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AN

HISTORY

OF

MARINE ARCHITECTURE.

INCLUDING AN

ENLARGED AND PROGRESSIVE VIEW

OF THE

NAUTICAL REGULATIONS AND NAVAL HISTORY,

BOTH CIVIL AND MILITARY,

OF ALL NATIONS,

ESPECIALLY OF GREAT BRITAIN;

DERIVED CHIEFLY FROM

Original Manuscripts,

AS WELL IN PRIVATE COLLECTIONS AS IN THE GREAT PUBLIC REPOSITORIES:

AND DEDUCED FROM

THE EARLIEST PERIOD TO THE PRESENT TIME.

IN THREE VOLUMES.

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HISTORY

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OF

MARINE ARCHITECTURE.

CHAPTER THE FIRST.

Political Account of the different Navies of Europe, from the Commencement of the Eighteenth Century to the Death of Queen Anne—Effect produced by the turbulent and ambitious Conduct of Louis the XIVth—State of the Genoese, Venetian, and Spanish Marine—The Naval Power of France—its Declension, and the Causes which produced it—the Losses it sustained during the War which commenced in the Year 1702—*Custom of Building Ships of encreased Dimensions according to their Rate and Number of Guns, introduced by the French Builders—its Effect, particularly on the British Navy—insignificant State of the Spanish Marine at the Commencement of the Eighteenth Century—Particulars of its Diminution during the War—State of the Portugueze Navy—Account of the Dutch Marine—Causes of its Decline—Conduct of the Government itself instrumental to it—Growing State of the Russian Navy under the Auspices of Peter, surnamed the Great—its formidable Condition in* 1714—*Force of a Squadron collected at Revel in that Year—Defeat of the Swedes by Admiral Apraxin—Causes of the Declension of the Swedish Naval Force—Inconsiderable Figure made by its Navy, notwithstanding the acknowledged Abilities of its Seamen—of the Daniſh Navy, and the collateral Causes which tended to produce its apparent Inactivity—the Attention of the Sovereign applied to prevent its Decay or Diminution—Comparative View of the different Navies and of the Commercial State of Europe.*

A PERSON living secluded from the world, and regarding the actions of mankind merely as a philosopher, might not improbably be induced to think, on being informed of the political ſtate of Europe, and the general prospect of public affairs, as they separately ſtood at the commencement of the seventeenth and

eighteenth centuries, that all those principles, by which the conduct of nations was regulated, had, through some extraordinary convulsion of nature, or other cause with which he was not acquainted, undergone a total and moſt mischievous change. At the firſt of those periods, owing to circumstances which it is not necessary to repeat again, a tranquillity, almoſt universal, appeared to overspread Europe; but, according to the ancient and trite proverb, this delusive calm was but the forerunner of that dreadful, and almost uninterrupted storm, which has not only laid the shores of Europe waste, but extended its horrors into the most distant, and totally unoffending quarters of the world, during the greater part of the eighteenth century.

A continuance of the same acting principle, which had lighted the torch of war, and brandished it when blazing in all its horrors, over so considerable a part of Europe, towards the conclusion of the seventeenth century, was productive of still more dreadful effects immediately after the commencement of the ensuing. The discordant and diabolically ambitious spirit of Louis the XIVth, nothing abating in its vigour, though the fuel which had at first fed its fury was consumed, eagerly spread itself in search of freſh materials which might continue to support its rage. The fatal industry with which this system was pursued, proved, most unfortunately for the rest of the world, too effectual. Independent of those countries which immediately surrounded the identical spot whence the flame arose, and which of course became the most immediate prey to its effects; its baneful influence was soon most sensibly felt even in remote districts, which its own immediate operations were incapable of reaching.

Spain, Portugal, Britain, Holland, Germany, and the northern parts of Italy, formed an immense volcano, of which France was the crater; while Russia, Sweden, Denmark, and, in fine, almost every country in Europe, influenced by the persuasion, terrified by the threats, or cajoled by the specious promises of Louis, were armed against each other, and joined in a scene so terrific, as almost to threaten an annihilation of the human race.—The Mediterranean States of Genoa and Venice alone derived tranquillity; the first, from its insignificance and total want of naval power; the latter, from its distance and secluded situation. A species of hereditary and habitual animosity, which appeared to exist between the latter Republic and the Turks, might be almost said to separate them from all the rest of the world, as naval combatants; they appeared to single each other out for contest; and the condition of their fleets, as well as the particular equipment of the ships composing them, seemed duly balanced against each other. The advantage, in point

of ſkill, as well in the construction as the management of a ship, was evidently on the side of the Venetians; but this pre-eminence was more than counterbalanced by the very superior numbers and force of the vessels which generally composed the Turkish fleets. This competition, together with that portion of trade which they still continued to retain with the Italian and other Mediterranean States, or Republics, whose territory bordered on the sea, served to preserve the existence of the Venetian marine, which had been so long on the decline; but it were absurd to search for, or expect, improvement with regard to any science, in a country where the pursuit of it is in the wane. The alterations, therefore, which the example of those progressive improvements, made by other countries, gradually and slowly introduced into the Turkish and Venetian navies, have not sufficient consequence to render any description of them necessary.

Spain continued under the same paralysis which had, during the whole of the preceding century, deprived her of the power of action. Although nearly fifty years had passed away in uninterrupted quietude, that circumstance which served only to plunge her, if possible, into a still greater abyss of obscurity, would have enabled a less torpid nation than herself, possessing any internal resources, thought deserving that appellation, to erect itself into consequence.

France, Britain, and Holland, the three competitors for fame, for empire, for wealth, and for dominion, exerted separately every means of acquiring them, stretched to their utmost extent, which their situation afforded. The first of those countries, which had but very recently assumed to itself the character of a maritime power, had, by exertions, certainly unprecedented, and almost incredible, raised itself, within a very few years, into a situation capable of disputing the empire of the seas with its two rivals. Notwithstanding the severe losses which Louis had experienced during the preceding war, and that heavy blow he had in particular received, by the destruction of the best ships he possessed, off Cape la Hogue, so earnestly did he apply himself, during the short period of tranquillity which succeeded to the peace at Ryswic, in the re-establishment of that navy, the possession of which he appeared to think so essential to his glory, that at the commencement of the eighteenth century, he considered himself in a condition to disturb the peace of Europe as powerfully as ever. The event, however, proved he had been rather too hasty and sanguine in his expectation; for, although the Dutch contributed, *pro formâ*, twenty ships of the line, as their *quota* of the fleet, consisting of fifty, sent on the expedition against Cadiz, he possessed not a naval force capable of facing the British singly. Continued perseverance, however, in the same

measures created a fleet, collected at one point only, which consisted, in the year 1704, of fifty-two ships of the line * ; seventeen of which were three deckers. This

* *A List of the French Men of War that were in the Sea Engagement; with the Names of their Commanders, and their respective Divisions.*

Vanguard, or the White and Blue Division.

Ships.	Captains.	Guns.	Men.
L'Esclatant - -	M. de Belle Fontaine	66	730
L'Eole - -	De Mons	62	380
Le S. Philippe, V. A. -	M. D'Infreville	90	700
L'Heureux - -	Colbert St. Mar	70	450
Le Ruby - - -	De Beneville	56	330
L'Arrogant - -	Derherbierf	62	350
Le Marquis - -	De Patonlét	60	350
Le Content - -	De St. Maure	70	450
Le Fier, Adm. - -	De Vilette	88	800
L'Intrepide - -	Du Casse	84	600
L'Excellent - -	De la Roche Alard	62	350
Le Sage - - -	De Montbaut	54	330
L'Ecueil - -	D'Argint	62	380
Le Magnifique, C. A. -	De Belleile	86	600
Le Monarque - -	Chabert	84	600
La Perle - -	Le Mothuïe	54	300
		1110	7700

Body of the Battle, or Center of the White Division.

Le Furieux - -	Le Comte de Blinacq	60	350
Le Vermandois - -	De Betusne	63	350
Le Lis - - -	Le Chevalier de Villars	88	600
L'Etonnant, V. A. - -	De Coetlogan	90	700
L'Orgueilleux - -	Du Palois	88	600
L'Esperance - -	De Lagnion	50	330
Le Serieux - -	Champmelin	58	330
Le Fleuron - -	De Grancey	56	350
Le Vainqueur - -	Le Bailly de Lorraine	88	600
Le Foudroyant, Ad. - -	Le Comte de Toulouze	104	950
Le Terrible - -	De Relingue	104	900
	Carried over	849	6060

L'Entre-

This force was independent of those inferior squadrons necessarily stationed in other parts of Europe and the more distant quarters of the world: but Louis finding, from

Ships.	Captains.	Guns.	Men.
	Brought over	849	6060
L'Entreprenant – –	De Hautefort	60	350
La Fortune – –	De Baigneux	58	350
Le Parfait – –	Le M. de Chateaumorand	74	470
Le Magnanime, C. A. –	De Pointis	84	600
Le Sceptre – –	Le Comte de Bailly	88	600
Le Fendant – –	De la Luzerne	58	350
		1271	8780
	Rear or Blue Division.		
La Zelande – –	M. Ferville	60	350
Le St. Louis – –	De Beaujeu	60	380
L'Admirable, C. A. – –	De Cepeville	92	675
La Couronne – –	De Champigni	88	500
Le Cheval Marin – –	De Pontacque	44	260
Le Diamant – –	Dorogne	58	350
Le Gaillard – –	Du Mont	54	330
L'Invincible – –	Roverois	70	450
Le Soleil Royal, Ad. –	De Langeron	102	850
L'Ardent – –	D'Aligre	66	400
Le Trident – –	De Modesne	56	350
Le Coureur – –	Phelipeaux	60	380
Le More – – –	De St. Clair	52	330
Le Toulouze – –	Du Quesne Mon	60	380
Le Triumphant, V. A. –	De la Harteloire	92	750
Le St. Esprit – –	Du Quesne Gui	72	490
L'Henri – –	Servigni	66	400
		1152	7625
Frigates.			
L'Etoile – –	Gonson	30	190
L'Hercule – –	Rouvré	20	170
L'Andromede – –	Chamilli	8	85
La Diligence – –	Masmet	6	60
La Meduse – –	Roquemadere	28	150
L'Oiseau – –	Figuiera	36	180
La Galatee – –	Degorti	11	120
La Sibille –	Guittasin	10	70

L'Enflamme

from sad experience, that all the exertions he could possibly make were inadquate to the attainment of his so much wished-for purpose, was content, from this time, to confine himself entirely to a defensive system. His fleets no longer spread themselves over the face of the ocean, in pompous display of his pretended power, but were satisfied with remaining in security within their own ports; and the people, as well as their sovereign, were as much rejoiced at the slender, the transitory success of a desultory expedition, cautiously and secretly dispatched, as they could, or ought in reason to have been, with a victory which had preserved their country from ruin, or raised it to the highest pinnacle of glory.—Soon after the commencement of the war with England and Holland, the naval force of France consisted of 90 ships of the line, including those of fifty guns; with nearly 200 other vessels, many of which were frigates of considerable force. The injury sustained by the maritime power of France, in consequence of the victory off Malaga, was but trivial: the glory, indeed, that resulted from it was great; and the critical advantage derived by Britain, from so opportune a check, consequential in the extreme; but the diminution of the French navy, on that occasion, could scarcely have been felt by a country whose resources had not been stretched to the utmost. The loss of the French, to state it in its greatest possible extent, did not exceed, either in ships actually destroyed, or rendered unserviceable—one ship of three decks, Le Fier, of 88 guns; four of two decks; the Excellent, of 62; the Fortune, of 58; and the Esperance, of

	Captains.	Guns.	Men.
L'Enflamme	Canvet	6	40
Le Dangereux	Du Gay	6	50
La Turquoise	De Soutier	8	45
Le Croissant	Gabaret	12	50
Le Bienvenu	Rochambart	8	60
L'Aigle volante	Kervilly	6	35
L'Ester	Canvine	6	35
Le Violent	Renoix	10	45
Le Lion	Marquisat	8	50
Flutes.			
Le Rotterdam	Grand Maison	6	60
Le Portefais	Le Quesne	6	60

Besides the above-mentioned men of war, frigates, fire-ships and flutes, there were 12 French and 11 Spanish galleys; in all 92 sail.

50;

50; the Cheval Marin, of 44 guns*; with a few galleys, the demolition of which was a mischief too inconsiderable to be taken into the account. It is true, that, not long afterwards, the marine of France sustained a second, and not less serious, disaster, in the capture or destruction of the Magnanime, of 84 guns; the Lys, of the same force; the Ardent of 66; the Arrogant, of 62; and the Marquis of 60; which were surprised, by Sir John Leake, off Gibraltar; being the squadron forming the blockade of that fortress, under the orders of the Sieur de Pointis. But it is also certain, that at the time of the attack made on Toulon, in 1707, being three years after the Malaga fight, from whence historians date the downfal of the naval consequence of Louis the XIVth, there were then, in that port, 46 ships of the line †, besides 29 frigates, fire-ships, and vessels of smaller force or consequence.

The conclusion which naturally remains to be drawn from these facts is, either that the French King, grown wise by experience, saw too late the absurdity of his own chimerical projects, or that the means he possessed were incapable of supporting, any longer, a system raised on so weak and unstable a foundation. It is, perhaps, worth investigating to which of these causes the subsequent events are ascribable. At the time of the attack made on the port of Toulon, in 1707, by the army under the command of the Duke of Savoy, and the confederate fleet, led by Admiral Sir Cloudesley Shovel, it is somewhat remarkable, that there were in that harbour, as above stated, 46 French ships of the line, 16 of which were of three decks ‡; besides 29 frigates, and other vessels of inferior force; and that the combined fleet of Britain and Holland, at least such part of it as was immediately engaged in the attack, amounted to no more than 43 ships of the line, of which six only were of three decks.

This circumstance very sufficiently proves, that the bubble, with which Louis the XIVth had for so long a time, and so expensively amused himself, in blowing to the largest size it was capable of attaining, had burst through the slender film which rendered it a visible object, and vanishing into air, was suddenly snatched from human sight, till an adoption of the same ridiculously ambitious principles, at some future period, should cause a repetition of the same childish,

* The latter not properly a ship of the line.

† No enterprize or expedition was ever undertaken by this formidable armament after the battle of Malaga, except a frivolous attempt, made by the Count De Tholoure, in 1706, to co-operate with Marshal Tesse, in the siege of Barcelona.

‡ Four of them mounting upwards of 100 guns each.

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Le Croissant – –	Gabaret	12	50
Le Bienvenu – –	Rochambart	8	60
L'Aigle volante – –	Kervilly	6	35
L'Ester – – –	Canvine	6	35
Le Violent – –	Renoix	10	45
Le Lion – – –	Marquisat	8	50
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though far from innocent experiment. Although it is natural to suppose that the inertness of the French fleet proceeded from its general condition being inadequate to a contest, even with an inferior enemy * ; yet several of the ships were nearly new off the stocks—one of them of 96 guns, which is erroneously called, in the official account †, Le Triumphant; the Pompeux, of 80; the Neptune, of 76; the Bizarre, of 70; the Constant, of 68; the Temeraire, of 60; and the Meduse, of 50.

The loss sustained by the besieged, amounting to eight ships of the line—the Triumphant, of 92 guns; the Sceptre, of 90; the Vainqueur, of 86; the Neptune, of 76; the Invincible, of 70; the Serieux, of 60; the Laurier, of 60; and the Sage, of 54; accelerated, and completed, the almost total retirement of the French fleet, from the busy and dangerous theatre of war, for 36 years. The Mediterranean no longer beheld, issuing from the port of Toulon, armaments, which were vainly expected to carry unlimited conquest before them, and give laws to the whole universe, without the ceremony or fatigue of a contest. Thirty-eight ships of the line, however, still remained to France; but the service effected by them was confined to little desultory expeditions, frequently unsuccessful; and when otherwise, unproductive of any solid advantage. So well satisfied was the British admiral of the supineness or debility of the foe with which he had to contend, that, after the termination of the expedition, and his consequent return to England, towards the close of the year, he left Sir Thomas Dilkes to command in the Mediterranean, with a squadron of no greater force than 13 ships of the line, none of which were larger than third rates; an armament ostensibly not equal to one-third of that which then remained undestroyed at Toulon.

During the years 1708, and the early part of the ensuing, no advantage was taken of this apparent superiority, notwithstanding little or no reinforcement was added to the British squadron. The only counterbalance to a multitude of losses sustained by the enemy, which it were irrelative to mention here, was the casual capture of the Pembroke, of 64 guns, and the Faulcon, of 32, by three French ships of the line; which, knowing the absence of an English force in any degree capable of contending with them, had, with considerable caution, ventured out of Toulon. Sir George Byng, who had arrived in the Mediterranean, and reconnoitered the

* The largest ship in the British fleet was the Association, of 96 guns. A very large proportion of the armament were even fourth-rates. London Gazette, No. 4357.

† A second ship, under the same name, carrying 92 guns, being one of the vessels destroyed by the fire of the assailants.

harbour

harbour of Toulon, in the month of June preceding, found only eight ships of the line ready for sea, and one which was careening, all the rest being totally dismantled, or laid up, without any apparent intention of their being speedily brought forward into service. From this circumstance, as is properly remarked by historians, he naturally concluded the information he had received was true, that the French had no intention, or, to speak nearer the truth perhaps, were not able to fit out any fleet or force whatever, exceeding that already stated.

From this time France appears to have patiently adopted the resolution of permitting the combined powers to carry on whatever naval operations they thought proper in the Mediterranean, without making the smallest attempt to give them disturbance or interruption. Fleets of transports, laden with stores, or filled with troops, were perpetually passing between Italy and Spain, under very slender convoys, though the French force at Toulon far outnumbered that of its allied antagonists employed in the same quarter. The natural situation of the country renders, as it were, two distinct navies necessary both to its protection, and the annoyance of its foes in time of war. Louis adopted a different scheme of management for each: previous to the commencement of hostilities, he seems to have arranged his whole plan, and to have acted according to that arrangement, as far as circumstances permitted him, during the whole war. He resolved to keep the principal part of his naval force in the Mediterranean, imagining that his opponents would consequently find it necessary to detach thither the principal part of their navies; and, by that means, leave the Atlantic more open to his depredations. He had another reason, also, for this conduct; which in all probability, weighed no less forcibly with him than the former: the ships sent through the Streights, by the Confederated Powers, would be removed a considerable distance from their own harbours; and should they sustain any injury, either from tempests, or in action, their return to a friendly port, where they could procure assistance, might be difficult, if not impossible. The ships of England and Holland must pass at least a month from the time of their quitting Britain, ere they could come in contact with those of France; there was, consequently, the natural chance of contrary winds and tempests to be calculated on for their annoyance, while the fleet of Louis could lay quietly, and without incurring any such risk, till the very moment almost arrived, when an engagement should be deemed politically prudent. The plan was judiciously laid, but in great measure failed: this was owing, however, not to any defect in the plan itself, but the incompetency of the French navy to render it effective. The check, for

it hardly deserved the name of a victory, off Malaga, gave so complete an ascendancy to the Confederates, that they scarcely appeared to consider, after that time, whether their enemy had any naval force in the same quarter or not.

The system adopted by the French King on the side of the Atlantic was much more successful. Instead of collecting the principal part of the naval force he possessed into one mass, he divided it into light squadrons, which were ſtationed at Dunkirk, at Brest, at Rochefort, and other ports, under the command of the most experienced officers in his service. He was admirably furniſhed in this respect—Jean Du Bart; the Count de St. Paul; the Chevalier de Forbin; and M. du Guay-Trouin progressively conducted the flying armaments employed in this desultory kind of war; and the deaths of the two first-mentioned Chefs D'Escadre, though very deservedly esteemed two of the ablest officers France had ever produced, appeared to create no confusion in the conduct of the war, their stations being so admirably well filled by those who were their successors. The policy of the conduct adopted by Louis, in respect to his marine arrangements on the northern and western coasts of France, was manifest, from the success which, in spite of very heavy and reiterated losses, attended them. At the very commencement of hostilities, the misfortune he sustained at Vigo nearly equalled all he experienced on the side of the Mediterranean, where he possessed a powerful fleet, during the whole of the war*; yet the destruction of so formidable a squadron, as that which had been under the Count de Chateau Renaud, seemed to produce no sensible inconvenience; while in the oppoſite quarter, all the naval genius and spirit of the French appeared in one instant overthrown; as though they considered their measures had been so deeply laid, that, failing of success on an occasion when they had exerted every nerve to procure it, little advantage was to be expected from any similar attempt fruitlessly repeated.

To counterbalance the ill-fortune in that quarter, the active spirit of Forbin and his coadjutor harassed, almost incredibly, the commerce of Britain; they captured the ships appointed to protect its fleets, and afterwards made themselves masters of no inconsiderable portion of those very fleets also. The Grafton and Hampton, of 70 guns each, were taken at one time, after a most resolute defence against Forbin, whose squadron consisted of ten ships of the line, a frigate, and four small vessels. Within an interval of less than six months, the united armaments under Forbin and Du Guai Trouin fell-in with a second Lisbon fleet, and,

* Including that occasioned by the victory off Malaga, which appeared to paralize all the naval efforts of France in that quarter.

after

after a dispute no less obstinate than that which took place on the former occasion, succeeded in capturing or destroying the Cumberland and Devonshire, both of them three-decked ships, carrying 80 guns, with the Chester and Ruby, of 50 each. Several other enterprizes, of a similar nature, were also projected, and carried into execution with varied and perhaps less consequential success than the two just mentioned. The mere attempts, however, had they been completely foiled, added to the provision made from the same source for the safety and protection of their Weſt Indian and American colonies, where, considering the great disadvantage under which the enemy certainly appear to have laboured, very little impression was made, or advantage gained by the British, plainly prove the French marine to have acquired such wonderful strength, that nothing but the greatest activity and most unremitted diligence could possibly have checked its growing power.

The expedition, fitted out in the year 1708, under the command of the Count de Forbin, and sent on the coast of Scotland for the purpose of covering a descent intended to be made there, under the auspices of Louis, in favour of the Pretender, being completely unsuccessful, appears to have had the same effect in restraining all future operations on so extensive a scale, as the battle of Malaga had in another quarter. The utmost stretch of subsequent hope exceeded not the fortuitous interruption of some nearly defenceless convoy, or the casual success of two or three cruizers, venturing out in company, and fortunately meeting with some prize, so inferior to themselves in force as to render resistance almost an act of culpable temerity.—Nothing can more forcibly display the relative conditions of the French and British marine, together with the resources possessed at that time by each country in support of it, than their different actions on the occasion of this expedition. France, it is true, had experienced losses during the war, amounting to more than 40 ships of the line, besides a multitude of frigates and vessels of inferior rate. These, of themselves, constituted a navy that would not be considered otherwise than respectable; but she still possessed, including the fleet which lay inactive at Toulon, a force of 70 ships of two and three decks, with upwards of 100 frigates and vessels of inferior rate.

Such, however, was the ascendancy acquired by Britain at this period, that while Louis was, through his repeated disasters, compelled to leave the defence of his Weſt India colonies; of his possessions on the coast of America; the protection of the shattered remnant of that Trans-Atlantic commerce, the preservation of which, contemptible as it was, required his best efforts; in short, his whole system of

defensive and offensive naval war, in every part of the world, the Mediterranean excepted; to about 32 ships of two decks, mounting from 46 to 76 guns each; Britain was able, in the space of six weeks, to collect, on the occasion of this desultory attack, a force, which including some Dutch ships consisted of 40 sail of the line, besides frigates and inferior vessels. This was effected, after every other branch of a diffused service was fully and completely provided for, and sufficient force left for the protection of those widely-dispersed territories and possessions which it was incumbent on Britain to guard with particular attention.

But though the wonderful inferiority, in point of force, with which the gallant and enterprizing Forbin was, in obedience to the commands of his sovereign, induced to undertake this expedition, may prove the desperate state to which the affairs of Louis were reduced; yet it serves to shew at the same time, how evidently superior in respect to sailing must have been the quality of the ships composing that squadron, without which pre-eminence it would appear incredible, if not impossible, for the armament to have proceeded from Dunkirk in the face of such a fleet as that which opposed them under the orders of Sir George Byng: that it should have proceeded as high as the Firth of Edinburgh, and should afterwards have effected its return back to its own port, after sustaining a loss, which, taking all circumstances into consideration, must be considered trivial in the extreme. There remains behind a still stronger evidence of this alleged superiority, which the French ships possessed in respect to form over those of the English, and this arises from the particulars of the loss which the enemy sustained on this occasion. It was confined entirely to ships which had once been in the possession of, and had been built by the Engliſh themselves; of these the Salisbury, of 50 guns, was taken; the Blackwall, of the same force, with the Deal Castle and Squirrel, of 24 guns each, either foundered at sea, or were wrecked on the coast of Holland. These accidents furnish self-evident examples either of a superiority in skill, with respect to the French, or a strange predilection for particular and absurd principles, which strongly influenced the minds of British marine architects at that period. The advantage in point of sailing appears beyond controversy to have been in favour of the French ships, the Salisbury falling alone a victim, as the rest in all probability would have done, notwithstanding Forbin's ability and address *, had not his ships, to use the

* See the official account given by Sir George Byng:

" The ship that went up yesterday came down this morning, and is now within two leagues of us: she appears to be a ship of 60 guns, but has now no flag on board. We saw this morning, when they

the seamen's phrase, considerably fore-reached those of the British. The losses which are imputable to accident, and those dangers to which all vessels at sea are liable, no less forcibly proves the superiority of that construction or form given to vessels, under the load water-line, which was then adopted by the French. Those which perished were entirely of English construction, while the remainder, built in the ports of France, being better enabled to hold their wind, to work off a lee shore, and to endure the assaults of an heavy head-sea, were capable of successfully combating and effectually resisting it.

they weighed, a flag at the main-top-mast-head on board of one of their ships. They stand from us, and we after them with all the sail we can."

In a second letter Sir George states, "We chased the enemy to the northward of Buccaness, sometimes with reasonable hopes of coming up with them. The Dover and Ludlow Castle being the only clean sailing ships we had, they were the first which came up with part of the enemy's squadron, they passed by some of the smaller to engage some of the larger ships, and stopped them till they could be relieved. They attacked two or three of the enemy's ships, among which was the Salisbury: they did not part with them till more of our ships arrived, but worked the ships in a handsome manner to cut them off from the rest of the fleet; but, in the darkness of the night, they all got out of sight, except the Salisbury, which falling in amongst our head-most ships, the Leopard entered men on board. We were informed by the officers who were taken, that there were 12 battalions on board their squadron, commanded by the Count de Gace, a Marshal of France; the pretended Prince of Wales, Lord Middleton, Lord Perth, the Macdonalds, Trevanion, and several other officers and gentlemen, on board the Mars, in which also was Monsieur Fourbin, who commanded the squadron. The number and strength of their ships are very near the account we lately received from Dunkirk; nor were they joined by the Brest men of war: and they further assure us, that the ships, our out-scouts saw off Calais, were privateers and their prizes going into Dunkirk. The morning after this chace, we saw but 18 of the enemies ships, as far as we could perceive them from the mast-head, in the E. N. E. of us. Having no prospect of coming up with them, we lay off and on Buccaness all day yesterday to gather our ships together; and this day, blowing hard at N. E. with a great sea, judging the enemy could not seize the shore to make any attempt, we bore up for this place, which was thought most reasonable, not only to secure, but to give countenance and spirit to her Majesty's faithful subjects, and discourage those that could have thoughts of being our enemies."

It is no less worthy of remark, that very few ships captured by the enemy, from the British, have ever continued long the property of their new possessors. If it has so happened, that one of them, being in company with others of French construction, has ever fallen-in with any English squadron, that ship, almost without exception, has been among those captured, and most frequently the first which has fallen. Exclusive of the Salisbury already noticed, the Pembroke, re-taken in the same war, the Warwick, the Ardent, and the Alexander, besides a number of other vessels of inferior rate, in times much more modern, are additional proofs of the same principle.—On the other hand, the re-capture of any ship, frigate, or vessel of inferior rate, from the British, which was originally French, is a circumstance extremely uncommon.

The

The same principles appear to have been unceasingly adopted by the French builders ever since that time, and the same causes have proved almost invariably productive of the same effects. It will also, without doubt, be admitted, that the ships of French construction have, generally speaking, while in a proper condition for service, made better weather, and held a better wind, than those, their contemporaries, built in any other country whatever; for the accidents which have so frequently befallen French ships, when adopted and taken into the British service, appear to have been principally owing to a defect either in materials or workmanship, and not to any impropriety in the exterior or shape of the vessels themselves.

In 1707, the capture of a French ship, called the Maure, mounting 60 guns, being of extraordinary dimensions for her rate, and constructed with particular attention to her sailing and working, proved that people, even to the conviction of the English themselves, to have been by no means inattentive to the acquisition of knowlege in the science of marine architecture, though a variety of causes appear to have prevented the proper combination of ingenious theory with regular practice, or sufficient experience. The re-capture of a ship not long afterwards, called the Pembroke, which, when in the British service, had mounted 64 guns, but, when re-captured, carried only 50, proves in corroboration of the circumstance last mentioned, that the French had very proper and extensive ideas in regard to that enlargement, or encreased size of vessels, which, according to their force, has generally been considered as most conducive to improvement, at least while confined under proper regulations. It cannot moreover be in justice denied to an enemy, that although the navy of France was so considerably reduced by the general events of a long contest, that diminution was considered as principally occasioned by a supposed superiority of skill in naval tactics possessed by the British; for there was scarcely a single vessel captured from them which was not deemed a valuable acquisition to the latter, while, on the other hand, few of those vessels belonging to Britain, which the chance of war unavoidably threw into the hands of the enemy, were ever brought forward into the public service of that enemy; or, if brought forward, they appeared in an inferior rate or class to that in which they had been ranged when belonging to their original possessors *.

At

* The following list of losses sustained by France, during the preceding war, have been transmitted with

At the commencement of the eighteenth century, the navy of Spain, which, as already observed, had once, though some generations had intervened, amazed

with the utmost fidelity from one historian to another, who have thereby given to the world an uninterrupted continuation of erroneous account.

Guns.	Ships.	Total of Guns.		Guns.	Ships.	Total of Guns.
			Brought over		32	2530
100	4	400		48	1	48
90	8	720		40	1	40
86	8	688		36	2	72
74	1	74		34	1	34
70	3	212		32	1	32
64	1	64		30	2	60
56	1	56		28	1	28
54	4	216		24	8	192
50	2	100		20	3	60
Carried over	32	2530			52	3096

But the annexed account may, on the other hand, be considered as more correct:

	Guns.	
Triumphant –	92	Destroyed by the fleet under Sir C. Shovel at Toulon.
Sceptre – –	90	Ditto.
Fier –	88	Supposed to have been sunk after the engagement off Malaga.
Lis – –	88	Burnt by Sir John Leake and the Dutch off Gibraltar.
Magnanime –	84	Ditto at ditto.
Vainqueur –	86	Destroyed at Toulon.
Neptune –	76	Ditto at ditto.
Prompt –	76	Taken at Vigo.
Fort –	76	Burnt at ditto.
Firme –	74	Taken at ditto.
Invincible –	74	Destroyed at Toulon.
Esperance –	70	Destroyed, after running on shore, at Vigo.
Superbe –	70	Ditto at ditto.
Bourbon –	68	Taken at Vigo by the Dutch.
Ardent –	66	Taken off Gibraltar by Sir John Leake.
Assurance –	66	Taken at Vigo.
Prudent –	64	Burnt at Vigo.
Oriflamme –	64	Ditto at ditto.
Content –	64	Destroyed by two ships of Captain Coney's squadron, off Cape de Gatt, Dec. 26, 1706.

One

amazed and terrified the world with its power and splendour, displayed an insignificance which could scarcely fail to excite the compassion even of a foe.

During

	Guns.	
One ship name unknown	64	Taken by the same squadron, and carried into Gibraltar.
Sirene –	62	Destroyed at Vigo after running on shore.
Excellent –	62	Supposed to have sunk in, or immediately after, the Malaga fight.
Arrogant –	62	Taken by Sir John Leake's squadron off Gibraltar.
Marquis –	60	Ditto at ditto.
Serieux –	60	Destroyed at Toulon.
Laurier –	60	Ditto.
Maure –	60	Taken in the Mediterranean, 1707, by the Bredah and Warspite.
Auguste –	60	Taken in Soundings, August, 1704.
Fortune –	58	Supposed to have been sunk in, or soon after, the Malaga fight.
Solide –	56	Burnt at Vigo.
Superbe (new)	56	Taken by the Kent.
Gaillard –	56	Taken by the Suffolk in the Mediterranean.
Hazard –	54	Taken in soundings by Captain Norris and others.
Falkland's Prize	54	Taken on her passage from Virginia. N. B. This appears to have been a ship lent by the King to the French merchants. Its name, when forming part of the Royal Navy, is unknown.
Sage –	54	Destroyed at Toulon.
Moderè –	54	Taken at Vigo.
Esperance –	50	Sunk, as is supposed, in the Malaga fight.
Tholouse –	50	Taken in the Mediterranean by the Hampton Court, 1711.
One ship of –	50	Name unknown. Destroyed by Sir John Norris near Toulon. This ship is supposed to have been of the same description with the Falkland's Prize.
Vigo –	50	Taken. This ship had formerly been in the British service, but was taken by the French in the preceding war.
Total –	40	Ships of the line, exclusive of many others which the enemy lost by tempests or other misfortunes: several of them being firſt or second rates.—Among these were the
Phœnix –	88	
Victorieux –	88	
Coupable –	60	
Peste –	60	
Prince –	60	
Ambitieux –	60	

France also lost the following two-decked ships, which were not properly of the line.

Adriade –	48	Taken September, 1709, by Captain Hanway, in the Channel.
Voluntaire –	44	Destroyed at Vigo, after running on shore.

Dauphine

During the whole of the contest in which that country was evidently a principal, very little mention is made of any naval force possessed by it, which properly deserved that name, except indeed the three vessels destroyed at Vigo; the Jesus Maria Joseph, of 70 guns; with the Buffoona and Capitana D'Assogos, of 54 guns each. The rest of its marine consisted merely of vessels, some of which, it must be admitted, were of considerable burthen and force, but appropriated solely to the conveyance of the treasure, derived from the Peruvian and Mexican territories, to Europe. Thirteen of these fell a victim at one time, together with the three ships of war just mentioned, to the enterprizing spirit of their enemies; and many subsequent successes of the same nature, though not perhaps so extensive, followed a perseverance in the same spirited and adventurous conduct. Owing to these repeated losses, the maritime consequence of Spain, even combining the navy of the state with that of the civil and commercial department, which was considered contemptible at the commencement of the year, was reduced almost to a total state of annihilation before the conclusion of it *. Portugal, her former appendage,

	Guns.	
Dauphine -	44	Burnt at Vigo.
Cheval Marin -	44	Sunk in the Malaga fight.
Thetis -	44	Taken by Sir George Byng.
Gloire -	44	Taken by Captain Mathews, 1709, under the orders of Lord Dursley.
One of -	44	Taken by Sir W. Whetstone in the Weſt Indies: supposed to have been a ship lent to the merchants by the French King.
Mercury -	42	Taken in the Mediterranean.
Triton -	42	Taken at Vigo.
One of -	42	Taken off Gibraltar by Sir J. Leake.

Making in the whole 56 ships of two decks; exclusive of more than 90 frigates, corvettes and vessels of inferior rate; with upwards of 50 sail which were supposed to have been lost by accident.

* Exclusive of the ships which were burnt or captured by the Combined Fleet at Vigo, hiſtorians make mention of the following Spanish ships taken or destroyed during the war.

	Guns.	
Santa Maria * -	70	Taken at Ostend.
Porta Cœli -	64	Taken and carried into Lisbon, by a squadron under Sir Thomas Dilkes.
Santa Teresa -	64	Ditto by ditto.
St. Joseph -	64	Blown up in action with Commodore Wager
A galloon, name unknown	64	Taken in the West Indies.

pendage, and then opponent, was in the same inoffensive rank at the commencement of the eighteenth century, in which she has continued unoffendingly to pass through the whole remainder of it *.

Holland appeared to have passed the zenith of its glory. Its maritime power continued, indeed, still respectable, but carried not with it that terror as in the preceding century, when it arrogantly assumed to itself the mastership of the ocean, and the power of prescribing marine laws to almost all Europe. The navy of the state

	Guns.	
Flandria * -	50	Taken at Ostend.
One galloon -	44	Taken by Commodore Wager.
Queen of Spain* -	40	Taken at Ostend.
One ship, name unknown	40	Blown up by the crew, to prevent its falling into the hands of the English.
St. Nicholas -	24	Taken by Sir T. Dilkes.

Six sloops of war or armed vessels; together with 50 merchant ships taken at Ostend.

The whole of these were galloons, except those taken at Ostend by Sir Stafford Fairborne, which are marked with an asterisk. All the ships which were in the harbour of Cadiz at the time it was attacked by Sir George Rooke and the Duke of Osmond, though some of them were fitted as ships of war, appear to have also been of the same description; so that the navy of the state, at least that part which could be properly so called, might be said to be nearly annihilated. Its force, even at the commencement of the war, exceeded not seven ships of two decks, the largest mounting 70 guns, with a very slender proportion of frigates and smaller vessels. The vessels intended for the purposes of ordinary commerce experienced no less degradation; so that the intermediate class alone, which was appropriated solely to the purpose of conveying warlike-stores, either from one port to another, or from Old Spain to the American Continent, and carrying from thence the treasures of Mexico and Peru either to Europe or Asia, continued to retain its consequence. This, however, was a matter of indispensable necessity, not choice; and if, on one hand, the vessels just described degraded not the science, as specimens of Marine Architecture, they certainly did not, on the other hand, advance it, or reflect lustre on its growing progress.

* The ſtate of Portugal at this time is very briefly and properly explained by Campbell:— "When the war first broke out," says he, "Portugal was allied to the two crowns, and with great difficulty it was that we detached that monarch from their intereſt; but the means by which we detached him ought not to remain a secret. In the treaty he concluded with Lewis XIV. and his grandson, he had stipulated that he should be protected by an annual fleet from France; but, when he found that this could not be complied with, and that, if he performed his part of the agreement, his coast would be left open to the insult of the maritime powers, he saw the necessity of changing his party, which induced him to make a treaty with us in 1703; and when the French miniſter, M. de Chateauneuf, reproached him for thus changing sides, Don Pedro replied with great spirit—'If your master had sent 30 ships of the line, to cruize between Lisbon and Setubal, I had never quitted his alliance; and, therefore, I would have you let him know, that he ought to blame himself, not me, for the consequences.'

had

had diminished considerably, not only in the number of its ships, but also in the force of them; for, though in the reign of King William they possessed several vessels, as the Hollandia, and others, having three tiers of guns, amounting to 90, or upwards in number, yet, after the commencement of the eighteenth century, little or no mention is made, that can be relied on, of any Dutch ship carrying more than 76 guns. Their commerce appears to have been in the same proportion also in the wane: Britain having entered into the competition with such spirit and avidity, that the cold phlegmatic temper of Holland shrunk, as it were, in dismay from the contest, and yielded up a participation of those darling pursuits to which, heretofore, every consideration had been sacrificed, patiently, and almost without a struggle.

The decline of the navy followed as a necessary consequence, the invasion and avulsion even of that trifling part of their commercial consequence, which with heartfelt sorrow they found forcibly torn from them. Like bees, despoiled of even a part of their honey, they grew careless, for a time, as to the protection of the remainder. Instead of displaying that energy of character, that enthusiastic boldness and love of enterprize, which, contrary to the usual characteristic of a commercial people, they so fully manifested on many occasions during the British reign of their Stadtholder William the third; they became cautious, reserved, doubtful in cases of enterprize, parsimonious, and, on all occasions, remarkably retentive of that proportion of force which they were solemnly bound by treaty to furnish towards the furtherance of an end which, at the commencement of the league, was deemed a common cause.

Throughout the whole of the war one-third at least of that due proportion of naval force which they had engaged to provide was, on various pretences, kept back; and those ships, which were actually furnished, were, many of them, in so ill a state of equipment, as well as so inferior in point of force, that it became almost unsafe to trust them in a line of battle. The action off Malaga afforded an incontrovertible proof of the truthof this charge; for, though the service on which it was known the fleet was destined to proceed was confessedly of the most consequential nature, and ought to have called forth their best exertions, it is very apparent, from the private account given by Sir Cloudesley Shovel, who commanded a division of the British fleet in the engagement alluded to, that, if they were not most shamefully inattentive to the welfare of the cause in which they were engaged, their navy had most wonderfully declined from those days when their ships under Van Tromp, and other Dutch admirals, hesitated not a moment to enter into

single contest with the first rate ships of Britain.—"The Dutch," says Sir Cloudesley, "were in the rear with *little* ships; the admiral carrying but 64 guns; they fought very well, but had not weight to make the enemy give way."

Thus it is, that the gradual emersion of nations from obscurity to splendour, and their more sudden decline from that splendour, without even the contravention of any unforeseen or unfortunate causes, is frequently observable, if prudence, policy, and wisdom, direct not the proper maintenance of it. Such had been the fate of Venice, of Spain, and of Portugal; such was the reverse which the short-lived pageantry of the naval power of France had experienced; and such will invariably be the fate of every country in the universe, which, after having reached that summit which Providence permits and industry grasps at, becomes either arrogantly dazzled by the visionary brightness of its own consequence, or supinely neglectful of those means by which it was attained. The navy of the United Provinces, which, at the commencement of the eighteenth century, though at that time considerably past its zenith, consisted of 84 ships of the line, all in condition fit for immediate service, had, by the end of the year 1711, been suffered to waste, by degrees almost imperceptible, till the States were unable, according to their own shewing, to equip more than 50 sail *. The peace of Utrecht, concluded in 1713, contrary to the wishes, and, perhaps to the expectation of the Dutch, who then saw their error too late, furnished an additional cause of relaxation with regard to their ſtate marine, which, after having given laws to almost the whole world, was hastening so rapidly towards its original insignificance, that

* *State of the Navy of the Allies during Queen Anne's War.*

Years.	English ships.	Dutch ships.	Dutch quota.	Dutch deficiency.	Allied fleet.	Allied fleet according to treaty.
1702	74	38	44	11	107	118
1703	79	22	47	25	101	126
1704	74	18	44	26	92	118
1705	79	20	47	27	99	126
1706	78	15	46	31	93	124
1707	72	27	43	16	99	115
1708	69	25	43	18	94	112
1709	60	11	42	31	71	102
1710	62	13	37	24	75	99
1711	59	12	35	23	71	94

Journals of the Houſe of Commons, vol. XVII. p. 48, 28th Jan. 1711.

they

they might have feared the power of France alone, had they not relied implicitly on the support of Britain, in case of any serious and premeditated attack.

The northern powers of Russia, Denmark, and Sweden, began, at the commencement of the century, to make rapid advances with respect to their marine. This change was principally owing to the suddenly raised consequence which the enterprizing and truly patriotic spirit possessed by Peter, surnamed the Great, had created with respect to the former country. The fleet which he had, with so much industry, laid the foundation of in 1696, was, by a continuance of the same diligence and indefatigable pains, augmented till it almost vied in numbers with that of France, reduced as she was, by her reiterated contests with Holland and Britain. It even surpassed that of most other states in Europe (Britain excepted). In 1709, his newly-raised city of Petersburg, which had emerged so suddenly from the morass, on which he thought proper to cause it ſhould be built, as if in defiance of those decrees of nature which seemed to forbid it, became the grand arsenal of his naval force. From that time it daily acquired additional ſtrength and vigour; for, in the same year, after having travelled through all the countries in Europe, not with the volatile and superficial temper of a man of high rank merely inquiſitive, but that he might actually acquire and perfect himself in the practical knowledge of every useful science, he assisted in person, and bore a part in the labour of laying the keel of a new ship of two decks, mounting 54 guns. So rapid, so indefatigable, and so successful was this great Prince in prosecuting this mighty plan of raising into consequence, as a naval power, a nation which he found destitute of a single ship of war, that in the midſt of a myriad of other coeval projects, which must have taken up so considerable a portion of his attention, he had raised, in the year 1714, a naval force consisting of more than 40 ships of the line, as many frigates, and upwards of 150 gallies or small vessels.

One armament which he collected at Revel, in the same year, consisted of 30 ships having two decks, 20 frigates or corvettes, and nearly 100 gallies or tenders. With a detachment from this force he had the good fortune to baffle the fleet of Sweden, which was on its passage to Revel, in the presumptuous hope that, through a supposed superiority of skill in naval tactics, the fleet of the Czar might be bombarded and destroyed. Nor did his good fortune, or rather those irrefragable proofs of a mind equal to combating and overcoming every difficulty or danger, end here; the commanding officer of a detachment which had forced its way through the opposing Swedes, having sent information to the Czar that he had blocked up the rear squadron of the enemy, commanded by Admiral Ehrens-

child, consisting of seven ships of the line, besides frigates and smaller vessels, a division of the Russian fleet, commanded by Apraxin, was sent against him, and, after a well-maintained contest, succeeded in capturing or destroying every ship of the squadron.

Sweden, which, under the direction of so able a man as Charles the XIIth is universally admitted to have been, might have acquired the highest consequence as a nation, particularly among the northern powers of Europe, had it been possible to have directed those abilities into a proper channel, and confined the strange impetuosity of his temper with due bounds, was compelled to sink, after a long and bloody contest, under the talents of the Czar, which were so evidently superior, whether considered as a warrior, or as a lawgiver and prince entrusted merely with the civil direction and government of a state. Owing to the peculiar temper and turn of mind which Charles possessed, the public attention was almost entirely diverted from the fleet; it was suffered to dwindle considerably from that state in which it was left by his predecessor, and the protection of the country was transferred to an army, the temporary successes of which, proved ultimately, not only the destruction of that head-strong prince's affairs, but nearly involved the state in irretrievable ruin.

That fleet which, in the year 1700, had, in conjunction with the Dutch and English squadrons, prescribed laws to Denmark, compelling its monarch, sorely against his inclination, to sign the peace of Travendahl, had gradually dwindled almost into non-existence. Mention is made, indeed, of an inconsiderable Swedish squadron having ineffectually attempted, in 1704, to force its way into the harbour of Narva, which was then closely besieged by the Russian army; but, except in this instance, and an engagement which took place ten years afterwards, as already related, between a Swedish squadron, commanded by Admiral Ehrenschild, an officer of the first ability, and the Russian fleet *, in which the former was defeated, with the loss of six ships of the line and a frigate, no material service seems to have been even attempted by it till after the return of the fugitive Charles to his harrassed and exhausted country.

Denmark might be considered in nearly a similar situation with regard to her navy, as the state last mentioned: the military efforts of Sweden naturally directed the exertions of her neighbour and rival into the same channel, so that the

* Notwithstanding this check, or rather defeat, the Swedish officers and seamen still continued to be considered as possessing more nautical ſkill, knowledge, and general ability, than thoſe of any other ſtate among the northern powers.

want

want of necessity rendered any attempt towards the improvement or augmentation of its marine unnecessary. Frederick the Fourth, however, though he might be considered nearly a passive monarch in maritime affairs during the fourteen first years of the new century, was not so neglectful of them as to suffer his navy to perish through inattention. The former eſtablishments continued to be maintained with unimpaired force; and, when any circumſtances whatever rendered the appearance of a Danish squadron at sea politically necessary, it failed not, at leaſt, to command respect, and sometimes to excite terror, in those against whom it seemed destined to act.

To draw a brief comparative view of the European marine, as it stood in the year 1700, Britain might be said to possess nearly one third of the whole of that force which was especially equipped for the purposes of war; France and Holland more than a second third part; while the minor ſtates of Spain, Portugal, Russia, Denmark, and Sweden, could boast no greater navy, had the whole of it been united together, than what could have been sent forth from the ports of England alone. The fluctuation or alteration which was occasioned by the uninterrupted continuance of war during the firſt fourteen years of the eighteenth century, tended but little to affect the proportion just stated. The alteration which was produced by it was in favour of Great Britain; the losses sustained by her not having equalled, by one third, those which France had suffered within the same period. The marine of Spain had also undergone what might be considered as a total demolition; while the contests subsisting between the northern powers had prevented them, taken in the aggregate, from augmenting that total which they had possessed at the commencement of them, notwithstanding the wonderful exertion Peter the Great made to raise himself into naval consequence.

Commerce, the customary attendant of maritime pre-eminence, held not the same comparative proportion. Diverted from those more insignificant, though refreshing streams, which, had they been permitted to have remained undisturbed, according to the apparently even disposition of nature, might have better contributed to supply the supposed wants of mankind, became, in great measure, temporarily concentered into one rapid torrent, raging on all ſides as if in proud defiance of the world, and menacing destruction on any puny object which threatened to oppose its course. Holland, and the United Provinces, as had been their practice on former occasions, were, from an attentive diligence, and by a variety of artifices, enabled to acquire to themselves, in the midst of warfare, the greater share of those mercantile advantages which had, in former years, been more

generally

generally and equitably distributed over the face of all Europe. But, though possessing sufficient powers to acquire that pre-eminence in the first instance, Providence thought proper to withhold from them that degree of ability and resource in what may be called national consequence, which were necessary to maintain it. The advantages became, after a species of monopoly which continued only during the war, gradually more diffused; the naval force of the United Provinces, incompetent to its protection, sunk under the weight of its charge; and the benefits which it still continued, though in a more contracted degree, to derive from commerce, have, since that time, owed their existence to the supineness, or rather forbearance, of all the rest of Europe.

CHAP.

CHAPTER THE SECOND.

Account of the Improvements made in Marine Architecture among the different European Powers during the first Fourteen Years of the Eighteenth Century.—The immediate Causes which gave Birth to them, and produced the extraordinary Augmentation of Vessels in Regard to their Tonnage as well as Force.—The Dimensions and Force of the Venetian and Genoese Ships of War; of those belonging to Spain, Portugal, France, Holland, Russia, Denmark, and Sweden.—Description of the Vessels employed for Mercantile Purposes by those Countries—the Prevalence of Fashion pointed out, and the different Principles of Ship-building practised by the Artificers of the Southern, from those of the Northern States—the Reasons which first produced that Distinction, and have still continued to preserve it.—Remarks on the Marine of Sweden, Russia, and Denmark.—The original rude State of the Russian Marine, and the Foundation of its sudden Improvement.—Mild Character of Frederick the Fourth, King of Denmark.—Similarity between the Danish and Dutch Ships.

IMPROVEMENT in every branch of science practised or pursued among what are called civilized nations, generally spreads with rapidity, fertilizing and adorning those more distant countries through which the stream takes its course, in a far superior degree to what it does that parent clime under which it first burst forth to human sight. A generous, or rather, perhaps, an envious spirit of emulation, promotes the gradual exertions of the human mind, which, naturally restless and ambitious, cannot rest in quiet, till it exultingly and arrogantly exclaims, it has reached the utmost limits of mortal perfection, and is therefore satisfied.

A still superior and more compulsive cause operated to the advancement, both of the art of navigating vessels, and the method of constructing them. This was the supposed actual existence of a necessity demanding that emulation, which the apparent advantages it held forth to luxury and to ambition impressed so strongly on the human mind, that it soon becoming credited, was considered as a reality. It was deemed a political heresy to deny it: all states, all governments, monarchical as well as republican, agreed in this one point; and while the hardy opposer of it would, under Louis the tyrant, have been condemned to a solitary seclusion from all the rest of the world, within the walls of the Bastile, the only

existing difference between his hard fate, and that which might have attended a free unfettered mind, acting under the more genial influence of what is called a free government, such as that of Holland was reported to be, would have been a more speedy, though far more violent, termination to his misery, from the savage fury of his irritated countrymen: his mangled limbs would have been borne in triumph through their cities; and the atrocious conduct of the victim would, most probably, have been considered by the executive power a sufficient sanction, or at least excuse, for the violence of this summary punishment.

If Louis the Fourteenth, in the height of his career, had madly ordered ships to be built, equalling in dimensions the most extravagant ideas that ever entered the brain of a chimerical projector, and his coffers had been exhausted in pursuit even of an useless object; such, nevertheless, would have been the force and influence of example, that Britain, at least, would have endeavoured to outvie his folly, and build vessels, alike intended for the purposes of war and commerce, still less useful, because they would have been still more unwieldy. Rivals as these two countries were, in power and in wealth, it would have been somewhat singular if either had monopolized to itself folly and absurdity. Ships of the first rate, which, till the middle of the preceding century, had been considered as meteors serving as much to terrify their enemies with the report of their thunder, as to awe them by the effects of the bolts themselves, became objects less dreadful, because they were introduced into much more frequent use. The dimensions or burthen of vessels of the same nominal rate or force, gradually enlarged also, till they reached what was then considered as the *ne plus ultra* of the artift's operations. In this instance, the artificers of Louis himself became the copyists; they were not the original contrivers of the system, but the imitators or revivors of that practice which Spain, when in the zenith of her naval power, had endeavoured, though fruitlessly, to carry into execution, as the means of subjugating the world. The frequent reflection made, that original projectors rarely profit by their speculative ingenuity so much as those who secondarily enter into the same system, and, by consequence, improve upon it, was strongly exemplified in the fate of Spain, and in the sudden exaltation of France into consequence as a naval power.

Louis, pursuing the footsteps of the nations his instructors, became possessed of a fleet that would have completely awed them when in their greatest plenitude of power.—Nor was it merely in the number of vessels he possessed, but in their superior construction, both in regard to mechanical improvement and philosophical

sophical principle, that he excelled his teachers. The cumbrous ornaments which, at the conclusion of the seventeenth century, loaded the vessels of France, and, according to the hyperbole of preceding history, might cause, in appearance, the very ocean to groan under the burthen, became gradually disused; or, at least, gave way to the lighter and more elegant simplicity of decoration used in modern times. The extravagant, if not ridiculous, bulk of the lanthorns, was succeeded by contrivances of equal use, though of dimensions very considerably abridged. The absurd practice which had been before that time extremely prevalent in France, and in most other countries possessed of a fleet, of throwing back the bow of the vessel till its inflexion appeared rather to invite the approach of the sea than to repell it, was by slow and almost imperceptible steps exploded, till reason appeared to have dictated the proper form or contour. Holland and the northern powers, though they preserved that peculiarity of construction which will probably, to the remotest ages, continue to distinguish the ships built in one country from those of another, followed, in some degree, the same example. The inflexion of the top-side became less remarkable, and the chain-plates affixed to the sides, for the security of the masts, ascended, in ships having three tiers of guns, from the middle to the upper deck. Other European nations followed as at a respectful distance in the train of improvement; and, according to the political rank they held, adopted, from time to time, such augmentations as appeared sufficient to enable them to maintain it. The Southern states and kingdoms had indeed little reason to apprehend they could become of less consequence than a coincidence of unfortunate events had rendered some of them; while, in regard to other potentates, neglect had completely produced the same effect misfortune had on their neighbours.

The Venetians and the Genoese were content with almost implicitly conforming to those customs and mechanical ideas of their ancestors, which appeared sufficiently enlarged to answer all the emergencies and necessities of their states. The navy of Spain, as well as Portugal, became a mere phantom, or non-entity, almost immediately after the commencement of the war; so that all improvements in that quarter necessarily fell into a state of abeyance or arrest. In France, the dimensions, or bulk of ships, became considerably enlarged. The ordinance of Louis the XIVth, published in 1688, had directed that ships intended for the first class or rate should be of 1500 tons burthen only; but, after the peace at Ryswic, those former limits were so much extended, that a short time subsequent to the re-

commencement of hostilities it was by no means uncommon for the principal ships of that country to measure more than 2000 tons: the same proportional increase was adopted through all the inferior rates; so that the tonnage of the French navy royal might be considered as augmented, during the first fourteen years of the eighteenth century, at least one-fourth. The Dutch, and the ſtill more northern states of Russia, Denmark, and Sweden, contented themselves according to the example of the Mediterranean powers, and appeared satisfied that their situation, and the shallow seas which surrounded their coast, seemed to forbid any extension of these principles, which they considered as then carried as far as their convenience, added to propriety and prudence, permitted.

The commercial marine of Europe, taking the whole of it in the aggregate, kept pace with the navies belonging to the different states. Naturally dependent on each other for support, the rise or fall of one necessarily produced the same effect on the other. This fluctuation, however, very trivially affected the principles adopted in constructing vessels intended for mercantile purposes; the whole, or at least the strongest part of human efforts, being directed to the number of them. The absurdity and inconvenience attendant on ships of large dimensions, being the property of private individuals, soon became too sensibly felt not to cause a discontinuance of the system. But the India trade of France, and the Spanish commerce with Mexico and Peru, or, to speak nearer the truth perhaps, the tribute exacted from those countries, appeared imperiously to demand a more powerful and enlarged establishment of vessels capable of protecting, from the rude assaults of enemies, the treasure they might be employed in conveying to the shores of Europe. With Spain the measure was (nearly had it been called aboriginal) at least coëval with her sudden acquisition of extensive territory and unexpected wealth. Misfortunes, and the natural consequences of her own folly, had reduced her state marine in no small degree into the wane; and the influx of wealth also became, in some measure, abridged. France, equally ambitious and avaricious, was restrained from launching too far by a certain quality which appeared, as it were, constitutional; and although the example, the influence of her sovereign had so far succeeded as to convert a portion of that pursuit which heretofore had been solely directed to military occupations into the channel of commerce, yet the principle had taken root too deeply to be totally eradicated, and the opinion, that India, with the American colonies were the principal points from whence wealth could with the greatest ease be derived, served, in some measure, to support that ſlender

character as a commercial state which France appeared compelled, by the authoritative will of its ruler, to maintain among nations, contrary to its own inclination.

Holland consoled herself in the hope, and flattered herself with the prospect, of having craftily secured as much consequence in the commercial world as she was capable of maintaining. She flattered herself, on account of her alliance with England, with possessing every advantage that could have been reaped had she continued to maintain her marine in that proud extent it was when she pretended to give laws to every other state in the universe. After having studiously contemplated, with a physiognomical attention, the political features which distinguish the character and the minds of one nation from another; she imagined she had discovered an intermediate character, considered as a nation alone, forming the link between France and herself. She attributed to Britain a zeal for military glory; inferior, indeed, to the extravagant, romantic, character of France, but at the same time sufficiently disdainful of what are called the advantages of commerce, to permit her to reap the benefits resulting from it unmolested, while the supposed dupe should remain content with the illustrious title of her patron and defender. There certainly was some truth in the idea; and each of the parties appeared, for some time, so well satisfied with the characters allotted to them, that neither the expence unnecessarily incurred by the one, nor the influx of wealth so easily acquired by the other, appeared to awaken either to a sense of the folly and impropriety of their mutual conduct. The navy of the States sunk almost into obscurity, while the shipping of the country increased not only in numbers, but, individually speaking, in the burthen of the vessels, beyond any former precedent, and almost exceeding credibility.

With regard to fashion and principles of the art, the Dutch, in conformity with that partiality which they had so long manifested towards the customs of their ancestors, seemed totally disinclined to encourage any improvement or alteration whatever. Like their pictures, the ornaments of their vessels were suited to their own taste; and the decorations as well as forms used by all other countries appeared to them as inelegant and improper. The lineaments of the child easily proved its pedigree in all cases when nature did not interpose, and turn the prominent feature into a different cast. The Venetian navy had given birth to that of Spain; and the United Provinces, though they had thrown off the yoke of the latter country, had not as yet acquired so independent a way of thinking, as to rid themselves totally of all attachment to her customs, both in ship-building and

in

in dress. Some allowance is to be made for those variations which a difference of climate and situation unavoidably create; and the extended breadth of the Dutch vessel of war, as well as of that intended for the higher purposes of commerce, such as the trade to India; which might be thought, by some persons sceptically inclined, to destroy similitude so materially as to render it impossible to trace the true lineal connection with that of Spain; was rendered unavoidable, as well by the situation of the country, as by the natural propensity which the Hollanders entertained toward rendering their vessels as capacious as possible. They had observed the difference of fashion which both the English and the French adopted in the construction of their vessels, more particularly of the stern-part: they found on reflection that the enormous elevation to which their maritime forefathers, the Spaniards, had been so much addicted, and to which they then in great measure adhered, was not only inconvenient but dangerous, and they were content to yield so far to conviction, as to abridge the height. But the alteration that was made consisted merely in compressing it in such a manner that the stern of a Dutch ship differed only from that of the Spaniards in this, that the one might be compared to a column in its proper elevation; the other to a pillar, which, having been originally formed with the same mouldings, and of the same contour, had been beaten down by some violent mechanical power till it was only half the altitude with the former, but containing just the same quantity of material, and only distorted in its appearance. The attention necessarily bestowed by Spain on the construction of the vessels called galleons, was faithfully imitated by the subjects of the United Provinces, in regard to those that were intended to waft to the shores of Europe, commodities that, owing to the comparative ease with which they were procured, might be said almost to vie with the treasures of Mexico and Peru. Many, if not the greater part of them, were of force equalling those which had, in the preceding century, been considered as ships of war; for it was no uncommon thing for them to mount forty, fifty, or even sixty guns; having a tonnage or burthen proportioned to their force. It therefore became by no means a matter of wonder that this nation of merchants should, from the actual force with which they braved the ocean, render the most powerful of the Asiatic empires tributary or submissive to their wills; and that they should threaten, in case of resistance, to shake their governments even to their very foundations, or annihilate their existence as independent countries.

However carefully the subjects of the United States, whether considered in their private capacity as ship-builders, or that more public one which regarded the

the navy of their government, might copy the fashions of Spain in all the parts that met the eye from the surface of the water upward, the semblance rested there; for no two countries, perhaps, ever varied more materially in their ideas or practice as far as related to that part of the hull which was immersed in the water. Spain, which had been taught by the Venetians and other Mediterranean powers, and had practised the galley principle of building so long as to indelibly fix it on the minds of the artists, had neither the inclination, nor was she under the necessity of completely altering those principles, in the use of which she experienced no inconvenience. With Holland the case was different. The elegant shape of the galley, particularly in its bow, or fore part, though remarkably well fitted to the more tranquil navigation of the Mediterranean, was extremely ill-adapted to encounter the tempestuous surge of the German ocean; added to which consideration, the extravagant expence necessarily attendant upon the construction of a vessel so formed, in comparison with that which appeared, and certainly was better suited to the views of a commercial nation, would have rendered the rejection of the Spanish system certain on the very first inspection.

As it is mathematically certain, that the greater the breadth which is given to a vessel, the less will be the expence in constructing it proportioned to the commodities that it will be able to contain; this principle, acting forcibly on the minds of a commercial people, naturally gives the same result as, even in the remote ages of antiquity, were manifest in the distinctions between the commercial and warlike marines belonging to the Greeks, the Romans, and the Carthaginians.

The northern maritime powers, Denmark, Sweden, and Russia, held, at this time, in respect to political society, a far more elevated rank than could be claimed, perhaps, by any of the more southern, and certainly more ambitious, states. Placed by nature in a cold and inhospitable climate, they appeared satisfied with the condition and situation which fate had imperiously imposed on them; and were little anxious in interfering with the luxuries embraced with avidity by the inhabitants of more southern regions. Their commerce was limited, their wants few, and their ambition, as to acquiring wealth, extremely contracted. Contented with the office of being sometimes employed as the transporters into foreign countries of commodities produced in their own, they sought little or no extension of their commercial marine beyond those bounds that were necessary for so limited a purpose. The dreadful wars in which they were frequently engaged against each other, and the trivial petty disputes which occasionally appeared to threaten contests with Britain, with France, and with Holland, originated either in the personal

personal enmity existing between the sovereigns of the different countries, or some frivolous and punctilious dispute ridiculously roused and speedily suppressed. The wars, dreadful as they were, which deluged Sweden, and Russia, and Poland, with blood, were not the wars of the people, but the efforts of one prince at the head of an uncivilized nation, boldly standing forth to prevent his country being over-run by a troublesome and restless neighbour, who, confiding in the superior skill of his soldiers or his seamen, particularly the former, held no authority for the commencement of hostilities so high as his own inclination. Influenced by moderate appetites, it would have been wonderful if the temperance of the public mind had been debauched by speculative enquiry, or a thirst of knowlege and experiment in an art, the extravagant extension of which the people considered immaterial to their happiness. It was natural for them to study the principles and copy the practice of any country whose approximate situation afforded an easy opportunity of diligently observing them; and from this natural connection, as it may fairly be styled, arose that affinity which has long subsisted between the systems of marine architecture, particularly when confined to the commercial class, and which has distinguished the vessels of the countries just mentioned, added to those of Holland, from those of perhaps every other quarter of the world.

To struggle against the rigid decrees of nature appears one of the hardest tasks imposed on the human race. Yet, as if that task were sent by Providence as a special scourge on the vices of mankind, the contest is more frequent than bad men will allow, or good men can wish. Some countries appear wonderfully gifted with the production of many of those articles and materials which are of the first necessity to the creation of a marine, but at the same time the want of others positively oppose the acquisition of more than a limited rank. Were the ports of the Baltic as accessible to ships of enlarged burthen and great draught of water; were the oak of those northern countries as durable as that which is produced in somewhat milder latitudes, or were the soil as productive of it, however inferior its quality, as it is of the fir; the competition would in all likelihood be vain and frivolous. The states of southern Europe would be compelled, for their own safety, to cement themselves with each other in close confederacy, or the seat of maritime empire would become, perhaps, irrevocably transferred into the more northern regions. But, in the dispensation of the bounties of nature, there appears an equity and equality which opposes pre-eminent rule, and seems to prescribe to the tyrant the utmost limits whither he shall extend his power. In reviewing the characters of the several potentates who governed the countries alluded to at the early part of the eighteenth century,

century, so manifest a difference is apparent between them, that it might be a matter of doubt, if there were any other than men, whether they were not beings of a distinct species from each other. Posterity views, almost with indignation, the wild attempts of Charles to raise himself into the arbiter of northern Europe, though his people were groaning under every accumulation of misery which the horrors naturally attendant on war could bring upon them. In Russia, the interposition of a single river produced an intire change of sentiments and of pursuits. The rude inhospitable desart was converted, fast as human exertions could effect the change, into a state of cultivation and plenteous produce, while the austerity of the noble became gradually, though slowly, softened by an intercourse with countries whose very names, perhaps, had been unknown to the preceding generation. The rude floats, which might be considered as aboriginal, for they varied but little from those that had been used in the earliest ages of navigation, became suddenly formed into vessels vying almost in elegance, in use, and in consequence, with those of neighbouring countries whose artists had held, for a number of ages, their skill in the science as of very considerable value. That this wonderful revolution should have been effected by the attention and resolution of a prince in direct opposition to the stubborn prejudice of his subjects is certainly extraordinary in the extreme, and may not improbably appear to future ages as fabulous. As an intermediate character between the preceding extremes of princely attention and monarchical neglect, stands the mild and placid example of Frederic the Fourth; constantly attentive to the interests and wishes of his people, he neither strove to plunge them into wars by any inconsiderate attempt to increase his own dominion, nor did he suffer their consequence to sink below that regular rank which they had so long held as a brave and commercial people. He justly considered the use of arms and the swords of his subjects as intrusted to him, not for the gratification of his own vanity and ambition, but as to be directed by him solely to their welfare and their defence. He regarded commerce in its true light; as conferring, while restrained within its proper limits, a myriad of benefits, but bearing in the other hand a no less extensive catalogue of evils, when imprudently cherished as the only means of rendering a country great and respectable. He wisely treated it as an impassioned friend, who, while he could conduct himself with sobriety, contributed materially to the civilization, the comfort, and the pleasures of his people; but as one, who, when inebriated, threw off all those distinctions which render society indurable, and by rendering the manners of the people corrupt as well as dissolute, threatened not

only to enervate, but to destroy them. Actuated by these considerations, he neither encouraged speculative projects, nor suffered the honest industry of his subjects to dwindle under a cold neglect. Their intercourse with the most distant quarters of the world was carried on without opposition, or even murmur, from other countries, because no intention was betrayed of rendering those pursuits, which, in their first intent, were proper and beneficial, injurious to the rest of the world, by an undue or inequitable extension. Under a prince possessing such moderate, and certainly such enviable qualities, the historian can little expect to meet with any of those exalted proofs of improvement in a science, whose arts were considered by him as practised to the utmost extent which he deemed necessary, when he assumed the direction and guidance of his people. Built in conformity with the fashion of their neighbours, the inhabitants of the United Provinces, their inferior vessels of commerce might almost universally have been confounded, by even a curious observer, with each other; while those few which they possessed of the superior class were as little distinguishable from those of the Hollanders as the former. Thus did the marine of Europe become as it were divided into two classes, and the distinctions have been invariably preserved down to the present time.

CHAPTER

CHAPTER THE THIRD.

Condition of the British Navy at the Commencement of the Eighteenth Century.—The Augmentation which it experienced during the latter Part of the Reign of William III.—Its State at the Time of that Monarch's Death.—Recommencement of Hostilities with France, and Account of the British Fleet sent on the Expedition against Cadiz—the Failure of that Enterprize—its subsequent Success against Vigo.—Force employed during the Year 1704, under the Orders of Sir George Rooke and Sir Cloudesley Shovel.—Account of the Battle which took place off Malaga.—Statement of the British Force employed during the subsequent Years of the War in the Mediterranean and the Atlantic.—Recapitulation of the Number of British Ships employed in the West Indies; exhibiting the Force and Number of the Vessels in that Station in each particular Year.—Remarks on the Civil Œconomy and Management of Maritime Affairs during the whole Reign.—The Murmurs of the British Merchants, in Consequence of the pretended Neglect shewn to the Commercial Interest—with other Grievances contained in various Petitions presented to the House of Peers.—Report of their Lordships thereon.—Answer of his Royal Highness Prince George of Denmark to the Remonstrance—with cursory Observations on the Whole of the Proceedings.

THE conclusion of the peace at Ryswic necessarily produced a relaxation from the actual equipment of ships of war; but it had not the same effect on the construction or preparation of them, so that they might be soon put in a state of active service in any case of sudden emergency. The royal navy, at the conclusion of the seventeenth century, had acquired an increase during the last twelve years, which were it not established on grounds incontrovertible, and even indubitable, might excite much room in future ages for historic doubt and the cavil naturally attendant on remote search.

The augmentation of the British navy had not been confined merely to the increase of numbers, but in many instances had included the enlargement of the ships themselves. Eleven ships of the third rate, mounting eighty guns each, were launched within the first five years of the preceding reign; so that the number of ships of war actually composing the fleet, became more than doubled ere the conclusion of the seventeenth century. The experience derived from the

exertions made by France during the preceding contest, taught the nation, as well as the government, that no remission of exertion ought to take place that could in any degree contribute towards keeping so active and dangerous a foe in constant check. Britain, at the commencement of the eighteenth century, seemed to hold, as by the joint consent of all Europe, the honourable, and certainly enviable office of mediator between all countries involved either in war, or in dispute. The appearance of her fleet, in conjunction with the small reinforcement which joined it for form-sake from Holland, secured for a time the naval tranquillity of northern Europe; and reſtored almost by its appearance only, peace to Charles of Sweden, whose early age and depressed situation naturally seemed, at that time, to claim protection and support. The gentleness with which this service was executed, will stand to the latest ages a proud and indelible example of Britain's forbearance, and her attention to the intereſt of that very antagonist, from which she came first to demand equity, and secondly to punish, should useless obstinacy render it necessary. When Charles, in all the plenitude of that power at the head of which he then considered himself, viewing the force of the armament which was sent to his relief, complained that the bombs of the allied powers either flew over, or fell short of the Danish fleet, the English commander-in-chief mildly and memorably replied, that he was "sent thither to serve the "king of Sweden, but nöt to ruin the king of Denmark."

This expedition was scarcely concluded, ere Louis the Fourteenth, conceiving himself sufficiently recruited from those numerous disasters which he had experienced in the preceding contest, betrayed a manifest inclination of again disturbing the peace of Europe by an attempt to dictate to England who should be its sovereign. On the death of the unfortunate James, the proclamation of that personage whose legitimacy had been so strenuously disputed by the people of England, became an insult that could scarcely be passed over in silence, even though the subsequent conduct of the French monarch had not been such as convinced the world that the mere form, affronting as it might be, was not intended as an empty compliment to the pretended son of his deceased friend. Under the apprehension of that event, which was clearly foreseen, but which it as yet lay in the womb of time to discover when it would actually take place, orders were given for the immediate equipment of all the ships in the British navy that were in the best state for immediate service. Such was the condition of the marine at that time, and such the exertions made in expediting the public service, that, in the space of little more than six months, upwards of ninety ships of the line of battle

battle were actually ready to put to sea, exclusive of many others which were in so great a state of forwardness, as to promise a speedy and very powerful reinforcement.

The main, or Channel fleet, which was put under the orders of Sir George Rooke, consisted of forty-eight ships of two decks; thirty-two of which mounted sixty guns and upwards. The report of these measures appeared to have a temporary effect in deferring the mischievous storm; but the death of William*, which took place soon afterwards, having, as it was supposed, materially altered the state of parties in England, and rendered the cause of the Pretender infinitely less desperate, on account of the number of opponents, whose weight it was imagined the demise of the late king had taken off; Louis thought himself so strong, that it was no longer necessary to temporise, or act with reserve. In less than two months after the accession of Queen Ann, war was formally declared, and every preparation continued to be unremittingly made for the purpose of carrying on

* *At the Death of King William the Royal Navy consisted of*

Rates.	Number.		Guns.		Men.
1	7	carrying	702	and	5,228
2	14	–	1,260	–	8,834
3	47	–	3,451	–	21,478
4	62	–	3,226	–	16,104
5	36	–	1,170	–	4,947
6	15	–	360	–	1,650
Fire-ships	11	–		– –	495
Bomb Vessels	13	–		–	450
Yachts – –	15	–		– –	336
Advice Boats	3	–		–	115
Brigantines	5	–		– –	175
Sloops – –	10	–		–	335
Pink – –	1	In all about –	300 –	– –	20
Ketch – –	1	–		–	50
Store Ships	3	–		– –	123
Hulks – –	12	–		–	225
Hoys – –	16	–		– –	75
Smacks – –	2	–		–	12
Hired Store Ships –	3	–		– –	132
Hospital Ships –	7	–		–	335
	283		10,469		61,119

the

the contest with the utmost spirit and vigour. Squadrons were detached even in the most distant quarters of the world; and after every other service had been carefully provided for, a fleet, consisting of thirty British ships of the line, was sent on the expedition to Cadiz, independent of a force, still more formidable, which was left for the protection of the Channel against any unforeseen attempt that might be made by the enemy on the shores of Britain itself, during the absence of Sir George Rooke *.

* *His Fleet consisted of the following Ships:*

	Guns.
Royal-Sovereign (Sir George Rooke)	110
Saint-George (Rear Admiral Fairborne, bearing the white flag)	96
Prince-George (Vice Admiral Hopson, bearing the red flag)	90
Triumph (Rear Admiral Graydon, bearing the blue flag)	90
Association	90
Barfleur	90
Cambridge	80
Cumberland	80
Torbay	80
Boyne	80
Ranelagh	80
Somerset	80
Monmouth	70
Essex	70
Orford	70
Yarmouth	70
Grafton	70
Lenox	70
Berwick	70
Northumberland	70
Stirling-Caftle	70
Burford	70
Expedition	70
Chichefter	70
Swiftsure	70
Kent	70
Bedford	70
Eagle	70
Plymouth	60
Pembroke	60

In all 30: with which were joined 20 Dutch, bearing 5 flags.

The

The failure on the attempt on Cadiz was occasioned by events and mismanagement which nothing diminish the maritime consequence of Britain, and the force employed by her on that expedition. Ample recompence was, however, made for this disappointment by the success obtained by this hitherto luckless armament when on its return home. Fifteen ships of war *, of two decks, several of them mounting seventy guns and upwards, together with seven frigates, or vessels of inferior rate, belonging to the French, were either captured or destroyed at Vigo. The Spaniards, who had been compelled to accept the protection of that force, were scarcely less unfortunate. They lost, indeed, but three ships of war, which were all they had there to lose; but thirteen galleons, laden with specie to an immense amount, either fell into the hands of the assailants, or were destroyed.

The armaments of the year 1703 rose still more formidable, and the success which ultimately attended the operations of the former expedition, appeared as an additional incentive and encouragement to the greatest possible exertions. Thirty-eight ships of the line were equipped for the main fleet, to be employed in the Channel, or the Atlantic, under the orders of Sir George Rooke; while thirty-five others of the same description, with a sufficient number of frigates and smaller attendant vessels, were dispatched to the Mediterranean, on an expedition rather unavoidably undertaken for the purpose of effecting a diversion to the arms of France, by relieving the Cèvenois. Britain might, during this year, without arrogance, be said to ride mistress of the ocean. Her fleets were unopposed in every quarter; but the successes of the year, through the caution of the enemy, were limited to the casual capture of a cruizer, or the interception of some inconsiderable convoy. The squadrons employed in different parts of the world, added to the fleets whose numbers have been just recounted, prove the British marine to have consisted of at leaſt one hundred ships of the line, actually in commission. France prudently declined the contest against so superior a foe; but, though compelled to submit to the humiliation, resolved to make every possible effort in its power to render it as short as possible. At the conclusion of this year, the Royal Navy sustained an injury, though not from the hands of the enemy, far more dreadful than perhaps it had ever experienced in any contest whatever with the foe. Eight ships of the line, one of them a second rate, together with five frigates, were completely wrecked in that tremendous hurricane

* See p. 19, *et seq.*

which

which took place on the 26th day of November: but the severity of the stroke, great as it certainly was, proved not to have perceptibly weakened the force employed, nor diminished the future exertions of the nation. Squadrons succeeding to squadrons, were dispatched to Lisbon, under the admirals Rooke, Leake, and Dilks. Charles of Austria, whose pretensions to the crown of Spain were supported by all the weight of the British power, was conveyed to the Tagus with considerable pomp; and the power of the allies seemed on the point of dictating to Spain, or to any other country where they chose to assume such a right, who should be placed over it as its sovereign. While operations of this kind were pursued to the southward, a fleet of twenty-five ships of the line was put under the orders of Sir Cloudesley Shovel, to counteract the movement of a French armament then in a complete state of equipment in Brest, under the command of the Count de Thoulouse. The instructions given to the admiral decidedly prove the perfect conviction entertained by the British ministers, that the fleet intrusted with the defence of the nation was fully competent to its task in all quarters of the world, under any circumstances that could possibly occur. The blockade of Brest, provided the enemy had not quitted that port previous to the arrival of the British armament on the station, or its immediate pursuit of them, in case of their previous * escape, formed the principal features of those orders, and the enemy having

* *His Force consisted of the following Ships:*

	Men.	Guns.
Saint George	680	96
Namur	680	96
Barfleur	710	90
Torbay	500	80
Shrewsbury	540	80
Boyne	500	80
Norfolk	500	80
Ranelagh	535	80
Dorsetshire	500	80
Royal-Oak	500	76
Essex	440	70
Warspight	540	70
Orford	440	70
Swiftsure	440	70
Lenox	440	70
Nassau	440	70

Rupert

having been fortunate enough to get out before the arrival of Admiral Shovel, and intelligence being received that they had proceeded to the southward, the admiral repaired to Lisbon with the greater part of his fleet, after ordering back to England such ships as were deemed superfluous, or whose presence the emergencies of the state might render necessary nearer home. The junction between the British commanders took place without the smallest difficulty; and the collection of the whole force belonging to the enemy was also effected with as little impediment. The greater part of the French navy was now drawn together at one point, while that of the allies, at least such part of their force as they deemed necessary to the great occasion, appeared in array to oppose their foes. The event of the war appeared to hang on the decision, and the rest of the world might have considered the conduct of Louis as indicative of a determination to put his own assumed greatness, and the claims of the Duke of Anjou, to the short arbitrament of a general and decisive encounter. The operations commenced auspiciously on the part of Britain: the strong fortress of Gibraltar was attacked and carried by the confederates almost on the moment of assault; and the event of the battle of Malaga, in which the Count de Thoulouse received a signal defeat from a part of the combined fleet *, proved the decided superiority which the actual force of the Allies

	Men.	Guns.
Rupert	440	70
Revenge	440	70
Moderate	365	60
Gloucester	365	60
Monk	365	60
Medway	365	60
Kingston	365	60
Assurance	365	60
Triton	280	50
Bridgewater.		
Roebuck.		
Lightening fire-ship.		
Vulcan fire-ship.		
Vulture fire-ship.		
Terror bomb.		
William and Mary yacht.		
Princess Ann hospital ship.		

* Four English ships of the line, and six Dutch, had been accidentally detached on different services a few days previous to the action.

had substantially acquired, independent of that vain and arrogant boasting made by nations on some occasions, of superior skill and more exalted prowess *.

Britain and the United Provinces laboured, however, under a very serious inconvenience with respect to their foe; an inconvenience which, if properly and energetically improved upon, must have considerably lessened the disparity in point of strength, which proved the little reason for apprehension that the Confederates had to entertain as to the future naval events. While the fleets of France had ports in their own immediate possession, or friendly to them, and their interest, ever at hand to receive them, in case of discomfiture, or injuries sustained by tempests, as well as other causes that might be called natural; while the best harbours in Spain were ever ready to afford them an asylum when inferior to their antagonists, or to allow them to pour forth into the ocean in all the arrogance of superiority, if such ever should prove the situation of their affairs; the Confederated Powers were far distant from their own coasts; they had no ports in which they could hope for relief in case of any of the accidents just mentioned befalling them; nor was there even a creek in which they could expect shelter, from the Streights of Gibraltar to the British Channel, Lisbon excepted. Awkwardly situated as they were in this respect, necessity taught the Confederates to provide against contingencies, and render the Tagus, incommodious as it was on many accounts, a sufficient check both to the ports of the Atlantic, and of the Mediterranean also. Alive to the great advantage, and in the hope of converting it to its best use, repeated attempts were made by the French to repossess themselves of the fortress of Gibraltar, ere its garrison was sufficiently reinforced, and its fortifications so materially improved, as to permit its defying assault. The attempt was spirited, but the events unfortunate. They seemed only to add to those proofs which had already appeared of the declining state of the French marine, and its total want of means to recover its pristine greatness. The success which had attended hitherto the operations of the combined powers nothing abated the exertions of Britain, for her navy is said to have consisted, in the year 1705, of one hundred and twenty-nine ships, then reputed of the line, seven of which were first rates. In addition to these, she possessed sixty-four frigates, and eighty-six sloops of war, fire-ships, or vessels of inferior note; so that, notwithstanding the fatal mischief occasioned by the great storm, and the other disasters naturally attendant on a state of warfare, her fleet had actually been increased seven ships,

* The combined fleet, at the time of the battle of Malaga, consisted, had the whole been collected together, of forty-five English and eighteen Dutch ships.

equal, from the number of guns mounted on-board them, to third rates of the inferior class. The events of the year 1705 have very little interest to recommend them to public notice; for though armaments were sent out as before on the different stations, except from that circumstance, the people might almost have persuaded themselves the nation was in a state of peace, had they not been reminded of the contrary by the repeated intelligence of various successes, which though, perhaps, not entirely connected with the navy, served to establish its pre-eminent character. The succeeding year passed on in nearly the same state. The relief of Barcelona, the surrender of which had graced the arms of Charles and his supporters the preceding year, continued to him the same fixed confidence in the assistance of his all-powerful friends. The surrender of Carthagena, of Alicant, of the islands of Ivica and Majorca, added also to the triumphs of Britain, and the encouragement of the Archduke's hopes. The occurrences of the ensuing year proved to be still more interesting. An assault of Toulon, that port where all the naval power, which France possessed on the side of the Mediterranean, had taken refuge, was decidedly resolved on, and measures, considered as adequate to the purpose, were taken to render the event of the expedition successful. A considerable land army, headed by that renowned captain, the duke of Savoy, advanced from Italy to besiege it on one side, while the harbour was blockaded, the forts which defended it assailed, and the ships which confided their protection to them were destroyed, by the bombs, or the furious cannonade of the combined fleet, under the orders of Sir Cloudesley Shovel. The failure of this enterprize is not, therefore, in the smallest degree, attributable to the inefficacy of the marine attack, but to causes which it were totally immaterial to relate in this place. Glorious as it thus proved, as far as the navy was concerned, whose exertions, during the assault, had inflicted a loss on the enemy of no less than eight ships of the line *; its termination was fatal, but the misfortune was incurred, not by the hands of the enemy, but by the operations of Providence. The victorious fleet had, as it is well known, nearly accomplished its return to England, when, through a fatal mistake, the Association, of ninety-six guns, the Eagle, of seventy, with two others of inferior rate, and a fire-ship, were wrecked on the rocks of Scilly. The misfortunes attendant on the British navy were not confined to this disaster. Confessedly superior as her marine was, the peculiar management of Louis, with regard to his squadrons in the Atlantic, proved far more injurious to the maritime and the commercial interests of Britain, than he had ever been able to effect in the grander and more

* See page 12.

extensive scale of naval operations. Six two or three-decked ships, the Cumberland and the Devonshire, of eighty guns; the Grafton and the Hampton-Court of seventy; with the Chester and Ruby, of fifty guns each, fell into the hands of the enemy, together with a considerable number of valuable merchant vessels, in whose defence the utmost gallantry was exerted. Notwithstanding, however, these irremediable accidents, the navy became actually increased one ship of the line and two frigates, within the last twelve months. The failure of the expedition, undertaken by the French court in behalf of the Pretender, proved, in 1708, the wonderful energy which England, in case of necessity, was capable of exerting with regard to her marine *. It extinguished the then nearly expiring hopes of France, and the war might be said to continue, like the remains of a conflagration, which having already consumed what was considered valuable, the extinguishment of the embers was considered as an useless labour.

Not, however, to pass in total silence over the period which intervened ere the peace of Utrecht actually took place, fleets were annually equipped, and the command of them given to officers not inferior, either in spirit or ability, to those under whose conduct Britain had most proudly triumphed. But Louis, warned by his misfortunes, confined himself merely to the defensive system, whether in the Mediterranean or on the Atlantic; so that the services of Sir John Jennings, Sir John Norris, Sir John Leake, and Mr. Aylmer, were confined merely to the attention of keeping their fleet in constant order to repel the enemy, in case they should be hardy enough to venture out of their own ports.

Such were the exertions made by Britain, in defence of her own coasts, and in the attack of those belonging to her enemy: but, though those particulars which have been slenderly recounted might have been deemed a sufficient proof of her maritime strength and consequence, yet, others made by her in distant quarters, where she had no succour or assistance from her allies, fully proved her strength to be equal to every necessity, and that the non-reduction of every colony possessed by France, in the West Indies, as well as other parts of the world, was far from being ascribable to any want of efficient force employed on those stations. Complaints, indeed, succeeded to complaints; disaffection or cowardice, at one time; want of co-operation in the collateral branches of the service, at another; and a variety of inferior causes, united in rendering the events of war, generally unsuccessful, not unfrequently disastrous, and sometimes even disgraceful. These occurrences, however, were by no means attributable to the force and quality of the squadrons

* See page 16.

employed

employed on those stations, as will appear evident from the subjoined authentic list *.

The

* *Jamaica.* *Barbadoes and Leward Islands.* *Together.*

	Ships.		Guns.	Ships.	Guns.	Ships.	Guns.
1702	1	of	70	1 of 32		14	
	2	–	64	1 – 24			
	5	–	60				
	1	–	54				
	5	–	48				
	2	–	32			5	
	4	–	24				
	1 fire-ship.					1 fire-ship.	
	2 bomb vessels.					2 bomb vessels.	
703	3	of	80			25	
	4	–	70				
	10	–	60				
	7	–	50	1 of 50			
	1	–	32	1 – 36		5	
	1	–	24	1 – 32			
	3 fire-ships.			1 – 24		3 fire-ships.	
	2 bomb vessels.					2 bomb vessels.	
1704	4	of	50	2 of 50		6	
	2	–	30	6 – 30		10	
	2	–	24				
	2 fire-ships.					1 sloop.	
	1 sloop.					2 fire-ships.	
1705	1	of	70			9	
	1	–	60				
	4	–	50	3 of 50			
	2	–	40	1 – 40		10	
	2	–	24	2 – 32			
	1 sloop.			3 – 24			
						1 sloop.	

1706

The ineffectual gallantry and miserable fate of Benbow, whose force, had it co-operated with him, according to his own wishes and intentions, was equal to the

	Jamaica.		*Barbadoes and Leeward Islands.*		*Together.*	
	Ships.	Guns.	Ships.	Guns.	Ships.	Guns.
1706	2	of 70			2	of 70
	3	— — 64			3	— — 64
	3	— 54	3	of 54	6	— 54
	2	— — 42	1	— 42	3	— — 42
	2	— 30	6	— 30	8	— 30
	2 sloops.		1	— 18	1	— — 18
	2 fire-ships.				2 sloops.	
					2 fire-ships.	
1707	2	of 70			2	of 70
	3	— — 64			3	— — 64
	3	— 54	3	of 54	6	— 54
	4	— — 50	1	— 40	1	— — 40
	1 sloop.		3	— 30	7	— 30
	2 fire-ships.		5	— 24	5	— — 24
					1 sloop.	
					2 fire-ships.	
1708	2	of 70			2	of 70
	2	— — 64			2	— — 64
	4	— 54	3	of 54	6	— 54
	1	— — 42	3	— 42	4	— — 42
	3	— 30	1	— 30	4	— 30
	1 fire-ship.		2	— 24	2	— — 24
					1 fire-ship.	
1709	1	of 70			1	of 70
	1	— — 64			1	— — 64
	3	— 54	3	of 54	6	— 54
	2	— — 42	1	— 42	6	— — 42
	1	— 36	1	— 24	1	— 36
					1	— — 24
1710	2	of 64			2	of 64
	5	— — 54	4	of 54	9	— — 54
	1	— 42	4	— 42	5	— 42
	1	— — 30	1	— 30	2	— — 30

the task of totally effecting the ruin of the enemy's squadron, was endeavoured to be avenged, by sending very formidable detachments thither in the ensuing year; but no material injury was effected on the land-possessions of the enemy, owing to the sickness or inadequate force of the land army. From this time, Britain appeared to be content with the mere power of reigning mistress, and destroying the commerce of the enemy in those seas, without risquing the lives of her soldiers. The naval transactions which took place in more inferior quarters being conducted on principles nearly similar, require but little comment or historical detail. All parties were sufficiently tired of bloody and ineffectual contest. Louis, waving all farther hopes of being able to assume to himself his once arrogantly hoped-for title of emperor of the sea, appeared perfectly willing to wait till some more favourable period; and Britain, together with her ally, saw, too late, the folly of attempting to impose a sovereign on the Spaniards contrary to their own wishes and their own inclinations.

Although the events of the preceding contest had by no means been productive of those brilliant and glittering honours, which the superiority of force possessed by Britain and its ally over France might seem to promise; though the losses sustained in her marine, taken in the aggregate, including the ships which fell victims to misfortune, as well as to the force of the enemy, in all probability exceeded what she had ever before experienced in any preceding war; yet, such were the exertions made by the government, that the royal navy, so far from feeling a diminution during its continuance, actually acquired a pro-

	Jamaica.		*Barbadoes and Leeward Islands.*		*Together.*	
	Ships.	Guns.	Ships.	Guns.	Ships.	Guns.
1711	1	70			1	70
	1	60			1	60
	5	54	4	54	9	54
	1	30	3	42	3	42
	2 sloops.		2	30	3	30
					2 sloops.	
1712	2	66			2	66
	1	64			1	64
	4	54	4	54	8	54
	1	30	3	30	4	30
	2 sloops.		A sloop.		3 sloops.	
	1 bomb vessel.				1 bomb vessel.	

gressive,

gressive, though slow augmentation; so that after every vessel, considered as unfit for actual service, had been dismantled and broken up at the conclusion of the peace, the British navy, on the demise of queen Ann, actually reached the same number, within four, to which it had amounted at the hour of her accession, when every ship that was afloat, however desperate her condition might be, was taken into the account.

On the score of actual improvement, very little progress appears to have been made in the science itself. The minds of artificers, and of those ingenious men from whose theoretical observations it might have derived benefit, appear to have been too much occupied by surrounding events, and the contest in which their country was engaged, to permit their minds to diverge sufficiently from the mere practical and manual operation so far as to indulge any speculative opinion founded on study. Ships of the first rate appear to have been somewhat disregarded, and it was a favourite maxim, extremely prevalent at that time, that they were capable of rendering little service in proportion to their magnitude, and to the expence of equipment; except in some formidable attack on a fortress against which, owing to the superior number of the guns mounted on-board them, in comparison with any vessel of inferior rates, the tremendous weight of their fire must inevitably prove effectual, and all-powerful. In respect to the vessels of the less weighty classes, the same conviction appears to have prevailed, that the art had reached the utmost summit of supposed perfection. The dimensions of the ships then built were still extremely contracted; and from the peculiarity of their form several were totally unfit for a variety of those dangerous services which, though then thought unadviseable, or impossible for them to undertake, a subsequent alteration has rendered them fully competent to. It continued the fashion of the time, to attribute every superior faculty of sailing to the mere length of the vessel itself, without any, or at least very trivial, regard to the form or shape of the bottom; from this circumstance, the wishes of the architect were rarely answered; and whenever they happened to be so, the success, in all probability, was more attributable to a coincidence of blunders innocently committed, so that the effect of one mistake was counteracted by another, than to any regular and established system resulting from theoretical knowledge and studious application. To sum up the character of the English vessels of this period, in general terms, they were crank, confined, very indifferently adapted to the purposes of keeping the sea in tempestuous weather, and in general but sorry sailers, even when it was most favourable. To the superior practice of the French naval architects, be it in justice remembered to their

their honour, Britain is indebted for her first emancipation from a steady and obstinate adherence to ridiculous prejudices and customs, which, owing to an experience of their inconvenience, ought to have been exploded long before they really were so. The circumstances have already been sufficiently, though briefly, explained*; but notwithstanding the principle itself might certainly have been considered to contain so much internal advantage as would recommend, and render its entertainment general, on its first promulgation, yet it as certainly proved so slow as to appear considered rather an act of necessity, than proceeding from a certain conviction of its propriety. The minds, even of the most scientific men, are not directed, except with difficulty, to any alteration of postulata, or maxims which long use has established a belief in the utility of; a belief, converted by prejudice, into a supposed principle as irrevocable and determinate as the venerable data of the most profound philosophers, or the decrees of Nature herself.

By referring to the annexed list, which is probably as correct as the distance of time will permit, the strength of the British Marine, during the preceding contest, together with the losses sustained by it within the same period, will be readily seen at one view, and may be compared with that of the enemy †. It is to be observed, however,

* See p. 16, *et seq.*

† Rate. Names. Guns. Fate.

I.	Royal Sovereign	110	
	Royal Anne	100	
	Britannia	100	
II.	Saint George	96	
	Prince-George	96	
	Triumph	96	
	Association	96	Lost off Scilly 1707.
	Barfleur	96	
	Namur	96	
	Albemarle	90	
	Ramillies	90	
	Royal Catherine	90	
	Vanguard	90	Lost in Chatham River during the great storm.
III.	Humber	80	
	Russel	80	
	Ranelagh	80	
	Shrewsbury	80	
	Somerset	80	

however, that in the subjoined account are contained such ships only as were known to have been employed in active service and on foreign stations during the war:

Rate.	Names.	Guns.	Fate.
III.	Torbay	80	
	Cambridge	80	
	Newark	80	
	Boyne	80	
	Norfolk	80	
	Cumberland	80	Taken in 1707.
	Devonshire	80	Taken in 1707.
	*Devonshire	80	
	Royal-Oak	74	
	Northumberland	70	Lost on the Goodwin Sands in the great storm.
	*Northumberland	70	
	Stirling-Castle	70	Lost in the great storm.
	Ipswich	70	
	Rupert	70	
	Assurance	70	
	Bedford	70	
	Orford	70	
	Eagle	70	Lost off Scilly 1707.
	Warspight	70	
	Lenox	70	
	Essex	70	
	Monmouth	70	
	Swiftsure	70	
	Hampton-Court	70	Taken 1707.
	Suffolk	70	
	Grafton	70	Taken 1707.
	Nassau	70	
	Revenge	70	
	Firme	70	
	Kent	70	
	Captain	70	
	Burford	70	
	Yarmouth	70	
	Elizabeth	70	Taken by the French 1705.
	*Elizabeth	70	
	Resolution	70	Lost on the coast of Sussex in the great storm.
	*Resolution	70	Taken in the Mediterranean 1707.

Mary

war: being totally independent of a considerable number of vessels which were either engaged at home in as necessary, though less active occupations. Among the ships

Rate.	Names.	Guns.	Fate.
III.	Mary	70	
	Restoration	70	Lost on the Goodwin Sands in the great storm.
	*Restoration	70	Lost off Leghorn 1711.
	Edgar	70	
	Pembroke	64	Taken in the Mediterranean 1710, re-taken 1711.
	Defiance	64	
IV.	Windsor	60	
	Sunderland	60	
	Mary	60	Lost on the Goodwin Sands in the great storm.
	Lion	60	
	Dunkirk	60	
	Moderé	60	
	Auguste	60	
	Jersey	60	
	Moor	60	
	Exeter	60	
	Montague	60	
	Kingston	60	
	Monk	60	
	Nottingham	60	
	Norwich	60	
	York	60	
	Canterbury	60	
	Plymouth	60	
	Superbe	56	
	Oxford	54	
	Falkland's prize	54	
	Chester	54	
	Greenwich	54	
	Hazard	52	
	Hampshire	50	
	Anglesea	50	
	Assistance	50	
	Romney	50	Lost off Scilly.

ships omitted, there are to be reckoned, for instance, four ships of the first rate, with nearly thirty others of the line of battle, which needing material repairs were not

Rate.	Names.	Guns.	Fate.
IV.	*Romney	50	
	Colchester	50	
	Rochester	50	
	Weymouth	50	
	Dartmouth	50	
	Salisbury	50	Taken 1703; and re-taken 1708, by Sir G. Byng, off Scotland.
	*Salisbury	50	
	Dragon	50	
	Bristol	50	Taken, and immediately re-taken.
	Nonsuch	50	
	Gloucester	50	
	Worcester	50	
	Reserve	50	Lost off Yarmouth.
	Newcastle	50	Lost at Spithead.
	Vigo	50	
	Severn	50	
	Portland	50	
	Falkland	50	
	Falmouth	50	Taken by M. St. Paul's squadron 1704.
	Portland	50	
	Winchester	50	
	Warwick	50	
	Litchfield	50	
	Hampshire	50	
	Dover	50	
	Triton	50	
	Centurion	50	
	Panther	50	
	Swallow	50	
	Leopard	50	
	Tilbury	50	
	Antelope	50	
	Tiger	50	
	Litchfield	50	
	Coventry	50	Taken 1704, and re-taken 1709 in the West Indies by Captain Hutchins.
	Blackwall	50	Taken 1705.
	Pendennis	50	Taken 1705.

Guardland

not brought forward into the more active scenes of war, because the numbers composing the fleets, exclusive of them, would have rendered the labour of repairing them as useless, as their services were unnecessary.

Although

Description.	Names.	Guns.	Fate.
IV.	Guardland -	50	
	Ruby -	50	Taken 1707.
	Burlington -	50	
	Chester -	50	Taken 1707.
Frigates.	Advice -	48	Taken, after a desperate resistance, 1707.
	Bonaventure -	48	
	Roebuck -	40	
	Diamond -	40	
	Lark - -	40	
	Experiment -	40	
	Woolwich -	40	
	South-Sea-Castle -	40	
	Phœnix -	40	Lost off Scilly 1707.
	Adventure -	40	
	Litchfield's prize -	40	
	Arundel -	40	Lost in the great storm.
	Lynn -	40	
	Hector -	40	
	Mermaid -	40	
	Enterprize -	40	
	Sapphire -	40	
	Loo -	40	
	Feversham -	36	
	Litchfield's prize (2) -	36	
	Milford -	32	
	Folkstone -	32	
	Falcon -	32	Taken 1710.
	Lowestoffe -	32	
	Kinsale -	32	
	Charles-Galley -	32	
	Tartar -	32	
	Fowey -	32	Taken 1704.
	Ludlow -	32	Taken 1702-3.
	Sorlings -	32	Taken 1705.

Gosport

Although the naval power of France, as far as regarded that of the state, was reduced almost into insignificance by the events which took place during the war, yet

Description.	Names.	Guns.	Fate.
Frigates.	Gosport –	32	Taken 1707.
	Lyme –	32	
	Sheerness –	32	
	Swallow prize –	32	
	Southampton –	32	
	Winchelsea –	32	Taken 1706.
	Triton's prize –	30	
	Medway's prize –	28	
	Mary-Galley –	26	
	Dolphin –	26	
	Child's-play –	24	
	Squirrel –	24	Taken 1703.
	*Squirrel –	24	Taken 1706.
	Newport –	24	
	Flamborough –	24	Taken 1705.
	Deal-Castle –	24	Taken 1706.
	Nightingale –	24	Taken and re-taken.
	Fox – –	24	
	Lizard –	24	
	Swan –	24	
	Maidstone –	24	
	Sea-horse –	24	
	Dunkirk's prize –	24	
	Cruizer –	24	
	Winchelsea –	23	
	Sun's prize –	22	
	Valeur –	18	Taken from the enemy 1710, re-taken and immediately again captured.
Pink	Tartar –	18	
Advice boat.	Eagle –	18	Lost in the great storm.
	Rochester's prize –	18	
	Advice's prize –	18	
	Worcester's prize –	14	

Swift

yet the peculiar management of their flying squadrons, under the command of Forbin, Jean du Bart, Du Guay Trouin, and the count de St. Paul, rendered her

Description.	Names.	Guns.	Fate.
	Swift -	10	Taken 1702.
	Ferret -	10	Taken 1706.
	Postilion -	10	
Ketch.	Martin -	10	Taken 1703.
Pink.	Paramour -	10	
	Jolly -	10	
Brigantines.	Post-boy -	8	Taken 1702.
	Trial -	8	
	Chatham's prize -	8	
	Orford's prize -	8	
Sloops.	Wolf -	6	Taken 1704.
	Prohibition -	6	Taken 1702.
	Shark - -	6	Taken 1703.
	Spy -	6	
	Discovery -	6	
	Nottingham's prize -	6	
	Postilion's prize -	6	
	Swallow -	6	Taken 1703.
Yachts.	William and Mary.		
	Fubbs.		
	Isabella.		
Hospital ships.	Antelope.		
	Princess-Ann.		
	Jeffery.		
	Smyrna-Factor.		
Bombs.	Comet - -		Taken 1706.
	Serpent - -		Taken 1703.
	Terror - -		Taken 1704.
	Granada.		
	Mortar - -		Lost in the great storm.
	Basilisk.		
	Fire-Drake.		
	Hare.		
	Star - -		Lost in the West Indies 1711.

Fire-ships.

her depredations against the British commerce as injurious as they possibly could have been, if France had reigned undisputed mistress of the sea. It was natural that this species of advantage should create a murmur among the numerous and formidable body whom it peculiarly concerned, as violent as though the whole navy of England had been annihilated by the mismanagement of those who had the guidance of its force. Scarcely had the war commenced, ere the complaints on the different and varied grounds of extravagant expenditure, misconduct, neglect, and the employment of particular persons who had, on different occasions, rendered themselves obnoxious, acquired sufficient strength to become the object of parliamentary attention *. The House of Lords, in the month of February, 1704-5, had the boldness,

Description.	Names.	Fate.
Fire-ships.	Lightning – –	Taken 1705.
	Hawk.	
	Hunter.	
	Phœnix.	
	Vulture.	
	Terrible.	
	Griffin.	
	Fire-brand – –	Lost off Scilly 1707.
	Stromboli.	
	Mermaid.	
	Harman.	
	Earl-Galley.	
	Vulcan.	
	Vesuvius – –	Lost at Spithead in the great storm.
Hulk.	Arrogant.	

* "May it please your Majesty,

"We, your Majesty's most loyal and obedient subjects, the lords spiritual and temporal, in parliament assembled, having referred several books and papers laid before the house from the treasury, admiralty, and navy offices, to a committee; and received and fully considered their reports thereupon, think ourselves bound in duty to represent to your Majesty the following observations:

"It appears to us, by the accounts of the navy, that the charge of the navy, exclusive of the ordnance for sea-service, for the last three years, amounts to the sum of £.6,559,127. 12*s*. 2*d*. It does also appear, by the books delivered by the lord-treasurer, that the provision designed by parliament for the service of the navy, excluding the ordnance for sea-service for the said three years, amounted to the sum of £.6,193,094. 15*s*.; so that, the charge of the navy, within that time, exceeded what was designed by parliament, beside the charge of the ordnance for sea-service, the sum of £.366,032.

boldness, notwithstanding Prince George of Denmark, consort to the Queen, was, at that time, lord-high-admiral, to address her Majesty, in terms scarcely civil, considering

£.366,032. 17*s.* 2*d.* We also observe, that, whereas the provision intended by parliament for the said three years, amounted as aforesaid, to the sum of £.6,193,094. 15*s.* it appears by the account of the treasury, that there has been issued to the use of the navy, exclusive of the ordnance, to the 8th of November, 1704, the sum of £.5,051,788. 15*s.* 4*d.*; so that there has been issued, for the use of the navy, £.1,142,361. 2*s.* 4*d.* short of the portion allotted to that service by parliament. But we must beg leave to observe, that the navy accounts make the sum received by the treasury of the navy, between Michaelmas 1701 and Michaelmas 1704, to amount to £.5,420,700. 11*s.* 1*d.*; which difference, we conceive, arises by the navy-accounts commencing sooner than the treasury-accounts; and by the voluntary charge of the treasury of the navy.

"We also beg leave to acquaint your Majesty, that, by the accounts delivered in, and signed by the commissioners of the navy, it appears, that the debt of the navy, at Michaelmas 1704, amounted to the sum of £2,266,864. 17*s.* 10*d.*; and, that the debt of the navy, at Michaelmas 1702, amounted to the sum of £.1,016,767. 3*s.* 9*d.*; so that the debt of the navy, in two years time, has increased the sum of £.1,250,097. 14*s.* 10*d.*—But we take notice, that, by the treasury-books, it appears, that the funds given by the parliament, for the service of the war, have proved deficient, and fallen short of answering the service intended by parliament, and several extraordinary expences of the war, the sum of £.1,194,249. 16*s.* 5*d.* We farther humbly observe to your majesty, that, by the treasury-books, it appears, provision was made by parliament, that a number of men, not exceeding 40,000, including 5,000 marines, should be employed for the service of the year 1704, for whose wages there was appointed the sum of £.731,507. 1*s.* 2*d.*: that the charges of wages for that year, by the navy-accounts, amounts to the sum of £.651,963.; which sum amounts only to the wages of 33,434 seamen; so that 1,506 were wanting to make up the number of 35,000 men, who, with the 5,000 marines, ought to have been employed at sea, to make up the 40,000 men.

"We beg leave farther to observe to your Majesty, that there were, the last year, ten flags in sea pay, viz. three admirals three vice-admirals, and four rear-admirals; and that three of these were not on their posts: that Mr. Churchill, admiral of the blue, has not been at sea in any year of this war; and Mr. Graydon, vice-admiral of the red, has been a-shore all this last year; and that Sir James Wishart, though a rear-admiral, has been, the last year, captain to the admiral of the fleet. There were two vice-admirals of the red, and two rear-admirals of the blue, but no vice-admiral of the white; which seems to us to have been irregular, and to have been done in favour of Mr. Graydon, to continue him in the service, although this house had voted, that his behaviour, in letting the four French ships escape, was a prejudice to your Majesty's service, and a great dishonour to the nation; and that his proceedings in Jamaica had been a great discouragement to the inhabitants of that island, and prejudicial to your Majesty's service; and, hereupon, we did, on the 9th of March last, make an humble address to your Majesty, that the said Graydon might not be employed any more in your service: but we have been acquainted, since the report made us from our committee, that the said Mr. Graydon is discharged; and we humbly beseech your Majesty that he may no more be employed in your Majesty's service. We humbly offer it as our opinion, that the permitting

considering the relationship in which his highness stood, and the manifest censure directed against him, particularly in the latter part. The lord-high-admiral himself

permitting officers to be absent from their duty is not only of ill example, but may prove of very fatal consequence in time of service. We humbly desire leave to observe to your Majesty, that it appears by the navy-books, in the year 1697, the last year of the last war, the pensions amounted only to £.7,077. since which time they are so far increased, that the estimate of the pensions, for the year 1705, amounts to £.18,011.: one of these is a pension of £.319. 17*s.* 6*d.* to Sir John Munden, though your Majesty, upon consideration of the circumstances relating to the expedition to Corunna, had been pleased to determine, that he had not done his duty, and that your Majesty did not think fit to continue him in your service, and declared your pleasure, that he should be immediately discharged from his post and command in the navy. We have been also informed, that the pension of Admiral Nevil's widow, which is set down in the books as continuing, has not been paid for two years past. At the same time [that] we find the pensions so much increased, we have been informed, that some officers of your Majesty's fleet have been laid aside without any pension or consideration, though no crime or misbehaviour has been laid to their charge.

" We beg leave to observe farther, that, in the ordinary estimate of the navy, delivered into the parliament, and for which allowances were annually demanded and made, there is put down for the prince's * council £.7,000.; whereas it appears, that, in the year 1702, they were only four in number; in the year 1703 five; and six only in the year 1704; and yet, it does not appear, that more than £.1,000. a-piece has been paid to them. We also observe, that Mr. Churchill's appointments for the navy are, as prince's council, £.1,000.; for pension £.500.; as admiral of the blue £.1,277. 10*s.*; and for table-money, though not at sea, £.365.; in the whole £.3,142. 10*s.*

" Upon a careful inspection of the admiralty-book, relating to your Majesty's ships employed, from the 1st of January to the 1st of November, 1704, as cruizers and convoys for the home-trade, though the same be kept very confusedly, we have extracted out of it a scheme of the number of ships, and the time for which the same have been employed in cruizing, or as convoys, for the protection of trade, to which we humbly desire to refer. In that scheme, all the days are set down, that can be found, when any of these ships were cruizing; and, upon calculation, all of them together have not done the duty of three cruizing ships kept constantly on the service for ten months. Besides, several of these cruizers were ill-chosen, and improper ships for that purpose, as being the worst sailers in the fleet; particularly the Warspight, Expedition, Gloucester, Assistance, and Falkland; and the number of ships that have been at any time employed within that time, as cruizers, did not exceed twenty-two, and for home seven; whereas, in the late war, the parliament judged it necessary that there should be employed, for the protection of trade, besides the main fleet and foreign convoys, four third-rates, thirteen fifth-rates, sixteen fourth-rates, and ten sixth-rates; in the whole forty-three.

" Having thus humbly laid these our observations before your Majesty, we rest assured that your Majesty's great wisdom, and tender concern for the happiness of your subjects, will dispose you to apply the proper remedies. Your Majesty is fully satisfied, that the honour and safety of your Majesty's dominions, and the security of trade, depend entirely upon a due management of the naval affairs;

* Prince George of Denmark.

and,

self had raised no inconsiderable degree of displeasure in the nation by his very strong, and peculiar attachment to Admiral Churchill, brother to the Duke of Marlborough: for the pride with which the latter carried himself, together with the contemptuous manner in which he affected to treat the general and very justly-founded complaints, had raised the displeasure of the people almost to a pitch of frenzy. If any thing had been wanting to render him still more obnoxious, the repeated misfortunes which befel some of the most valuable fleets that ever quitted the ports of Britain, furnished very sufficient materials to feed that fire which had been so fiercely kindled. After a series of murmuring representations, less consequential than that which, in some measure, closed the dispute, the controversy, and the blame attached to the public losses, was brought to a public issue *. The principal heads will be found in the abstract given beneath: to have inserted

and, therefore, we cannot doubt but your Majesty will consider of the fittest measures, and give the most effectual order for restoring and establishing true discipline of the navy; and, as we are very sure your Majesty is touched in the most sensible manner with the late heavy losses of the merchants, and the persons of many hundreds of your seamen, so we humbly beseech your Majesty to give commands that all possible methods may be taken for the encouragemant of seamen, the guarding of the coasts, and the protection of trade."

* The Address of the Lords Spiritual and Temporal, presented to the Queen on Monday the 1st day of March, 1707-8, respecting the mismanagement of the navy, including abstracts of the several papers inserted in the same:

"*Die Mercurii, 25 Februarii, 1707.*

"We your Majesty's most dutiful and obedient subjects, the lords spiritual and temporal, in parliament assembled, do humbly acquaint your Majesty, that, early in this session of parliament, a petition of several merchants, on behalf of themselves and others, traders of the city of London, was presented to the house, whereby they complained of great losses by the ill-timing of convoys, and the want of cruizers, so that they durst no longer engage the remainder of their estates to carry on their several trades, unless immediate care was taken to remedy these two main causes of their misfortunes.

"This petition, containing complaints of great consequence to your Majesty's subjects, and we being sensible that nothing but a strict and impartial inquiry into matters of fact could put them in a due light, and enable us to distinguish between ill-grounded clamours, and a just cause of complaint, in order to take the usual method of being rightly and fully informed, did refer the petition to a committee; and did also refer to the same committee several papers which the house had found necessary to call for from the proper offices, for their better information in divers things relating to the navy.

inserted more would have been unnecessary, for the inferior parts of the dispute became eclipsed by those of a more consequential nature. In no time, perhaps, was

" The committee having prepared a report, and presented it to the house, upon a mature consideration it was approved and agreed to; and we think it our duty humbly to lay the same before your Majesty."

" The lords committee have heard many of the petitioners upon their oaths, and have caused them to put their depositions into writing, and sign the same."

THE LORDS COMMITTEE observing that the complaints of the petitioners naturally fell under several heads, for the greater ease of the house, have endeavoured, in their report, to reduce the evidence they have received into the following order; always referring, as they proceed, to the depositions themselves.

One thing complained of was, the insufficiency of convoys appointed for the merchants, whereby their ships had, from time to time, become a prey to the superior force of the enemy.

A second point was, the merchants suffered great discouragement by their being forced to wait long for convoys, even after the time promised and prefixed for their sailing, whereby the charge of seamen's wages and victuals, demurrage of shipping, damage of goods, and loss of markets, made trading insupportable.

A third ground of complaint was, the untimely and unseasonable sailing of convoys, whereby trade, to the West Indies especially, was in a manner ruined.

A fourth was, the great want of cruizers in the Channel and Soundings.

A fifth complaint was, concerning the arbitrary proceedings of the captains of the Queen's ships of war, in impressing seamen out of the merchant ships in the Weſt Indies, as also, upon their return to the ports of Great Britain, to the endangering of many, and the loss of several, ships.

In order to make out the firſt head of their complaint relating to the insufficiency of convoys, they gave the following inſtances.

Firſt, in June, 1706, a fleet of merchant ships, under convoy of the Gosport man of war, bound for the West Indies, were attacked in the Soundings, and the Gosport and eight or nine merchant ships were taken.

Secondly, the Lisbon fleet, under convoy of the Swiftsure and the Warspite, were attacked in March, 1706-7, and about fourteen merchant ships taken in the Soundings.

Thirdly, the Newfoundland fleet, under convoy of the Falkland and the Medway's prize, were attacked in April, and some of them taken.

Fourthly, the coasting convoy was attacked in April off the Land's End.

Fifthly, the convoy from the Downs, consisting of the Hampton-Court, the Royal-Oak, and the Grafton, sailed the firſt of May laſt, and the next day were attacked in the Channel, and the Hampton-Court, and the Grafton, and about twenty merchant ships, were taken by the Dunkirk squadron.

A sixth instance was, that of the Russia ships, outward bound, this year, which were attacked by the Dunkirk squadron, and sixteen of them taken.

And farther, in respect to the Russia fleet, Mr. Dawson informed their lordships, that, on the 29th of April, the governor and a committee of the Muscovian Company attended the Prince's council, to know what convoy was appointed to conduct their ships to Archangel. They were told their

was assumed a tone of more boldness than on this occasion; and the temper with which it was endured by those elevated personages who were more materially affected by it, stands as no slender proof that the complaint was just.

With

their convoy should be one fourth and two fifth-rate ships. Upon their representing their fears of danger from the Dunkirk squadron, it was told them from the board, they need not be under any apprehension on that score, for the Dunkirk squadron was gone to the westward, which proved untrue; for, on the Thursday following, the Hampton-Court, Grafton, and Royal-Oak, sailed out of the Downs with the ships under their convoy, and the next day, being the second of May, fell in with the Dunkirk squadron.

Seventhly, the merchants instanced in the convoy which went with the king of Portugal's horses; and many other merchants ships, which were attacked the 10th of October last by the Dunkirk and Brest squadrons joined together, who burnt one of our men of war, and took three others, with about thirty of our merchant ships.

To shew this, the merchants produced the Gazette of the 3d of November, 1707.

These several convoys having been thus attacked in the Soundings and Channel in less than a year and a half, the merchants insisted was a convincing proof of their insufficiency.

The second general head of complaint was, of the great discouragement and prejudice to trade by the merchants being under a necessity of waiting so long for convoys, whereby their charges were exceedingly increased, great damages happened to their cargoes, and their markets were lost.

The 25th of March, 1707, a fleet sailed for Portugal, but there was then a prospect given that there ſhould soon go another convoy. This encouraged the shipping of great quantities of corn and woollen manufactures, and the heat of the weather coming on, pressing applications were made for that convoy, but without success.

The 10th of August the grand fleet sailed from Portsmouth, but took no merchant ships under their convoy.

Another instance insisted upon was, that a great number of merchant ships having gotten into Portsmouth from Jamaica, Virginia, New-England, Antigua, Lisbon, and other parts, in December, 1706, as also many coasters, all these were detained there for want of convoy to the Downs, from that time to the 24th of April following, between four and five months, although frequent applications were made to the prince's council for convoy to the Downs, from the masters there, and the owners at London, and many promises given; and yet, during that time, many of her Majesty's ships lay there in harbour, and several men of war passed by from Plymouth, without calling for the merchant ships which lay there.

Sir Thomas Hardy, with the Eaſt Indian ships, and other ships from Ireland, passed by without calling in.

When these merchant ships came into Portsmouth, the Southampton lay ready fitted at Spithead, and continued there two months at least; and the Anglesea lay there a considerable time ready fitted.

During this time, several frigates sailed from Portsmouth, and cruized up as far Dungeness, within seven leagues of the Downs, but, for want of orders, took no ships with them.

While these ships lay there for want of convoy, there were at Spithead the following men of war, many of which lay there a considerable time:

Anglesea,

With a navy, little inferior to that of the Combined Powers, then in an actual state of equipment, France had been able to effect very little mischief against the commercial

Anglesea,	Portland,	Reserve,
Southampton,	Ruby,	Dover,
Swiftsure,	August,	Ramilies,
Warspite,	Nassau,	Sun prize, and
Severn,	Albemarle,	Two fifth-rates.

All this while the merchants lay at great charges, besides the damage of their cargoes, and loss of many of their voyages for the following season.

About the 10th of February, the Ruby and Feversham, appointed as convoy for them, gave sailing orders; but were again countermanded, and the Ruby went into the dock to clean.

Afterward, upon farther opportunity, the August was ordered to join the Ruby and Feversham; but, instead of going from the Downs, they went first to fetch the coasters from Topsham, and then came to call for the ships at Portsmouth.

For a farther evidence, the merchants produced to their lordships the Gazette of the 8th of May, 1707, and shewed the paragraph from Ostend, in which are these words:

"A fleet of merchant ships, which lay five months in the Downs, consisting of fifty-five sail, ar-
"rived at Ostend this evening, to the great advantage and satisfaction of this place."

This, the merchants observed, was a great delay for so short a passage, and must extremely prejudice the Flander's trade, which the parliament thought fit to encourage, by passing an act the last session for repealing the prohibition of importing lace.

A third ground of the merchants complaint was, that, by the untimely and unseasonable proceeding of convoys, especially to the West Indies, they were great sufferers upon many accounts.

The Jamaica merchants complained that they had long lain under great discouragements.

That, about October, 1705, they applied themselves to the prince's council, complaining of the many losses in their fleet the preceding year: but that, however, depending upon their repeated assurances that they should have a sufficient convoy to depart early, and more particularly upon an order sent from that board to the Jamaica coffee-house, that the merchants should get their ships ready to depart by the 20th of January at farthest, they had prevailed with sundry persons to let their ships go to Jamaica. Accordingly, ships were fitted out with great expedition, and men hired at extravagant wages: but, after all these fair promises, their ships thus fitted lay almost two months before the time prefixed, for want of a convoy.

The 21st of March, the merchants, as men in despair, reciting the former assurances given them, petitioned his royal highness that their ships might depart with the first squadron bound out of the Channel; adding, that, if their fleet should miscarry by their late going out, they desponded of getting ships for carrying on the trade of the succeeding year.

Howbeit that fleet was detained till the beginning of May, and the ill success too well answered the merchants apprehensions, for the greatest part of the fleet, being separated from their convoy in their return, were lost.

That by these, and many other hardships, the Jamaica trade is brought to so low a state, that whereas, at the beginning of the war, their fleets home have consisted of 30 or 40 sail, when they were lately

commercial property of Britain during the preceding reign. In the year 1690, the most disastrous and alarming epoch, perhaps, that England had ever witnessed, when her

lately informed by the prince's council, that a sufficient convoy should be ready to depart with their fleet in a proper time, they were obliged to acquaint the board that they had now but two ships in loading.

In respect to the Virginia trade: in October, 1705, some ships sailed for Viginia, under convoy of the Woolwich and Avice, who were ordered to stay there till reinforced from England; and the merchants were then promised, that the Greenwich and the Hazardous should sail with the first fair wind in January following; but these ships did not sail till *May, 1706.* This delay was the cause they did not reach Virginia till August, at which time the greatest part of this fleet had been sixteen months in their voyage. By this length of voyage, their whole freight was expended in wages, victuals, and other incidental charges.

Secondly, the ships lying there almost two whole summers, several of their bottoms were perished by the worm, which, in those parts, always eats in the summer months.

Thirdly, to complete their misfortune, they were forced to make a winter passage home, and, by the badness of the weather, &c. sixteen or more ships were sunk or foundered at sea, and above 8000 hogsheads of tobacco lost; other ships, with above 2000 hogsheads of tobacco more, were taken and carried into France, and divers of the ships were forced back into America, and since returning without convoy are lost, and not heard of.

A fourth head of the merchants complaint was, the great want of cruizers in the Channel and Soundings; and a variety of instances were produced by different deponents.

In the year 1704, few or no ships arrived safe for want of proper cruizers. The Jamaica traders lost fourteen ships in the Soundings and Channel.

Sir George Byng, and Admiral Jenings, in Jamaica, 1704-5, were at sea cruizing till the October following, during which time the English ships were protected; and twenty sail of the enemies privateers, and merchant ships, were taken; but, from that time till October or November 1706, very few ships were cruizing.

Then Sir Thomas Hardy sailed with five men of war, which all returned in five or six weeks, and soon after sailed for Ireland, and returned to the Downs in February or March, since which time, the merchants have had no knowledge of any ships cruizing till September, 1707.

The merchants gave an account of the vast advantages of the Mediterranean trade, which, for a considerable time, had been carried on with great success by nimble galleys, without putting the government to the charge of convoys.

Mr. Gould informed, that, besides the Turkey-trade, and trade from several other places in the Mediterranean, the customs of Leghorn, Venice, and Genoa, did amount to about 300,000l. sterling, *per annum*; and an account was also given in by him, in particular, of the very great annual exports to Leghorn alone, consisting of our manufactures, goods of our native growth, and other merchandizes; which trade had continued for many years, while our Channel was better guarded; but of late it is in a manner quite interrupted for want of cruizers in the Channel and Soundings, and many ships taken there. He mentioned, in particular, the Mazarine-galley from Turkey, worth

her fleet, in conjunction with the squadron of her ally, had been actually worsted by the superior force of France, when the navy of Louis might be said to have become

above 80,000l. taken in the Soundings; the Mediterranean-galley from Zant, taken off Beachy-Head; the St. George-galley taken in the Channel; the Royal-Ann-galley taken in the Channel, where she made boards for about fifteen days together, without seeing any one cruizer to help her; the Trumbal-galley, rich in money, taken near the Downs. He declined naming more, though he could mention several others, the rather because some of them are included in the great list of merchants losses given into their lordships, consisting of 1,160 ships: but, in order to shew the difference when any care was taken for cruizers, he produced a list to their lordships of 91 sail of galleys bound from Leghorn, which arrived safe without convoys, from September, 1703, to October, 1704, while there were some cruizers employed.

He said, that foreigners did reproach our nation for their great neglect of the merchant ships; and to this purpose he produced two letters from his correspondents at Leghorn, one dated the 12th of September, in which, after taking notice of the Russia ships, it follows: "Seeing the enemy fall in "with so many of our convoys, we begin to suspect there may be some traitors among us;" and another letter in which, among other things, it is said, "they had received a lamentable account of the "Lisbon horse-convoy; by which they observed there had been strange management in our maritime "affairs, seeing we can suffer so much so near home."

He also produced another letter from Plymouth, dated the 1st of November last, where it was said: "the French privateers are so bold as to cruize in our very mouth: about four days since, two "of them chased a Dutchman from Mount's-Bay into our very harbour within Pentee, where there "was a sharp dispute, and some score of guns fired: there was at that time between the island and the "main the three Welch convoys; but neither of them stirred, having no orders: however, the "Dutchman saved his ship: but this is enough, and too much, on so melancholy a subject."

Mr. William Coward said, he believed that the list of 1,100 and odd sail of ships lost, given in to their lordships, was very far short of the whole number.

To all these complaints, the lord high-admiral returned the following reply:

The lords spiritual and temporal, in parliament assembled, having, by their order, bearing date the 17th day of December last, directed that a copy of the report should be sent to the lord high-admiral, which was made to them on the same day from the lords committees appointed to consider of the petition of several merchants on behalf of themselves and others, traders of the city of London, and of the depositions to which the said report doth refer; and the said merchants having represented in their petition that they have of late years sustained great losses by the insufficiency, by the delays, and by the unseasonable sailing of convoys, and the want of cruizers; his royal highness has thought it necessary that this general complaint, as well as the several particulars contained in the aforementioned, should receive such answers as may set the whole matter in a much truer light than their lordships can possibly have by those papers only from which the report hath been collected; and, therefore, it is desired, that their lordships may be referred to the following particulars:

1. As

become mistress for a time of the British Channel, no other advantage was gained on one part, or injury effected against the other, than the plunder and ignoble

As to the insufficiency of convoys.

The lord-high-admiral does not observe any instances given, where the trades that usually proceed with convoys have ever wanted a reasonable and sufficient strength for their security; and even in the last year, the stated convoys have been much stronger than formerly. The misfortunes of several convoys being attacked by a superior force were in no way to have been prevented, but by whole squadrons, and it is to be observed, that all the instances mentioned in their lordships report happened in the later years of the present war. In the two first years of her majesty's reign there were not many ships employed in or towards the Mediterranean, and even those were not long absent from our own coasts; so that there were undoubtedly many more ships, and those very proper too to be employed in the defence of the trade of the nation, with respect not only to convoys, but to cruizers: whereas, in the later years of her majesty's reign, the public service hath required the employment of great part of our fleet abroad in the Mediterranean; and although several ships have returned from thence to England in the latter end of those years, yet they have not been fit for any service until the time appointed wherein it was necessary they should be sent abroad again; for they were such as were the least able to continue out, and, consequently, wanted the greatest repairs.

2. As to the merchants waiting long for convoys after the time promised, and fixed for their sailing.

The many constant, as well as accidental, services which have absolutely required the use of the queen's ships, have often left but very little choice of ships for foreign convoys: but when applications have been made by the merchants, the proper convoys have been always appointed and ordered to be got in readiness by the time desired, and not afterward diverted to other uses: yet it hath sometimes happened, upon their coming into the dock, that they have been found, by a long and constant use, in a much worse condition than was hoped and expected. The necessity of fitting ships at different ports for the same convoy, and contrary winds, have often prevented them joining at the rendezvous: sometimes the men, and the necessity of removing them from ship to ship, and the constant care to pay the men so removed before they sailed, may have occasioned the delays complained of: yet upon a strict enquiry it will appear, that these delays are as often to be imputed to the traders, who are seldom ready to sail at the same time; and that the queen's ships have as often been delayed for the merchants as they for their convoys.

3. As to the want of sufficient cruizers in the Soundings and Channel.

There hath every year been a provision made for cruizers in the Soundings, Channel, and North Seas; and never less than twelve for the North Seas, and fifteen for the Soundings, which were as many as other necessary and pressing services would possibly admit of; but they have been very frequently diverted from the service of cruizing upon the applications of merchants themselves, either for the convoying up the Channel their homeward-bound ships, or fetching them from Ireland or other parts; and in convoying the trades to Archangel, the Baltic, Holland, &c. there has been a necessity to comply with this, because those services could not possibly be otherwise accommodated, unless some of the few ships had been taken off, which were on various stations placed on the coast to secure the trade from one port to another.

hle destruction of an insignificant fishing town, added to the paltry triumph of having destroyed a few miserable barques, whose very humble occupation and value

4. As to the complaint of the arbitrary proceedings of the captains of her majesty's ships, in impressing seamen from merchant ships in the West Indies, and at their return into the ports of Great Britain.

If this hath been done, it is contrary to the constant and direct orders given to the said captains, by which they are required not to impress any men from merchant ships in the plantations, without applying to, and receiving the consent of, the respective governors; and then never above one out of five, which is more than have ever been exacted from them during this war. If, for the better manning her majesty's fleet, any men are taken from merchant ships, when they arrive here, the captains of her majesty's ships are strictly required to supply as many good men in their room to bring them into the ports whereto they are designed; and to send a careful officer with them. When such men have performed those services, they are allowed the usual conduct-money to enable them to repair to their proper ships again: but, if this should be true, it must needs seem hard to their lordships that the merchants do impute to the lord-high-admiral the miscarriages of his officers, which have never been complained of to him without a proper redress.

5. As to the Gosport's being taken in the passage to the West Indies, in June, 1706, with several other convoys.

This was an accident that could neither be foreseen nor prevented: and these ships being taken almost 300 miles in the sea, on which occasion as the queen's officers did all that was possible in the defence of the merchant ships, so it is hoped that their lordships justice and wisdom will not make such misfortunes criminal.

6. Another complaint is, that the Lisbon fleet, under convoy of the Warspite and Swiftsure, was attacked in March, 1706-7, and fourteen merchant ships taken in the Soundings.

This convoy had the misfortune to fall in with seventeen ships belonging to the enemy, which were going directly from Brest to the West Indies; and, by the greatest chance imaginable, met them in their passage.

7. It is farther alleged, that the Newfoundland fleet was attacked in April, under convoy of the Falkland and Medway prize.

These two ships did, in their passage out, meet with eight sail of enemy's privateers, from 20 to 30 guns, with which they engaged; but carried all their convoy safe to Newfoundland, except two that made sail from them, and by that means fell into the enemy's hands.

8. It is alleged, that a coasting convoy was attacked in April off the land's end. This may be true, though this is the first advice of it.

9. Another complaint there is, that the Hampton Court, Royal Oak, and Grafton, sailing from the Downs, on the 1st of May last, were the next day attacked, and the Hampton and Grafton, with about twenty merchant ships, taken by the Dunkirk squadron, of which no intelligence had been received otherwise than that they were in the Flemish Road, notwithstanding what is sworn by Mr. Dawson, that he was told at the Admiralty Office the said squadron was gone to Westward; for, upon the strictest examination of all the advices, and of the minutes of the office of that very day, there does not appear any notice of the enemies ships being sailed to the West; wherefore those three ships, which were one

value might have been thought sufficient to have preserved them from the fury even of a petty corsair. The comparative view between the events of the two reigns

one of 76 guns, and the other two of 70 guns each, were judged a sufficient convoy between the Downs and Spithead; nor were there then any ships within reach to have strengthened them.

10. It is also alleged, that the Russia ships, outward bound the last year, were attacked by the enemy, and sixteen of the merchant ships taken.

Sir William Whetstone, with the squadron under his command, did conduct them into the latitude of 63 degrees, and then leaving them to their proper convoy, none of the merchant ships did fall into the enemies hands, but those whose masters did actually leave the said convoy; and that not till they were in the latitude of 78 degrees; about three weeks after Sir William Whetstone parted with them.

11. Complaint is also made, that the convoy which was conducting the ships with horses for the king of Portugal, and the trade to Lisbon, was attacked the 10th of October last.

This convoy consisted of her majesty's ships Cumberland, Devonshire, Royal-Oak, Ruby, and Chester; being two of 80 guns, one of 76, and two of 50 guns each, and was thought a sufficient convoy to Spain in the opinion of the merchants, till the misfortune happened by the accidental junction of two French squadrons: but, on this occasion, the queen's ships behaved themselves so well, that very few of the merchant ships were taken.

12. The merchants also complain, that they waited long for convoys, and of the prejudice they received when their ships returned from foreign parts for want of convoys to the river Thames. This head being general, their lordships are desired to refer to what hath been already said on this subject in the beginning of this paper.

13. They further allege, that they had orders, in July, 1704, to buy great quantities of corn for the king of Portugal's use; and that in July and August they did so; but that notwithstanding their frequent applications, they could not obtain convoy till the 8th of February following.

This seems to be somewhat extraordinary, for they say their ships were ready to sail in July and August; whereas in the latter of those two months there were orders given to her majesty's ships the Pembroke, Canterbury, Greenwich, and Gloucester, to convoy the trade to Lisbon: and on the 6th of September Sir William Whetstone was ordered, with the squadron under his command, to sea 100 leagues, South South West from Scilly, which he did; but why the ships that were ready in July and August, as is alleged, did not proceed with their convoy, the masters, or the owners of them, or both, can give the best account: besides, there were several ships belonging to the States-General, which called at Spithead in their way to Lisbon, and, as it had been concerted at the Hague, took our merchant ships under their convoy. Here it may be observed, that although it hath been found impossible to furnish convoys for the trade to Portugal at the immediate times the merchants have applied for the same; yet there have been twenty-nine convoys, between England and that kingdom, from the month of April, 1703, to October last; and some of those convoys have been no less than great part of the fleet; and, at other times, considerable squadrons; particularly in the year 1706, there were five convoys in one year, which makes it very improbable that the king of Portugal's magazines and armies have been furnished from the Baltic.

reigns was extremely likely to create malice and rancour: but, though it certainly argues some mismanagement that a force so confessedly superior should permit

14. They farther complain, that the grand fleet sailed on the 10th of August from Portsmouth, and did not take any merchant ships under their convoy.

This was in the year 1706, when the admiral of the fleet had instructions to proceed upon services not fit to be made public, which did consequently render it impracticable for him to take merchant ships in his company.

15. Another objection they make, that there was an embargo laid on their trade and convoys.

It is presumed, that by the word *embargo* they mean that there was some little stop put to their proceedings, until there could be a more certain account of the intelligence received, that there was a squadron of the enemies ships in the Soundings, which proved afterwards, as they observed, to be Dutch homeward-bound merchant ships from the West Indies.

It cannot be imagined that this caution was designed for their prejudice, but rather intirely for their service, as well as for the safety of her majesty's ships: and as they own that the Norfolk, Warspite, and Exeter, did sail with their trade, so did they allege that the Nassau did not join them for want of necessary orders, for that the fleet did not sail till three in the afternoon, and the Nassau came to Spithead before night. On the contrary, the Nassau passed through the Downs on the 14th of October, 1706, and got as far Westward as Folkstone, but the wind coming to the Southward, and there being a likelihood of dirty weather, she bore up for the Downs the 10th, from whence she sailed the 18th, at fix at night, and arrived at Spithead the 20th, which was two days after the convoy sailed. Their lordships may be pleased to take notice that a Dutch convoy sailed in the beginning of January, 1705-6, in company with several of her majesty's ships; that the 25th of February, captain Price sailed with five ships of war; that on the 27th of March following, Sir George Byng sailed with a squadron; that on the 28th of June, four other ships of war sailed thither; and that, in July, the merchants petitioned for a convoy to go in Auguft, which was appointed, but afterward unavoidably stopped.

16. They farther declare, that by reason of the insufficiency of this convoy, several merchant ships were taken out of the fleet off Portland; and that afterwards, meeting with bad weather in the Bay of Biscay, the Warspite and Exeter became disabled; and that the trade, except some few ships, proceeded to Lisbon with the Norfolk only.

The convoy appointed for the trade, were three ships, one of 80, one of 70, and one of 60 guns; and as this was thought a sufficient strength, so were there not any more ships to reinforce them; nor could it be foreseen, that two of the ships would have been disabled in their passage, though accidents of that kind have, and frequently may happen.

17. Another subject of complaint is, that great number of merchant ships were in Portsmouth harbour in the month of December, 1706, and detained there, for want of convoy to the Downs, till the 24th of April following; notwithstanding several of her majesty's ships were at Spithead (which they have enumerated) and that others came from the West, and did not call for them; they particularly mention the Suffolk and Bristol.

All

permit the inconsiderable squadrons of an almost vanquished enemy to reign triumphant over the commercial interest of their antagonist, and carry off their mighty

All the ships which the merchants suppose lay idle at Portsmouth, during this time, were under orders for particular services.

18. Another complaint is made, that in the month of October, 1706, Mr. Coward and Mr. Jones chartered their ships to the commissioners for victualling, on condition they should go directly to Jamaica, whereas they were carried from the Downs to Portsmouth, thence to Plymouth, from that port to Ireland, and then to Barbadoes or Antigua.

It is not doubted, but these ships were taken up by the commissioners for victualling, at so much per month freight; and her majesty finding it necessary for her service to send a governor to her island of Barbadoes, with some forces which were to be embarked in Ireland with provisions and other necessaries for the plantations of Nevis and Antigua, there was a necessity of these ships accompanying the convoy which was appointed for that service, in regard there was not any other which could be got in readiness for them; but their owners will be paid for the time they have been employed in the service of the public, according to the agreement made with them.

19. Mr. Palmer deposes, that, in the year 1705, a ship, of which he was part owner, with several others, was convoyed from the Downs to Portsmouth by the Litchfield's prize, but that for want of orders she could not see them to Plymouth, where they might have joined the fleet with Sir Cloudesley Shovel, bound to Lisbon.

Their lordships may perceive how much this person hath forgot himself, and imposed upon them; for the Litchfield's prize did not arrive with the trade at Spithead until the 7th of June; and Sir Cloudesley Shovel sailed from thence the 23d of May, passed by Plymouth the 25th of the said month, and was off Lisbon the 9th of June; so that the fleet was actually at Lisbon two days after the time that this gentleman says the Litchfield prize might have joined them at Plymouth.

20. As a farther evidence, the merchants have produced to their lordships the Gazette of the 8th of May, 1707, wherein there is the following paragraph from Ostend, viz.: "A fleet of merchant ships which lay five months in the Downs, consisting of fifty-five sail, arrived at Ostend this evening, to the great satisfaction of this place."

This advertisement was very ignorantly and unadvisedly inserted in the Gazette; the fact itself being intirely wrong; for her majesty's ships the Lynn and Deal-Castle, sailed for Ostend the 7th of February, and there were then no more than five merchant ships to accompany them: Sir Edward Whitaker, with his squadron, did the like on the 27th of April following, and after seeing the trade into that port, brought what was there from thence; but she carried with her not above fifteen ships and vessels, and how that number could swell to fifty-five is somewhat strange: besides, it doth not appear, that at any one time, from December to the month of May, there were more than five merchant ships in the Downs, bound to Ostend; and above three-fourths of that time not so much as one; yet the advertisement in the Gazette says, that fifty-five ships arrived at Ostend from the Downs, after that they had lain there five months for a convoy.

21. As to the general article relating to the untimely and unseasonable proceeding of convoys, especially to the West Indies, their lordships are desired to be referred to what hath been already said at the beginning of this paper relating to that matter.

22. The

mighty plunder without molestation, or an attempt at reprisal; yet these unfortunate accidents will be found, on close scrutiny, by no means affording so glaring

22. The Virginia merchants allege, that in October, 1705, some of their ships sailed from hence under convoy of the Woolwich and Advice, which were ordered to stay till reinforced from England; that they were promised the Greenwich and Hazardous should sail the first fair wind in January following; but that they did not sail till May, which occasioned their not reaching Virginia till August.

The Greenwich and Hazardous were ordered for this service the 26th of February, 1705-6, but could not get clear from Plymouth till the 24th of April; and on the 27th they were forced, by bad weather, into Falmouth; but the Hazardous sailed soon after, for the Greenwich was disabled, and forced to come to Greenwich to refit: however, the said ship Greenwich sailed from Plymouth the 1st of June, and arrived at Virginia the 11th of August; and the 17th of September sailing from thence, with the Hazardous, Woolwich, and Advice, and 182 merchant-ships, arrived with them in the Channel the November following.

23. The said Virginia merchants have farther represented, that in the hope of convoys proceeding from hence to Virginia the last Spring, many ships that carried stores from hence to Lisbon, and others from London, proceeded to Virginia, but remained there till September last, expecting convoy, and must now come home without, in the winter season. That although in the last Spring her majesty in council ordered a convoy to be ready in August, yet the said convoy remains at Portsmouth.

The delays and misfortunes which have happened this year to the Virginia traders are, in a great measure, to be attributed to the different interests and opinions of the merchants and planters concerned in that trade; to the different westerly winds which have hindered their departure; and to the delays occasioned by several merchants chartering their ships to the Portugueze convoys for transporting horses to Lisbon.

24. They farther declare, that for some years past there hath not been a frigate appointed to take care of the Virginia coast; for want of which many ships have been taken going in, and coming out.

The ships of war which convoy the Virginia ships have usually orders to cruize between the capes while the trade is loading. The Strombolo had those particular orders; the Gosport, which was taken in her passage, and which may occasion this complaint, had the same; the Guardland is now upon that service; and the ships going out to Virginia have the same directions.

25. Complaint is made by Mr. John Wood of the difficulties he met with in September, 1706, and some time after, in getting a ship of his, called the Union frigate, to Portsmouth.

This ship took in her cargo of corn at Shoreham, one of the most difficult ports to get out from: but, when the ships of war are ordered, either Eastward from Portsmouth, or Westward along the Downs, they have always directions to call at the several ports in their way; but several have been unsuccessfully appointed to get the ships and vessels out of this harbour.

26. The said board doth also affirm, that in the months of April, May, and June last, there were several ships freighted at Shoreham, which could not proceed to Spithead by reason of the enemy's privateers:

glaring a proof either of that mismanagement itself, or of such superior ability in the enemy as may be attributed to it on the first glance. The advantage possessed by

privateers; that, at last, there was a convoy appointed, but soon after ran away, and left the ships, upon a report that the Dunkirk squadron was upon the coast.

The convoy here meant was the Charles galley and Gosport, though several others were before appointed to get those vessels out of the harbour: however, the aforesaid two ships did do it about the 10th of June, 1707, and being on their way towards Spithead they received an express from the mayor of Hastings, with an account that there were eighteen sail of French men of war coming from the Eastward, with all the sail they could make; which advice, although it proved false, was not safely to be neglected: but so far were her majesty's ships from running from the trade, upon this intelligence, as it is falsely and maliciously insinuated, that they kept them company, and brought them safe to Spithead, as the captain of the Charles galley gave an account in his letter of the 20th of June, 1707. Those ships which occasioned the alarm were her majesty's ships the Defiance and Advice, with their convoys from the Downs.

27. Mr. Winter deposes, that he came from Gibraltar the 14th of March last, in company of the Pearl, Hanover, and Lodington gallies; that off Beachy Head two of them were taken by French privateers.

These ships were all runners, or at least called so; had they put into Portsmouth until an opportunity of convoy had presented, the person who complains of these losses would not have run the hazard he did. Nor can it be thought these ships, which the merchants call gallies, can, when they are laden and foul, sail much better than other ships not under that denomination; they, therefore, are consequently as much subject to misfortunes, by going without convoy; and it is very reasonable to believe, that till this trading by gallies or runners grew so much in fashion, the losses were much less; as, it is hoped, it will be again, when the merchants will learn to alter their way of trading, as the enemy hath altered their method of carrying on the war by sea.

The remaining part of their lordships' report relates chiefly to,

1. Merchant ships being chased off Beachy, and the parts thereabouts, by the enemy's privateers.

2. The advantages accruing to the Mediterranean trade, by carrying it on with gallies; but the hazards they run in their return home, for want of cruizers in the Soundings and Channel.

3. A French privateer having chased a Dutch ship into Plymouth, on or about the 14th of November last, while three Welsh convoys rode fast for want of orders.

4. That the list of 1146 sail of merchant ships lost was far short of their real number.

5. The inconveniences by pressing men in the West Indies, and at their return.

6. The complaint of Mr. Benjamin Way, that the captain of the Northumberland did not take care of his ship called the London-Galley, which sailed from Jamaica the latter end of February last.

As to the 1st, 2d, and 5th, of these articles, their lordships are desired to be referred to what hath already been said.

Then,

by France, as mistress of the port of Dunkirk, was in itself sufficient to counterbalance the utmost effort even of a formidable naval force. The ships destined for this

Then, as to the 3d, which relates to a Dutch dogger, it seems not at all material, only to swell a complaint; but, as to what is insinuated, that the three men of war did not stir for want of orders, it is well known, that when her majesty's ships get sight of an enemy, they stand in need of no particular orders to attack them; for their general instructions, annexed to their commissions, do sufficiently require that of them; but this happening at five o'clock in the evening in the month of November, it was impossible for any of the three ships before mentioned to have come up with the privateer; and the Dutch ship was secure under the guns of the fortification.

The lord-high-admiral cannot, without great concern, take notice of the list of 1146 ships said to be lost during this war; although it is possible great part of that number consists of gallies or runners: and that some part of this loss may be attributed to the incertable fate of war. Some have arisen from the wilfulness or negligence of masters of merchant ships, who, when sufficient convoys have been granted them, have deserted that protection, and exposed themselves a prey to the enemy, of which frequent complaints have been made.

Lastly, as to the 6th article, which in the complaint of Mr. Way, that care was not taken of his ship from the West Indies, their lordships are desired to refer to the copies of two letters herewith transmitted to them, one from Sir John Jennings, and the other from the captain of the Northumberland; which give a particular account of that matter; and was not complained of at the Admiralty office before it was brought to their lordships.

Thus much being said as to the reports of the lords committees, grounded upon the depositions of the merchants, which are partly what they say, of their own knowledge, and the rest what they have gathered from others, the lord-high-admiral thinks it necessary to lay before their lordships some farther observations under the following heads, to explain some papers which have been demanded by their lordships from the Admiralty office.

1. That, notwithstanding the almost continual use of her majesty's ships, the loss sustained by storms, particularly in the violent tempest in 1703, and the many hazards they have been exposed unto in their extensive war; the number of ships of the royal navy is so far from being diminished since her majesty's accession to the throne, that it is increased by ten ships of war; although the parliament hath not, in this reign, given one farthing for building ships; that the last war there were about four millions given for that and other extraordinary services; yet the royal navy was less in strength at the end thereof, than at the beginning, by twenty ships of the line of battle.

2. That the number of ships of the navy of France, which have been taken or destroyed by her majesty's ships this war, much exceeds the losses of Britain.

3. That during the present war there have been 175 of the enemy's privateers taken, and many of them of considerable force.

4. That in the last war which was declared the 7th of May, 1689, and ended the 10th of September, 1697, the whole number of the enemy's ships, taken and condemned, were 1296: whereas in the present war, which was declared the 4th of May, 1702, unto the 1st of December, 1707, the number of ships taken from the enemy, and condemned, amounts to 1343, which carries with it no little disproportion.

5. That

this predatory war, being always kept in a state of equipment, spread a constant alarm from the apprehension of those effects which might naturally be expected to

5. That the re-captures by her majesty's ships of war, from the 4th of May, 1702, to the 1st of December, 1707, are 108; which amounted by appraisement to more than the sum of £.82,975; and the re-captures within that time, to £.38,054.; both which sums amount unto £.121,030. exclusive of customs.

6. That in the last war, the merchants had the misfortune to lose near 4,000 ships; whereas in this war, they have themselves given an account of no more than 1,146; and it were to be wished, that even that loss could have been prevented; but here it may be observed, that during the last war, we had ports of Spain, as well as those in the Spanish West-Indies, always open to secure our merchant ships and vessels, not only from the enemy, but from bad weather; whereas, during the whole course of this war, our trade hath been entirely debarred from that so essential a countenance and protection.

7. Besides, while her majesty has yearly fitted out her royal navy for carrying on the war abroad, the enemy hath, ever since the battle of Malaga, totally altered their methods of carrying on their naval war; and, instead of sending forth great fleets, they fill the seas with privateers, and with squadrons of their nimble ships; and, by that means, watch all opportunities of seizing upon our trade, for which the situation of their ports gives them but too good opportunities; and yet our merchants, who cannot but be sensible of their danger, carry on their trade, in a very great degree, in defenceless ships, called runners; and they have been obliged, by charter-party, to go without convoys, and thereby too often became exposed to the enemy who lie in watch for them.

Lastly, the lord-high-admiral desires their lordships to do him so much justice as to believe, that no man is more sensibly affected than he is, at the great losses and misfortunes which have happened to the merchants; and he is so much more sensible of them, because, in the way those gentlemen carry on their trades, by single defenceless ships, and by the method the enemy now takes, while the French king himself, and so great a part of his subjects, employ so many ships and men only to make war upon the merchants, such misfortunes will happen; yet his royal highness does hope their lordships will believe that the queen's fleet has not been useless and unemployed during this war, which cannot be carried on according to the declared sense of their lordships but by supporting a superiority at sea, upon the coasts of Portugal, Spain, and Italy; in all which places the queen's fleet hath done great services during the last four years, and attempted some things which might have secured Britain for one age from all the naval power of France.

THE HOUSE took this answer into their most serious consideration; and finding several facts therein stated very differently from what had been asserted by the merchants upon their oaths (who had therefore, according to the methods of justice, a right to be farther heard by way of reply), and finding several other things alleged in the answer, which at first sight seemed to be plain mistakes, we thought it necessary, for our farther information and satisfaction, to appoint a committee to hear the merchants; and also to make such observations upon the answer as they should think proper.

The committee having perfected their report, and laid it before the house, the same was agreed to, and we think ourselves obliged humbly to present their second report to your majesty.

to ensue on their putting to sea, and they were, in number and force, equal to the task of employing what might be considered a fleet, in the tedious occupation of watching

Die Martis, 17 Februarii, 1707.

IN RELATION to the first head of the answer, which is conceived in general terms, without being applied to any of the particulars in the merchants complaints, some things seem proper to be taken notice of.

1. The answer says, that all the instances mentioned in the report are in the latter years of her majesty's reign.

The lords committees observe, that an address of the house of lords, presented to her majesty in the year 1704, did lay before her the heavy losses of the merchants, which had happened through the want of cruizers and convoys for the home trade.

Soon after the presenting that address, Sir George Byng and Sir John Jennings were sent out to cruize, and continued cruizing till the October following, during which time the English ships were well protected, and many of the enemy's privateers taken; and the lords hoped there would have been no farther occasions of complaints from the merchants; and all the losses contained in the report now before the house have happened since that care was laid aside.

2dly. It does appear, from the papers sent to the house by the lord-high-admiral, that, in the year 1706, the highest complement of the ships employed in the Mediterranean, supposing them manned to their complement, did not exceed 17,373 men; and, therefore, notwithstanding that part of the fleet was made use of there, in both those years, yet about 23,000 men of the numbers provided for by parliament remained for the necessary service of guarding and protecting the coasts and trade; so that it seems not possible that the keeping those squadrons in the Mediterranean could be the occasion of the cruizers and convoys being so weak and few, and the coast so ill-guarded.

3dly. The strength of convoys is to be proportioned to the existing circumstances of the enemy, as far as intelligence can be had; and the many instances, mentioned by the merchants of convoys attacked to our disadvantage, shew by experience, that most of our convoys have been too weak.

The second head of the answer is also general: but the lords committees observe, that the great ships are the strength of the line of battle, and if more first and second rates had been employed in the Mediterranean, instead of so many third and fourth rates, and smaller ships, a much greater number of ships proper for convoys and cruizers for the protection of trade in the Channel and Soundings would have remained free for those services: or, if there was found to be a real want of such ships, timely and proper application might have been made to the parliament, who have ever been forward in providing for the security of trade: and, in the mean time, ships might have been hired, as has been often done, rather than the whole coast should continue in a manner besieged by the enemy's men of war and privateers without interruption.

2. The want of seamen is too well known, which proceeds principally from the many hardships they suffer. The constant practice now in use, in turning over or removing them from ship to ship, is, of all others, the greatest discouragement; and though the paying them at the same time they are turned over may have a fair appearance, yet, that being generally done when they are abroad, it tempts the seamen into extravagant expences, and proves, in conclusion, the utter ruin of their families.

3. Many

watching their motions. Attempts, made in the preceding reign, under the conduct of the ablest officers Britain possessed, to destroy this nest of hornets, had proved

3. Many of the inconveniences, mentioned in this paragraph of the answer, could hardly ever happen in case an early distribution was made of proper ships convoys, and the time of their departure fixed; whereas, very frequently, ships are appointed when they are at sea; and it is unknown in what condition they will return. The merchants say, that this year one of the convoys named for the Jamaica trade was at that time in the Sound.

The answer says, the queen's ships have as often stayed for the merchants, as they for their convoys: of which one instance is given in an annexed paper. The fact may be so, sometimes; but the case mentioned in the paper is not of that sort; for then the merchant ships were lying in the Downs, together with the Assistance and Dunkirk prize, two of the ships of captain Kerr's squadron, and were ready to sail, and did sail with them to Spithead, where the rest of the squadron lay: and though it may be asserted, that Mr. Kerr's ships were ready the 18th of February, at Spithead; yet it appears, that his instructions do not bear date till the 3d of March, 1706-7.

As to the third head, relating to the want of cruizers, the lords observed, that it is not the appointing cruizers yearly which will protect trade; but the careful and strict observation, that the ships appointed for that purpose do cruize accordingly:

Whereas it appears, in the account of the disposition of the fleet laid before the house of lords, that no ship was cruizing in the Soundings and Channel in the Months of June, July, August, and September last, in which almost all the galleys and homeward-bound ships, whose loss is so heavily complained of by the merchants, were taken or destroyed.

The ninth paragraph of the answer relates to the loss of the Hampton-Court and Grafton men of war, which, together with the Royal-Oak, and the merchant ships under their convoy, sailed from the Downs the 1st of May last.

The answer affirms, that notwithstanding what Mr. Dawson swore before the lords, that he was told at the Admiralty-office, on the 29th of April last, the Dunkirk squadron was gone Westward; yet there was no notice at that time of the Dunkirk squadron, otherwise than that they were in the Flemish road: wherefore, the three men of war, one of 76, and the other two each of 70 guns, were judged a sufficient convoy from the Downs to Spithead.

Sir Benjamin Ayloff, governor of the Muscovia company, and five of the committee of the same company, viz Mr. Randolph Knipe, Mr. Henry Phill, Mr. Josiah Wadsworth, Mr. Thomas Stiles, and Mr. Samuel Heathcot, beside Mr. Dawson, who was again sworn, did severally depose, that they did attend the prince's council the 29th day of April last, and then were told from the board, that the three ships designed for them were sufficient for their security, because the Dunkirk squadron was gone Westward; and four of them, viz. Sir Benjamin Ayloff, Mr. Wadsworth, Mr. Styles, and Mr. Phill, swore, they believed admiral Churchill was the person who told them so; but, as to that, they were not positive.

This matter of fact being directly proved, by so many persons of unquestionable credit, the lords committees think, that by the reasoning used in the answer, the prince's council could not judge the three men of war a sufficient convoy; and, consequently, ought not to have suffered them to sail to Westward on the 1st of May, especially considering that, from time to time, notice had been sent from

proved so successless as to render a repetition of the same project ridiculous and censurable. The only alternative that remained was to post a force sufficient to awe

the Admiralty-office, from both the secretaries of state, of the strength of the Dunkirk squadron; and when it is fully proved, that they owned that they had notice the squadron was gone Westward.

The tenth paragraph of the answer relates to the complaint of the merchants touching the Russia ships.

The instructions given to Sir William Whetstone, of the 10th of June last, take notice that the Dunkirk squadron was gone to the Northward, and that there was reason to believe it was designed for the coast of Norway; under orders to look out for, and endeavour to intercept, the fleet bound to Russia for naval stores; which made it absolutely necessary, that the convoys to that trade should be strengthened. He is therefore directed to proceed, with all the merchant ships under his convoy, as far as the Northernmost part of the isle of Shetland; and there to leave them to prosecute their voyage with their proper convoy.

The lords make this observation, that after such intelligence, sir William Whetstone's orders should have been to see a fleet of such consequence out of danger before he left them.

The 13th, 14th, 15th, and 16th paragraphs, relating principally to the former deposition of Mr. Jacob Henckell, the lords committees ordered him to attend again; and he was farther examined in relation to the facts mentioned in the answer.

He desired to observe, that the 13th paragraph made him to assert what was not in his desposition; for he did not say the corn ships were ready to sail in July and August, but that a great quantity of corn was bought in those months.

In the 14th head of the answer, much weight seems to be laid upon the circumstance, that the Nassau did not arrive at Spithead till the 20th of October; whereas Mr. Henckell, in his complaint, had sworn, the Nassau came to Spithead the 18th at night, the same day the convoy sailed from thence. To clear himself, Mr. Henckell produced two original letters, signed by Cornelius Collies, his captain, written from Portsmouth; the one dated the 19th of October, which says, the Nassau came too late for the convoy, but was at that time at Spithead; and the other dated the 25th, which says expressly, the Nassau came to St. Helen's the same night the Lisbon fleet sailed. Mr. Henckell affirmed also, that he had other advices which fully verified what he had said in his former deposition as to the Nassau's arriving the 18th at Spithead.

The 17th head of the answer says, that those ships, which the merchants supposed lay idle at Portsmouth so long, were under orders for particular services.

Upon consideration of this paragraph, and of the paper to which it refers, the matters of fact, whereof the merchants did complain, seem, in effect, to be admitted to be true: and the services for which it is alledged the ships were designed, do not appear so pressing, but that some of them might have been employed to help the merchants in their great extremity.

As to the 18th head, which relates to Coward's complaint that his ships let to freight to the commissioners of victualling were long detained; the answer says, it is not doubted they were taken up at so much per month freight; and the owners will be paid for the time they have been employed, according to the agreement made with them.

Mr.

awe them from putting to sea, in such a situation as to render the attempt dangerous, if not impracticable. Repeated experiment had shewn the impossibility of

Mr. Coward deposed, that his ships were not taken by the month, as the answer alleged; but the contract was at £.3. a ton, directly to Jamaica; which might have been performed in seven weeks: whereas, by means of the deviations complained of, they have been detained ever since the 15th of November, 1706, and were in Ireland at the time the complaint was made; whereby the ships are ruined, and left at mercy, as to any satisfaction.

The 19th paragraph takes notice how far Mr. Palmer had forgot himself, and imposed upon the lords in his deposition: for that the Litchfield prize did not arrive at Portsmouth till the 7th of June; whereas, Sir Cloudesley Shovel was off Lisbon the 9th of June; and therefore it was not possible that the Litchfield prize should have joined him at Plymouth.

Mr. Palmer being examined as to this particular, said, that in this complaint it was alleged, the Litchfield prize came to Spithead the 7th of July, not of June, as it is repeated in the answer; but owned his mistake in saying, "If the Litchfield prize might have proceeded to Plymouth, the corn-ships might have joined *Sir Cloudesley Shovel's fleet*;" whereas, he meant to have said, *the transport fleet*, which at that time lay at Plymouth bound to Portugal.

To shew that it was a mere mistake, he produced to the lords three original letters from Portsmouth, wrote by his master, Samuel Riccard, dated the 7th, 12th, and 28th of July, which mention the *transport fleet*, which had lain for a considerable time at Plymouth; and, as those letters say, sailed for Portugal about that time.

The 20th paragraph, affirming that the article in the Gazette of the 8th of May, 1707, which the merchants had produced, was very ignorantly and unadvisedly inserted, the fact being entirely wrong; the lords committees thought fit to be informed how that passage came to be put into the Gazette; and upon examination it appeared, that Mr. Stepney, the 12th of May, new stile, wrote a letter from Antwerp to the earl of Sunderland, at the solicitations of some considerable traders there, representing the hardships they lay under for want of convoy from Ostend, (though it had been promised, and several times notified on the Exchange of London), to their great loss and discouragement, and what was like to have an ill influence on that trade, which was in a way of being better established than ever: and that afterward, upon the arrival of that fleet at Ostend, Mr. Stepney wrote another letter to the earl of Sunderland, dated the 14th of May, new stile, the very words of which second letter are those transcribed into the Gazette.

The complaint of the merchants, in relation to the Virginia trade, consisted of many particulars, none of which seem to the lords committees to be answered, or excused, by what is alleged by the 22d, 23d, or 24th paragraphs of the answer; nor by the paper to which the 23d paragragh does refer.

The 25th and 26th paragraphs of the answer, which relate to the complaint of Mr. John Wood of the difficulties and delays he met with in getting his vessels, laden with corn, to Portsmouth, containing nothing in particular besides one matter of fact, viz. that the Charles galley and the Gosport, the two convoys for the corn-ships to Spithead, were so far from running from the trade, as was falsely and maliciously insinuated by Mr. Wood, that they kept the merchant-ships company,

of carrying this measure also into effect. Contrary winds, tempestuous weather, fogs, and other occurrences, naturally incident to naval operations, served at different

pany, and brought them safe to Spithead, as the captain of the Charles galley informed the prince's council by letter.

Mr. John Wood being sent for, and charged with this matter, produced two letters, which he made oath were sent to him from Portsmouth, by captain Edward Friend, the master of one of the corn ships, the first dated the 21st, and the other the 22d of June last, wherein it is expressly affirmed, that about 8 o'clock in the evening the commander of the convoy sent his boat on board the merchants, to tell them the news, that the Dunkirk squadron was at sea; and at the same time to let them know, that the convoy will take no farther care of them, but would make the best of their way to Portsmouth; and that the merchants must shift for themselves.

Captain John Falkner, the master of the Navy, another of the Ships from Shoreham, made oath, that the commander of the convoy sent his boat on board the merchants, to tell them, that he had advice of a French squadron, and that they must shift for themselves, for they would take no care of them, but would make the best of their way to Portsmouth: and he swore the convoy were as good as their word, and made all the sail they could, having got in thither a considerable time before the merchants, who were in very great danger of being taken, having been chased at least eight hours by a French privateer.

The 27th paragraph relates to the merchants complaints of the many and great losses of ships off Beachy, and upon the English coast upon their return home.

What this paragraph says, is, that these ships were *runners*, and should have put into Portsmouth till they had an opportunity of convoy; and when the merchants shall leave off trading in these gallies, or runners, which are subject to many misfortunes by going without, it is to be hoped, their losses will be less. Their lordships cannot think it strange, if the merchants are very unwilling to put into Portsmouth, in hopes of convoy, after the instances given by them of their ships lying there many months, in vain expectation of men of war to convoy them.

As to the proposal that the merchants should leave off trading in gallies, in expectation of convoys, the lords committees observe, the use of this kind of vessel was taken up during the late war, and has been continued ever since with very great success, till within two years past, during which time there has been in a manner a total neglect of any cruizers in the Channel or Soundings, or any man of war to guard their coast.

These ships are built for sailing, and also to row with oars, they carry more goods than are proper for sailing, and carry twice the number of men that a common sailing ship does, and are of force from 16 to 40 guns.

There is no convoy granted to any trade within the Streights, but to Turkey only, which is never above once in the year; and must be acknowledged to be too seldom to answer the occasions of the traders to Leghorn, Genoa, Venice, and other places in those seas.

If therefore the use of gallies, or *single ships*, be given up (for if any single ship be used in trading, it will be granted the gallies are the better sailers, and have the advantage of any common built ships), and all the Mediterranean trade is to be carried on by convoys, that whole trade will be, in a manner, lost

ferent times to render the most watchful attention on the part of the blockaders totally useless: so that the mismanagement to which the misfortunes alluded to were

lost to England, especially in respect to fish and other perishable commodities; which would soon be felt in a very heavy manner in all parts of the nation, the great consequence of that trade fully appearing by the merchants, set down in the report made upon their petition.

It is necessary, for the safety and honour of the kingdom, and of all manner of trade whatsoever, that the Channel and Soundings be well guarded; and if this be done, the traders in gallies own they have no reason to complain.

The enemy have not altered their mode of making war by sea: they always endeavoured to infest our trade by their privateers to as great a degree as they could; but it must be owned, that of late they have had better success than ever; and the great encouragement they met with, the sea, in effect, being left open to them, it is too probable will soon increase their numbers.

The merchants do insist, that the list of 1146 ships, given in by them, does not contain all their losses during the war; but, in a manner, such only as have been taken in the Channel and Soundings within two or three years last, and principally such as did belong to the port of London.

They have already had an account of 34 ships taken in the Channel and Soundings since they made their complaint to the house of lords; of which ships they delivered a list to the committee, and affirmed, that the loss of those ships, by a moderate computation, amounted to above £.170,000. They affirmed beside those named in that list, several other rich ships are missing; and many of them, they fear, have met with the same fate, the Channel and Soundings being infested with the enemy's men of war and privateers as much as ever; the neutral ships which come into the ports of Britain declaring that they have been boarded by them in those places several times in a day.

It is asserted in the answer, that at the end of the last war, notwithstanding the sums granted by parliament for its augmentation, the royal navy was less, by twenty ships, than at the beginning; instead of which it was increased by 113 ships and vessels, of which 39 were of the line of battle; beside 21 ships which were building on the 30th of September, 1697, whereof 13 were of the line of battle.

And though in the same observation it is alleged, that nothing has been given in this reign for building of ships, yet the provision for the navy in general has been much larger in this war than in the last: for, in this reign, there has been granted, for the use of the navy, including the ordnance for sea service, and the sums voted for the service of the year 1708, the sum of £.15,366,867. 17*s.* 10*d.* whereas all the sums received by the treasurers of the navy, between the 5th of November, 1688, and the 30th of September, 1697, including the money given for building of ships, only amounted to the sum of £.15,236,898. 1*s.* 5*d.*

It may be also observed, that in the year 1698 there were 105 ships of the line of battle in thorough repair; whereas it appears, that on the 1st of December, 1707, three first rates, eight second rates, and two fourth rates, wanted re-building or great repairs, which, considering the nature of the ships, makes a great part of the strength of the line of battle.

The lords committees take notice, that during the war only 25 ships of all sorts have been taken or destroyed by cruizing ships at sea; and of that number only five ships from 30 to 60 guns.

The

were owing, was to be confined to one point only, that of sending insufficient convoys with those fleets on whose safety the welfare, and commercial prosperity of Britain were considered very materially to depend.

As

The sixth observation is, that in the last war the trade of the nation had the misfortune to lose near 4000 ships.

This appeared so strange to their lordships, that they sent to the Admiralty-office to be informed if there was any list of those ships, or what ground there was for making that assertion.

The answer sent in return to this message was a printed paper, without any name of the author or printer, in which are these words: "It is generally allowed, that the number of ships and vessels miscarried does not fall short of 4000."

Upon consideration of the paper, it appeared to be a libel, written as a pretended answer to an account published by authority in the year 1695, of what men of war and privateers had been taken from the French from the beginning of that war; and it contains in it, not only scandalous reflections upon the parliaments of that reign, but notoriously false representations of matters of fact, which might easily have been known to be so at the Admiralty-office; and therefore it seems very strange that such a libel should be offered as a proof to the lords, in an answer which is supposed to come from that office.

May it please your majesty,

We having thus performed what we take ourselves indispensably obliged to, cannot doubt but it will be graciously accepted by your majesty, as coming from most dutiful subjects, who sincerely wish they may never have occasion hereafter of making addresses to your majesty, but to congratulate your successes, or to return our humble acknowledgements for the blessings of your reign.

We beseech your majesty to believe, that none of your subjects do exceed us in true respect to his royal highness the lord-high-admiral; his great personal virtues require it; and his near relation to your majesty makes it our duty; and as we do not mean that any thing in this address should in the least reflect upon him, so we are very well assured his royal highness will never suffer other persons to protect themselves under his name from a just pursuit of such faults and negligence as immediately tend to the ruin of trade, and the destruction of Britain.

There cannot be a plainer proof that some persons employed by the lord-high-admiral have made the worst use imaginable of the trust he honours them with, than in presuming to lay such an answer before the house of lords in his name.

For (not to take notice of the many things which, in the second report, have been already laid before your majesty), throughout the whole paper there are not the least hopes given, that, for the future, any better care shall be taken of the trade; on the contrary, the whole turn of the answer seems to be intended for exposing the complaint of the merchants, rather than pitying their losses. We are sure nothing can be more remote from the goodness and compassion of the lord-high-admiral's temper, and the tender regard he has always shewn for your majesty's subjects.

May

As a partial exoneration from this charge, it is to be observed, that the commerce of Britain herself, added to those of her friends and allies, whom she was bound to protect, had reached an height, which, had such protection been afforded, in the extent it was wished, and was, perhaps, necessary, would have required a navy not improbably exceeding that of all Europe. The French squadrons lay ready in their dens, like tygers, prepared to dart on their prey, whenever it should be found to pass within their reach. Though one convoy might effect its passage in safety; and a second, a third, or a fourth, might be equally fortunate; yet the capture of a fifth, owing probably to misinformation or accident, would occasion a murmur sufficient to countervail and destroy all the applause that could have been bestowed on the most consummate exertions, had they been most happily employed for months or years, in assuring the same security to the mercantile interest which it could have expected in the time of the profoundest peace. Much stress was laid, both in parliament, and in the memorials presented to the sovereign, on this or similar occasions, at the wonderful disparity of loss sustained by the English, in proportion to the French, a loss which was sufficient to excite the most serious alarm. The fact is, that this great inequality actually proved the maritime consequence of Britain; and, on the other hand, the insignificant state of the French marine. England had put a total stop to the ambitious views of Louis, by the very trivial success which she gained at the battle off Malaga. Her fleets were employed during the remainder of the war, either in insulting the coasts of her enemy, or confining the remains of his principal fleet to the port of Toulon, from whence it scarcely ever ventured to issue. Encouraged by this superiority, the British merchants had extended their speculations with a rapidity then unprecedented, and an ardour which it might have been con-

May it please your majesty,

It is an undoubted maxim, that the honour, security, and the wealth of this kingdom, does depend upon the protection and encouragement of trade, and the improvment and right management of the naval strength. Other nations, who were formerly great and powerful at sea, have, by negligence and mismanagement, lost their trade, and seen their maritime strength entirely ruined. Therefore we do, in the most earnest manner, beseech your majesty, that the sea affairs may always be your first and most peculiar care. We humbly hope, that it shall be your majesty's chief and constant instruction to all who shall have the honour to be employed in your councils, and in the administration of affairs, that they be continually intent and watchful in what concerns the trade and fleet; and that every one of them may be made to know it is his particular charge to take care that the seamen be encouraged, the trade protected, discipline restored, and a new spirit and vigour put in the whole administration.

sidered as almost impossible to have displayed in the extent to which it was carried. The commerce of France, on the other hand, had, through necessity, dwindled almost into a shadow; and there is no need of laboured argument to prove, that it must require much greater activity and exertion to capture five ships out of twenty, than twenty out of a thousand. Such, nearly, was the relative proportion between the shipping of the two countries; and though the losses which took place might be grievously felt by a variety of rich and powerful persons, yet those misfortunes certainly establish nothing either in advancement of the naval consequence of the enemy, nor are they a certain proof of mismanagement in regard to that of Britain, or its insufficiency to answer those purposes which were naturally to be expected from it.

The murmurs were in great measure closed by the serious controversy already alluded to. England became, perhaps, more cautious: her commercial speculations were regulated with more prudence, and the complainants found to their cost, that by reducing their civil concerns to a lower state, though still in a far more flourishing one than that of the enemy, they had to a certainty reduced their positive losses, but had, in the same ratio, diminished their gains also. One obvious comment naturally obtrudes itself on this occasion: that extensive loss must, in all cases of war, be the inevitable consequence of extensive commerce; that it is one of those strange, and, in some measure, scarcely comprehensible paradoxes, particularly by the actual sufferers; that the commercial prosperity of a nation may, in great measure, be deduced from the magnitude of its losses, provided it has acquired that ascendency at sea which enables it to confine the fleets of its adversary to its own ports.

CHAPTER

CHAPTER THE FOURTH.

Conditions of the different Navies of Europe from the Accession of King George the First in 1714, *to the Commencement of the War between Great Britain and Spain,* 1739—*Revival of the Spanish Marine by Cardinal Alberoni—The Attack of Sicily—Defeat of the Spanish Fleet by that of England, under Sir George Byng —Disgrace of the Cardinal—The fickle and weak Conduct of Philip the Fifth— Ambitious Views of the Queen—The Siege of Gibraltar undertaken by the Spaniards—the Enterprize abandoned, and Peace concluded—The subsequent Disputes between Great Britain and Spain—The Invasion of Sicily in* 1734— *That of Portugal threatened soon afterwards—The Interference of Britain, and Conclusion of Peace under her Mediation—The Insolence of Spain, and Depredations committed by the Guarda Costas—State of the Spanish Marine in* 1739 *—Condition of Portugal and of France—Causes which had prevented France from materially augmenting her Marine—The flourishing state of Trade and Navigation during the Peace—Reasons which produced a Diminution in the Size of Merchant Vessels—Enlargement of the Scale of Proportions adopted in constructing Ships of War by Louis XIV.—His Example followed by Spain, but neglected by the United Provinces and other Countries.*

THE different nations which aspired to the character of maritime powers had, from their own superiority of rank, reduced to so low an ebb those Mediterranean States whose strength had heretofore made some of the most formidable kingdoms tremble, that their navies might be considered as forming a part of the state regalia, intended for show only, and not contributing either to the welfare of country, or to its protection. It is a truth indelibly established, by a myriad of historical instances, that some of the greatest national revolutions and events have originated in causes apparently of the most trivial consequence, and have ripened silently into perfection, without exciting the astonishment of the world, or, perhaps, even attracting its notice. The wonderful alterations which had taken place in the Spanish marine are sufficient to form a useful lesson to mankind of the impropriety of national arrogance, and the baneful effects of public torpidity; but, after having passed nearly a whole century in the lowest obscurity, the pride of government appeared either roused by a reflection on the inferior political rank which the country then held in Europe, or the establishment of the duke of Anjou on the throne by the title of Philip the Fifth had restored a degree of energy and exertion to which it had long been a stranger. The cause of this sudden and

salutary change is attributed, by most persons, to the special advice and conduct of that great and well known personage, the cardinal Alberoni. The measure he adopted displayed a considerable share of that genius which has justly entitled him to so exalted a character. Perfectly aware that to attempt raising a marine from a state of almost absolute non-existence, without forming some basis on which the superstructure might be progressively and safely carried on, would be a matter extremely difficult, if not impracticable; he, to obviate this obstacle, caused a number of ships to be purchased in different countries, particularly France, which might be capable of being converted into ships of war, or had already been employed in that capacity. The Cumberland, of 80 guns, formerly belonging to the English, and captured in the year 1707 by the united squadrons of Forbin and Du Guai Trouin, was one of these auxiliaries; and after being matriculated in the Spanish navy, was re-named the Prince of Asturias. However inconsiderable the Spanish marine might be in respect to numbers, those who were intrusted with the direction of it, appear to have possessed rather exalted ideas as to those fundamental points which were necessary to be observed in establishing it on a permanent and effective footing. The Cumberland, when in the British service, had ranked as a third rate of the highest class; she consequently mounted 80 guns, but being found incommodious, and, on account of her small dimensions, inadequate to the purpose of displaying so extensive a force, much less of exerting it to advantage in real contest, it was deemed necessary to reduce one of her tiers of guns; so that, by degrading her from a three to a two-decked ship, they might render her more serviceable than she could have proved while in her original state of construction. A number of other ships of inferior rate became enrolled in the Spanish navy, and so indefatigable were the exertions of the cardinal and his coadjutors, that in a space of time, almost incredibly short, scarcely exceeding three years from the conclusion of the treaty at Utrecht, the world beheld with amazement, a Spanish fleet, consisting of more than thirty ships of war, making its appearance on the Mediterranean. Cagliari was the first object of its attack; and its surrender was immediately followed by the submission of the whole island of Sardinia.

In so formidable a light were the exertions of the Spanish minister held by the rest of Europe, that even Great Britain herself took the alarm, and confessed some apprehension that the ambition of Spain would rekindle those flames of war which had so long desolated Europe, and were but so recently extinguished. So early as the year 1717, Spain had the presumption to remonstrate with the court of London against the equipment of a fleet which she considered as destined to act in

in opposition to her hostile views. The firmness of the answer was construed into affront; and the cardinal, presuming, perhaps, too much on the strength of the measures which he had taken, resolved rather hastily to throw off the mask, and attack the island of Sicily, which then formed a part of the dominions belonging to the duke of Savoy. When the exhausted state of the finances of the country, the late wretched condition of her marine, the reduced state of her army, and the dreadful scarcity, both of naval and military stores, which had so lately prevailed through every arsenal of the kingdom, are considered, the undertaking alluded to, may be unquestionably regarded as one of the greatest efforts of political boldness, and the mind of the historian, while it is directed with admiration to the exertion, feels itself somewhat divided, whether it should applaud the attempt as one of the most consummate proofs of a statesman's ability, or condemn it as inconsiderate and rash in the extreme.

The fleet collected for the occasion consisted of nearly five hundred sail of transports, having on board a formidable army, provided with every requisite necessary to render their descent effectual, and their victory certain. For the protection of these vessels, a fleet accompanied them consisting of twelve ships of the line, and six others of two decks, with a number of stout frigates with lighter vessels, which, including galleys and bomb ketches, raised their number to nearly forty sail. Britain could no longer remain an inactive spectator of the intended mischief. Sir George Byng, afterwards created viscount Torrington, on account of the success he met with in destroying the fleet in question, was dispatched to the Mediterranean, at the head of a formidable force, amounting to nearly twenty ships of the line. The contest was short, and the greater part of the Spanish armament being either taken or destroyed *, the cardinal had the humiliating mortification of beholding all

* It will not be thought irrelevant, perhaps, to annex the following list, notwithstanding it has been already, and perhaps more than once printed:

		Men.	Guns.
St. Philipe	Taken	650	74
Principe d'el Asturias	Taken	550	70
El Real	Taken	400	60
St. Lewis		400	60
St. Ferdinand		400	60
St. Carlos	Taken	400	60
Santa Isabella	Taken	400	60
Santa Rosa	Taken	400	60

St.

all his mighty project overthrown in one instant. Though foiled in the principal part of the attempt, his views did not tamely sink under the pressure of the misfortune. A squadron, consisting of five ships of war, having about forty transports, with troops on board, under their protection, sailed from Cadiz in the month of February, 1719, in the romantic hope of making a descent on the northern coast of Britain in favour of the pretended son to the deceased king James the Second. Misfortune appeared to attach itself to every measure undertaken by the Spanish court. This last remnant of its naval force was completely dispersed by a storm, and the pride of Alberoni received a still more humiliating stroke, on being dismissed by his catholic majesty from his councils, and peremptorily commanded to quit the kingdom within three weeks. These violent measures, taken against a favourite who was considered as the first and chief promoter of the war, were adopted by the sovereign, in the hopes of softening his antagonists, and rendering them more lenient in those conditions of peace which they should think proper to impose on him: but his hopes were vain, and his foes inexorable. Yet,

		Men.	Guns.
St. Juan Baptiste		400	60
St. Pedro		400	60
El Perla		400	60
——	Burnt	300	50
St. Isidore	Taken	300	46
L'Esperanza	Burnt	300	46
Volante	Taken	300	44
——	Burnt	300	44
Harmonia		300	44
Porcupine		250	44
Surprize	Taken	250	36
Juno	Taken	250	36
El Galera		200	30
El Castilla		200	30
Count de Thoulouse		200	30
Tyger	Taken	240	26
Eagle	Taken	240	24
St. Francis-Assis		100	22
Little St. Ferdinand		150	20
Little St. Juan		150	20
Arrow		100	18
		8830	1284

upon

upon the whole, Britain appears to have considered Philip as a prince of whose power she need not entertain the smallest apprehension, since it was agreed that all the ships, taken from him in the engagement off cape Passaro, should be restored, or that the value of those which had been sold should be refunded to him. Though the cardinal had been dismissed, the world might have quickly perceived, that the charge made against that minister, of having been the sole cause of the preceding war, was unwarrantable in the extreme. Philip, though he had delivered himself so peremptorily from his ambitious and dangerous monitor, soon convinced both his friends and his enemies alike, that the utmost extent of the crime that could be substantiated against the favourite was his having implicitly studied the inclinations, or pursued the instructions, of his sovereign.

Although the peace between Spain and England was formally signed at Madrid on the 13th of June, 1721, yet there appeared not, by any means, that returning system of amity between the parties which was absolutely necessary to render it permanent and effectual. Treaties succeeded to treaties, and negotiations to negotiations, without any of them accomplishing the wished-for end. The congress at Cambray, the unsettled state in which the Spanish government at that time was, the irregular, the fickle, and weak conduct of Philip, all tended to prevent the misunderstanding from rising into the dignity of a public quarrel, but kept all the rest of Europe for some years in doubt, and suspence as to the event. The interest, the dangerous spirit of intrigue, together with the ambition of the queen of Spain, combined to prevent that cordial intercourse which seemed so indispensably necessary to the mutual discussion of the cause of complaint, and the affectation of respect and feeling for the misfortunes of the spurious descendant from the house of Stuart, proved an admirable excuse for the interference of that or any other court who sought a pretext for encouraging a dispute with that of Great Britain. The queen of Spain, having, by the treaty of Vienna, settled her difference with the emperor, and engaged by a subsidy his friendship, and probably his assistance if necessary, began now to talk in a more peremptory style, and insist on the restoration both of Gibraltar and Minorca. A combination rather of a dangerous nature appeared to threaten Great Britain; and the want of decision on the part of government appeared, in some measure, to favour the attempt. The squadron sent under the orders of Sir John Jennings, to cover Gibraltar, was restrained from acting offensively; and Spain, probably attributing its inactivity to the wrong cause, or presuming upon the false consequence which the respite from chastise-

chastisement gave her, had the assurance to commit a direct insult on the person of the British embassador, then resident at Madrid.

In a very short time after this, the political prospect grew still more gloomy; the Spaniards decidedly threw off the mask, and commenced hostilities, by besieging Gibraltar in form. A little experience, however, convinced them of the arrogance of their expectations, and they were compelled to abandon the ridiculous attempt, after a fruitless and inoffensive trial, which they persevered in for four months, and in which short space one half of that force, which they considered sufficient to ensure their conquest, had fallen victims either to disease or the effects of the British cannon. Foiled in this first attempt, Spain appeared seriously inclined to save herself from experiencing a repetition of mortification, by acceding to such terms of pacification as were, in the eyes of all Europe, considered fair and equitable. The preliminary articles of the future conclusive agreement were signed at Paris on the 31st day of May, 1727; in consequence of which, orders were dispatched to every quarter of the world, restraining the British officers from committing any farther acts of hostility.

Notwithstanding the proof which Spain had so recently received of her inability to effect any serious injury against Great Britain, still did the vindictive and restless spirit of the queen prevent, for several months, the final conclusion of the agreement. Sir Charles Wager, who commanded the British fleet sent to the Streights, soon received orders not to relax from the object of his equipment, but to continue his till then suspended hostilities, whenever opportunity should offer: while France, who during the minority of their sovereign, and the regency of that great, that truly honest man, the duke of Orleans, had conducted herself with the utmost candour and impartiality towards all countries whatever, beginning at this time to display a change of system and of principle, seemed, by the actual equipment of a squadron, far from contemptible in force, to be more than half inclined to declare herself as the ally of Spain. Negotiation indeed, and the prudent advice of persons who had immediate access to the queen, at length put a final period to this long, and languid state of warfare. The whole of the preceding business appears of the most inexplicable kind; and is one of those political enigmas which no subsequent information, or the most attentive contemplation, will, perhaps, enable posterity to develope, or account for. Spain, with a navy completely inadequate, even to a defensive war, provoked the quarrel with a country, the peace establishment of which alone, had it been drawn together,

together, was fully equal to a contest with her whole navy. That navy, despicable in the beginning, received a decisive blow in the action off Syracuse; yet this chastisement on one hand, neither proved sufficient to cause the submission of the Spaniards to their fate, nor, on the other, did the continuance of their insolence seem sufficient to raise the anger of Britain to such an height as to cause her taking those decided and spirited measures which have would been sufficient to decide the event at one stroke. To compare the conduct of both countries with more trivial actions, it seemed to resemble that of a powerful animal unwilling to display its own strength, and pleasing itself with the torments which its prey endures, instead of closing its miseries at once, by the stroke of death.

During the whole of this very uncomfortable period, as it certainly must have proved to the Spaniards, little or no exertions seem to have been made by them, either in the augmentation or improvement of their marine. Nor, perhaps, was it in their power, however great their inclination might be, to effect either; but, the instant the more pressing avocations rendered an attention to those points possible, the most immediate advantage was taken of it. The effect seemed instantaneous: for, as though they considered that the building a dozen ships only was sufficient to place them again in a state to renew their former unquiet conduct, they immediately began to carp, to cavil, and to dispute on various articles in the treaty which they had just before concluded. The capture of one of their register ships appeared, in some measure, to restore them to the temporary use of their reason, and the Assiento contract appeared to forbode a continuance of better understanding. The event proved the opinion had not been lightly taken; Spain being content, for some years, with displaying her pretended consequence, and confining her threats to countries less capable of making resistance against her. The success which attended the invasion of Sicily at the end of the year 1734, had the immediate effect of again rousing the arrogance of her government. A frivolous dispute concerning the servants of the Portugueze minister at Madrid was deemed a sufficient excuse for her immediate invasion of that country with a very powerful army. Britain stood forth in defence of that impotent, that unoffending people; and the court of Madrid, though highly offended at an interference which they loudly complained of, thought proper to shun the effects of so unequal a contest, by acceding to the terms which Britain, as mediatrix, proposed. The maritime exertions of Spain, had for some years preceding this event been so unremitted, as to inspire her with some degree of confidence in her own

strength, although she was not vain enough to consider it, as yet completely, sufficient to enable her to act in open display of those long-projected schemes which her pride had flattered her with the hope of being able to carry into execution. The ambition of the queen, the same cause which had, for the fifteen years preceding, kept the Spanish government in a perpetual state of secret, and, for a considerable part of the time, of publicly avowed enmity to that of Great Britain, tended to produce a continuance of the same implacable spirit. The insults, and the depredations committed by Spanish armed vessels, and particularly in the American seas, by that class called the guarda-costas; the barbarities which they were wont to commit, almost without exception, on all British subjects who were so unfortunate as to fall into their hands, seemed the certain and the immediate forerunner of the dreadful rupture. The forbearance of Britain was singular: her minister was averse to war; and cardinal Fleury, who held the same station in France, was of the like disposition. Although it seemed, in 1737, that a rupture was unavoidable, yet the dispute was carried on with the ineffectual weapons of remonstrance, complaint, and threat, for nearly three years, ere the more decisive methods were resorted to. In 1739, the disorder seemed to have reached its utmost height; it had attained to its crisis, and the recovery from it depended merely on the skilful management of those to whose care it was peculiarly intrusted. The relative situation of the contending parties appeared not to forbode the smallest room for apprehension on the part of Britain: while the navy of the latter, without any exertion whatever, in an actual state of equipment, amounted to little less than one hundred ships of war, ready for immediate service: that of her threatened antagonist reached not forty. Many were included even in the latter number, which scarcely deserved to be ranked as ships of war, being vessels, which though armed even to a formidable extent, must be considered as of an inferior class, being built for the peculiar service of conveying treasure from America to Europe; and its required protection from any free-booter, or unauthorized adventurer, who, allured by the consequence of the prize, should be hardy enough to attempt the seizure of it.

Of Portugal, and France itself, it is scarcely necessary to take any material notice, during the section, or particular period of time included between the commencement of the year 1571, and the conclusion of 1739. The former country, ever inferior to her neighbour, sought not, by any extravagant attempt, to expose herself to the ridicule, and, perhaps, the vengeance of a power to whose superior

superior weight it was evident she must of necessity bend, unless supported by extraneous assistance, which she could only sue for as a compassionate act, and not equitably demand, as a natural right. Happy was her state of insignificance, for, except the immaterial convulsion which took place in 1735, no event whatever appeared to threaten her perfect quietude from the conclusion of the treaty of Utrecht, to the commencement of the rupture between Spain and Great Britain in 1739. The situation of France was, indeed, materially different; although it might not have been possible for that country to have effectually convulsed the peace of Europe, yet it certainly was in her power to have very materially disturbed it. The conduct of Louis the Fourteenth had proved the capability; but the honesty of those to whom the regal authority, during the minority of his successor, became delegated, prevented the exercise of it. The regency of the duke of Orleans was favourable to peace: he had too much prudence and political sagacity to plunge his native country into any dispute which, though successful in its extreme, he saw, from the contemplation of preceding contests, must be ultimately injurious to it; and he had too much philanthrophy, as well as benevolence in his composition, to endanger the peace of other countries, with whom that of his own was probably connected. The internal distress of the kingdom, occasioned by the Missisippi scheme, and other causes, which it were immaterial to enter into any particular detail of, contributed to favour the pacific disposition of the regent himself; and the continuance and adherence to the same principle, though from different motives, which marked the administration of Fleury, the favourite and minister of Louis the Fifteenth, after he assumed the reigns of government, were as equally productive of the same effects, which the more enviable qualities had been, in the former instance. The marine of France, though reduced to a state incapable of materially disturbing the peace of Europe at the time the treaty of Utrecht took place, still remained perfectly sufficient to every system of defence and protection which reason, and a moderate system of political principles could require. Notwithstanding it experienced little or no augmentation during the pacific period which succeeded the event just mentioned, yet it certainly suffered little or no degradation; and its state of respectability ensured to the country a continuance of quiet. The interval alluded to was indeed particularly favourable to the naval tranquillity of all Europe. Sweden, Denmark, and Russia itself, following in the rear of those countries to whom they yielded, without dispute, precedence, passed through the same æra almost without molestation, because they

gave no material offence, and attempted not to disturb the peace of other nations because no object sufficiently consequential appeared to engage their attention, or to stimulate their ambition.

The causes just described, unfavourable to war, were, on the other hand, productive of peculiar advancement to trade, and to navagation. These exertions, however, were not unattended with ill consequences peculiar to themselves. The well-known Missisippi scheme involved half France in irretrievable ruin; if the sudden transfer of a property, in a great measure imaginary, from one part of the community to the other, could be considered so. The South Sea scheme, which had blazed in the most terrific splendor, was productive, in its pecuniary effects, of injuries not less sensibly felt by the people of Great Britain. Its very embers, after the conflagration itself had ceased, fanned by the faint hope of acquiring imaginary wealth, served to embroil the country with Spain, and at last engage it in a contest which, successful as its termination proved, caused a greater expenditure of treasure than could ever have been derived by the most complete admission of the justice on which the point in dispute stood. Trade, however, might be said to have universally flourished; the minds of speculators enlarged with their success; and the spirit of enterprize naturally increased in proportion to the pecuniary emolument which they derived from it.

India, that most formidable source, from whence luxury and avarice derived their maintenance, afforded a never-failing support to both. But, however lamentable the primary causes may be, to which the effects themselves are attributable, they were all equally productive of advancement, not only of the principles of navigation and marine architecture, but of that general knowledge and improvement which, while it amuses, raises the human mind to the utmost pitch of cultivation and supposed excellence; which, while it affords the sensual man the power of indulging his appetite; the enterprizing man, with the means of gratifying his ambition, in some measure palliates the deleterious effects of those unphilanthropic principles by the dissemination of knowlege among nations hitherto esteemed barbarous, and the procurement of that information which studious men thirst for, which benevolent men are anxious for, in the hope of alleviating the misfortunes of the wretched, and which even the most indolent persons are not indifferent to the acquisition of.

The consanguinity both of principle, and of idea, which in all countries, and in all ages, has been transferred from the construction of vessels intended merely for warlike purposes,

purposes, so that it soon became discernible in those built for commerce only, has been so little varied from, as not to excite either doubt, or surprize. The improvements, or to give them, perhaps, a more proper term, the augmentations which, toward the end of the seventeenth century, took place in the science of marine architecture, convinced practitioners and adepts they were not properly acquainted with the extent of their own powers, and that height to which it was not only possible, but highly probable their labours might be carried. Experiment, generally speaking, takes place in quarters, and on occasions, where the least danger is to be apprehended from it. The boisterous billows of a northern ocean appeared to militate very strongly against any attempt at innovation; there the greatest risk of misfortune existed, and the smallest deviation from principles, the effect and result of which had not been experimentally proved, appeared to be, with great prudence, most studiously avoided. In the more southern climates, such experiments were naturally considered as far less dangerous. Although the earlier part of the preceding century, and a period still more remote, had given to the world vessels which, without hyperbole or extravagance, were esteemed, and denominated prodigies; yet the frequent misfortunes which attended the use of them had sunk them into discredit, and even into disuse. The carracks of Genoa, and of Venice, were succeeded by vessels of the most inferior dimensions; and the only mode of counter-balancing the wonderful change, appeared to rest on opposing numbers to magnitude. In the remotest ages of the revival of commerce, and the renewal, if the term be allowed, of the science of navigation, the commercial marine appeared on most occasions, to exceed, and on all, to vie with, that of the state. To this cause may certainly be attributed that neglect so universally paid by all sovereigns to their navy, while they found, that on any sudden emergency, they could have immediate recourse to the vessels of their subjects, which were as fully competent to the task of asserting the honour of the prince, and vindicating the honour of the state, as any they themselves could cause to be equipped. In process of time, a slow, though progressive change of system took place. The heavy losses sustained by private individuals, on account of the wreck of one ship, so extensive in bulk, and containing merchandize of so high a value, naturally caused a division of that property into smaller parts, so that if the gains were inferior, the losses, on the other hand, might be less injurious. Ships peculiarly, and solely intended for war were then of necessity built, for the consideration just mentioned had not the smallest effect on the marine of the state. Power and might were the only expected requisites; and neither the

expence attending the extension, nor the danger which accompanied the loss of a ship, built on the most enlarged principle, were considered as sufficient to counterbalance the advantages derived from the possession of it. France first made the experiment, and other countries, though slowly, followed her example. Spain, in consequence of those ambitious projects, which Philip and his queen had formed in their own minds, appeared among the earliest to enter into the fashion. With this country, indeed, it might rather be considered as the revival of an ancient custom, than the introduction of a new one. The same ideas which suggested the construction of the Princessa, one of the largest ships, considering her force, which had, at that time, ever been built, was nothing more than a re-adoption of those measures, which, in the reign of Elizabeth, had caused the imperious monarch, of the same country, to extend, in some instances, the dimensions of his shipping, far beyond what had ever been practised since the regeneration of the art, subsequent to the irruption of the Goths.

Although the example first shewn by Louis the Fourteenth, a short time before the peace of Utrecht actually took place, might certainly be considered as the foundation, yet the superstructure appeared so weighty, as to require no slight degree of attention, in order to render the union between them sufficiently apparent. The augmentation was certainly advantageous, although the extravagant extent to which it has, on some occasions, been carried in times less remote, may induce many cool and dispassionate admirers of the science to doubt whether the dangerous effects that might be produced, on one hand, by the extravagant extension alluded to, might not more than counterbalance those inconveniences which gave birth to the augmentation.

Among the different European states, France and Spain only, appear, at this time, to have stepped beyond the track of their ancestors. The United Provinces, deriving wisdom, if attention to nothing but their own pecuniary interests can be said to deserve that name, from experience, banished from their minds the visionary hope of conquest and dominion. They seemed perfectly contented with the occupation of acquiring wealth, through commercial intercourse, rather than risk an attempt at the acquisition of it, by the dangerous attack of any other country, which, at all events, was an expensive, and not improbably a dangerous measure. The result was natural: many of the private vessels, the property of their merchants, and, almost without an exception, those belonging

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to their public companies, vied in dimensions and equipment with those of the state. In numbers, the former increased to an height almost incredible, while the latter, from the want of necessity as to its assistance, was suffered to diminish almost into a non-entity. In a country where nature itself might be almost said to have prescribed the laws of the science, little alteration can be expected as to its principles; and the same account may serve, together with their remote situation from all scenes of contest, but what might arise among themselves, for that of all the northern powers of Europe.

CHAPTER

CHAPTER THE FIFTH.

State of the British Marine at the Conclusion of the Treaty at Utrecht—The Disputes which took place with Spain during the succeeding Peace—The Measures adopted by Britain, during that Period, for the Preservation of her Marine—The Conduct of Sweden, with the spirited Measures adopted by Britain in Consequence of it—The restless Conduct of Russia—State of the British Marine in 1730*—The Interference of Britain in the Dispute between Portugal and Spain—Depredations committed against the British Commerce by the Spanish Guarda Costas—State of the British Navy at the Commencement of the Rupture with Spain,* 1739*—Ill Construction of the Ships composing the British Navy at that Period—A brief Statement of the mistaken Principles on which the Marine Architects of Britain then acted—The Inconveniences under which Ships so contrived and built naturally laboured.*

THE peace of Utrecht left Britain in possession of a very formidable naval force, while that of her foe, dispirited as she must have been by the events of the preceding war, appeared little disposed to disturb her tranquillity, at least for some considerable time to come. Her condition, however, was far from a quiet one; and though for, nearly, the thirty years succeeding the cessation of hostilities, no event took place which could be said to merit the name of direct war, if the petty intervening disputes with Spain, which ceased almost on the instant of their commencement, are excepted; yet the frequent equipment of fleets exhibited a state of suspicion, and preparation which at least served to keep her seamen alert, and find employment for her shipwrights. Policy, indeed, had not the supposed necessity of the measure existed, would certainly have dictated a proper attention to both; and though the naval events which related to Britain are less interesting than those in any other of the same length had been, from the commencement of the reign of Henry the Seventh, yet the civil department seems to have been by no means neglected. Attention, however, did not extend beyond the construction of a sufficient number of ships to replace those which, through natural decay,

decay or accident were lost to the service; for the dimensions and principles which had been introduced so early as the year 1700, were continued, as will be hereafter shewn, with little or no alteration, like fixed principles, which it were almost impious to deny the propriety of, and certainly impolitic to deviate from, till the conduct of other countries rendered a material alteration a matter of necessity, and not of choice. To return, however, to the various events, uninteresting as they in general may prove, which took place from the commencement of the reign of George the First, to that of the serious and justly provoked war with Spain in 1739.

Sweden, distant as her situation was, and little as any dispute with that country might be apprehended, first, on account of her naval impotence, speaking comparatively with the strength of Britain, and secondly, on account of her locality, was the first object against which it became necessary to shew to what extent the power of Britain could be raised, whenever circumstances should require its being called into action. The affront was provoking, though the attempt was almost too contemptible to demand a serious chastisement, had the satisfaction required been resisted with less prudence, and more peremptoriness than it was. The nation had, as it is well known, been for many years in a state of the utmost confusion. The monarch, an exile in a distant country, the victim to his own folly, and very extravagant conduct, had reduced the state itself to the most deplorable condition. Beset with enemies on every side, the senate or regency, in whom the power of governing was vested during his absence, scarcely possessed the power of defending their frontiers from the encroachments and ravages of the foes which surrounded them. The distresses which the body of the people suffered on account of imposts unavoidably laid on, compelled, as it were, the government to connive or wink at a number of improper acts, which private adventurers, having a bold and enterprizing spirit, engaged in, for the double purpose of enriching themselves, and affording, in a secondary light, some trivial benefit to the state by the captures which, with an irregularity of conduct bordering on piracy, were made indiscriminately on the vessels of almost all nations which were unfortunate enough to fall in their way. Britain, as being the most powerful, stood foremost to chastise this conduct: representations were made, and as is not unfrequently the case on such occasions, almost without effect; but the appearance of Sir John Norris, with nearly twenty ships of the line under his orders in the Baltic, seemed more likely to accomplish the desired purpose. There existed, indeed, a second ground of complaint, not so public, perhaps, as that already assigned, which originated in

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the absurd, and imprudently insulting measures taken by the sovereign himself. His anger appeared feminine and impotent; and, as though resolved to irritate a government whose power he would not but stand in awe of, he attached himself so warmly to the cause of the supposed descendant from the house of Stuart, that he is said to have actually had it in contemplation to attempt the invasion of Britain with a formidable army; and to have resolved on taking the command of it himself, in the hope of rendering its operations more effectual. The British commander, and those under whose orders he acted, seemed as though they compassionated this fallen state, and were unwilling to throw into a greater paroxysm of distress a nation apparently involved in almost irretrievable ruin. No hostilities whatever took place, and the dispute, though not compromised, even during the year, rather seemed referred to the decision of the ministers pens, than the cannon of the fleets belonging to the different countries. During the two ensuing years, a repetition of the same measures continued to preserve a remembrance that the dispute existed, without displaying any decisive measures taken, toward bringing it to an issue. The death of Charles concluded the dispute; but even before that event took place, it appeared, far as attention could be paid to the schemes and intrigues of politicians, to be in a fair and regular train of adjustment.

'Ere, however, this long impending, though far from dangerous cloud had been dispelled, the supposed ambitious views of the cardinal Alberoni, with respect to Italy, rendered it expedient to send into the Mediterranean an armament under the orders of Sir George Byng, not inferior to that which, as successor to Sir John Norris, he had commanded in the Baltic. His Eminence appears to have been either fatally presumptuous in regard to his own strength, or to have trusted, perhaps, to alliances or diversions from Sweden which were never carried into effect. Notwithstanding every dispassionate and cool representation of the absurdity of his conduct was made to him, yet such was his obstinacy, that he chose rather the fleet of his sovereign should rush into certain destruction, than alter those measures and opinions which he had very hastily and imprudently adopted. The almost total destruction of the fleet under admiral Castaneta closed the scene of naval contest: for although hostilities were not actually declared in form, till four months after that event had taken place, which might have been considered as having put a period to their existence, yet Spain, having little or no naval force in reserve, that of Britain, of course, had no occupation left it, except of parading in triumph over the Mediterranean sea, without meeting a foe to contend with. Various less consequential attempts, indeed, were made by the Spaniards to distract

tract and alarm the country by a threatened invasion; but the complete incapacity under which the enemy laboured, of supporting their intentions by the protection of a proper naval force, rendered totally abortive the whole of their projects; the utmost they were capable of effecting being the introduction of a body of troops, not amounting to four hundred in number, into Scotland; where, as might naturally have been expected, they were happy in being permitted to surrender themselves, a few days afterwards, prisoners of war, without hazarding the smallest resistance.

The alliance between Great Britain and France being at this time of the most cordial nature, the whole of Europe appeared at their disposal; and yet the differences which arose with other countries, except in this instance with Spain, never exceeded the equipment of a force capable of being called into action should the complaint be neglected, or the injury which it pointed out be refused redress. After the death of the turbulent Charles, the disposition of Sweden toward Britain became, on the instant, completely changed. Russia, however, in the character of the implacable enemy to the former, appeared as threatening to drive her into a still lower abyss of distress than the utmost effort of his arms had, ere that time, been able to accomplish. Britain generously stood forth as the protectress of the former; and the customary remedy, a fleet sent thither under the orders of Sir John Norris, compelled the Czar, much against his inclination, after some diplomatic protraction, to conclude the treaty at Nieustadt. The tranquillity appeared general for some years after this time; but in 1726, an alliance having been entered into between Russia and Spain, which evidently had for its object an attack on Britain, it was deemed necessary again to send a fleet into the Baltic, under the orders of Sir Charles Wager: its effects were almost instantaneous; the Czarina, dowager to Peter the Great, notwithstanding her inveterately inimical disposition toward Britain, was prevailed upon, by the prudential council of her friends, to dismantle her whole naval force, as the most likely method of preserving it from insult or destruction. Similar measures were adopted with regard to Spain; but the British government, continuing to display the same pacific disposition, which peculiarly marked all its measures during this period, rather exposed itself to the censure, than the admiration of the rest of the world, by the extravagant height to which its forbearance was carried. Although the hostile intentions of Spain were too well known to admit of either controversy or doubt, yet the British squadrons sent out for the express purpose of awing that country and its government into submission, were

restrained, so completely, from acting decisively against an inveterate, though impotent, enemy, that, as is justly remarked by historians, those squadrons, which, on their first appearance, had been objects of universal terror to the Spaniards, became, long ere their departure, those of mirth only.

This was more particularly the case in the instance of admiral Hozier; and the mind of posterity will, perhaps, be in some degree puzzled, whether they should attribute the moderate conduct of Britain to consummate benevolence, or a much less meritorious cause, indolence and ridiculous timidity. This dispute was not thoroughly disposed of, when a renewal of attack, said to be meditated by the Czarina, against Sweden, caused Sir John Norris to be once more sent into the Baltic with the accustomed palliative, which had been so often used with success, in that quarter, in the settlement of national disputes. These measures were effectual, and instantaneously so. The Spaniards, cured of their unquiet conduct, by so many proofs of their impotence, were glad to rest contented, in that rank among nations, which Providence had allotted them; and Russia, from the experience of the inefficacy which attended her former dispositions toward Sweden, resolved to conduct herself with more temper, and behave less unneighbourly than she had, for some time, been in the habit of doing.

Britain, of course, enjoyed an uninterrupted tranquillity for seven years; nor was it then invaded, except in the most trivial manner *. A dispute of a very futile

* Her navy consisted, in 1730, of 119 ships of three and two decks; and though no less than 44 of the latter mounted only 54 guns each, yet they were, at that time, considered as vessels fit to be stationed in a line of battle, and were ranked accordingly. — To enter into more minute particulars, in the British marine were enumerated —

Seven first rates; the Victory, of 110 guns; the Britannia, Royal Anne, Royal George, Royal Sovereign, Royal William, and London, of 100 guns each.

The second-rates were 13 in number, all of them mounting 90 guns each; the Marlborough, Blenheim, Barfleur, St. George, Prince George, Prince, Princess, Vanguard, Neptune, Union, Namur, Sandwich, Ramilies.

The third-rates were nearly three times more extensive, as to their numbers, than both of the preceding taken collectively. They amounted to fifty-five sail; fourteen of these, the Cornwall, Boyne, Dorsetshire, Devonshire, Cumberland, Shrewsbury, Russel, Norfolk, Chichester, Humber, Newark, Lancaster, Ranelagh, and Torbay, were of 80 guns.

Twenty-three of 70; the Lenox, Nassau, Royal-Oak, Northumberland, Ipswich, Kent, Bedford, Bredah, Berwick, Hampton-Court, Prince-Frederic, Grafton, Edinburgh, Essex, Captain, Elizabeth, Buckingham, Burford, Revenge, Orford, Stirling-Castle, Suffolk, Yarmouth.

One of 66; the Monmouth.

Sixteen

futile nature had arisen between the courts of Spain and Portugal; the latter, as being the weakest, was, of course, threatened with all the vengeance, arrogance and consciousness of superiority could inspire, while Portugal, like the pigeon under the talons of the eagle, crouched from the dreaded stroke. Britain here effected the deliverance of the oppressed; and the mere appearance of her squadrons in the Tagus produced, without hesitation, the same effect which had, almost without exception, attended the adoption of the same measure in other quarters of the world; so that the consequent emancipation of Portugal from the fangs of its enemy was produced, as it were, by political magic.

Sixteen of 60 or 64; the Dreadnought, Canterbury, Dunkirk, Kingston, Lion, Exeter, Mary, Medway, Montague, Rippen, Nottingham, Plymouth, Sunderland, Superb, Windsor, York; with the Antelope of 58 guns; and the forty-four fourth rates already mentioned.

Independent of theſe, were two ships of 50 guns; one of 48; ſeven of 42; and ſixteen of 40; three large frigates of 36; two of 32; nine of 28 or 24; and eighteen of 20; to which were to be added nearly two hundred sloops of war, fire-ships, bomb-ketches, tenders, store-ships, yachts, hulks, cutters, and small vessels, forming a part of the state navy.

What might not have been expected from a force apparently so consequential! It had increased, during the nominally pacific interval which succeeded the demise of queen Ann, to the amount of sixteen sail; all of them belonging to that particular class of ships, the third-rates, which are very justly estimated as the strength of a fleet; while in the lower classes, which are also of the utmost consequence in the hour of actual hostility, to preserve the country from the insults and depredations which would otherwise be committed by the enemies corsairs, a fourfold augmentation had arisen during the same interval.

The neglect, or to assign a less reprehensible political reason, the want of power, on the part of France or Spain, which had sunk their marine to a state of contempt, even taken conjointly, when compared with that of Britain, appeared to promise her a long continuance of that tranquillity which her forbearance, in some instances, and her energy on others, appeared as entitling her to.

Amid these hopes, however flattering, specious, and well founded as they might appear, science seems to have been much more neglected than at any preceding, or, as it is hoped, it will be at any subsequent period. The consequence, and value of a ship of war, was estimated by her nominal force; her capacity and power of exerting it properly was almost totally disregarded, as though foreign countries were to be intimidated from entering into contest on barely inspecting the statement of the naval force which Britain nominally possessed, without inquiring into the quality, or its capability of exertion. A consciousness of this circumstance seems to have actuated all countries in their measures, without their perhaps being sensible of the cause from whence their different political conduct toward each other ſprung. However this might be, the neglect and contempt of example might have proved fatal: but the danger innocently passed over, and a consciousness of having avoided it, will, in all probability, afford so useful a lesson to posterity, that it never will incur a chance of its repetition.

Immediately after the amicable termination of this dispute, the insolence of Spain, which had long been smothering, covered with the deceitful ashes occasioned by its own flame, burst forth so ostensibly, as to be completely manifest, though it might not be considered dangerous. On the latter ground, its effects appeared rather the object of cool representation, than of serious alarm. It was treated accordingly, and, as the event proved, improperly. Various were the depredations, numerous were the insults, extending even to injuries of the most atrocious nature, committed against the subjects of Great Britain, by vessels fitted out under the orders and immediate direction of the Spanish government, particularly in the American seas. The complaints were numerous, and the murmurs of the British nation continuous. Ministers, however, appeared to consider the actual commencement of hostilities against a rich and powerful country as a measure of too much weight to be hastily entered into, and requiring something more than the support of an individual injury to authorise, or render it necessary. They resorted to the customary preliminary of complaint, a species of moderation which increased the arrogance of an opponent, already too haughty. Remonstrance was either neglected, or, when pretendedly paid attention to, was disregarded in respect to redress, as a matter of not the least moment. The last effort of a minister, who wished to invent every possible excuse for not entering into a war was then resorted to, a convention was proposed, and, with considerable difficulty, agreed to by the British nation. The terms, though far from agreeable to it, were acquiesced in, as in a matter of regular arbitration, where the decision was considered as binding to both parties, however contrary the result might be to the general expectation. Advantageous as they certainly were, on the mere ground of debtor and creditor, to the Spanish nation, the latter had the hardiness, or rather the folly, to refuse complying with it. The country lost all patience, and the war, which had so long been considered as absolutely inevitable, was now on the point of bursting forth with the rapidity of a volcano, long stifled in its eruptive efforts, which at length acquires sufficient strength to overcome the massive weight which had so long restrained its violence.

The British navy, at this time, consisted, according to authentic documents, of thirty-eight ships of the line, actually in commission; namely, one of 90 guns, five of 80, twelve of 70, and twenty of 60; exclusive of nineteen ships of 50 guns, and twenty-seven vessels of inferior rates, none of which carried less than 20. Independent of these, twenty-four other ships, of two and three decks, two mounting 100 guns each; as many 90; six 80; four 70; and ten 60 or 50;

besides

besides eight frigates were ready, at a moment's warning, for immediate service. Such was the publicly avowed condition of the British navy, while that of Spain, as already remarked, notwithstanding every exertion she could make, equalled not half that number. It becomes necessary, however, to make a short remark, injurious as it may prove to the credit of marine architecture, according to the principles practised in Britain from the conclusion of the treaty of peace at Utrecht, to the period when the British navy was in the state just mentioned.

France had, in great measure, attended more to improvement than augmentation. Spain had, through necessity, been equally attentive to both. The ships of the latter, inconsiderable as the number might be, were confessedly superior to those possessed by any country in Europe. Britain, on the other hand, though in respect to numbers and nominal force, in possession of a navy exceeding that which France, added to Spain itself, could boast of, was unequal, perhaps, to the task (let not this be considered as an arrogant national assumption) of contending with half that number, had they been constructed according to the principles then practised by the Spaniards, and the combatants been transferred from the ships of one country, to those of another.

Whether it was to be imputed to Britain, that in the arrogant and supposed superiority of her numbers only, she rejected, as beneath her notice, those systems of improvement introduced by other countries; whether her ministers were blindly lulled into security from a confidence in that terror which her nominal power was expected to create; or whether a dull and ignorant prejudice persuaded a continuance in, and adherence to, certain principles which other countries had wisely overcome, and whose example the marine architects of Britain most contemptuously disdained to follow, is a point, which it is now, and, perhaps, ever was, extremely difficult for more than a dozen persons in the whole kingdom, who prudently kept the secret securely locked within their bosoms, to decide. Certain it is, however, that although the force of the British navy might, from the recapitulation, excite terror in many countries which surround it, yet no one, at that period, possessed a fleet, the ships composing which, were, as far as the structure and theoretical part of the science extended, worse contrived for the service of their country. Destitute of almost every principle that could constitute a ship of war, fit for the varied species of service which it must ever be prepared to enter on, they were crank, in general heavy sailers, of ill stowage, confined, and inconvenient in the hour of battle; the larger ships frequently incapable of employing their lower-deck guns, in the use of which their most efficient force consisted,

except

except in the most moderate weather, and the smaller, particularly in the lowest classes, absolutely dangerous, except in the most tranquil seasons. These principles, and the remedies to their inconveniences, will be hereafter explained with more propriety than in this place. Suffice it for the present, that a fact is repeated, universally known as it may be to the whole world, that Britain, inferior as the qualities of her ships might be, effected the ruin of the Spanish navy, together with that of France, which, ere the conclusion of this too long subsisting dispute, most inconsiderately attempted to support the distracted cause of the former.

CHAPTER

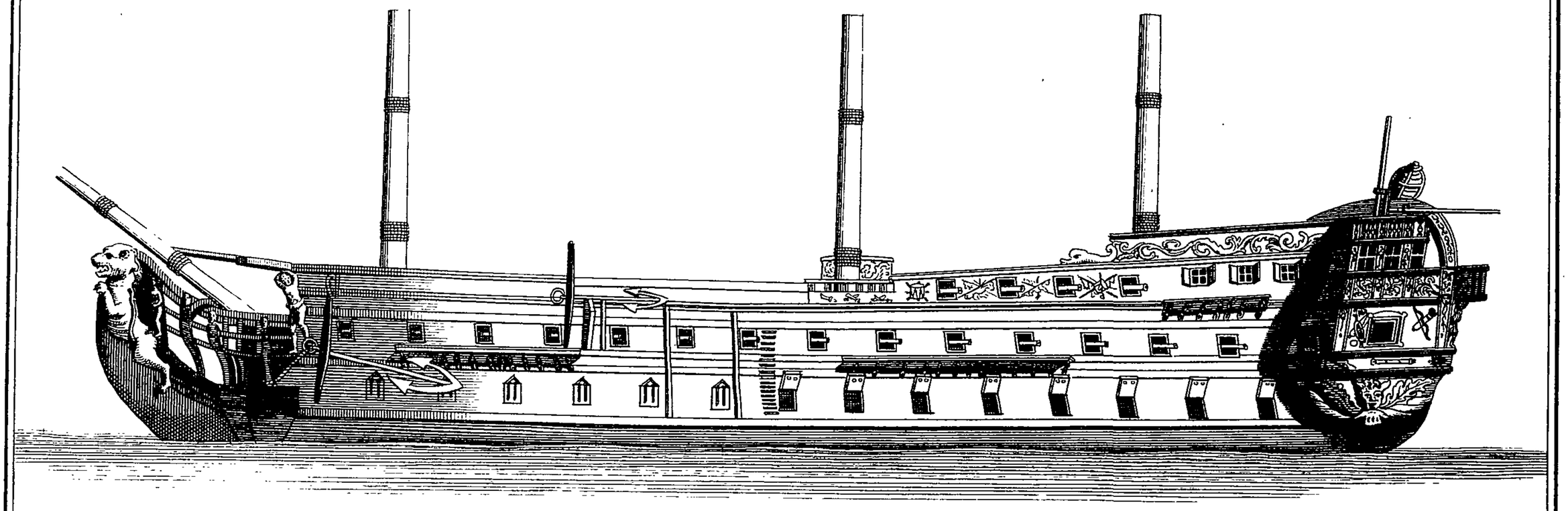
CHAPTER THE SIXTH.

The Effects produced by War on the Spanish Marine—The trivial Injury which it sustained notwithstanding the Successes of Great Britain—Force of the Squadron which engaged Mr. Knowles—The long suspicious, and afterwards hostile Conduct of France—The Disaster which befel the Fleet ordered from Brest into the British Channel—The Superiority of the French Marine in the Indian Seas—The ill Success of the Expedition sent to attempt the Re-capture of Louisburg—Defeat of the Squadron intended for India by Mr. Anson and Mr. Warren, with the subsequent Misfortune which befel a second Armament, the Whole of which was nearly captured by Rear Admiral Hawke—Measures adopted by France in the civil Management of her Marine subsequent to the Treaty of Utrecht—Its Force at the Time that Event took place—Her Conduct contrasted with that of Britain, in regard to the Principles of Marine Architecture severally embraced by both Countries—The Commercial Losses of France, Spain, and Britain, during the War—The Aversion of the United Provinces to engaging as Parties in the naval War.—Their final Determination—The inoffensive State of the Northern Powers of Europe.

SPAIN, after having committed a long-continued series of provocations, found herself seriously engaged in war, and made a much longer resistance to the very superior force with which she had to contend, than could have been fairly expected from her. Attacked and worsted as she was in every quarter, the successes of her enemies were not only far from rapid, but were frequently attended with those inconvenient checks which convert a partial victory almost into discomfiture. The well-known expedition against Porto-Bello, successful as it proved, effected no injury against the Spanish marine: that still more consequential one undertaken against Carthagena, was little more destructive; for, though the Spaniards had the mortification to see five of their ships, mounting from 60 to 70 guns each, taken or destroyed; yet the expence which Britain was put to in countervailment, together with the loss of men, and other inconveniences, far overbalanced the success, which certainly was trivial, when compared with the labour which it cost her enemy to effect it. Even the luckless expedition to the South Sea, undertaken to parry any attempt that might be made by the squadron sent under the orders of commodore Anson in that quarter, was far from being so injurious, considered in a national light, as

the pompous vanity of some historians have endeavoured to represent it. If shipwreck fatally attended the Spanish armament, it scarcely proved less destructive to that under Mr. Anson; so that the whole advantage gained, appears to have been the mere enrichment of the few individuals who survived the fatal expedition; and the depredations committed on a defenceless town, in a most distant quarter of the world, the situation of which totally precluded the inhabitants from bearing any part in the contest, except what was impotently attempted toward their own defence.

After the total failure of the attempt on Carthagena, the principal part of the British armament returned to Europe. The Spaniards possessing at that time a marine force in the harbour of the Havannah sufficient to counteract any attempt their enemy might make on the most important of their possessions in that quarter of the world; they seemed little attentive to any casual impression made by a desultory expedition in a less defensive quarter. The result proved the wisdom of their determination; for they contrived to keep a considerable part of the British navy in constant employment during the whole war, while their own ships neither suffered injury, nor encountered the slightest risk. Similar measures adopted in other quarters, were nearly productive of similar consequences; so that, except in the instance of the Princessa, a Spanish ship of war, mounting 70 guns, captured by three British vessels, nominally of the same force, but infinitely inferior, as well in equipment, as other points, the Spanish marine sustained no injury material enough to deserve notice, during the first four years of an open war against a foe so confessedly her superior. Wearied, however, with the continuance of a cold, defensive system, and irritated by those losses which, in spite of every precaution, her commerce sustained, France was allured to become a party in the dispute, as much, perhaps, by a natural enmity born to England, as by the hope of pecuniary gain from the assistance rendered in the time of need. The alliance was productive of very trivial advantage. A contest took place immediately after the combined force had quitted the harbour of Toulon; but, notwithstanding the allied fleet was considerably inferior to that of Britain, it effected its retreat from the latter, after a long, though partial contest, with loss of one ship only, the Poder, of 60 guns; which the British, being unable to carry off, were compelled to set on fire. The Spanish division consisted of one ship of 114 guns, the Real Infanta; four of 70 guns, the Constant, the Isabella, the Hercule, and the Amerique; six of 60 guns, the Orient, the Brilliant, the Neptune, the San' Fernando, the Superbe, and the Poder; one of 54, the Retiro; and two frigates.



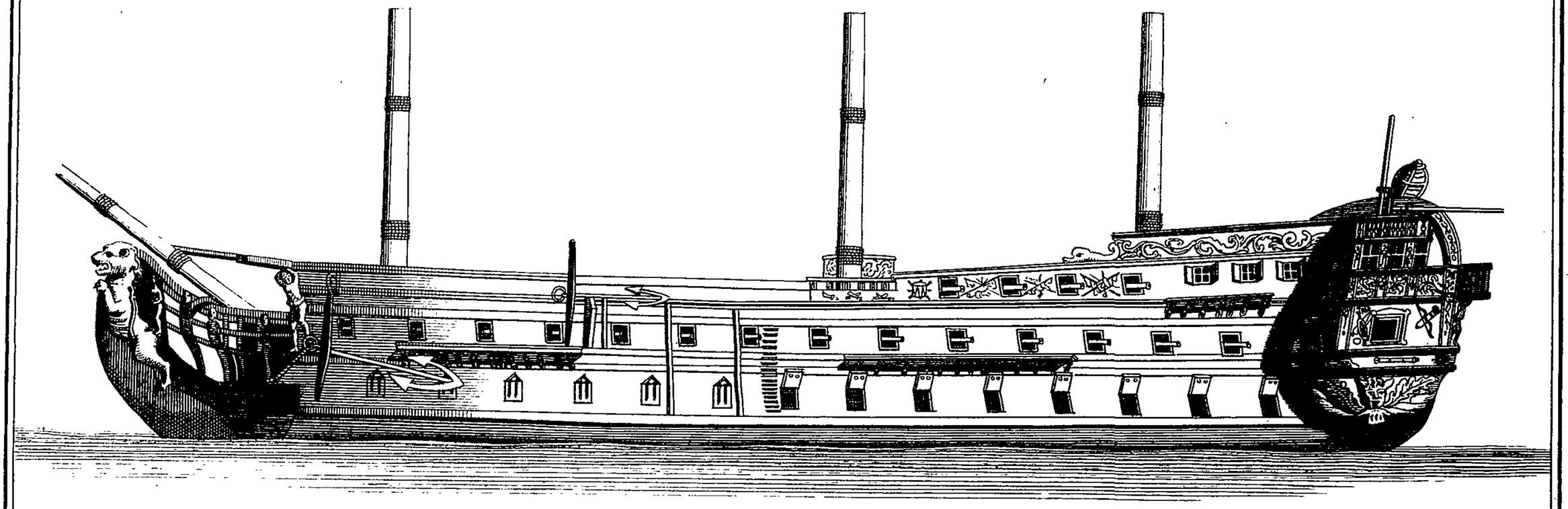
John Charnock Del.t

Newton Sculp.t

The Glorioso Spanish Ship of war, mounting 70 Guns, Taken by Captain Buckle in his Majesty's Ship the Russel.

frigates. This force, which consisted of no more than twelve sail of the line, formed the principal part of all the naval strength possessed by Spain in the Atlantic. Detached squadrons, on other services, she possessed none; nor, at this period of the war, had she any number of single ships employed as cruizers. It appears, therefore, that except the squadron stationed in the Weſt Indies, for the purpose of forming some species of check to the Engliſh in that quarter, the whole of her marine, even including such vessels of force as were unavoidably employed in the conveyance of their treasure from one part of the globe to another, exceeded not thirty ships of two decks, with about the same number of frigates. In the American seas, the preservation of the Spanish colonies seems to have been in a much greater degree owing to the strength of their fortifications, the inclemency of the climate, and several instances of mismanagement which took place on the part of Britain, than to any protection they did, or could derive from their ships of war. Few of them ever came into contact with those of Britain, exclusive of those already mentioned, except the Princessa and Glorioso, of 70 guns each, both of them captured at different periods; the Africa and Invincible, of 74 guns; the Conquestador, the Dragon, the New-Spain, and the Royal-Family, of 64 guns each; with the Galga, of 36. The seven last-mentioned vessels composed the squadron under admiral Reggio, which engaged Mr. Knowles off the Havannah, in the month of November, 1748; in consequence of which action the Conquestador was taken, and the Africa totally destroyed.

The attention of Spain appears, indeed, to have been applied during the war in a far greater degree to the general improvement of her marine than to the augmentation of it; and it is not difficult to point out the reason of this conduct. The adopted measure rested more on science itself, which the most impotent nation, however low its condition might be, had it in its power to cultivate. The contrary expedient required an ability and resource beyond the reach, and which no exertion, perhaps, was capable of supplying. A secondary reason, also, might assist in producing this conduct: for, soon as France had rashly and inconsiderately involved herself in the quarrel, the different departments appear to have been allotted to each, which they were separately best able to fill. France, as possessed of the most powerful means of actual annoyance, undertook that part of the task; and Spain, in whom the means of providing or recompensing that annoyance principally resided, addressed herself, with all becoming assiduity, to protect her wealth, and the subsidies of her ally, safe into her own ports.



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France, whose intention of joining her arms with those of Spain had long been formed, continued to avoid, for some time, making that intention actually known: the armaments of Toulon, which comprized the great part of the naval force she possessed, were, in great measure, kept in check by the English squadrons progressively commanded by Mr. Haddock, Mr. Lestock, and Mr. Mathews; but Spain having united her ships under the orders of admiral Navarro, as already related, with those in Toulon then ready for sea, under Mr. De-Court, the jealousy and misunderstanding which had long prevailed, appeared to wear a much more threatening and serious aspect. The British force in that quarter was considerably augmented; Mr. Mathews, who was sent out to take the command, was regularly instructed to blockade the port of Toulon, and prevent his antagonists, of whose designs and alliance not the smallest doubt was then entertained, from either acting offensively against Britain, or affording any succour sent to an army collected in Italy, for the purpose of acting against the queen of Hungary. A variety of trivial disputes took place, which, if they bore not the appearance of actual warfare, tended, at least, to convince Europe that the hour of its commencement was not far distant. Mr. Mathews, in the mean time, reigned the undisputed master of the Mediterranean Sea; and, for the space of two years, the combined force of France and Spain was totally confined to the harbour of Toulon. In the early part of the year 1744, Lewis the Fifteenth, weary of having suffered this long-continued ignominy, and considering it necessary to create a diversion in that quarter, in the hope that the British government might make some farther detachments which would weaken the force on the side of the Atlantic, sent positive orders for De Court, with his force, to put to sea in conjunction with Navarro, and resist, to the utmost of his power, any attack that might be made by Mr. Mathews on their united force. The French division consisted of five ships of 74 guns each, the Terrible, the Esperance, the Saint-Esprit, the Ferme, and the Duc d'Orleans; six of 64 guns, the Borée, the Solide, the Leopard, the Trident, the Serieux, and the Eole; one of 60, the Thoulouse; one of 56, the Halcyon; and two of 50, the Diamant and Aquilon; making, in the whole, sixteen ships of two decks, and four frigates, the Atalante, Flora, Zephyr, and Volga. The event of the action is well known: it made too conspicuous a figure in the history of the time when it happened, to be forgotten even at the present hour. By the plan of operations arranged in the French cabinet, it was intended, that at the moment of that public alarm which it was supposed would be created in Britain in consequence

quence of the combined fleets having put to sea, and escaped from their former prison, the Brest squadron under Roquefeuille should quit Brest, and standing immediately over to the British coast, prevent the junction of two squadrons which were known to be ready for sea at Portsmouth, and Chatham. The French armament entered the British channel on the third of February; but, the wind being contrary, and the weather at times extremely tempestuous, fourteen days elapsed ere it was able to work up so high as the Isle of Wight. In the interim, the British ships had collected in the Downs to the number of twenty-nine sail of the line, under the orders of sir John Norris. Roquefeuille's force amounted to twenty-three ships of war only; twenty of which were of the line. On his arrival off the Isle of Wight, he dispatched a small frigate to reconnoitre Spithead, and finding no ships there, for sir John Norris had proceeded to the Downs three days before, with all the vessels that were ready, he was sanguine enough to suppose the same tempestuous weather he had been so unfortunate as to encounter, had compelled the British ships to disperse, and retire into their own ports.

Under this impression, four ships were detached to Dunkirk for the purpose of hastening the embarkation of a very considerable corps of troops collected in that neighbourhood, for the purpose of invading England; this delusive hope was extremely short-lived, for the main body having reached Dungeness, were surprised on the 24th, by the signal made to them from the advanced frigate, that sir John Norris was tiding it round the Foreland, and would presently attack them. It was one of the principal points given in charge to the French commander in chief, that he should, on no account, hazard an action, if it were possible to avoid one. The tide failed when the British fleet had worked up within two miles of him; a circumstance which, in all probability, preserved this luckless armament from total annihilation. The French admiral having called a council of war, it was unanimously agreed, to retire under the friendly covert of the night, a resolution which was considerably promoted by the sudden freshening of the wind from the eastward, so that, by the next morning, the fugitives had reached the length of the Isle of Portland on their return to their own ports: here their misfortunes, however, did not end; for, a thick fog suddenly arising, all the ships were dispersed, and reached Brest in a most shattered distressed condition. Thus ended an attempt, which was considered so prudently projected, that it filled the whole French nation with arrogant hope, and no inconsiderable part of the British with apprehension. All these events happened previous to any regular declaration of war, but that formality took

place

place at Paris on the 20th day of March; and was followed by a repetition of the same ceremoy in London, a few days afterward.

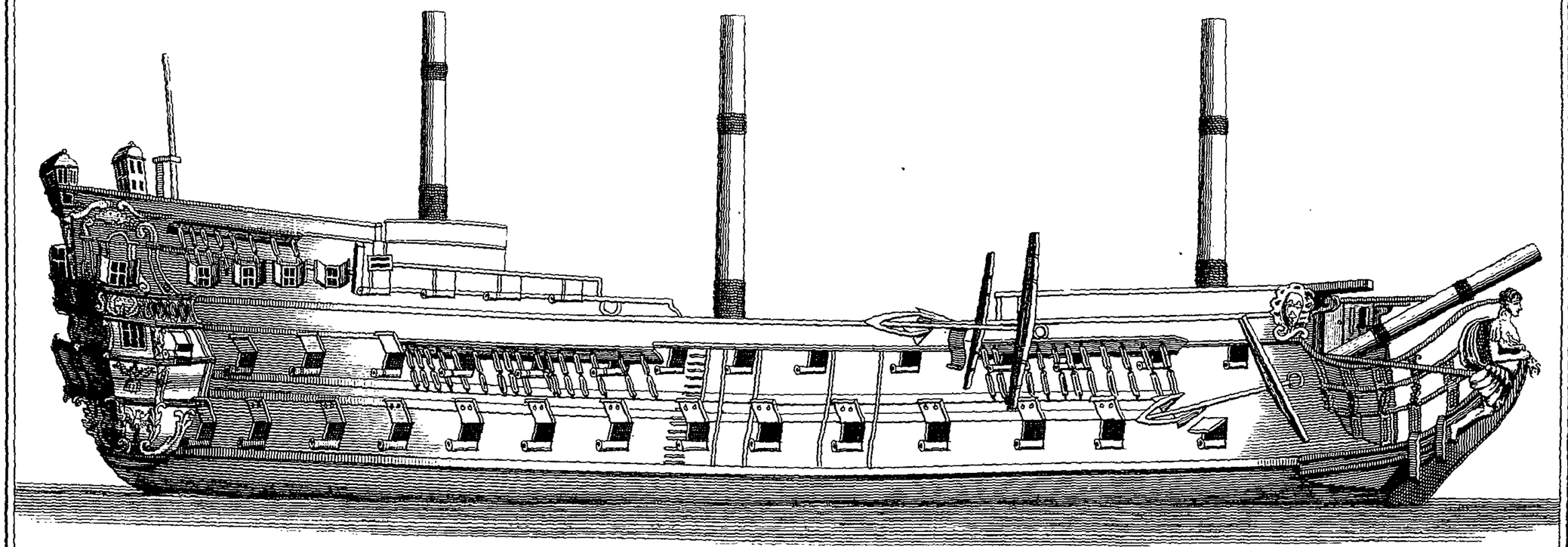
The French marine, notwithstanding its improvement in the quality of the vessels which individually composed it, had considerably fallen from that consequence which it boasted, in respect to numbers, during the reign of Louis the Fourteenth. It amounted, at the commencement of the war, to no more than forty-five ships of the line; scarcely seventy frigates, or vessels of inferior force; with a number of galleys, amounting, indeed, to nearly sixty; but which were, consequently, from their form, incapable of rendering them any assistance, except in the Mediterranean. With so inconsiderable a navy, it was scarcely possible to effect any enterprize by open force, except they could first deceive their antagonist by a feint in one quarter, while their actual intentions were directed against another. To have sent forth a fleet, either into the Atlantic, or the Mediterranean itself, against such a force as England possessed, would have been rashly exposing it to an almost certain destruction: for this reason, no instance occurred during the whole of the actual war, of the French having any armament at sea which deserved the name of a fleet, or of their projecting any expedition except such of the most desultory nature as could be effected by light or flying squadrons. Rochambeau, the French admiral, who succeeded Roquefeuille in the command of the Brest squadron, put to sea from thence with all the ships fit for service, amounting to fourteen sail of the line. With this force, he proceeded to the southward, and, for some time, actually blockaded an Engliſh squadron, under sir Charles Hardy, who had put into Lisbon on his passage to the Mediterranean. The arrival of sir John Balchen put an end to their temperorary exultation; and the French ships considered themselves as fortunate in being capable of making good their retreat into Cadiz. Foiled almost in every quarter, the most trivial successes, which in the general events of war must inevitably be atchieved, were boasted of with as much arrogance as though they had been the most splendid victories.

Upon the whole, however, the confederated powers acquired a very considerable share of political credit, possessed as they were of very inadequate means of opposition, on account of the address with which they contrived to prevent being totally over-run in every quarter, by the superior force which assailed them. Their little flying squadrons and cruizers did very considerable injury to the Britiſh commerce, which was sometimes heightened by the more mortifying information of the capture of a ship of war. Nevertheless, the general events at sea were scarcely conse-

consequential enough to merit any material notice; since, by parcelling out her ships to the best advantage, France contrived to divide and subdivide that of her antagonist also, into so many parts, that there was not sufficient strength in any single quarter to undertake a very memorable enterprize. India, America, the West India Islands, the Mediterranean, the Atlantic, were all of them provided, to a certain extent, with a marine force; and though it had been four times greater than it really was, it would not then have proved capable of effecting any very memorable piece of service. In repetition, however, of what has been before observed, the English squadrons being of necessity multiplied in the same proportion, the system of warfare was carried on at much less hazard of ruinous discomfiture, than it certainly would have been had the marine of France been more concentrated. In India, France had the address to collect a naval force actually superior to that of Britain; yet the war was carried on without advantage or loss to either party, except the needless expenditure of the sums which the maintenance of the armaments stationed there, of necessity required. In America, irritated by the loss of so important a post as Louisburg, Louis, conscious as he must have been of the danger that must attend the attempt, resolved, in the face of so superior a foe, to hazard an expedition for the hope of obtaining repossession of it. The armament, destined for this purpose, consisted of eleven ships of two decks, eight frigates or other vessels, with nearly four-score transports and armed ships, furnished by private adventurers; who, in aid of government, contributed to the undertaking. This luckless expedition, after having been detained in the port of Brest, by contrary winds, for the space of six weeks after it was completely equipped, at length proceeded on its voyage; but, as though the first disappointment had been ominously intended by Providence to cause its abandonment, misfortune appears to have uninterruptedly attended it from the moment of its quitting port, to the time of its return thither, in the most shattered state imaginable about the month of October. After having been detained on its passage to the coast of America for more than ten weeks, it was attacked, when it had nearly approached to its place of destination, by a tremendous tempest, which dispersed the whole fleet, destroyed several of the transports, and, in fine, so weakened the force, which was, perhaps, never adequate to the service required of it, that the commanders in chief were compelled immediately to return back to Europe, without having ventured at making the smallest attempt. Unfortunate as this measure had been, the French king was not so dispirited as to abandon all farther hope, even as to offensive measures. Two squadrons were ordered to be equipped in 1747, one of which was intended for the East Indies, the other for

America. The first of these, which consisted of the Invincible, of 74 guns; the Serieux, of 66; the Diamant, of 56; the Jason and Ruby, of 52 guns each; the Glory, of 44; with thirty-two ships belonging to the East India company, or to private adventurers, all of them armed, had the misfortune to fall in with a British squadron, commanded by the late lord Anson and sir Peter Warren, on the 3d of May. The defence made by the French, against antagonists so decidedly superior, for the ships with which they had to contend amounted to fourteen sail of the line, merited, perhaps, a better fate. The ships of war were all taken, together with six of the Eaft Indiamen, the Apollo and Philibert, of 30 guns; the Vigilante and Modeste, of 22 guns; the Thetis, of 20; and the Dartmouth, of 18. This misfortune was but the forerunner of a second, equally consequential, which befel the sister armament in the month of October following. Its force was considerably superior, and the value of the vessels put under its protection bore the same increased proportion. It consisted of one ship of 80 guns, three of 74, one of 70, two of 64, one of 60, and one of 54, with several frigates, having two hundred and fifty merchant vessels under their convoy. After a very severe and gallant contest of four hours continuance, the Terrible and Monarch, of 74 guns each; the Neptune, of 70; the Trident and Fougueux, of 64; with the Severn, of 50 guns, taken some time before from the British themselves, by a superior force, fell into the hands of their pursuers. With this event, which, in respect to its success, was certainly the most consequential of any which had taken place during the preceding contest, the scene of warfare might be said to close. The power of resistance had, at this time, become so much abridged by these and the preceding misfortunes which had befallen the confederated powers, that reflection induced them to preserve the small remains of that marine which still remained to them, by acceding to the terms of peace which were proposed, and waiting for a more favourable hour when their future exertions should have raised them from their, at that time, desponding state, to one of much more active annoyance. The navy of France and Spain had felt a very material diminution. The whole of their force, had it been conjoined, would scarcely have exceeded fifty ships of the line; so that, inadequate as it might be to the contest with Britain on the commencement of hostilities, it certainly was rendered still less equal to the task which it had originally undertaken, by having its own force diminished at least one third; and that of its opponents in as great a degree augmented.

During the time which had elapsed from the conclusion of the peace at Utrecht to the recommencement of hostilities, a period of more than thirty years, France,



John Charnock Del.t Norton Sculp.t

The Invincible French Ship of war mounting 74 Guns, Captured from France, May 3.d 1747, by Vice-Admiral Anson & Rear Admiral Warren.

Published as the Act directs March 1.st 1800. by John Sewell, Cornhill London.

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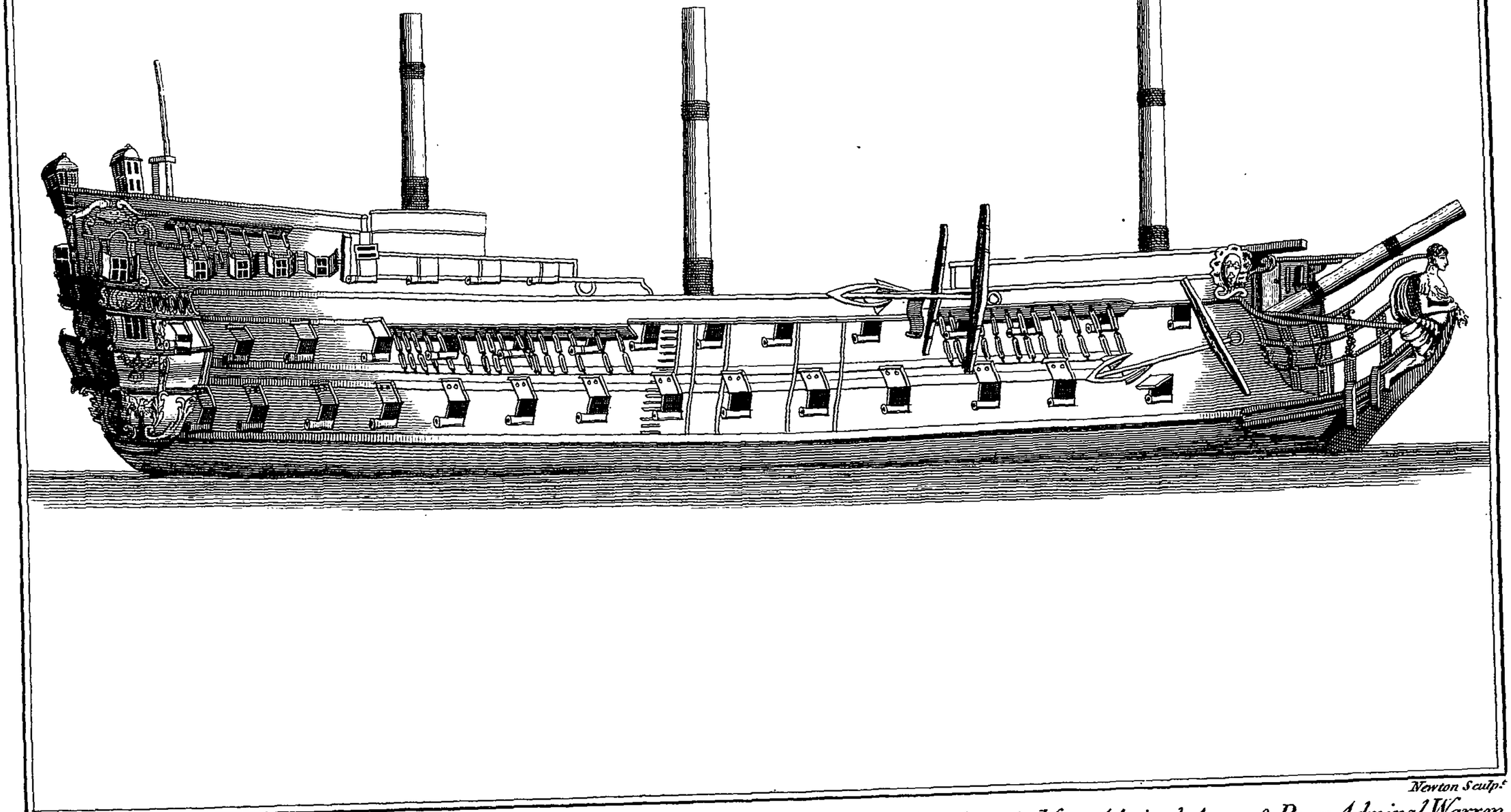

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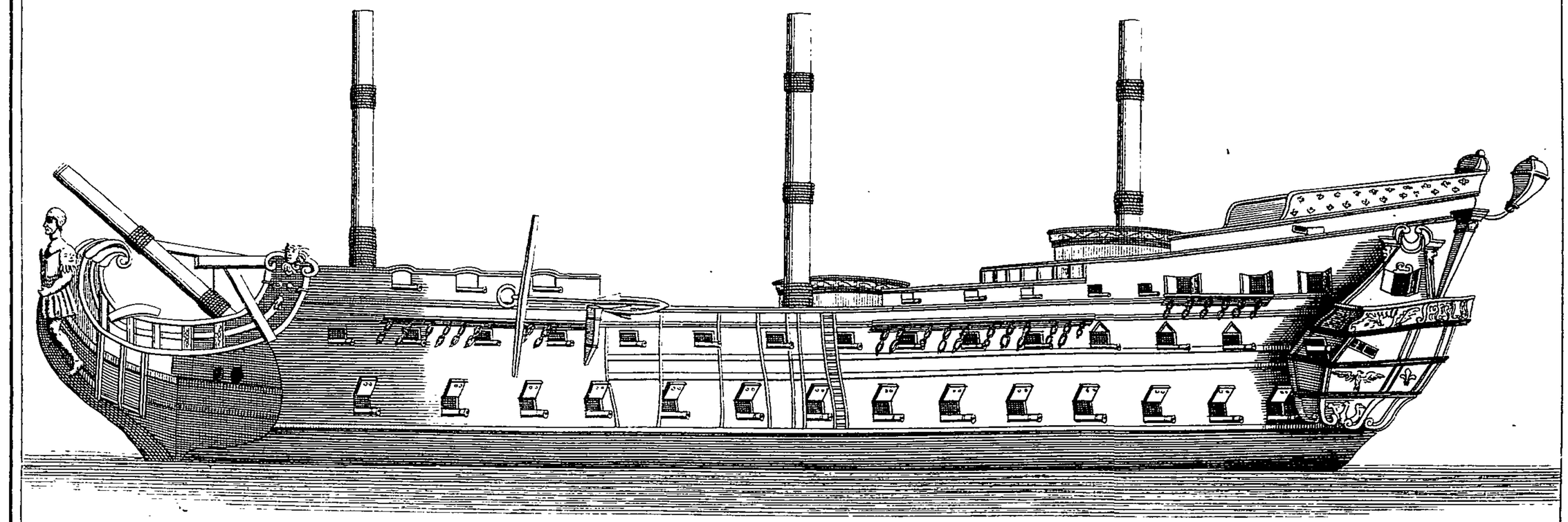
The Invincible French Ship of war mounting 74 Guns, Captured from France, May 3.d 1747, by Vice Admiral Anson & Rear Admiral Warren.

Published as the Act directs March 1.st 1802. by John Sewell, Cornhill, London.

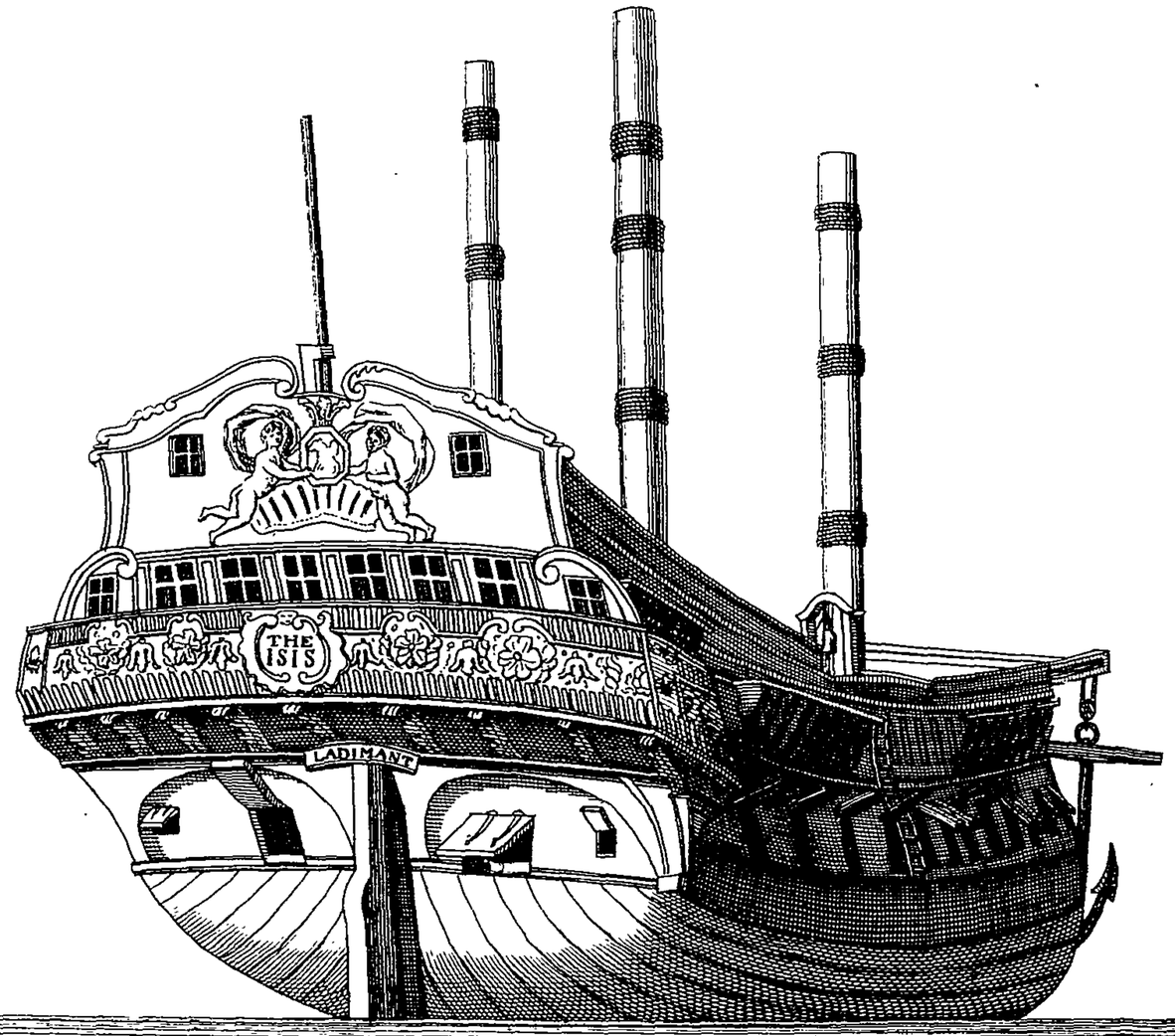


John Charneck del.

Newton Sculp.

The Terrible, French Ship of War mounting 74 Guns captured by the British Fleet under the orders of Rear Admiral Hawke. Oct.r 14.th 1747.

Published by I. & A. Arch, London. March 9th 1802.



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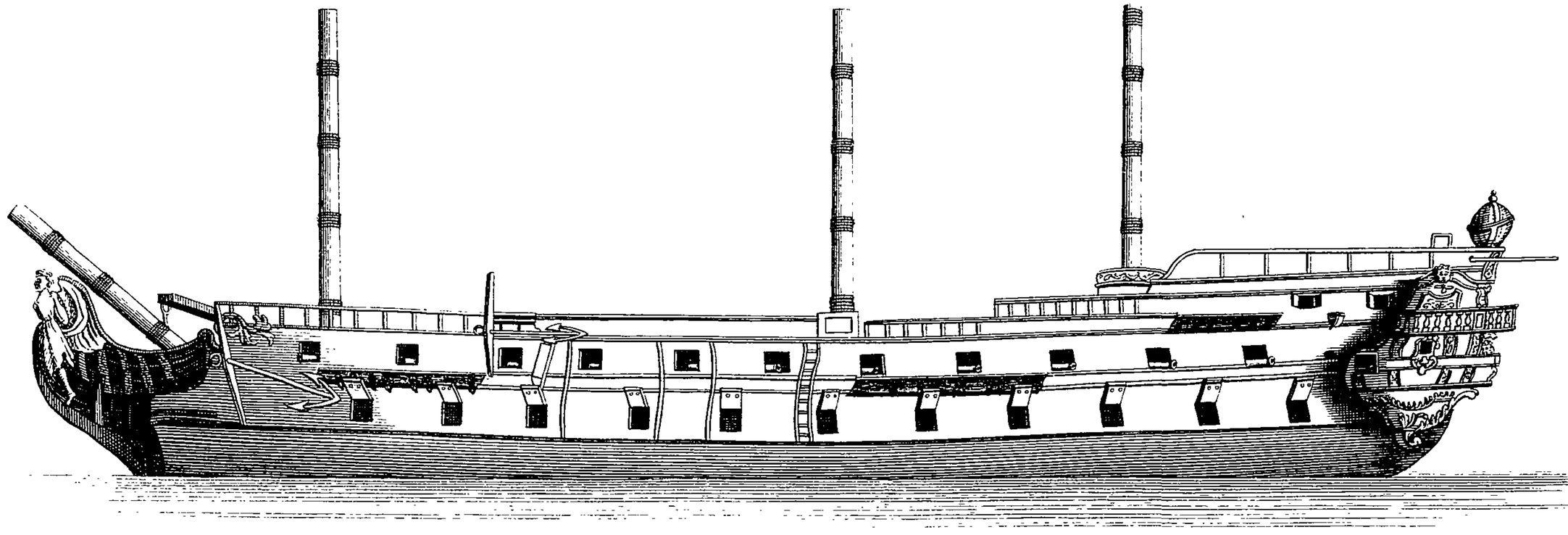
The Isis, late the Diamant of 56 Guns, captured from the French 1747.

Published as the Act directs March 1st 1802 by John Sewell Cornhill London.



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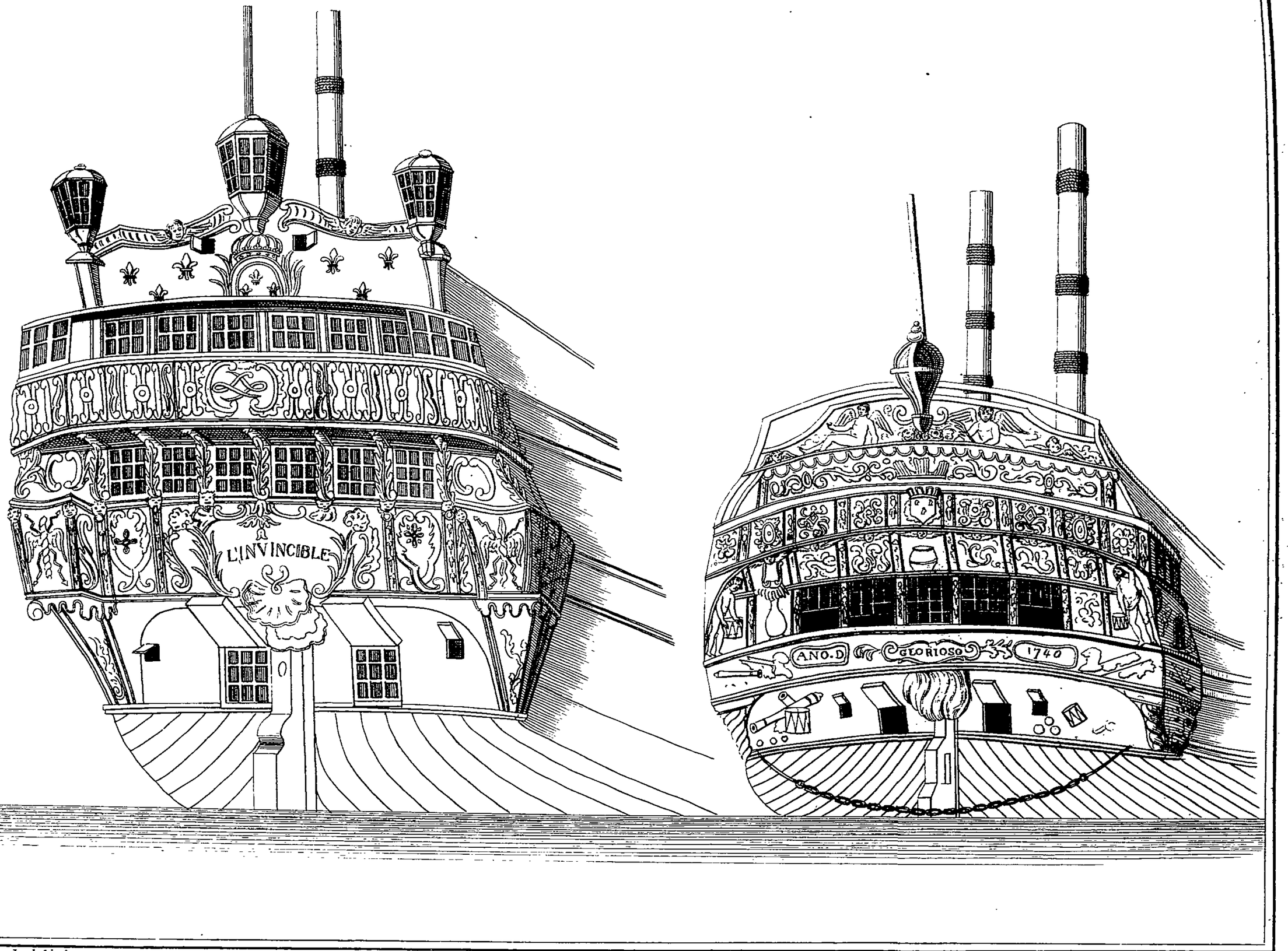
The Gloire French Ship of war of 44 Guns, Taken May 3.d 1747, by the British Fleet, Commanded by George Anson & Peter Warren Esq.rs

Published as the Act directs March 1.st 1802. by John Sewell, Cornhill, London.



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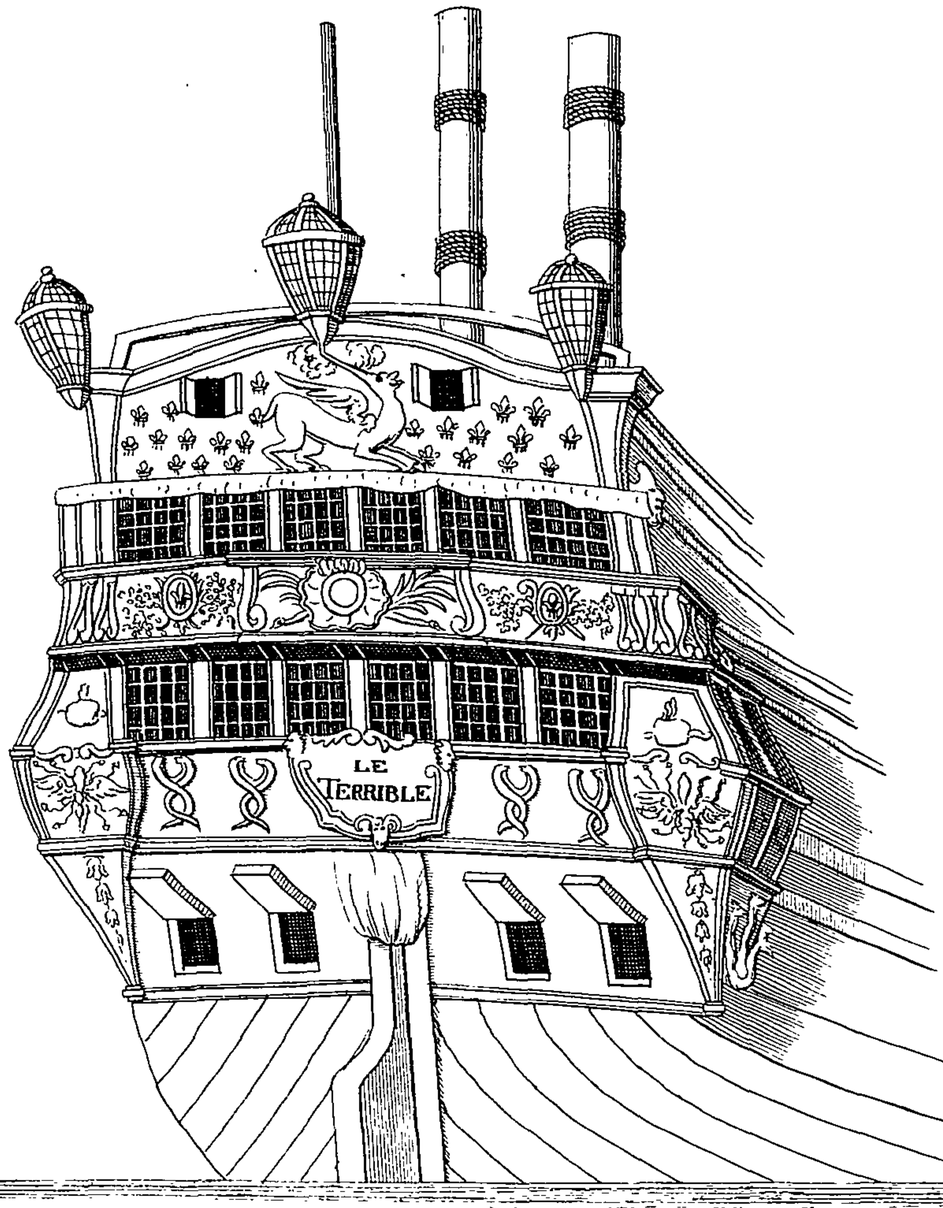
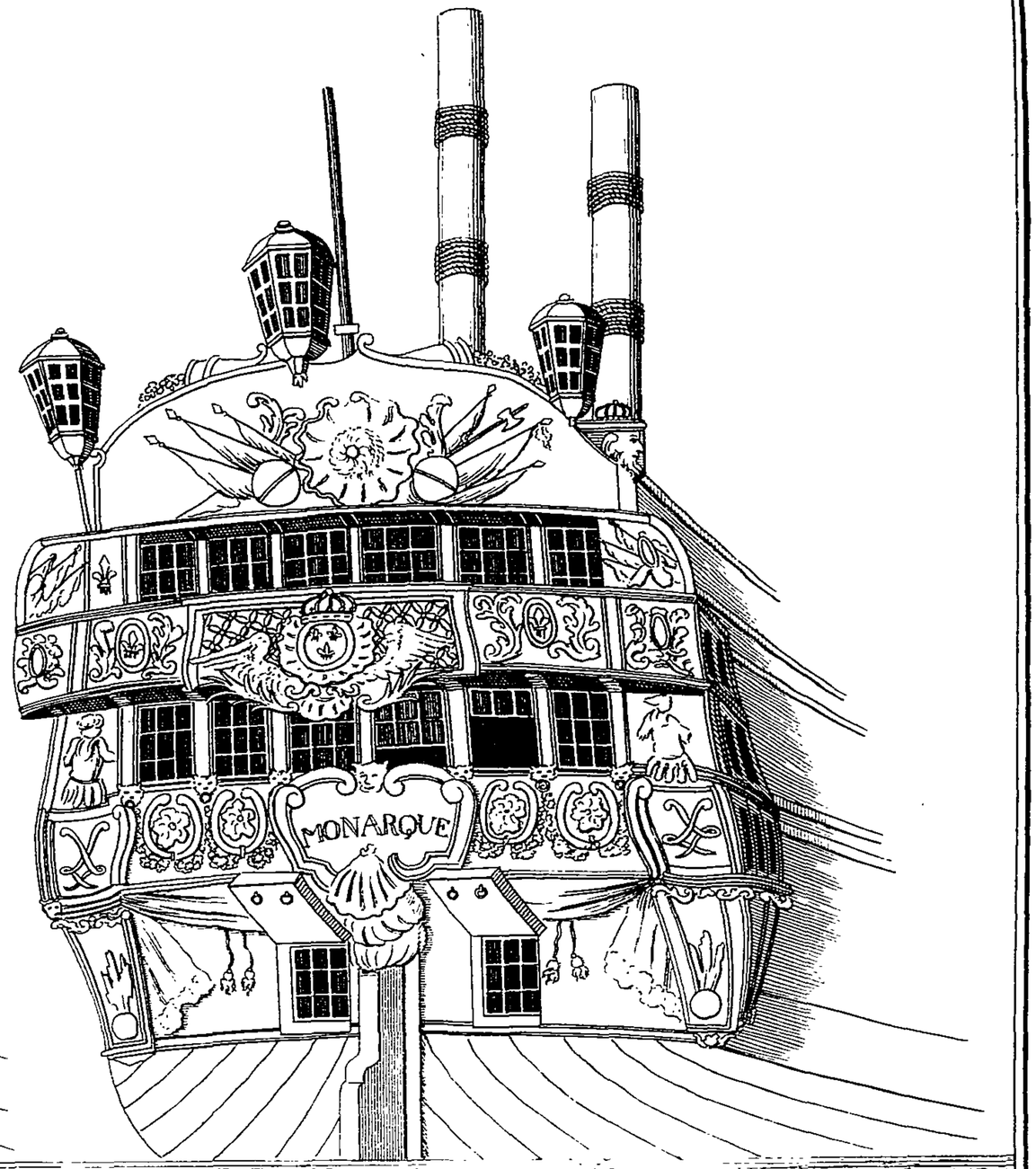
Stern Views of the GLORIOSO and INVINCIBLE.

Published as the Act directs by John Sewell, Cornhill London.

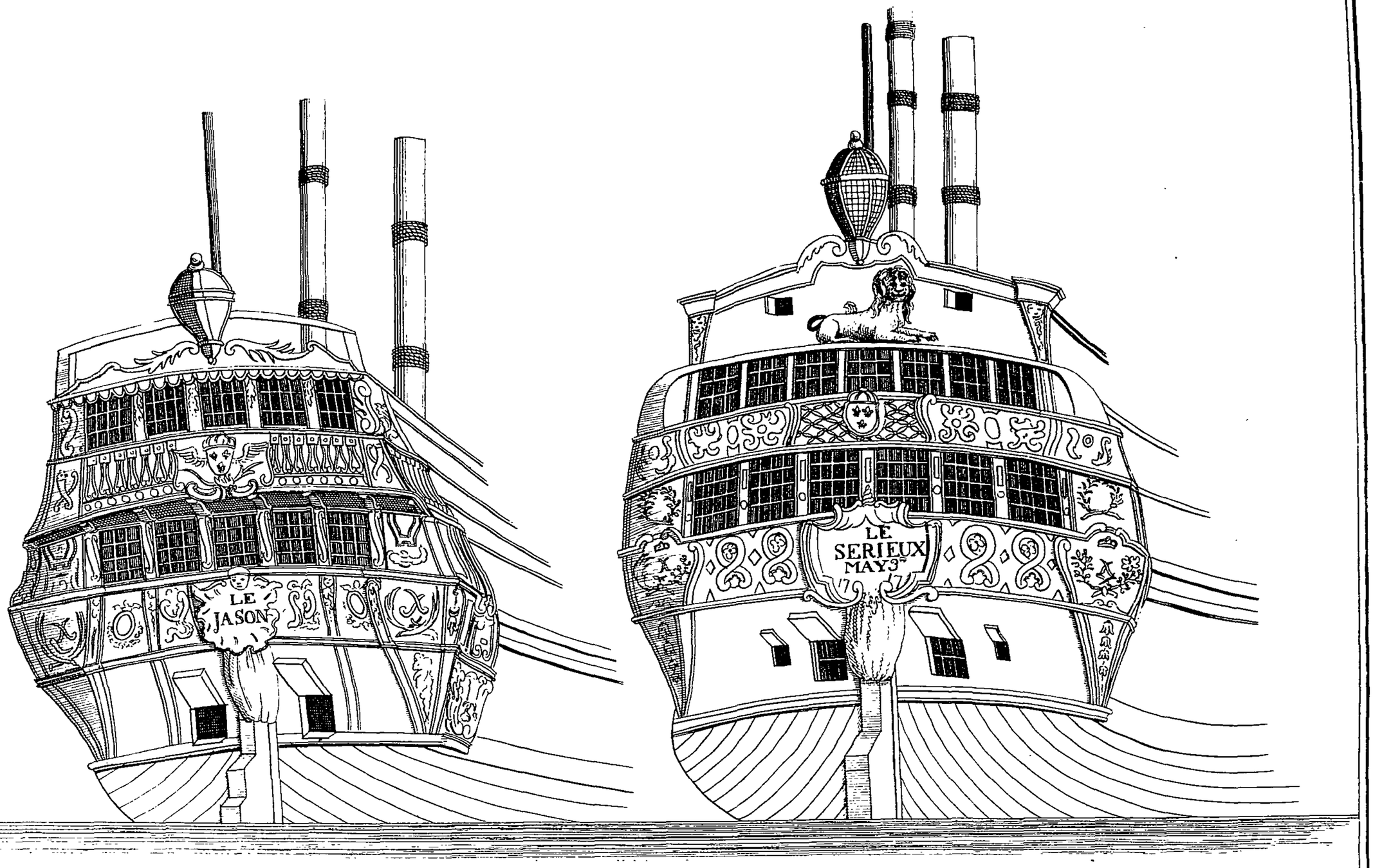




J. Charnock del.t Newton Sculp.t

Stern Views of the Terrible and Monarque, French Ships of War.

London Published as the Act directs March 25.1802 by John Sewell. Cornhill.



J. Charnock del.

Newton Sculp.

Stern Views of the Jason and Serieux, French Ships of War.

London Published as the Act directs March 25 1802 by John Sewell Cornhill

France, though not under the same difficulties, or labouring under the same natural incapacity with Spain, had suffered, as already observed, her marine to diminish considerably, both in respect to the number of vessels themselves, and that of the guns mounted collectively on board them. When the treaty of peace was concluded, the navy of the former country consisted of seventy-eight ships of the line, (speaking as closely as the best information from private documents, and the collation of public testimonies, will allow posterity to judge,) nearly twenty of which were of three decks, mounting from ninety to one hundred and ten guns. This force had, in the space of thirty-one years, decreased upwards of thirty sail; nor was there a single ship in the French navy, which, at the re-commencement of hostilities, or during the continuance of them, was brought into service, that ranked nominally higher than a British third-rate, or mounted more than 80 guns. Upon the whole, however, the French marine could not merit the disgraceful reproach of having been suffered to fall materially into decay. The numbers in which it had experienced the diminution, had, both in a scientific and political light, been more than compensated for by the superior and improved qualities of those newly-built vessels by which the place of their predecessors had been supplied. Britain, on the other hand, had pursued the contrary measure. Her numbers had increased, but the character of vessels composing her marine had certainly not experienced the smallest amendment during the same interval. The event carried with it the consequence which might naturally have been expected from it. France, with a force so apparently inferior, maintained an active and spirited resistance; and, till those losses took place which befel that country toward the conclusion of the war, her efforts against the commerce of Britain were as successful as could reasonably have been expected from the most decided superiority. Hiftorians, who have collected the different accounts with much apparent care, make the number of ships taken from Britain amount to upwards of three thousand sail; a strong and very convincing proof that the cruizers of the enemy were neither inactive, nor inconsiderable in number. This will appear more evident, when, by a comparison made with the numbers of ships taken from France or Spain, during the same interval, by Britain, her prizes, notwithstanding her acknowledged superiority of marine strength, appear not to have exceeded her losses more than two hundred sail: certainly a very small comparative advantage, when the numbers of her cruizers, and her boasted naval pre-eminence is considered. This undoubtedly is a circumstance which proves, almost beyond controversy, the advantage which the French and Spanish ships at that time held over those of the British, in respect to

sailing, working, as well as general ability to sustain the shock of the sea, together with the varied dangers to which ships of war are necessarily exposed.

The naval history of the United Provinces, during the period of the war, may be comprized within the narrowest compass. Persevering in that system which had weaned them from ambition, they exerted every effort to preserve their country from being engaged in a contest, during which, while in an inactive state, they derived the most consequential commercial advantages. Bound by solemn treaty to support the cause of Britain, under certain circumstances, they were compelled to furnish the force stipulated by their engagement; but, in conformity with that conduct, which they had before so frequently manifested, they took especial care that the ships provided by them should render as little service as possible. They, in a very short time afterward, considerably improved on their favourite principle, with respect to their marine, the following reasons for which behaviour, publicly and officially given, are so sufficiently explanatory of their motives and the cause which produced them as to render any comment on them unnecessary.

Dutch Arguments for recalling their auxiliary Ships.

It is a fundamental principle,

That the protection of their navigation and commerce, whereby they subsist, is absolutely necessary, and must not be neglected; and that it cannot be done without the support of their ships of war; and that there is no time to be lost without rendering its support useless for this year.

That the want of sailors, even for their merchant ships, will not allow them to make any new equipment of ships of war in proper time.

That several of the subjects of the Republic have complained of their ships being taken by those of the powers in war; and that this difficulty increases by the new prejudicial regulation; and that they must abandon their trade without the protection of the men of war.

That the expences already made by the States General are very burthensome; and that they have made their utmost efforts, and yet, as affairs are circumstanced, they cannot attain their end, through the great want of sailors for their merchant ships.

That this embarrassment puts them upon means they do not chuse, but are obliged, through necessity, to have recourse to.

That

That their High Mightinesses, at the desire of the King, in pursuance of the treaty of 1678, readily granted 6000 men and 20 ships of war; and by that had given proof of their good faith.

That they made no hesitation, by their resolution of the 24th October last, to promise the King the continuation of the said succours of twenty ships, and wish they could acquit themselves according to their desire; but if they must continue their ships, the above-mentioned circumstances of affairs make it impossible for them to give their own subjects the least protection, though indispensibly necessary.

That they hope, therefore, his Majesty will not exact the said succours from them, but rather consider it is impossible to furnish them.

That he cannot reasonably desire their High Mightinesses to continue their allies ships of war, however great their wishes are to live in perfect union with them, and to act for their preservation, when it puts it out of their power to protect their own subjects.

Nor is it the King's interest to have the ships of the allies taken, and the enemy enriched, and their power increased by their loss, or that the Republic should be rendered, by the loss of what they subsist by, incapable even of their own defence; and much less of assisting his Majesty and their other allies, and continue their effort toward maintaining the common cause.

In short, that those twenty ships can do no service to his Majesty comparable to the utility the Republic will draw from them.

The force which, according to treaty, they in the first instance caused to be equipped, amounted to twenty sail. Of these, nine only appear to have been ever engaged in any service whatever; the Haerlem, of 70 guns; the Dordrecht and Damiata, of 64; the Leewenhorst, Edam, Assendelft, and Delft, of 54 guns each; with two frigates. The whole service in which they were occupied, was an inoffensive voyage to Lisbon, and from thence back again to England; in which, meeting with no enemy, they consequently experienced no discomfiture. The rest of the maritime history of those states, remains as it were a perfect blank. Inconsiderable, however, as the state marine of the United Provinces certainly was, and inattentive as they appeared in respect to it, they acquired a prodigious acquisition of wealth, amidst the conflicts which distracted the nations that surrounded them, and in which they were themselves involved on the land side; but the

first object which thus engaged the public mind being gratified, the people, as with one accord, appeared totally indifferent to the enjoyment of any greater pleasure.

The northern powers of Russia, Sweden, and Denmark, though, perhaps, not so peculiarly addicted to the same pursuits as the inhabitants of the United Provinces were, pursued the same inoffensive conduct, and profited in proportion to the share they separately held in the neutral partnership. Far removed from the busy scene of war, they appeared perfectly careless as to the event of it. They were equally and indiscriminately employed, as occasion offered, by all parties; so that their commerce continuing completely uninvaded, they derived every advantage they could have expected to result from it, without experiencing the inconvenience, or incurring the expence of its protection.

CHAPTER

CHAPTER THE SEVENTH.

The State of the British Navy at the Commencement of Hostilities in 1739—*The brief Recital of the various Expeditions which took Place during the War, with the Events resulting from them*—*The Capture of the Princessa, and Effects produced by it*—*Measures taken for the Improvement of the British Marine*—*The Letter to Sir John Norris on the Occasion, accompanied by an Estimate of the Charge of building as well as completely equipping a Ship of each Class with Masts, Sails, Rigging, Ground Tackle, and all other Sea Stores, according to the different Proportions progressively adopted in* 1706, 1719, 1733, *and* 1741; *together with the Propositions made by Mr. Ward, Mr. Stacey, Mr. Hayward, Mr. Allen, and Mr. Locke; to which is added, a comparative View of the different Establishments settled by Order of the Navy Board in* 1706 *and* 1719—*A List of the British Navy, as it stood in the Month of September,* 1744.

BRITAIN, notwithstanding the peculiarly pacific disposition of her minister, found herself, at the close of the year 1739, contrary perhaps to her own inclination, and certainly so with respect to the wishes of her government, under the inevitable necessity of preparing for that scene of warfare which she appeared to have so long deprecated. In respect to numbers, her navy was extremely formidable; capable of contending, if the mere statement was to be taken as the true criterion of its force, with nearly that of all Europe. On the immediate eve of the rupture with Spain, it consisted of no less than eighty-one ships of two and three decks, actually ready for sea, or in condition for active service, exclusive of thirty-five frigates, with a sufficient number of sloops, or inferior vessels in their different classes, requisite to attend so powerful a force, in the most diffused and detached state. Owing, however, to causes which have been already explained, the condition of the maritime force possessed by Britain was far less formidable than the recapitulation of its strength appeared to portend. The memorable, and most popularly successful expedition undertaken against Porto-Bello, raised the minds of the people to a pitch of enthusiastic joy, bordering almost on phrenzy. Spanish America was considered

considered in idea as under absolute subjection to the British arms; and it was even supposed scarcely necessary to make any other preparation for the attack of the most consequential post, than the appearance of a British armament, and the ceremony of a summons from the officer who commanded it. A short time, and rather a slight portion of experience, proved the arrogance of these hopes. The expedition against Carthagena, though confided to a fleet far more powerful than that which had, in any preceding war, visited those seas, might be reckoned as having completely failed. Several Spanish ships of war were, indeed, destroyed; and so far the enemy, who originally were scarcely equal to the important task of contending against so powerful an antagonist, sustained an injury which could not be regarded but with material sorrow. If, however, the expence actually incurred in consequence of the enterprize, to say nothing of the dreadful mortality which swept away thousands of the unfortunate persons engaged in the expedition, were fairly balanced against the loss, considered in a pecuniary light, which the enemy suffered, it would, in all probability, be found that Britain was the loser in a sum far exceeding what the enemies of the measure asserted, or the friends of it, perhaps, believed.

Misfortune was insufficient to inculcate wisdom, or produce so prudent an alteration of measures, as ill success most certainly appeared to demand, and in the most imperative strain. Spain maintained by no means an unsuccessful system of defence, and Britain a most inglorious one of offence, during the whole contest. The operations of it, indeed, rather diverged from a regular naval history, as the greater part of them were confined principally to the attack of fortresses, which were either so injudiciously or dispiritedly undertaken, that very few afforded the smallest room for exultation, even in the minds of those who were most inflamed in their opinions, and warmest in their friendship for the persons who severally conducted them. The war with Spain was more contracted in its limits than any of those which, for nearly a century past, Britain had sustained against any other foe; for, though America appeared the most active scene, it furnished no event in the smallest degree decisive during the whole of its continuance. In India, properly so called, Spain was not possessed either of any marine force, or of a single settlement. The expedition sent into the South Seas, consisting of four small ships of two decks, one frigate, and a sloop of war, as it was among the first measures taken on the commencement of hosilities, so did its complete failure in the object of its mission prevent the repetition of any similar experiment in the same quarter. The disappointments, the dangers, and the disasters which attended

tended this ill-fated little armament, were not peculiar to itself. Felt, in a no less cruel degree, by the force sent to counteract its effects, the advocates in favour of its projectors poorly sought to palliate, in some measure, the miserable fate which attended their own countrymen, by enumerating, with an air of unphilanthropic triumph, the losses of the enemy, and boasting that the distresses which they unfortunately sustained on the same occasion, in a similar line of misery, considerably exceeded that of their own countrymen. In Europe, the warfare of the Atlantic appeared totally committed by the foe, to the charge of very inconsiderable privateers, too swift to dread the vengeance of the British cannon; and, at all times, certainly in general too contemptable to merit its vengeance. Availing themselves of the former, and confiding in the latter, the spirit of enterprize was excited in the minds of Spanish adventurers. The depredations committed on the commerce of Britain was immense; and notwithstanding the English fleet rode the undisputed mistress of the ocean, from the British Channel to the Streights of Gibraltar, during the whole of the war, the inhabitants of Spain were actually acquiring wealth from the predatory excesses of these petty corsairs. From the commencement of hostilities, till the time when France made herself a party in the dispute, no naval event, in the smallest degree consequential, appears to have taken place on the side of the Atlantic, except the capture of the Princessa, of 70 guns, and nearly eighteen hundred tons burthen. The effect produced by this success, which was effected, though with no inconsiderable difficulty, by three ships, nominally of equal force with herself, but of far inferior dimensions, and such very inadequate proportions, in respect to force, as rendered them almost totally incompetent to the task of sustaining a combat, on any ground, against so formidable a vessel, had an instantaneous and most salutary effect in producing that reform and alteration of system which had been so long necessary. Sir John Norris, who was then universally considered the naval oracle of Britain, was written to, by order of the admiralty board, on this subject. The letter, with the documents annexed to it, form a curious, and well-connected, though concise history, of the civil eſtablishment of the British navy, from the early part of queen Ann's reign, down to the period when the ship just mentioned was taken.

"SIR,

"The Lords Commissioners of the Admiralty have, sometime since, taken into consideration the methods now in use for building and re-building the ships of the royal navy, and find that there has been no regular establishment made therein since

since that dated the 18th of November, 1719, which has been for several years discontinued. They observe that in the year 1732 there was an attempt towards making a new establishment; and, in order thereunto, the master shipwrights of all his majesty's yards, were directed to consider and propose their several opinions in relation to the building ships, and to the dimensions for a ship of each class; which they accordingly did, but no determination was made thereupon: from whence it has proceeded, that the ships of the royal navy are not new-built according to any certain or uniform standard or establishment; but every particular ship has been built, or re-built, according to different proposed dimensions. Those of the same class or denomination have been built of unequal sizes and proportions: so that the furniture and stores for one ship have not fitted another of the same rank; which has been the cause of infinite inconveniences to the service, as well as of a great increase in the expence of the navy. It has been likewise observed, that the scantling of his majesty's ships, in general, are not so large and strong as they should be, and it is also a general complaint, that the ships are crank, and heel so much in blowing weather, that they cannot open their lee-ports; at the same time that the ships of some other nations go upright, with all their batteries open, and ready for action. Their lordships esteem it, therefore, a matter of the highest importance, that the great inconvenience arising from the present loose and irregular manner of building his majesty's ships, and the complaints made of their bad qualities, should be rectified and amended; that the dimensions of the ships in the navy should be brought to a certain size and standard, according to their several classes; that in doing this the opinion and advice of the master shipwrights of his majesty's several yards, and of such others as their lordships judged qualified, should be taken, in order to come at a general fixed establishment. They conceive the same should be such as would not only enable his majesty's ships to carry the number and nature of guns, according to the present establishment; but that their lower tier should be six feet above water, with four months provisions on board, and stores for foreign service; they wish also all other considerations should be comprehended, which, it may be hoped, will give them the proper qualities of good ships of war; in point of sailing, fighting the enemy, durableness, and all other respects whatsoever.

"Their lordships accordingly sent directions to Sir Jacob Acworth, surveyor of the navy; to the several master shipwrights of his majesty's yards, and to several other eminent shipbuilders, to take the present establishment of the ships of the navy into their separate consideration; so that they might propose and lay before this board such a solid and well-digested system and establishment for building a ship of

of each class or rate, down to a sloop, inclusive; as well with respect to their principal dimensions, as to their masts and yards, and whatsoever else might, in their opinion, contribute to make them complete ships of war. But, as the present ships of 80 guns, with three decks, are, in general, ill approved, they were directed to propose ships carrying 74 guns, with two decks and half, in their room. They were likewise directed to take into their consideration, and give their opinion, concerning such a disposition of the cabin rooms, platforms, awnings, as well as of all other parts of the ship, that may improve them for the several uses they are allotted to, by a fit placing, as well as proportioning the same; and likewise to consider whether any reasonable saving can be made in the present method of finishing his majesty's ships: or whether any superfluous or unnecessary expence might be retrenched. They have accordingly taken this important affair into their separate considerations, and severally made their report to us, their lordships, upon the several points referred to them; but their lordships thinking it necessary to have the said reports examined and considered by the flag officers of the navy, as well as by such of the senior captains as shall be thought proper, their lordships command me to signify to you their desire, that you will appoint a convenient day for your coming to town, and their lordships knowing the time you shall fix for that purpose, will order the flag officers, and some of the senior captains, who shall be in the way, to meet you at a place to be appointed for that purpose, in order to take the reports and proposals of the several persons above mentioned into your consideration; also that you may be attended by the said persons, for demonstrating and explaining to you their respective schemes; and enable you, by consulting or advising together, to form a judgment upon the best rules and methods of building the ships of the royal navy, so that you may report the same to their lordships. I am, &c.

This order, or rather invitation, accompanied by various documents already alluded to, tended very materially to elucidate the point in question; among the most consequential were those which immediately follow; which are rendered particularly interesting, as they form a plain, concise, and interestingly progressive account of the expences attendant upon the equipment of a ship or vessel in each class, at four distinct periods. To this is added, a short but very curious comparison of the various proposals made by the different master shipwrights, with respect to the two former establishments and proportions which had been received in the royal navy, at different æras, as the most proper for adoption.

An Estimate of the Charge of building and completely equipping a Ship of each Class, with Masts, Yards, Sails, Rigging, Ground Tackle, and all other Boatswains as well as Carpenters Sea Stores, to an Eight Months Proportion; according to the Regulations established by Order of the Navy-board, progressively in the Years 1706, 1719, 1733, *and* 1741, *viz.*

		1706.			1719.		
		Charges of the		Total.	Charges of the		Total.
		Hull, Masts, and Yards.	Rigging and Stores.		Hull, Masts, and Yards.	Rigging and Stores.	
Rate.	Guns.	£.	£.	£.	£.	£.	£.
1	100	31,994	6,587	38,581	32,707	7,476	40,183
2	90	25,591	5,428	31,019	26,622	6,264	32,886
3	80	20,528	4,590	25,018	21,937	5,400	27,337
	70	17,767	3,741	19,508	17,202	4,512	21,714
4	60	18,024	3,199	16,223	14,027	3,804	17,831
	50	9,152	2,464	11,616	10,192	3,020	13,212
5	40	5,310	1,863	7,178	6,355	2,356	8,731
6	20	2,176	962	3,138	8,216	1,496	4,712

		1733.			1741.		
		Charges of the		Total.	Charges of the		Total.
		Hull, Masts, and Yards.	Rigging and Stores.		Hull, Masts, and Yards.	Rigging and Stores.	
Rate.	Guns.	£.	£.	£.	£.	£.	£.
1	100	32,725	7,957	40,682	33,110	8,050	41,151
2	90	27,591	6,897	34,488	28,543	7,135	35,678
3	80	22,750	5,950	28,700	23,920	6,256	30,176
	70	18,666	5,202	23,868	19,687	5,488	25,175
4	60	15,753	4,539	20,292	16,564	4,786	21,350
	50	11,753	3,625	15,140	13,064	4,117	17,185
5	40	7,254	2,881	10,135	7,554	3,003	10,557
6	20	3,689	1,823	5,512	4,282	2,117	6,399

A Com-

A Comparison of the various Propositions now sent up from the Master Shipwright of the several Dock Yards, with the Two first Establishments, namely, those of 1706 *and* 1719.

	Particulars.		Guns. 100		90		80		70		60		50		40		20		Sloops.	
			Ft.	In.	Ft.	In	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.	Ft.	In.
Length on the gun-deck, from the rabbit of the stern to the rabbit of the post.	per Establishments of	1706	–	–	162	0	156	0	150	0	144	0	130	0	118	0				
		1719	174	0	164	0	158	0	151	0	144	0	134	0	124	0	106	0		
	Mr. Ward's proposition – – –		174	0	169	0	161	0	154	0	144	5	341	9	125	2	106	0		
	Mr. Stacey's – –		175	0	167	0	160	0	151	0	144	0	341	0	124	0	106	0	87	6
	Mr. Hayward's –		174	0	166	0	158	0	151	0	145	0	136	0	127	0	109	0	80	$0\frac{3}{10}$
	Mr. Allen's – –		–	–	165	$9\frac{1}{2}$	158	0	152	0	143	0	135	0	127	$2\frac{3}{4}$	106	0	80	6
	Mr. Locke's –		–	–	–	–	160	0	151	0	144	0	135	9	127	6	109	0		
Breadth extreme.	per Establishments of	1706	–	–	47	0	43	6	41	0	38	0	35	0	32	0				
		1719	50	0	47	2	44	6	41	6	39	0	36	0	33	2	28	4		
			50	0	47	2	–	–	44	10										
	Mr. Ward's proposition – – –		50	0	48	2	46	1	42	6	39	8	37	1	34	6	29	2		
	Mr. Stacey's –		50	4	48	0	46	0	41	6	39	7	36	10	34	1	29	1	23	0
	Mr. Hayward's –		50	0	47	8	45	5	43	4	41	0	38	6	36	0	30	10	24	$0\frac{8}{17}$
	Mr. Allen's –		51	0	48	7	46	$3\frac{3}{4}$	43	3	40	9	38	$4\frac{3}{4}$	36	1	30	6	24	6
	Mr. Locke's – –		–	–	–	–	44	6	41	6	39	6	37	4	35	0	30	0	23	4
Depth in hold.	per Establishments of	1706	–	–	18	6	17	8	17	4	15	8	14	0	13	6				
		1719	20	0	18	10	18	2	17	4	16	5	15	2	14	0	9	2		
	Mr. Ward's proposition – – –		20	0	19	2	18	5	18	4 0	15	10	14	9	13	9	11	7		
	Mr. Stacey's –		20	6	19	7	18	9	17	4	16	6	15	5	11	3	9	5	10	0
	Mr. Hayward's –		20	4	19	5	18	5	17	7	16	11	15	4	11	4	11	6	9	6
	Mr. Allen's – –		20	0	19	$0\frac{1}{2}$	18	$1\frac{3}{4}$	17	$3\frac{3}{4}$	16	$3\frac{3}{4}$	15	$4\frac{1}{4}$	14	$5\frac{3}{4}$	9	$1\frac{3}{4}$	9	6
	Mr. Locke's –		–	–	–	–	18	66	17	4	16	5	15	2	14	0	9	2	9	6
			Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.		Tons.	
Burthen in tons.	per Establishments of	1706																		
		1719	1869$\frac{4}{94}$		1566$\frac{9}{94}$		1350		1128$\frac{29}{94}$		951$\frac{37}{94}$		755$\frac{89}{94}$		594$\frac{55}{94}$		374$\frac{45}{94}$			
	Mr. Ward's proposition – – –		1870		1680		1460		1240		1005		818		660		400			
	Mr. Stacey's –		1903		1651$\frac{39}{94}$		1454$\frac{26}{94}$		1128$\frac{29}{94}$		977$\frac{18}{94}$		787$\frac{74}{94}$		624$\frac{56}{94}$		392$\frac{51}{94}$		200	
	Mr. Hayward's –																			
	Mr. Allen's –																			
	Mr. Locke's –																			

Particulars.			Guns.								Sloops.	
			100	90	80	70	60	50	40	20		
			Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	Ft. In.	
Draughts of water. per Establishments.	1706	abaft		19 8	18 0	17 0	16 0	14 6	12 9			
		afore		21 0	14 4	18 6	17 6	16 0	19			
	1719	abaft	21 6	20 2	19 0	17 7	16 6	13 10	13 10	11 4		
		afore	22 10	21 6	20 4	18 11	17 10	12 10	14 10	12 4		
	Mr. Stacey's proposition	afore										
		abaft										
	Mr. Hayward's	afore										
		abaft										
	Mr. Allen's	afore	21 4¾	20 4	19 6½	17 0	15 11½	14 11¾	14 0	11 0	7 9	
		abaft	22 10¾	21 10	21 0¼	19 0	17 11½	16 11¾	16 0	12 9¾	11 3	
	Mr. Locke's	afore										
		abaft										

In respect to the admiral, he immediately adopted the obvious, and certainly the most prudent method of producing improvement. He sought the opinions of men who were considered the best informed on the subject, and reported to the inquirers the result of their information, surmounted by such professional observations as his long-continued maritime pursuits had enabled him to collect. Reform, however, went on but slowly. The British navy was reduced to an inequality with respect to that of the different foreign powers, reckoning ship for ship, not only in the contracted dimensions, but the form or shape given to the vessels composing it, which neither the inconveniences experimentally and most seriously found to result from them, nor the example of those benefits found to be derived by other countries from the pursuit of a contrary system, were, for many years, capable of removing. This prejudice appears to have risen almost to a species of mania; so that nothing short of the most violent remedies, and coercive regulations seemed capable of effecting the return of reason.

Negligent, however, or rather obstinate, as those persons who had the direction of the British marine might be considered in several points, certainly extremely essential

essential to the perfection of marine architecture, considerable care and pains were bestowed on the collection and maintenance of such a number of ships as might awe the enemy, when they reflected on their numbers, and disregarded their individual inferiority. The Mediterranean was overspread by the ships of Britain, while the squadrons, if they could be said to deserve that name, and the ships fitted out by France as intended cruizers, owed an inglorious security to their patient continuance under the protection of their own batteries. On the side of the Atlantic alone, where the enemy scarcely possessed a sufficient number of ships to form a single squadron of respectable force, Britain employed thirty-one ships of the line in actual service, including those of fifty guns, independent of eleven others, almost immediately fit for service, and nineteen which were bringing forward with the utmost assiduity. Awed into perfect quietude in this quarter also, Louis the Fifteenth avoided even the attempt of sending any force to sea, either for the real purposes of war, or even those of mere bravado; so that the events of the war certainly proved, in the end, propitious to the intentions and expectations of those who were intrusted with the civil arrangement of the marine department, and the general management of those measures which were undertaken against the enemy. Baffled in every expedition where she attempted to act offensively, France not only found herself once more compelled to reluctantly forego her favourite system of violence, conquest, and oppression, but was obliged to substitute in its stead the milder, and, to an arrogant nation, the much more degrading scale of action, her own defence. The appearance of a French squadron on the ocean, was but the invariable forerunner of its discomfiture or capture; and as has frequently been the case, both in earlier and subsequent times, the only certain means left to them of avoiding the violence of their enemies, appeared to be their avoiding every chance of contest with them.

The human mind scarcely finds itself capable of supposing, that those customs or practices which it has witnessed the existence of, have not prevailed in almost every science, in a greater or less degree, even from its first origin. It has for many years been considered as an established datum, that the age of ships is of necessity confined within a certain period; and although, on some particular occasions of good fortune, and in peculiar cases, as well of care in construction, as in selection of materials, added to the inexperience of difficulties or dangers, those limits may, on some occasions, be somewhat extended; yet such enlargement is by no means common, or sufficiently material to effect any alteration in the principle, or cause any deviation from the arrangements which must be uniformly made in the necessary provision for the exigencies of the naval service. To such a re-

a regularity of system are moderns arrived, that the shipwrights of almost every European country are capable of stating, with considerable exactness, at the time even when a ship is launched, how long it will continue in a good state for active service; deprecating any of those accidents which it is within the bounds of possibility may completely disable it in a very few hours after it puts to sea. Pursuing the same system of calculation, established by long observation and experience, it becomes by no means difficult to say what number of new ships must be built annually to maintain a navy of any given extent in constant condition for immediate use. This is certainly now the case, but was by no means so at the commencement of the eighteenth century. A new ship, during the whole of the first forty years, might be considered as almost a prodigy, except under such circumstances as the capture, or total loss of the predecessor, bearing the same name, or the peculiar necessities of the state which rendered some extraordinary, though trivial augmentation necessary. As though an enthusiastic species of veneration was entertained, which it is confidently reported to have been, for that of the renowned Sir Francis Drake, in respect to every ship which had distinguished itself in the service of its country, reiterated repairs were continued from time to time, so that, in the end, it might generally be concluded, not a particle of the original construction remained. To this circumstance may be imputed, in great measure, that want of improvement or alteration which pervaded the British navy at this time; and may well account also, for that hiatus which might, but for that circumstance being made known, be considered an omission in report of the ships built for the public service during the earlier part of the last century.

Matters at length, as already observed, took a more favourable turn; preparations were ordered to be made for the construction of a considerable number of new vessels, a measure which was immediately carried into execution with a zeal and spirit that appeared to manifest, in some degree, a consciousness of former errors; and although, generally speaking, they were of the lower rates or classes, yet the trammels of ancient custom being once broken through, the newly adopted system spread progressively, though at first gradually, till it at length pervaded the whole.

The annexed official paper will concisely prove the assiduity of administration in this long-laboured and contested point, in which wisdom, after a tedious struggle, triumphed over custom; notwithstanding the former total negligence of it, and somewhat parsimonious adoption of the alteration, even in the instance where applause is rendered them, might subject those persons who were intrusted with the direction of public affairs to partial reprehension.

A LIST

A LIST of British Ships at Home, that is to say, in the Channel, the Irish Sea, the German Ocean, or on the European Side of the Atlantic including all the Convoys and Cruizers employed on various Services on this Side the Streights Mouth.

Rate.	Ships Names.	Guns.	Rate.	Ships Names.	Guns
1	Royal-Sovereign	100	4	Colchester	50
	Royal-George	100		Chester	50
	Victory	100	5	Dover	44
2	St. George	90		Hector	44
	Duke	90		Enterprize	44
	Sandwich	90		Lark	44
	Princess-Royal	90		Pearl	44
3	Princess-Amelia	80		Ludlow-Castle	44
	Shrewsbury	80		Mary-galley	44
	Cornwall	80		Fowey	44
	Hampton-Court	70		Anglesea	44
	Captain	70		Saphire	44
	Monmouth	70		Torrington	44
	Suffolk	70		Gosport	44
	Prince-Frederick	70	6	Shoreham	24
	Edinburgh	70		Success	24
	Lenox	70		Rye	20
4	Princess-Mary	60		Lively	20
	Sunderland	60		Phœnix	24
	Augusta	60		Blandford	24
	Exeter	60		Alderney	24
	Weymouth	60		Fox	24
	Dreadnought	60		Portmahon	24
	Princess-Louisa	60		Squirrel	20
	Strafford	60		Sheerness	24
	Falkland	50		Alborough	24
	Harwich	50		Wager	24
	Winchester	50		Gibraltar	20
4	Sutherland	50			

Sloops

Rate.	Ships Names.	Can.	Sw.	Rate.	Ships Names.	Can.	Sw.
Sloops.	Hind -	14	14	Sloops.	Mortar - -	10	14
	Merlin - -	14	14		Furnace -	12	12
	Grampus - -	14	14		Deptford prize -	14	8
	Trial - -	12	14		Swift - -	8	12
	Jamaica -	12	14	Fireship.	Ætna -	6	8
	Wolf - -	14	14		Scipio - -	6	8
	Granada -	10	14	Bomb.	Lightning - -	8	12
	Saltash - -	14	14	Hospital.	Princess Royal -	20	6
	Ferret - -	14	14	Armed	John and Ann -	16	6
	Baltimore -	14	14	vessels.	York -	16	16
	Vulture - -	14	14		St. Quintin -	16	16
	Fly - -	8	12		Baltimore - -	16	16
	Hawk -	8	12		Charles - -	14	6
	Cruizer -	8	12		James and Mary	8	6

Ships that may be ready by May next.

Rate.	Ships Names.	Guns.	When may be completed by master shipwrights.	Places where.
2	Prince-George - -	90	Ready -	At Chatham.
3	Ipswich - -	70	October -	Portsmouth.
	Yarmouth -	70	December -	Deptford.
4	Pembroke - -	60	December -	Chatham.
	Nottingham -	60	January -	Sheerness.
	Defiance - -	50	January -	River Thames.
	Lion - - -	60	March - -	Woolwich.
	Canterbury -	58	April -	Plymouth.
	Portland - -	50	This month -	River Thames.
	Rochester -	50	This month -	Ditto.
	Gloucester - -	50	April -	Ditto.
5	Looe - -	44	March -	Liverpool.
	South-Sea-Castle -	44	April - -	Ditto.
	New Ship - -	44	May -	Hull.
6	Bridgewater -	24	October -	Southampton.

New

Rate.	Ships Names.	Guns.	When may be completed by master shipwrights.	Place where.
5	New ship	24	March	Hull.
	New ship	24	April	Bursledon.
Sloops.	New		October	Harwich.
	New		November	River Thames.
	New		Ditto	Ditto.
	New		Ditto	Bursledon.
	New		January	Gosport.
	New		Ditto	Hamble.
	New		April	Shoreham.
	New		Ditto	Chichester.
	New		May	Hull.
Bomb.	Terror		Ready	Portsmouth.
	Serpent		Ready	Ditto.
Hospital.	Chester		Ready	Ditto.

Other Ships building, or re-building, with the Times they may be ready.

2	Prince	90	Uncertain	Chatham.
	Ramillies	90	Ditto	Portsmouth.
3	Devonshire	80	June, 1745	Woolwich.
	Lancaster	80	August, 1747	Ditto.
	New ship	80	Uncertain	Deptford.
	Newark	80	Ditto	Chatham.
	Kent	64	Ditto	Deptford.
	Grafton	64	Ditto	Plymouth.
	Centurion	58	February, 1745	Harwich.
	Windsor	60	August, 1746	Woolwich.
	Tilbury	50	Uncertain	Portsmouth.
	Old Centurion	50	Ditto.	Ditto.
	Ruby	50	July, 1745	Bursledon.
	Bristol	50	Ditto	Woolwich.
	Norwich	50	August, 1745	River Thames.

Rate.	Ships Names.	Guns.	When may be completed by master shipwrights.	Places.
4	Advice - -	50	December, 1745	Southampton.
	Salisbury -	50	February, 1745	East Cowes.
	Litchfield -	50	June, 1745 -	Harwich.
	Panther -	50	Uncertain -	Plymouth.
5	New ship -	44	July, 1745 -	River Thames.
	Ditto -	44	September, 1745	Ditto.
	Milford -	44	Uncertain	Portsmouth.
6	New ship -	24	July, 1745	Bewley.
	Ditto -	24	Ditto -	Liverpool.
	Ditto -	24	August, 1745	Ports. Harb.
	Ditto -	24	September, 1745	River Thames.
	Scarborough -	24	Uncertain.	Ditto.
Sloop.	Hound - -		Not surveyed	Deptford.
Hospital.	Scarborough -		Ditto -	Ditto.

Ships in Ordinary, with their Conditions.

Rate.	Ships Names.	Guns.	Places where.	Conditions.
1	Royal-Ann	100	Chatham	Will be taken in hand to be re-built when a dock can be spared.
	London -	100	Ditto	Wants great repairs, or re-building.
	Britannia -	100	Ditto	Wants great repair.
	Royal-William	100	Portsmouth	Wants small repair.
2	Union -	90	Chatham	Wants great repair.
	Blenheim -	90	Portsmouth	Serves as an hospital ship.
6	Guardland -	20	Woolwich	Wants great repair.
	Solebay -	20	Deptford	Serves as an hospital ship.
Hulks.	Panther -		Deptford	
	Success -		Ditto	
	Devonshire -		Woolwich	
	Chatham -		Chatham	
	Stirling-Castle -		Ditto	
	Captain -		Portsmouth	

Yarmouth

Rate.	Ships Names.	Places where.	Conditions.
Hulks.	Yarmouth -	Portsmouth	
	Buckingham -	Sheerness	
	Berwick -	Plymouth	
	Jersey -	Ditto	
	Salisbury -	Ditto	Fitted to go to Kinsale.
	Winchester -	Deptford	Fitting for a hulk.
Old.	Fowey -	Ditto	Keeps up the moorings there.
	Defiance -	Sheerness	Lies in ordinary to receive stores.
	Dreadnought -	Portsmouth	Serves as hulk there.
	Medway -	Ditto	Ditto.
	Nonsuch -	Ditto	Ordered to be sold.
	Diamond -	Ditto	Ditto.
	Hastings -	Ditto	Ditto.
	Enterprize	Plymouth	Ditto.
	Saphire -	Ditto	Ditto.

CHAPTER THE EIGHTH.

Alterations in the Principles of Construction which took Place in the British Navy soon after the Commencement of Hostilities with France in 1744—*The Consequences of Parsimony with respect to the British Marine*—*Comparative View of the Quantity of Materials consumed in the Construction of different Ships belonging to the Royal Navy*—*Account of the Timber consumed in building the Royal George, the Blenheim, the Princess Amelia, the Triumph, the Canada, the Mars, the Thunderer, the Rippon, the Dunkirk, the Falmouth, the Romney, and various other Ships of different Rates; with a concise Account of their general Services and Duration*—*A List of the Royal Navy, as it stood after the Conclusion of Hostilities with France and Spain in* 1748, *including all those Ships which had been captured from the Enemy, whether French or Spaniards, during the preceding War, and had been received into the British Service.*

NOTWITHSTANDING those defalcations which are necessarily attendant, even on the most successful wars, the British navy actually gained strength under the pressure of hostilities; while the knowlege acquired of those advantages to be derived from a change in the system of construction, and the number of ships captured from the enemy, at length serving for instructive models to her artists, appeared to place her, in the middle of the eighteenth century, as the complete mistress of the naval world.

Taking a progressive view of the expence attending the British marine, and comparing it with the force it contained, from the æra of the revolution, inquirers might, in some measure, be induced to suppose, that as the science advanced, extravagance kept pace with it. There are, however, a considerable number of secret points which it is necessary should be accurately understood before any definitive conclusions can be drawn. The increased value of materials, as well of labour, has been already shewn by a number of documents sufficient to furnish a tolerably correct scale; but there is another circumstance which has never as hitherto been taken into the account, and yet is, in itself, materially consequential

tial enough to throw an appearance of inaccuracy or waste over any detail of expenditure that might be given in the aggregate, were that point but imperfectly explained. The variation in the quantity of materials required to build two ships of the same rate, and nearly of the same burthen, is extremely curious: every change of system brought with it an alteration of expence; and unless the whole of those voluminous records which the labours even of a multitude of persons could not sufficiently explore and digest into regular order, except by the closest attention of their whole lives, were brought into one point of view, it would be extremely improper to say, that the persons charged with the conduct of marine affairs, during the reign of king William, were fraudulent, or those of any subsequent reign extravagant. The marine service of Britain is not to be conducted on the narrow principle of strict œconomy, for on some occasions the paltry saving even of ten thousand pounds, might prove of material ill consequence to the service of the country. During the administration of Sir Robert Walpole, including the long peace which succeeded the treaty of Utrecht, and the greater part of the war which followed it, one of the principal objections started against the increase of the British navy, with respect to dimensions, was the extravagant expence that would necessarily attend such an alteration. But it appears, from authentic papers, that this opinion was very incorrect, for it will be found the Triumph of 74 guns, though of the most enlarged dimensions, required a considerably less quantity of materials to construct her, than even the Mars, which was three hundred tons less than herself; while on the other hand, the Thunderer, of 74 guns only, required nearly eighty loads of timber more than the Princess Amelia, which was in the class or rate above her.

There appears, indeed, to have been much want of knowlege in respect to the requisites of a ship of war. The points that were considered as conducive to perfection were extremely ill-ascertained, and obstinately defended by prejudice, in opposition to experience: nor was it, till after a long and serious proof of defects, that an alteration of system was adopted. The investigation was carefully and diligently pursued, but the effects of it were not completely felt, till the expiration of fourteen or fifteen years. This circumstance, by carrying the system beyond the year 1750, may seem to create a species of confusion in principles, which it is, in fact, necessary to connect, in order to shew the whole of the new system, although it causes a deviation from that regular division of sections, which, if not explained, might be considered as an anachronism. The inconveniences and improprieties of construction which then marked the British ships of war, and certainly

rendered

rendered them inferior, speaking individually, according to their different rates and classes, to those of their cotemporaries in the possession of France or of Spain, were numerous. The several defects, which had long been discovered, were, at length, generally admitted as facts at the commencement of the year 1746. The new arrangement having, however, taken place, the British ships of war may be considered as built from this time on a system entirely new; and it is necessary to state, in few words, the improprieties in that which had preceded it.

The ships previously composing the British navy were so extremely long, in proportion to their breadth, at the same time so deficient in bearings forward, that, in a heavy sea, they pitched, and laboured with such violence as to endanger, considering this as the slightest inconvenience they were to expect, the loss of all their masts. Reflection, at length, produced an attention to the cause. The absence of these defects, which became too discernible in the vessels of different countries, were, at last, too glaringly apparent to be neglected by Britain. The practical experience derived, as already and repeatedly observed, from the superior qualifications of vessels captured from the enemy, caused an alteration of construction, and introduced, as it were, a total-different system into the British practice. The first attempt towards emancipation from the former servitude, was the construction of the Royal-George, a ship, at that time, deemed the paragon of beauty, and considered as the *ne plus ultra* of perfection in the science of marine architecture. The services rendered by this ship to the public, were of the most important kind. Her force nominally exceeded that of any vessel then possessed either by France, Spain, or any other country in the universe; for, owing to the general relaxation which had universally taken place with respect to marine architecture, all countries, France and Spain excepted, appeared little attentive to the construction of ships in the higher rates. The two nations last mentioned acted from motives far more scientific than Britain herself, of which notice will be hereafter taken; suffice it, on the present occasion to observe, that, having once taken the alarm, she immediately set on foot the establishment of a marine, which she flattered herself should, in actual principle, be equal to that possessed by any of her cotemporary rivals. The Royal-George, however, though a ship of the first rate, and, at that time, very justly considered one of the finest vessels in Europe, scarcely exceeded, in dimensions, the Princessa, a Spanish ship of 70 guns only, which had been captured from the enemy; for though reflection and observation had, at length, indeed, commenced their operations on the minds of the marine architects in Britain, the defeat of subsequent squadrons, and the capture of various other ships,

whose

whose excellencies had been experimentally proved, were still wanting for the completion of that improvement justly considered necessary to ultimate perfection. The ship just mentioned, according to the newly adopted system, led the van, as well in force as in superiority of construction; and though somewhat later dates in respect to other vessels, included in the subsequent list, may create that idea of anachronism already alluded to, yet, as those sentiments which suggested the alteration arose, without exception, on that adoption of principle of which the ship in question was considered to form the acmé, or principal point of perfection, it may be considered as extremely proper to introduce into the general scale adopted at the commencement of the year 1750, some few, which, though long theoretically projected, had not been introduced into practice till after that time.

The history of a science which naturally branches off into a variety of divisions, highly perplexes the describer, who, while he, through forcible compulsion, adheres to particular periods, finds a myriad of objections which militate against the adoption of so laudable a principle. Little, or to say the truth, no merit is ever to be taken on embracing a system, the success of which has, through the long practice of it, become manifest and apparent: for though, in former wars, the British navy has, in consequence of the exertions made by the persons employed on board it, been fortunate enough to establish its consequence among nations, degrading as the assertion may be to the science of this country, it cannot but be confessed that those successes have, during those contests, been in much greater degree owing to the conduct of those persons who were intrusted with the management of those vessels, than to any superior quality in the smallest degree attributable to the vessels themselves.

A remarkable degree of dilatoriness appears to have pervaded the maritime architects to whom that governmental-party, invested with the management of public affairs, entrusted the direction of the navy. Ten years, or upwards, were, on many occasions, considered as scarcely competent to the construction of a ship of war of the first class; although it is very evident, to more modern conceptions, that a ship of the same force might have been, with the utmost propriety, constructed in one-third of that time. The Royal-George with which the series commences, and which, as already remarked, is somewhat extended beyond the natural limits, may be said to include one particular class only. This ship must continue ever memorable for the services rendered by her to the country when under the orders of Lord Hawke; more particularly in the glorious encounter and defeat which the count de Conflans, at the head of what might be considered the French navy, experienced off the island of Belleisle, in 1759.

The

The drawing, from whence the annexed plate is taken, was made by Mr. George Staples, once belonging to Woolwich dock-yard, but who afterwards changed to Chatham, where he was unfortunately killed by taking hold of a slack rope, in consequence of which he fell into the dock-yard, and was dashed to pieces. The following memorandum will fully explain the different points necessary to be known:

ROYAL-GEORGE, built at Woolwich; taken in hand the 8th of January, 1746; *launched the* 1st *of February,* 1756.

Dimensions.	Feet.	Inches.
Length of the keel, for tonnage	143	$5\frac{1}{2}$
Length of the gun-deck	178	0
Extreme breadth	51	$9\frac{1}{2}$
Depth in the hold	21	6
Burthen in tons 2046$\frac{80}{94}$.		

Timber expended in building.

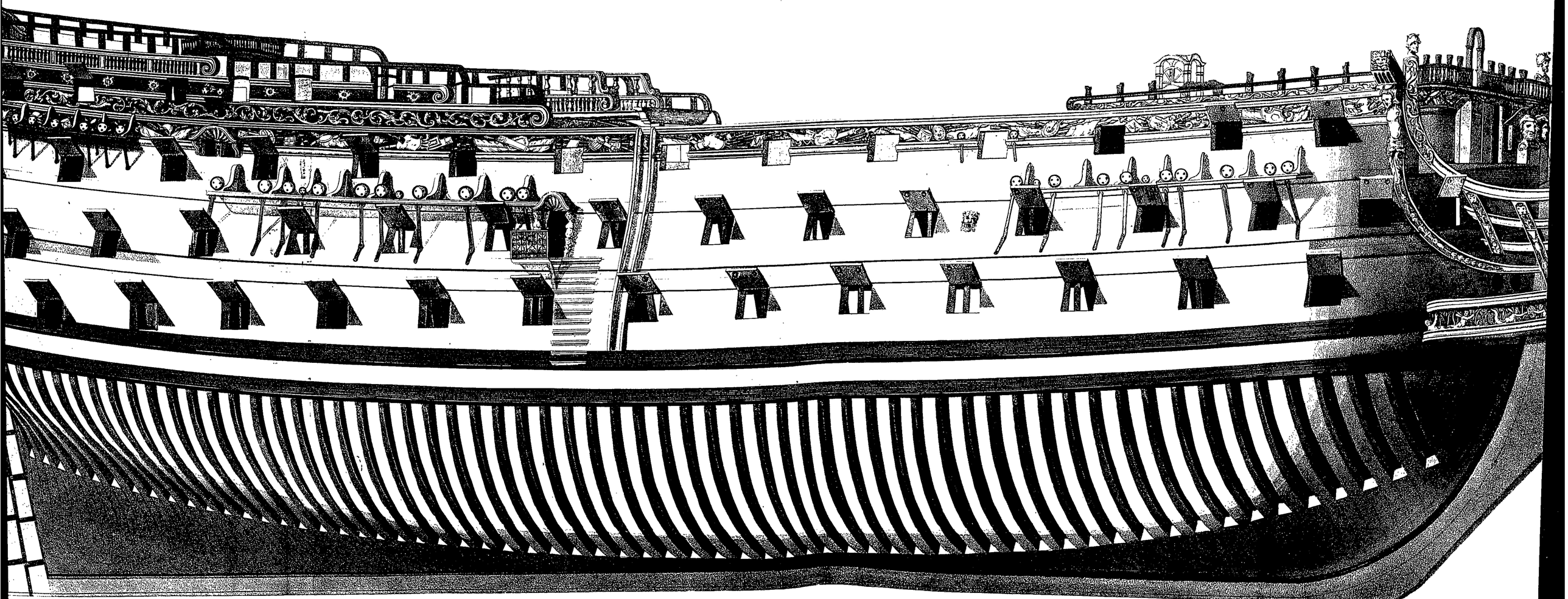
	Loads.	Feet.
Strait oak timber	2309	6
Compass ditto	2306	40
Elm ditto	125	10
Fir ditto	214	8
Knees, square	170	8
Ditto, raking	149	33
English oak plank, 4 inches thick	135	8
Ditto 3 ditto	94	9
Ditto $2\frac{1}{2}$ ditto	17	33
Ditto 2 ditto	15	4
Dantzick ditto 4 ditto	174	14
Ditto 3 ditto	42	13
Elm ditto 4 ditto	4	39
Ditto 3 ditto	2	0

N.B. Fifty cubic feet of timber make one load.

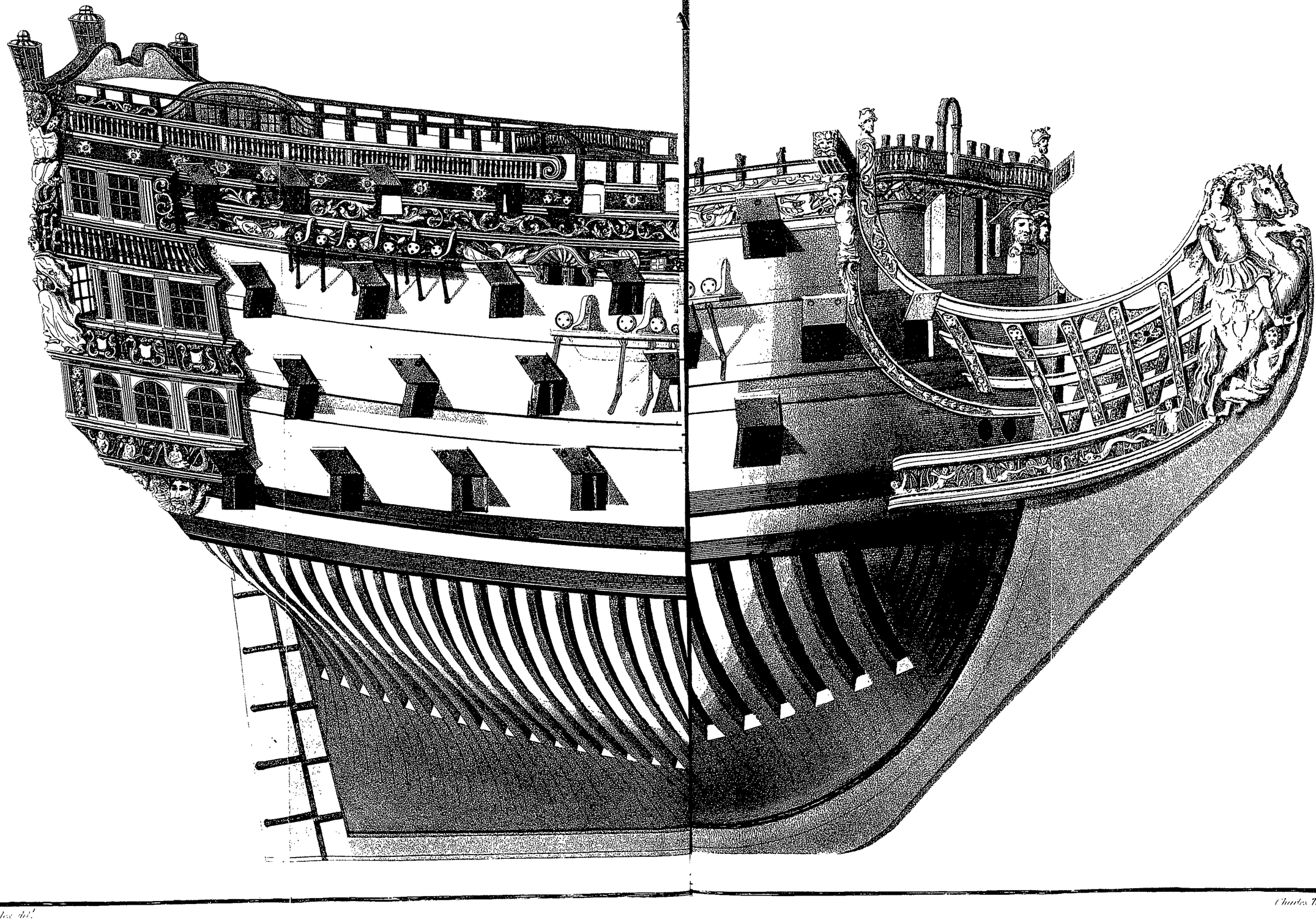
To this ship naturally succeeds the Blenheim, of 90 guns; the building of which, though not actually commenced till the year 1756, was, in all the different principles of construction, agreed to in 1748; a circumstance which naturally includes it in the same class with its predecessor.

BLENHEIM,

THE ROYAL GEORGE.

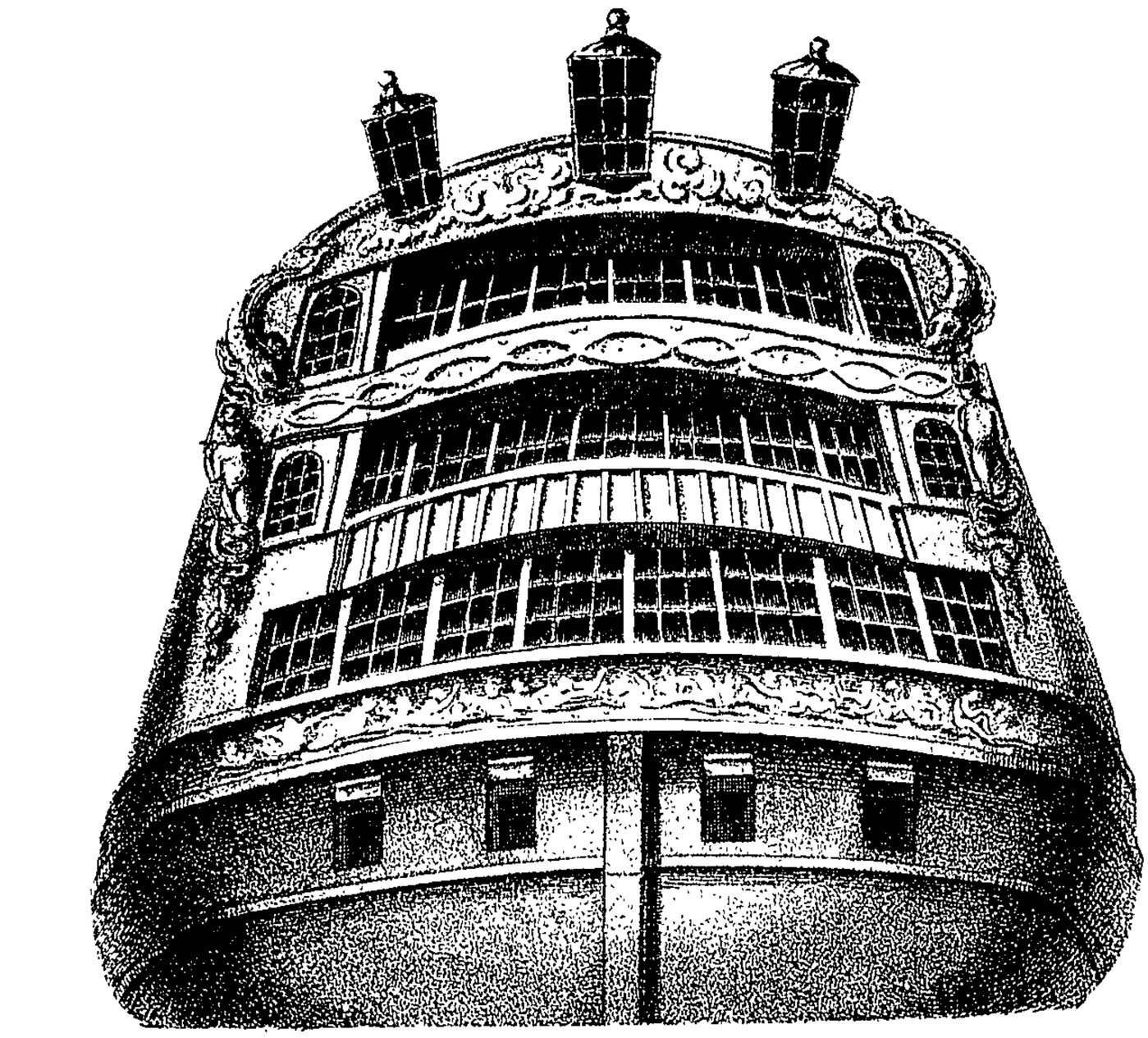


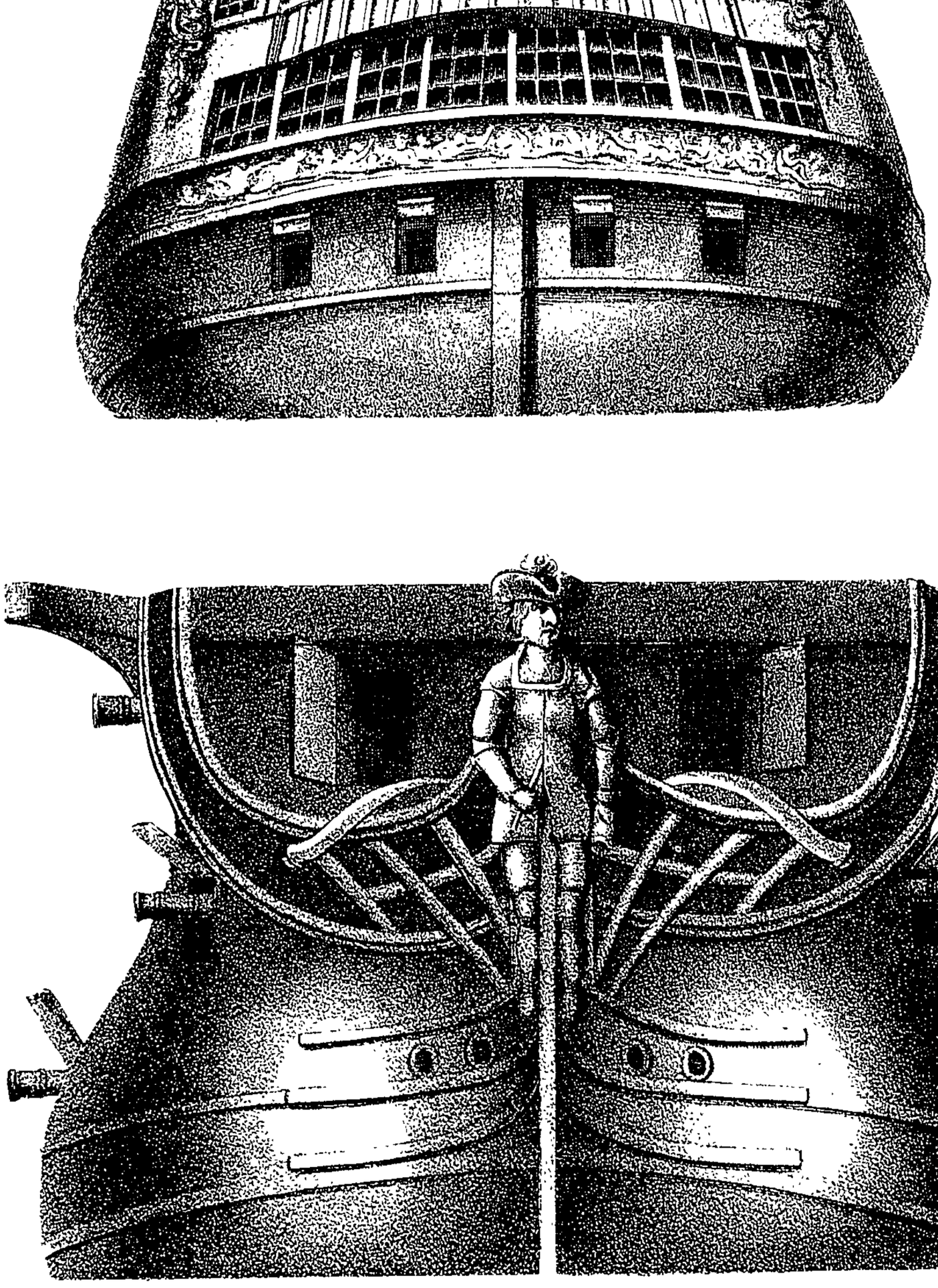
Published as the Act directs by G.J. & J. Robinson, Paternoster Row August 1st 1800.



Charles Toudouze pinxt.

to me Staples dir.





Greig Sculp

Head and Stern Views of a British second rate. Launched 1758.

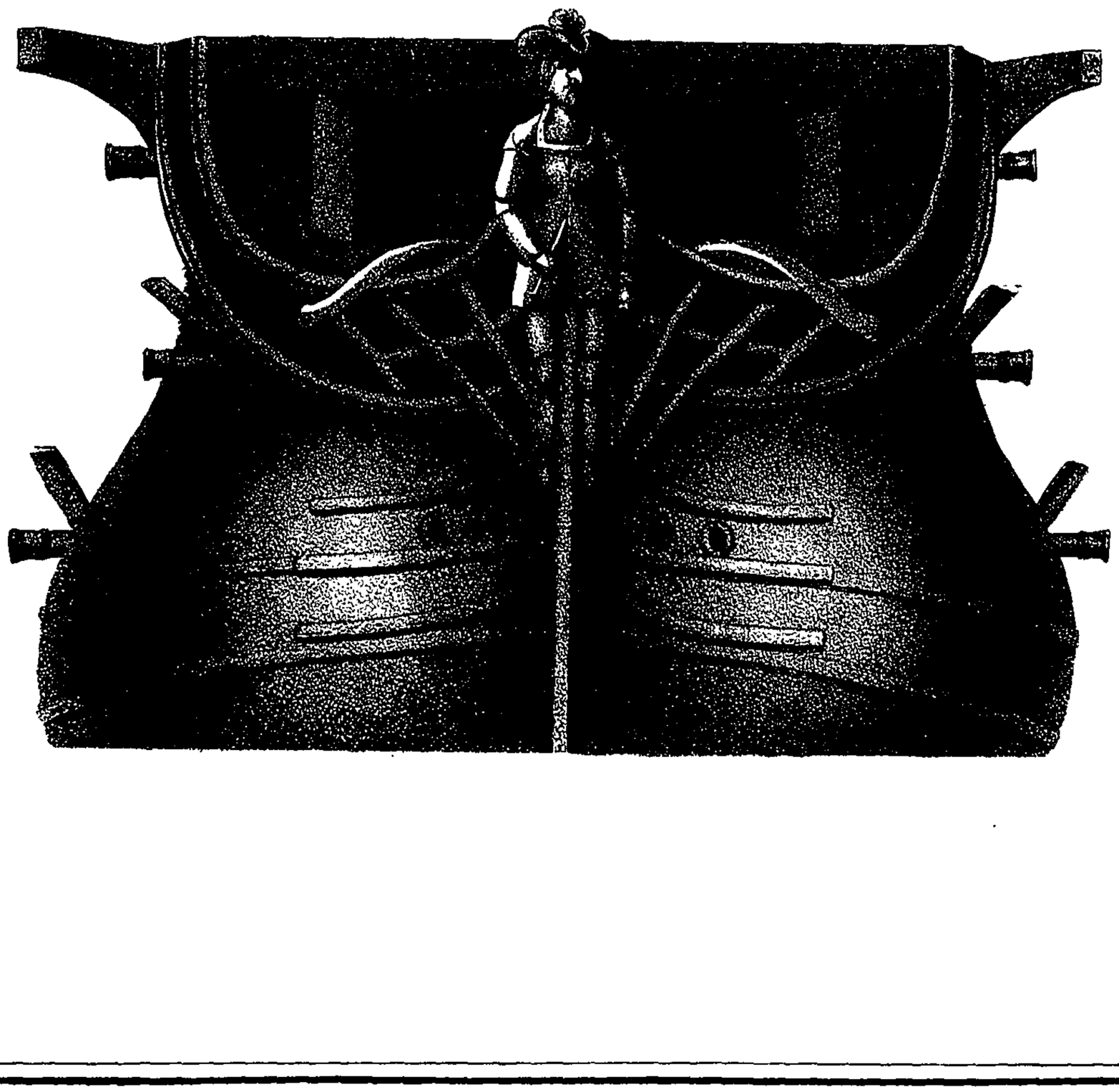
London Published as the Act directs 25 March 1802 by John Seccombe & Co

BLENHEIM, 90 *guns, taken in Hand* 1st *May*, 1756, *and launched* 5*th July*, 1761.

	Feet.	Inch.
Length of the keel for tonnage	142	7
Length on the gun-deck	176	1
Breadth, extreme	49	1
Real rake of the stern	29	8
Rake of the back of the main-post at the wing-transom	1	6
Depth in hold	21	0
Burthen in tons 1827		

False keel, one only of 5½ inches thick.

	Loads.	Feet.
Straight oak timber	957	29
Compass ditto ditto	1605	17
Elm ditto	64	26
Fir ditto	281	30
Knees, square	102	3
Ditto raking	94	4
Thick stuff of 10 inches	64	23
Ditto of 9½	0	40
Ditto of 9	74	38
Ditto of 8½	1	10
Ditto of 8	53	12
Ditto of 7½	32	20
Ditto of 7	71	35
Ditto of 6½	5	20
Ditto of 6	90	36
Ditto of 5½	8	30
Ditto of 5	65	35
English planks of 4 inches	130	44
Ditto of 3	71	40
Ditto of 2½	5	26
Carry forward	3782	18



Greig Sculp.

Head and Stern Views of a British second rate. Launched 1758.

London. Published as the Act directs. March 15. 1802. by John Sewell. Cornhill.

BLENHEIM, 90 *guns, taken in Hand* 1st *May*, 1756, *and launched* 5*th July*, 1761.

	Feet.	Inch.
Length of the keel for tonnage	142	7
Length on the gun-deck	176	1
Breadth, extreme	49	1
Real rake of the stern	29	8
Rake of the back of the main-post at the wing-transom	1	6
Depth in hold	21	0
Burthen in tons 1827		

False keel, one only of $5\frac{1}{2}$ inches thick.

	Loads.	Feet.
Straight oak timber	957	29
Compass ditto ditto	1605	17
Elm ditto	64	26
Fir ditto	281	30
Knees, square	102	3
Ditto raking	94	4
Thick stuff of 10 inches	64	23
Ditto of $9\frac{1}{2}$	0	40
Ditto of 9	74	38
Ditto of $8\frac{1}{2}$	1	10
Ditto of 8	53	12
Ditto of $7\frac{1}{2}$	32	20
Ditto of 7	71	35
Ditto of $6\frac{1}{2}$	5	20
Ditto of 6	90	36
Ditto of $5\frac{1}{2}$	8	30
Ditto of 5	65	35
English planks of 4 inches	130	44
Ditto of 3	71	40
Ditto of $2\frac{1}{2}$	5	26
Carry forward	3782	18

	Loads.	Feet.
Brought forward -	3782	18
English plank of 2 inches - - - - -	11	19
Dantzick plank of 4½ - - - - - -	4	10
Ditto of 4 - - - - - - -	217	2
Ditto of 3 - - - - - - -	40	26
Elm plank of 4 - - - - - -	11	40
Ditto of 3 - - - - - - -	0	45
Total -	3968	10

As the superior vessel among the third rates, appears the Princess-Amelia, a ship of three decks, but mounting only 80 guns; this was an improvement on the same class, which had long previously existed in the British navy; and the ship in question was, to the latest moment of her existence, held in no inconsiderable degree of estimation. During the dispute with France, which commenced in 1778, she was constantly kept in commission, was frequently a flag ship, and actually sent, towards the conclusion of the war, though so extremely old, in that capacity to the West Indies, after having been, for a considerable space of time preceding, employed in the same line of service, on the home or channel station.

PRINCESS-AMELIA, 80 *guns, taken in Hand* 15 *August*, 1751, *and launched* 7*th March*, 1757.

	Feet.	Inch.
Length of keel for tonnage - - - - -	133	0
Length of the gun-deck - - - - - -	165	0
Breadth of the extreme - - - - -	47	3
Rake of the back of the main poſt at the wing-transom -	2	6
Depth in held - - - - - - -	20	0
Burthen in tons - - - 1579$\frac{39}{94}$		

	Loads.	Feet.
Strait oak timber - - - - - -	1207	17
Compass ditto - - - - - - -	1088	40
Carry forward -	2296	7

Elm

	Loads.	Feet.
Brought forward -	2296	7
Elm timber	64	0
Fir ditto	120	0
Knees square	100	0
Ditto raking	94	40
Thick stuff of 100 inches	8	40
Ditto of 9½	0	10
Ditto of 9	54	43
Ditto of 8½	4	40
Ditto of 7½	11	4
Ditto of 7	137	7
Ditto of 6½	20	16
Ditto of 6	111	44
Ditto of 5½	4	40
Ditto of 5	161	0
English oak plank of 4 inches	102	25
Ditto of 3	64	10
Ditto of 2½	7	0
Ditto of 2	6	25
Dantzic ditto of 4	136	25
Ditto of 3	26	0
Elm ditto of 4	6	0
Ditto of 3	1	25
Ditto of 2	1	0
Total -	3541	1

To this ship are annexed the dimensions and history of four others, different in their fate and in their construction. The first, as the most powerful, is the Triumph of 74 guns; a ship which the possession of those severally captured from the French by the British squadrons under the orders of lord Anson and sir Edward Hawke, and the knowlege of those pre-eminent qualities which they possessed, induced the British marine architects to embrace the adoption of. The Invincible, captured by the former on the 3d of May, 1747, is said to have suggested the first idea which, till that time, ſtrange as it may appear to indifferent

readers, had never suggested itself as possibly, or, to say the least, as prudentially adoptable, by British marine architects. Disdaining, at length, however, the trammels of their former servitude, they boldly, though reluctantly perhaps, tore asunder the bonds of prejudice which confined them, and gave to the world a ship, which, for the space of more than twenty years, was considered as the first of her class then existing; nor has it, perhaps, been ever materially exceeded in principles and utility by any one that has been more recently constructed.

TRIUMPH, 74 *Guns, taken in Hand* 2d *January*, 1758, *and launched* 3d *March*, 1764.

	Feet.	Inches.
Length of the gun-duck	171	3
Length of the keel for tonnage	138	8
Breadth of the extreme	49	9
Rake of the back of the main post at the wing transom to the lower edge of the rabbit of the keel	1	4
Depth in the hold	21	3
Burthen in tons	1825$\frac{5}{9}\frac{3}{4}$.	

	Loads.	Feet.
Strait oak timber	597	27
Compass ditto	1355	29
Elm ditto	62	12
Fir ditto	135	25
Knees square	61	23
Ditto raking	76	15
Thick stuff of 10 inches	3	35
Ditto of 9$\frac{1}{2}$	13	15
Ditto of 9	42	10
Ditto of 8$\frac{1}{2}$	15	40
Ditto of 8	44	8
Ditto of 7$\frac{1}{2}$	23	4
	2430	43

Thick

	Loads.	Feet.
Brought forward -	2430	43
Thick stuff of 7 inches - - - - -	64	5
Ditto of $6\frac{1}{2}$ - - - - - - -	42	19
Ditto of 6 - - - - - -	107	30
Ditto of $5\frac{1}{2}$ - - - - - -	4	35
Ditto of 5 - - - - - - -	71	38
English oak plank of 4 inches - - - -	86	38
Ditto of 3 - - - - - - -	44	20
Ditto of $2\frac{1}{2}$ - - - - - -	12	30
Ditto of 2 - - - - - - -	0	40
Dantzic ditto of 4 - - - - -	146	16
Ditto of 3 - - - - - -	10	41
Elm ditto of 4 - - - - - -	5	45
Ditto of 3 - - - - - -	0	10
Total -	3028	20

To the Triumph, the keel of which, as just shewn, was not laid till the 2d day of January, 1758, and which ship was not finished till after peace had taken place with France and Spain, having been launched on the 3d of March, 1764, was added a sister, or cotemporary vessel, built nearly on the same scale; but as these extraordinary efforts beyond the rigid bounds of custom were intended merely for experiment, no more of the same class were built till a long proof of the superiority of so extended a scale of dimensions had been established by long practice. Of this circumstance, more enlarged notice will be hereafter taken in describing the present existing class of ships in the third rate.

The Triumph, which was the name of the ship alluded to, will be therefore found to have considerably outstripped the rest of her compeers: her crew was necessarily augmented beyond the ordinary compliment; and every other part of her equipment was conducted on the same grand scale.

The difference will be easily discernible on comparing the dimensions of the Triumph, just given, with those of the Mars, a ship of the same nominal rate; the construction of which commenced in the month of May, 1756, and was completed on the 15th day of March, 1759.

MARS,

MARS, 74 *Guns*, *taken in Hand* 1 *May*, 1756, *and launched* 5 *March*, 1759.

	Feet.	Inches.
Length of the keel for tonnage	134	4
Length on the gun-deck	165	6
Real rake of the stern	18	4
Rake of the back of the post at the wing-transom	1	$4\frac{1}{2}$
Breadth of the extreme	46	8

Burthen in tons 1556$\frac{10}{94}$.

	Loads.	Feet.
Strait oak timber	1340	22
Compass ditto	795	8
Elm ditto	39	43
Fir ditto	142	45
Knees square	70	0
Raking	72	17
Thick stuff of 11 inches	3	20
Ditto of 10	32	10
Ditto of 9	74	11
Ditto of 8	94	22
Ditto of $7\frac{1}{2}$	4	0
Ditto of 7	82	0
Ditto of $6\frac{1}{2}$	10	20
Ditto of 6	116	35
Ditto of $5\frac{1}{2}$	2	10
Ditto of 5	68	43
English oak plank of 4 inches	149	26
Ditto of 3	46	25
Ditto of $2\frac{1}{2}$	5	47
Ditto of 2	2	31
Dantzic ditto of $4\frac{1}{2}$ inches	3	40
Ditto of 4	164	40
Ditto of 3	10	45
Elm ditto of 4	7	48
Ditto of 3	1	32
Total	3342	40

This

This ship was engaged in active service during the whole of the war; particularly under Sir Edward Hawke, at the memorable defeat of the French fleet under Conflans, in the month of November after her first entrance into the service. During the ensuing peace, having needed some considerable repairs, which were undertaken by way of experiment with foreign timber, it is a curious and interesting anecdote to record, that although only inactively employed for a short time, as a guard ship, she was found so defective, as to cause a second survey to be held upon her: the consequence was, she was reported to be totally unfit for service, even should the best possible repair be given to her.

Between this ship and the Triumph was an intermediate class of rather more enlarged dimensions, which long continued the favourite method of construction, and has not even to the present moment been entirely departed from. The two ships selected for the purpose of showing the different, though not widely diverging branches of this system, were the two most favourite in their class: the Thunderer, which after having been almost uninterruptedly employed in the most active service, at length unfortunately foundered in that most dreadful of all hurricanes, which nearly desolated the West Indies, in the month of October, 1780; and the Cañada, more fortunate than her companion, which still continues in service, having been constantly engaged on the most active stations during the whole of the present war.

THUNDERER, 74 Guns, taken in Hand 17 September, 1756, and launched 19 March, 1760.

	Feet.	Inches.
Length of the gun-deck	166	6
Length of the keel for tonnage	136	0
Real rake of the stern	24	11
Rake of the back of the main-post at the wing-transom	1	$4\frac{1}{2}$
Breadth extreme	47	2
Depth in hold	19	9
Burthen in tons	$1609\frac{3}{9}\frac{3}{4}$.	

Strait

	Loads.	Feet.
Strait oak timber	723	4
Compass ditto	1892	38
Elm ditto	50	35
Fir ditto	121	44
Knees square	68	48
Ditto raking	79	34
Thick stuff of 10 inches	19	29
Ditto of 9	59	30
Ditto of 8½	0	40
Ditto of 8	81	25
Ditto of 7½	0	10
Ditto of 7	29	10
Ditto of 6½	16	40
Ditto of 6	139	0
Ditto of 5½	18	41
Ditto of 5	70	20
English oak of 4	128	5
Ditto of 3	62	35
Ditto of 2½	3	49
Ditto of 2	3	39
Dantzic Ditto of 4½	1	10
Ditto of 4	86	41
Ditto of 3	10	5
Elm ditto of 4	58	12
Ditto of 3	2	30
Total	3713	24

CANADA, 74 *Guns, taken in Hand* 1 *July*, 1760, *and launched* 17 *September*, 1765.

	Feet.	Inches.
Length of the gun-deck	170	0
Ditto of the keel for tonnage	130	1
Breadth extreme	46	9
		Depth

	Feet.	Inches.
Depth in hold - - - - - -	20	6
Real rake of the stern - - - - -	48	0
Rake of the back of the main-post, at the wing-transom -	4	8
Burthen in tons - - 1606$\frac{24}{94}$.		

	Load's.	Feet.
Strait oak timber, upward from 90 - - - -	347	10
Ditto under 90 to 60 - - - - -	311	25
Ditto under 60 - - - - - -	71	8
Compass ditto, upward from 80 - - - -	882	25
Ditto under 80 to 50 - - - - -	654	0
Ditto under 50 - - - - - -	89	20
Elm timber - - - - - -	64	15
Fir ditto - - - - - -	117	31
Knees square - - - - - -	82	19
Ditto raking - - - - - -	114	47
Thick stuff of 10 inches - - - -	5	0
Ditto of 9 - - - - - - -	45	5
Ditto of 8$\frac{1}{2}$ - - - - - -	16	35
Ditto of 8 - - - - - -	87	15
Ditto of 7$\frac{1}{2}$ - - - - - -	4	6
Ditto of 7 - - - - - -	29	45
Ditto of 6$\frac{1}{2}$ - - - - - -	45	45
Ditto of 6 - - - - - -	61	10
Ditto of 5$\frac{1}{2}$ - - - - - -	16	5
Ditto of 5 - - - - - -	42	10
English oak plank of 4 - - - - -	120	36
Ditto of 3 - - - - - -	48	26
Ditto of 2$\frac{1}{2}$ - - - - - -	4	36
Ditto of 2 - - - - - - -	2	26
Dantzic ditto of 4 - - - - -	119	5
Ditto of 3 - - - - -	18	30
Elm ditto of 4 - - - - -	2	20
Ditto of 3 - - - - - -	0	14
Total -	3405	19

The next inferior class of ships of war, being those carrying 70 guns only, became entirely exploded, and, consequently, formed no part of the new arrangement. Ships of 64 guns, which were then considered as of the lowest force which it was prudent to admit into a line of battle, were consequently enlarged in their dimensions. Of the former class, the Yarmouth only continued in existence till the conclusion of the eighteenth century; and of the latter, the Saint Alban's and Asia.

YARMOUTH, taken in Hand January the 14th, 1746, and launched the 28th of December, 1748.

	Feet.	Inches.
Length of the keel for tonnage	130	$6\frac{5}{8}$
Length on the gun-deck	160	0
Breadth extreme	44	3
Real rake of the stern	34	6
Rake of the back of the main-post at the wing-transom	4	$2\frac{1}{2}$
Depth in the hold	19	0
Burthen in tons	1359	

	Loads.	Feet.
Strait oak timber	713	18
Compass ditto	974	14
Elm ditto	49	8
Fir ditto	77	9
Knees, square	51	4
Raking	94	4
Thick stuff of 11 inches	3	47
Ditto of 10	15	4
Ditto of 9	8	38
Ditto of 8	48	7
Ditto of $7\frac{1}{2}$	3	8
Ditto of 7	46	18
Ditto of $6\frac{1}{2}$	9	7
Carry forward	2093	36

Thick

	Loads.	Feet.
Brought forward -	2093	36
Thick stuff of 6 inches - - - - -	98	15
Ditto of $5\frac{1}{2}$ - - - - - - -	12	0
Ditto of 5 - - - - - -	120	13
English oak planks of 4 inches - - - -	87	30
Ditto of 3 - - - - - -	54	12
Ditto of $2\frac{1}{2}$ - - - - - - -	17	6
Ditto of 2 inches - - - - -	4	33
Dantzick plank of 4 - - - - -	119	13
Ditto of 3 - - - - - -	12	9
Elm plank of 4 - - - - -	11	23
Ditto of 3 - - - - - -	3	15
Total -	2634	5

SAINT ALBANS, taken in Hand July 13, 1759, *and launched* 12*th September*, 1764.

	Feet.	Inch.
Length on the gun-deck - - - - -	159	$3\frac{3}{4}$
Length of keel for tonnage - - - -	130	9
Breadth of the extreme - - - -	44	$6\frac{1}{2}$
Depth in the hold - - - - - -	18	$9\frac{3}{4}$
Real rake of the stern - - - - -	17	4
Rake of the back of the main poft at the wing-transom -	1	3

Burthen in tons - - - 1380

	Loads.	Feet.
Strait oak timber - - - - -	974	13
Compass ditto - - - - - -	819	12
Elm timber - - - - - -	43	18
Fir ditto - - - - - -	134	0
Knees square - - - - - -	68	2
Raking - - - - - - -	69	18
Carry forward -	2108	13

	Loads.	Feet.
Brought forward -	2108	13
Thick stuff of 11 inches - - - - -	3	17
Ditto of 10 - - - - - -	31	19
Ditto of 9 - - - - - -	69	12
Ditto of 8 - - - - - -	88	9
Ditto of 7½ - - - - - -	4	2
Ditto of 7 - - - - - -	74	13
Ditto of 6½ - - - - - -	9	2
Ditto of 6 - - - - - -	108	9
Ditto of 5½ - - - - - -	3	4
Ditto of 5 - - - - - -	55	13
English oak plank of 4 inches - - -	140	2
Ditto of 3 - - - - - -	40	7
Ditto of 2½ - - - - - -	4	14
Ditto of 2 - - - - - -	2	19
Dantzic ditto of 4 - - - - - -	113	7
Ditto of 3 - - - - - -	9	2
Ditto of 2½ - - - - - -	7	12
Ditto of 2 - - - - - - -	1	18
Total -	2871	44

ASIA, taken in Hand February the 15*th*, 1759, *and launched March the* 3*d*, 1764.

	Feet.	Inches.
Length on the gun-deck - - - - -	158	0
Ditto of the keel for tonnage - - - -	129	6½
Breadth extreme - - - - - -	44	6
Depth in the hold - - - - -	18	10
Real rake of the stern - - - - -	17	6
Rake of the back of the main post at the wing transom -	1	3½
Burthen in tons - - 1364.		

Strait

	Loads.	Feet.
Strait oak timber	987	14
Compass ditto	784	45
Elm ditto	42	17
Fir ditto	139	18
Knees square	67	13
Raking	70	12
Thick stuff of 11 inches	3	4
Ditto of 10	30	9
Ditto of 9	70	2
Ditto of 8	90	12
Ditto of 7½	3	14
Ditto of 7	75	16
Ditto of 6½	8	13
Ditto of 6	104	9
Ditto of 5½	2	3
Ditto of 5	60	4
English oak of 4	139	2
Ditto of 3	38	14
Ditto of 2½	3	9
Ditto of 2	2	17
Dantzic Ditto of 4	129	3
Ditto of 3	7	2
Elm ditto of 4	6	15
Ditto of 3	1	17
Total	2864	34

The larger vessels of the fourth rate, mounting 60 guns each, appear next in succession; they were originally considered as perfectly intitled to the rank of ships of the line, but became, on the enlargement of ideas, gradually dismissed from a consequential service, and were rarely employed, after the new system had gained a permanent footing, in any other station than as convoys, except in cases of the greatest emergency. At the conclusion, however, of the war with France and Spain, in 1748, owing to the great extension of the British commerce, this class was more numerous, perhaps, than any other in the royal navy

navy; for it comprized nearly sixty sail of ships. The two among the most esteemed were the Rippon and the Dunkirk; and they continued, though their class was nearly annihilated, almost uninterruptedly employed for nearly half a century.

RIPPON, 60 *Guns, taken in Hand* 25*th November*, 1752, *and launched* 20*th January*, 1758.

	Feet.	Inches.
Length on the gun-deck	155	5
Length of the keel for tonnage	129	4
Real rake of the stern	33	9
Rake of the back of the post at the wing-transom	2	$9\frac{1}{2}$
Breadth extreme	42	6
Depth in hold	18	7
Burthen in tons	$1242\frac{56}{94}$.	

	Loads.	Feet.
Strait oak timber	622	5
Compass ditto	918	15
Elm ditto	44	28
Fir ditto	70	30
Knees square	49	38
Ditto raking	61	12
Thick stuff of 10 inches	3	32
Ditto of 9	12	46
Ditto of 8	54	18
Ditto of $7\frac{1}{2}$	1	3
Ditto of 7	15	4
Ditto of $6\frac{1}{2}$	6	6
Ditto of 6	100	25
Ditto of $5\frac{1}{2}$	8	2
Ditto of 5	115	0
English oak plank of 4 inches	82	30
Ditto of 3	53	18
Carry forward	2219	12

	Loads.	Feet.
Brought forward -	2219	12
English of $2\frac{1}{2}$ - - - - - -	12	5
Ditto of 2 - - - - - -	3	25
Dantzic ditto of 4 inches - - - - -	107	0
Ditto of 3 - - - - - -	10	18
Elm ditto of 4 - - - - - -	10	25
Ditto of 3 - - - - - -	2	20
Total -	2365	5

DUNKIRK, 60 *guns, taken in Hand* 1*ſt April,* 1746, *and launched* 22*d July,* 1754.

	Feet.	Inch.
Length on the gun-deck - - - - -	153	2
Length of the keel for tonnage - - - -	126	4
Real rake of the stern *omitted.*		
Rake of the back of the main-post at the wing-transom -	3	$11\frac{1}{2}$
Breadth extreme - - - - - -	42	$9\frac{1}{2}$
Depth in hold - - - - - -	18	9
Burthen in tons - - - $1230\frac{39}{94}$.		

	Loads.	Feet.
Strait - - - - - -	1069	28
Compass ditto - - - - - -	896	24
Elm ditto - - - - - -	64	15
Fir ditto - - - - - -	74	44
Knees square - - - - - -	65	31
Ditto raking - - - - - -	87	5
English oak plank of 4 inches - - - -	89	13
Ditto of 3 - - - - - -	39	26
Ditto of $2\frac{1}{2}$ - - - - - -	14	13
Ditto of 2 - - - - - - -	4	30
Carry forward -	2405	29

Dantzic

	Loads.	Feet.
Brought forward -	2405	29
Dantzic ditto of 4	135	49
Ditto of 3	14	37
Elm ditto of 4	5	35
Ditto of 3 *omitted.*		
Total -	2562	0

The inferior class in the same rate descended to ships nominally carrying 50 guns; a force which was occasionally increased, sometimes from caprice, and on other occasions from necessity, to 54 or even 58. Of this class, the Romney and Falmouth will afford a sufficient specimen: the first continued in existence for nearly forty years in constant esteem, as a ship possessing excellent qualities in proportion to her rate; the latter, scarcely inferior in repute, was much more unfortunate in the duration of her existence, having proceeded to the East Indies, and frequently sustained there the brunt of the various heavy contests which took place between the British and French squadrons under Sir George Pococke, and the count D'Aché, was prematurely condemned, and finally left to perish at Batavia.

ROMNEY, 50 guns, taken in Hand the 1st of August, 1759, and launched the 8th July, 1752.

	Feet.	Inches.
Length on the gun-deck -	146	0
Length of the keel for tonnage -	120	$8\frac{1}{2}$
Breadth extreme -	40	$4\frac{1}{4}$
Depth in the hold -	17	2
Burthen in tons - - $1046\frac{6}{94}$.		

	Loads.	Feet.
Strait oak timber -	318	45
Compass ditto -	1065	13
Elm ditto -	28	15
Carry forward -	1412	23

Fir

	Loads.	Feet.
Brought forward -	1412	23
Fir ditto	76	49
Knees, square	56	46
Raking	78	43
Thick stuff of 10 inches	0	42
Ditto of 9	4	30
Ditto of 8	18	10
Ditto of 7½	7	15
Ditto of 7	39	20
Ditto of 6½	19	10
Ditto of 6	45	35
Ditto of 5½	32	5
Ditto of 5	75	10
English oak plank of 4 inches	95	13
Ditto of 3	45	43
Ditto of 2½	8	21
Ditto of 2 inches	1	44
Dantzic plank of 4	114	22
Ditto of 3	11	35
Elm plank of 4	5	42
Ditto of 3	0	10
Total -	2151	18

FALMOUTH, 50 *Guns, taken in Hand August* 22, 1750, *and launched December* 7, 1752.

	Feet.	Inch.
Length on the gun-deck	144	0
Length of keel for tonnage	116	1½
Real rake of the stern	17	4
Rake of the back of the main poſt at the wing-transom	5	1
Breadth extreme	41	2
Depth in the hold	17	8
Burthen in tons	$1046\frac{5}{9}\frac{6}{4}$	

	Loads.	Feet.
Strait oak timber	813	34
Compass ditto	810	17
Elm timber	69	41
Fir ditto	108	22
Knees square	47	46
Raking	105	45
Thick stuff of 10 inches	0	22
Ditto of 9	0	49
Ditto of 8	3	14
Ditto of 7½	42	7
Ditto of 7	38	17
Ditto of 6½	27	9
Ditto of 6	25	12
Ditto of 5½	28	19
Ditto of 5	33	41
English oak plank of 9 inches	94	17
Ditto of 3	45	22
Ditto of 2½	0	30
Dantzic ditto of 4 inches	106	31
Ditto of 3	12	22
Elm ditto of 4	9	42
Ditto of 3	0	10
Total	2425	19

The superior class of ships in the fifth rate mounted 44 guns, on two decks, and certainly were the worst vessels which, at that time, composed any part of the British navy. Long use had caused the continuance of their construction, and experience of their manifold defects proved scarcely sufficient to abolish the ridiculous and absurd custom. Even in later times an attempt was made to continue the same class, amended, in some respects, as to those points which were considered as the greatest objections to its farther use; but though improvement was in such instances, perhaps, applied with sufficient success, yet there still remained a list of imperfections which will, in all probability, prove sufficient to prevent its revival, except some new and unforeseen occurrence should occasion it.

LUDLOW-

LUDLOW-CASTLE, 44 *guns, taken in Hand September* 14, 1743, *and launched December* 23, 1744.

	Feet.	Inch.
Length on the gun-deck	126	$10\frac{5}{8}$
Length of the keel for tonnage	103	8
Real rake of the stern	14	2
Rake of the back of the main-post at the wing-transom	4	3
Breadth extreme	36	3
Depth in hold	15	$5\frac{1}{2}$
Burthen in tons 725.		

	Loads.	Feet.
Strait oak timber	617	9
Compass ditto	584	13
Elm ditto	52	9
Fir ditto	90	3
Knees square	38	1
Ditto raking	79	2
English oak plank of 4 inches	82	16
Ditto of 3	40	3
Ditto of $2\frac{1}{2}$	18	16
Ditto of 2	0	47
Dantzic ditto of 4	84	10
Ditto of 3	8	10
Elm ditto of 4	6	4
Ditto of 3	1	4
Total	1701	47

Between this and the succeeding rate, there was a wonderful interspace, no intervening class, at that time, existing in the British navy, between those which mounted 44 and the sixth rates carrying 24 guns; these were considered as the only vessels entitled to the denomination of frigates; and the variation between the different British built ships comprized in that description, amounting, in the year 1750, to almost sixty sail, was so trivial, that the account of one may, without the smallest impropriety, serve for that of the whole.

SQUIRREL, 24 *Guns, taken in Hand August* 19, 1754, *and launched October* 23, 1755.

	Feet.	Inches.
Length on the gun-deck	107	3
Length of the keel for tonnage	89	$5\frac{1}{4}$
Breadth extreme	29	$1\frac{3}{2}$
Depth in the hold	9	2
Burthen in tons	$403\frac{51}{94}$.	

	Loads.	Feet.
Strait oak timber	332	20
Compass ditto	414	46
Elm ditto	14	27
Fir ditto	18	35
Knees square	33	43
Ditto raking	47	3
English oak plank of 4 inches	155	5
Ditto of 3	24	43
Ditto of $2\frac{1}{2}$	3	40
Ditto of 2	8	$25\frac{1}{2}$
Dantzic ditto of 3	1	42
Ditto of 3	29	43
Elm ditto of 4	0	32
Ditto of 3	0	3
Total	1086	$7\frac{1}{2}$

It had been the custom in many of the former wars to employ no inconsiderable number of vessels, as will be found on referring to the proper documents, which were denominated, indiscriminately, sloops of war or small frigates: their force displayed more variety than appeared in any other class whatever; the most consequential of them mounting 18 guns, and being of nearly four hundred tons tonnage; the smallest carrying not more than 4 or 6, and scarcely exceeding fifty. At this time also, frigates, properly so called, mounting 36, 32, 30, or 28 guns each, were by no means uncommon: but ere the commencement of the rupture with Spain, these classes

classes were most materially compressed: those which were styled frigates being almost without exception of the description just given, and the new sloops of war which were projected by Sir Jacob Acworth, mounting 8 guns only*. The principal purpose which they were intended to be applied to, was merely that of preventing injuries being effected against the revenue, by the unlawful importation of commodities liable to an heavy duty; and, except in this very ignoble occupation, were scarcely ever brought into service. They were rarely capable of being employed in time of war, except as advice-boats; but one of t em, however inadequate, as common sense might have considered her, to undertake such a voyage, was attached to the squadron, sent at the most unprosperous season of the year, under the orders of Commodore Anson, to encounter the storms and dangers which attend the passage round Cape Horn. Strange, however, as it may appear, this very inconsiderable vessel effected her passage without any very material difficulty or danger, when the proudest ships in the squadron were reduced to the utmost extremity of distress, or compelled to abandon the project. The Happy, which was, perhaps, as great a favourite as any of the whole class, will be a sufficient exemplification of what might rather be considered as the whimsical effect of a sportive imagination, than a serious attempt to contrive a class of vessels which should render service, in time of war, to the necessities of their country.

* The following table may serve to shew the difference, in tonnage and dimensions, between both the frigates and sloops of the new and old class—

The HYÆNA of 24 Guns.

	Feet.	Inches.
Length of the keel for tonnage	94	3
Length on the gun deck	14	4
Breadth extreme	32	3
Burthen in tons 522.		
	Loads.	Feet.
Quantity of timber, comprizing all qualities used in her construction	1318	18

The ZEBRA Sloop of War, mounting 14 carriage, and as many swivel Guns.

	Feet.	Inches.
Length of the keel for tonnage	79	6
Ditto on the gun deck	97	0
Breadth extreme	26	11
Burthen in tons 306.		
	Loads.	Feet.
Quantity of timber, comprizing all qualities used in her construction	714	13

HAPPY,

HAPPY, Sloop, taken in Hand September 20, 1753, *and launched July* 22, 1754.

	Feet.	Inches.
Length on the gun-deck	75	6
Ditto of the keel for tonnage	62	3
Breadth extreme	20	$7\frac{1}{2}$
Depth in the hold	9	4
Burthen in tons 140$\frac{79}{94}$.		

	Loads.	Feet.
Strait oak timber	75	42
Compass ditto	60	12
Elm ditto	8	9
Fir ditto	6	34
Knees square	8	49
Raking	13	45
English oak of 4	12	30
Ditto of 3	6	21
Ditto of $2\frac{1}{2}$	5	34
Ditto of 2	22	17
Dantzic Ditto of 4	2	0
Ditto of 3	2	39
Elm ditto of 4 *omitted.*		
Ditto of 3	0	5
Total	225	37

In respect* to the numbers composing the British fleet at the conclusion of the war with France, it amounted to four ships of the first, ten of the second, forty-

* The following was the civil establishment of the navy at this time :——
Treasurer of the navy—Mr. DODINGTON.
His Paymaster, 500l. *per annum.*
Eight clerks to him; four at 80l. four at 40l.
His cashier and accomptant 400l.
Four clerks to him; two at 80l. two at 40l.

Comptroller

forty-eight of the third, and sixty-nine of the fourth rate; forty-two fifth rates, and forty-eight sixths. Among the latter will be found several ships catrying 36 or 30 guns each; but which, it will be observable, were all of them prizes. In the inferior classes, were five fire-ships, ten bomb-ketches, thirty-five sloops of war, two store-ships, seven hospital-ships, eleven yachts, as many hoys, five smacks, sixteen hulks, and five zebecks; forming, in the whole, a marine of three hundred and thirteen sail *. The first rate consisting of the Royal-Anne, Royal-George, Royal-

Comptroller—Mr. HADDOCK.

Four clerks for bills and accounts, and attending pays; one at 100l. one at 50l. and two at 40l.

Another for examining accounts of sick and wounded, keeping a checque on the Paymaster in his payments, preparing estimates for wages, and checquing the purfers for men sick on shore, at 200l.

Surveyor – Sir JACOB ACWORTH.
Mr. ALLEN.

His Assistant 300l.

Four clerks; one at 100l. two at 50l. one at 40l.

Clerk of the Acts—Mr. OSBORN.

His Assistant 300l.

Seven clerks; one at 100l. two at 60l. and four at 50l.

Comptroller of the Treasurer's accounts—Mr. CORBETT.

Four clerks; one at 100l. two at 50l. one at 40l.

Four at the Ticket Office; two at 200l. one at 50l. one at 40l.

Comptroller of the Victualling—Mr. GASHRY.

Two clerks; one at 100l. one at 40l.

Comptroller of the Store-keeper's accounts—Mr. CROWLE.

Five clerks; one at 100l. three at 50l. one at 40l.

Commissioners at large – Mr. FALKINGHAM.
GEDD.
OSWALD.

Six clerks; one at 100l. three at 30l.

Commissioners at Chatham – Mr. BROWN.
Portsmouth – HUGHES.
Plymouth – VANBURGH.
Deptford and Woolwich COMPTON.
Port Mahon – TREFUSIS.

Two clerks each; one at 50l. one at 40l. Commissioner BROWN has one extra.

* The subjoined minute of the ships taken from the enemy, contrasted with those captured by them, cannot fail to be extremely interesting. The inequality is too striking to need any comment, however flattering it might prove to a Briton:

SHIPS

Royal-Sovereign, Royal-William, of eight hundred and fifty men, and 100 guns each; the second, of the Barfleur, Duke, Saint-George, Prince-George, Marlborough,

SHIPS taken or destroyed by the ENGLISH during the War.

FRENCH.

	Guns.	Men.
L'Invincible	74	700
Magnamine	74	700
Monarque	74	700
Terrible	74	700
Fleuron	70	686
Neptune	70	686
Serieux	66	680
Trident	64	650
Fougeux	64	650
Ardent	64	650
Intrepide	64	650
Vigilant	64	650
Mars	64	650
Causibon	60	550
Diamant	56	550
Mercury	54	540
Parfait	54	540
Rubis	52	580
Jason	52	580
Severn	50	550
Auguste	50	350
Ferme	50	350
Etoile	46	320
Gloire	44	300
Ambuscade	40	300
Medway's prize	40	300
Renommeè	32	280
Apollon	30	132
Fine	30	260
Ranger	30	260
Philibert	30	170
Carry forward	1686	15,664
Brought forward	1686	15,664
Flora	28	220
Phœnix	28	400
Lys	28	300
Castor	28	220
Bellona	28	220
Medea	26	240
Subtile	26	294
Grand-Turk	24	134
Panther	22	160
Inverness	22	134
Elephant	20	134
Richmond	20	134
Rippon's prize	20	150
Amazon	20	136
Bien-Aime	20	150
Vainqueur	18	200
Mercurie	16	300
Galgo's prize	12	112
Pembroke's Prize	8	112
Deptford's prize	8	110
Rupert's prize	8	108
Peregrina	8	112
Fame	8	112
Margarette	8	112
55 French.		
Total	2142	19,968

SPANISH.

Gurpuscoa	74	750
Princessa	70	700
Carry forward	114	1450

Gallicia

Marlborough, Union, Prince, Ramilies, Princess-Royal, and Sandwich, 750 men, and

	Guns.	Men.
Brought over –	144	1450
Gallicia – –	70	700
San Carlos – –	70	700
Africa – –	70	700
Conquestadore – –	70	700
St. Philip – –	70	700
St. Isidore – –	70	700
Invincible – –	70	700
Glorioso – –	70	700
2d Africa – –	70	700
Dragon – – –	64	610
2d Conquestadore –	64	610
Poder – –	60	600
N. S. de Cabadongo –	60	550
Carry forward –	1022	10,120
Brought forward	1022	10,120
Fuerte – –	60	600
Hermione – –	54	500
St. Estevan –	44	400
Fort de Nantz – –	32	300
Chincan – –	24	260
Worcester's prize – –	24	260
A Patache – –	20	200
Astrea – – –	18	180
Triumph – –	18	180
24 Spanish		
55 French.	1316	13,000
French –	2142	19,968
79		
General total –	3458	32,968

N. B. This list also contains those lost by accident during the same period.

By the Losses before stated, the Whole of the once formidable French Marine was reduced to the following insignificant State, viz.——(That of Spain sunk still lower.)

Ships.	Guns.
Tonnant – –	80
Magnanime – – –	80
Intrepide – –	74
Esperance – – –	74
Duc d'Orleans – –	74
St. Esprit – – –	74
Ferme – –	74
Superbe – – –	74
Juste – –	74
Dauphine – – –	74
Achille – –	74
Centaur – – –	74
Northumberland (Brit.) – –	70
Lys – – –	70
Solide – –	64
Leopold – – –	64
Content – –	64
Toulouse – – –	60
St. Louis – –	60
Constante – – –	60
Bourbon – –	56
Mars – – –	56
Heureux – –	56
Tigre – – –	56
Arc en Ciel – –	56
Neptune – – –	54
Carillon – –	54
Brilliant – – –	50
Locrine – –	50
Triton – – –	50
Aquillon – –	50
Frigates.	
Argonaut – – –	46
Anglesey (Brit.) – –	44
Zephire – – –	30
Atalante – –	30
Volage – – –	26
Venus – –	26
Flore – – –	20

and 90 guns each; the third, of the Princess-Amelia, Boyne, Cambridge, Princess-Caroline, Chichester, Cornwall, Culloden, Dorsetshire, Monarque, Namur, Neptune,

THE following List of the BRITISH SHIPS of War, lost, taken, or destroyed within the same Period, will shew how comparatively small was the Injury sustained by the English: one Ship only of the Line, and three or four very inferior Vessels, having remained with the Enemy; the Whole of the Remainder having been re-captured, or fallen by the Hand of Providence alone.

Years.	Ships.	Guns.	
1744	Victory	100	Lost in the British Channel.
1749	Namur	74	Wrecked in the East Indies.
1744	Northumberland	70	Taken by three French ships of war.
1744	Oxford	70	Wrecked in the Gulph of Mexico.
1742	Tilbury	60	Burnt in the West Indies, by accident.
1744	Weymouth	60	Wrecked at the Leeward Islands.
1749	Pembroke	60	Ditto in the South Seas.
1741	Gloucester	50	Sunk in the South Seas.
1742	Tyger	50	Wrecked in the West Indies.
1744	Colchester	50	Ditto on the coast of England.
1744	St. Alban's	50	Ditto in the great storm at Jamaica.
1744	Greenwich	50	Ditto.
1746	Severn	50	Taken by French.—*Retaken.*
1745	Anglesea	44	Taken by the French.
1743	Looe	40	Lost in America.
1747	Maidstone	40	Wrecked on the coast of France.
1741	Wager	20	Lost in the South Seas.
1743	Rye	20	Lost.
1744	Solebay	20	Taken by the French.—*Retaken.*
1744	Seaford	20	Ditto, ditto.
1745	Fox	20	Lost near Dunbar.
1745	Lyme	20	Foundered coming from the West Indies.
1747	Fowey	20	Wrecked in the Gulph of Florida.
1743	Astrea store-ship	18	Burnt, by accident, at Piscatawa.
1749	Apollo hospital-ship	18	Wrecked in the East Indies.
1744	Swallow	16	Lost.
1744	Grampus	16	Lost.
1740	Wolf	14	Lost.
1741	Otter	14	Lost.
1742	Drake	14	Lost.
1742	Grampus	14	Lost.
1742	Saltash	14	Lost.
1744	Bonetta	14	Wrecked at Jamaica.
1744	Hornet	14	Taken by the French.—*Retaken.*

Neptune, Newark, Norfolk, Russel, Shrewsbury, Somerset, Terrible, and Torbay, of 600 men, and 80 guns, each; the Bedford, Berwick, Buckingham, Burford, Devonshire, Lancaster, Edinburgh, Elizabeth, Essex, Fougeux, Prince-Frederick, Glorioso, Grafton, Ipswich, Kent, Lenox, Monmouth, Nassau, Princessa, Royal-Oak, Revenge, Stirling-Castle, Suffolk, and Trident, of 480 men, and 70 guns each; the Cumberland of 66 guns; the Captain, Hampton-Court, Intrepid, Mars, and the Yarmouth *, of 64 guns.

The fourth rates consisting of the Anson, Saint Alban's, Augusta, Canterbury, Defiance, Deptford, Dragon, Dreadnought, Dunkirk, Eagle, Exeter, Jersey, Kingston, Princess-Louisa, Lion, Princess-Mary, Medway, Montagu, Nottingham, Prince of Orange, Pembroke, Plymouth, Rippon, Rupert, Stafford, Sunderland, Superb, Tilbury, Tiger, Warwick, Windsor, Worcester, and York, of 400 men, and 60 guns each, with the Vigilant of 58, completed the list of those which were properly to be reckoned of the line at that day; but all under 64 guns have, by a later regulation, been omitted.

Exclusive of these, there were, in the same class of ships, although not put into the line of battle, except on very extraordinary occasions, the Advice, Antelope, Argyle, Assisstance, Bristol, Centurion, Chatham, Chester, Colchester, Falmouth, Falkland, Gloucester, Guernsey, Hampshire, Harwich, Isis, Leopard, Litchfield, Newcastle, Nonsuch, Norwich, Oxford, Panther, Penzance, Portland, Preston, Portland's prize, Le Rubis, Salisbury, Severn, Sutherland, Tavistock, Winchester, Wool-

Years.	Ships.	Guns.	
1745	Mercury	14	Taken.
1745	Wolf	14	Taken.—*Retaken.*
1745	Fame	14	Foundered.
1745	Sapphire's prize	14	Lost.
1746	Saltash	14	Lost.
1742	Duke	12	Burnt at St. Tropes.
1745	Hazard	12	Taken by the Rebels.—*Retaken.*
1745	Mediator	10	Sunk.
1741	Tryal	8	Sunk in the South Seas.
1744	Mercury fire-ship	8	Lost.
1744	Thunder bomb-ketch	8	Lost.
1745	Blast bomb-ketch	8	Taken by the French.
1746	Louisburg fire-ship	8	Ditto, ditto.
1746	Lightning bomb-ketch	8	Lost.
1744	Lark Hulk		Wrecked at Jamaica.

* This last ship was afterwards rated with the superior class of 70 guns.

wich, of 300 men, and 50 guns, each; and the Jason of 48 guns.—The fifth rates, were the Anglesea, Adventure, Assurance, Chesterfield, Crown, Diamond, Dover, Prince-Edward, Eltham, Expedition, Enterprize, Feversham, Folkstone, Fowey, Gosport, Hastings, Hunter, Hector, Prince-Henry, Kingsale, Lark, Launceston, Liverpool, Looe, Ludlow-Castle, Lynn, Mary galley, Mermaid, Milford, Pearl, Pool, Ruby, Rainbow, Roebuck, Romney, Sapphire, South-Sea-Castle, Thetis, and Torrington, of 250 men, and 44 guns, each; the Ambuscade, of 40; the Glorie, of 40; and the Renown, of 30.—The sixth Rates, were the Alderney, Aldborough, Arundel, Biddeford, Blandford, Bridgewater, Centaur, Deal-Castle, Experiment, Flamborough, Glasgow, Greyhound, Kennington, Lively, Lowestoffe, Margate, Mercury, Nightingale, Phœnix, Port Mahon, Queenborough, Richmond, Rose, Rye, Scarborough, Seaford, Sea-horse, Sheerness, Shoreham, Sphinx, Squirrel, Success, Surprize, Syren, Tartar, Triton, Unicorn, Wager, and Winchelsea, of 160 men, and 24 guns, each; the Solebay and Inverness, of 36 guns; the Amazon and the Lys of 34; the Grand-Turk, with the Bellona, of 30; Ranger, and the Gibraltar of 20; the fire-ships were, the Conqueror, Duke, Dolphin, Salamander, and Vulcan, of 45 men, and 16 guns, each; the Bombs, the Basilisk, Carcass, Comet, Firedrake, Furnace, Granado, Mortar, Serpent, Terrible, and Terror, of 100 men, 12 carriage, and 14 swivels, each, with two mortars; the Sloops, were the Albany, Baltimore, Badger, Dispatch, Drake, Falcon, Ferret, Fortune, Fly, Hazard, Hound, Hornet, Jamaica, Kingsfisher, Merlin, Otter, Porcupine, Raven, Saltash, Saxon, Shark, Shirley, Speedwell, Spence, Spy, Swallow, Swan, Swift, Scorpion, Trial, Vulture, Viper, Weazle, and Warren, of 110 men, 14 carriage, and 14 swivel guns, each; with the Grampus, of 20 carriage, and 10 swivel guns; the Storeships, the Deptford and Princess-Royal, of 120 men, and 24 guns, each; the Hospital-ships, were the Apollo, of 34 guns, the Blenheim, Britannia, Chester, Enterprize, Rochester, and Solebay, of 100 men, and 20 guns, each; the yachts, Catherine, of 20 carriage, and 10 swivel guns, the Charlotte, Dublin, Fubbs, Mary, and William and Mary; the small yachts, were the Bolton, Chatham, Drake, Portsmouth, of 10 carriage, and 6 swivel guns, and Queenborough; the Hoys, the Discovery, of 10 carriage, and 6 swivel guns; the Forrester, Heyling, Lion, Plymouth-Transport, Royal-Escape, Sheerness-Waterboat, Supply, True-Love, Unity, and Woolwich-Transport, of 20 men, each; the Smacks, were the Goodwin-Lighter, Mary, Minorca, New-Lighter, and Sheerness-Long-boat; the Hulks, the Alderney, Berwick, Captain, Chatham, Defiance, Devonshire, Dreadnought, Jersey, Ludlow-Castle, Medway, Panther, Salisbury,

Salisbury, Sterling-Castle, Success, Winchester, Yarmouth; the Zebecs, Brave, Postillion, Cruizer-Settee, Enterprize-Barcolongo, and the Spanish-Row-Galley.

Such was the magnitude of the maritime force possessed by Britain at the conclusion of the contest with the united powers of France and Spain, in the year 1748. Its regularly progressive increase, with very trivial exceptions, which occurred in the very infancy of its power, may serve to shew that maritime pursuits, except in those instances just alluded to, have never been relaxed in by Britain from the firſt moment she became truly sensible of the consequence attendant on encouraging them. In the eleventh report, made by the commissioners appointed by parliament to enquire into the state of the woods, forests, and land revenues of the crown, dated Feb. 6, 1792, is given the following concise account of the totals, and encrease of the British navy, from the time of Henry the Eighth, derived from authentic and official papers, which they procured from the Navy Office.

"England," say these respectable gentlemen, and with great truth, "could scarcely be said to have a fleet before the time of Henry VIII. He laid the foundation, and settled the constitution, of the royal navy. The amount of the tonnage of the ships of war of all kinds, at his death, was 12,455 tons. During the reign of Edward VI. it had declined to 11,065; and, at the death of Mary, it was only 7110. The navy was improved and increased of Queen Elizabeth, but even at her death the whole tonnage of the ships of war was only 17,110 tons. The state of the navy is not exactly known at the death of James I. but it had been somewhat augmented; and even in the disturbed reign of Charles I. a very considerable addition took place. A farther increase and improvement was made during the administration of Cromwell, and at the restoration was 57,463 tons. At the death of Charles II. it had risen to 103,558. The navy was put into much better condition by James II. but the tonnage during his reign was reduced to 101,892. By king William it was raised to 159,017. At the death of Queen Anne it contained 167,171 tons; and, at the death of George I, 170,862. The tonnage of the navy was somewhat lower at the commencement of the difference with Spain, in 1738, than it was in 1727, but ever since that time, the increase has been far greater, and more rapid, than at any former period *."

So superior was the British marine during the whole of the pending contest, to the actual necessities of the country, that a considerable number of ships, parti-

* At the accession of his present majesty the tonnage was 321,101, and at the end of the year 1788, it had risen to no less than 413,667 tons.

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cularly those of the first, second, and third rates, were never once put into commission. This occurrence was productive, in conjunction with other subsequently coinciding circumstances, of a very extraordinary naval anecdote: the Royal-William, a first rate, launched about 1719, was never employed for more than thirty-six years from the time of her completion, and never received any material inspection, or repairs that could be said to deserve that name till 1757 *. This ship was then found in so good a state, as to be capable of being sent to sea in a very short time, and continued during the whole remainder of the war, not only in commission, but employed in the most active service. Owing however, to a defect in the construction, or formation, which rendered it extremely crank, an evil that subsequent practice caused a discovery of, and remedy for, 'twas considered expedient to cut it down, and reduce its force from a first rate to that of a third, thereby causing it to mount 84 guns only. This measure was, nevertheless, taken solely on scientific grounds, having no reference whatever to the actual condition of the ship, in respect to service. The prolonged longevity of the same vessel subsequent to the peace, which took place in the year 1763, becomes a matter of no less wonder. After continuing almost uninterruptedly employed during the whole of the war, which commenced in 1778, with France, and in the ensuing summer with Spain also, it was not long afterwards, having undergone a survey a-float in 1785, considered not unworthy of being converted into a guardship, a station from which it was scarcely considered necessary it should be dismissed, till after the close of the eighteenth century.

As the long preservation of timber from decay is certainly one of the firft desiderata to a nation ambitious of erecting itself into a maritime power, and as the occurrence just related indubitably proves the great extent to which its duration, in a sound state, may be prolonged, perhaps even without any attention being paid to it: what extensive benefits might there not be expected to result from a serious investigation of this point. Strange, however, as it cannot fail to appear, the enquiry seems to have been laid totally dormant for more than a century. In the report before quoted, there is, however, p. 29, an account given at no inconsiderable length, of sundry experiments made in respect to the construction of

* The main-mast of this vessel is said, whether with truth or not is uncertain, to have been formed of a single tree, the growth of Scotland, and to have been brought from thence for that purpose, but that having continued in store for more than thirty-six years, was found, on examination, when the ship was ordered to be fitted, so far decayed as to be unfit for service. This anecdote is certainly somewhat curious, on more accounts than one

ships

ships with timber from which the bark had been stripped in the spring preceding the time of its being felled. The Sovereign of the Seas, the celebrated ship *, the building of which commenced by order of King Charles the Firſt, anno 1685, and was finished in the course of the two succeeding years, is supposed, by Mr. Secretary Pepys, to have been built of timber so prepared. In the reign of James the Second, special application was made, at the instance of the sovereign himself, to Dr. Plott, an eminent naturalist then living, who having transmitted his opinion on that interesting subject to the king, an order was, in consequence, immediately issued for the experiment to be made on one hundred and fifty trees, which it was commanded should be immediately peeled in Bushey Park, for the sole purpose of ascertaining the fact in question.

The letters, and other official papers on this subject, are to be found in the Appendix to the Report made by the Commissioners of the Land Revenue in 1792: they are now preserved in the Navy Office, and are dated in 1687. The succeeding Revolution in all probability prevented the immediate pursuit of the experiment in question, which no material attempt has been made to repeat, or revive since that time. The extraordinary variation which has frequently occurred in respect to the time that vessels have remained fit for actual service, has been imputed, by various ingenious and scientific persons who have industriously applied themselves to the consideration of the subject, to the difference in the quality of the timber itself, and the climate which produced it. It is a striking, but well-known fact, that oak, the growth of other countries, though lying under precisely the same latitude with Britain, has been invariably found less serviceable, in a degree almost incredible, than that of the latter, as though nature itself, if it were possible to indulge so romantic an idea, had forbad that the national character of a British ship should be suffered to undergo a species of degradation by being built of materials which were indigenous to it. The cause, however, of this inferior quality has been seriously, and, in all probability, very briefly accounted for, and that the reasons assigned are true, may well be reconciled to human belief. Though it were needless and irrelevant, perhaps, in this place, to enter into any enlarged statement of the learned opinions which have been promulgated on this subject, yet it cannot but be proper, briefly to observe, that as the durability of timber is supposed, in a very strong degree, to be occasioned by the free circula-

* Which continued in condition for the most active service during half a century, and was at last accidentally burnt.

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tion of air which it has received when in a growing state; and as in almost every other country, Britain excepted, the greater part of the timber is raised in immense forests, where the wind and sun are almost totally precluded entrance, the conclusion is obvious. Modern experience, and experiments of the simplest nature, most unquestionably prove, that trees, planted in considerable numbers, encrease in their bulk almost inconceivably faster than those which being singly planted, are compelled to endure and brave the rough assaults of the wind and weather, destitute of that protection which, even in plantations, trees mutually afford to each other,

On the contrary, it is to be remembered, that the extraordinary increase of bulk is by no means an equivalent for the depreciation in respect to quality. The spungy texture of the wood, naturally produced by quick vegetation and accelerated growth, causes the earliest decay; while the close grain or fabric of the tree, which, as it were, in spite of adversity and defiance of tempests, has acquired, though slowly, and, perhaps, with no small difficulty, a sufficient maturity, possesses the power of long defiance to those ravages of time which would, much more speedily, prove destructive to the upstart plant. Such appears to be the true cause * of the superiority in character which British oak long has, and still continues to maintain, over that of every other country in Europe.

Although prejudice, which, on some occasions, acquires the less harsh term of fashion, in respect to peculiar practices, and the example of other countries, displays much stronger effect in the instance of marine architecture than it does perhaps in any other existing; yet the practice of France and Spain was only partially imitated by Great Britain. The former country in particular had, for a long time, ceased to construct any three-decked ships, and the cause was very easily to be discovered. They were considered as peculiarly fitted, only, to the attack of batteries or fortresses; attempts which the French nation has been uniformly averse to, far as they were connected with the operations of their navy. The peculiar excellence of a naval officer was supposed to consist in the ability of making such an arrangement as should enable him, whether in a single ship, or as commander of an extensive fleet, to commence, and finish the encounter with his enemy by a distant and scientific cannonade, in which the peculiar abilities of the gunner could be rendered more efficient than the intrepid fearless temper of the seamen, who

* The comparatively small parcels in which the English oaks are planted, and the frequency of them in hedge rows, where the air has constant and free access.

seemed

seemed to disregard, at least, those of Britain, every measure, but that of almost personal contention with their foe. On this principle, the marine architects of France first bent their attention to the formation of such vessels as should, though in the most tempestuous weather, be less agitated by the sea than those of their opponents, and should be able, in defiance of any swell which would totally prevent such a measure in ships of inferior dimensions, to direct their shot, even from the lower tier of guns, in annoyance of the enemy. To this established system are to be attributed the superior dimensions and bulk which the French vessels for several years maintained over those of other countries. The same conduct on the part of Spain was, perhaps, attributable to a very different cause, that of an extravagant pride, which aimed at the establishment of a superiority, which, it was vainly hoped, might intimidate the very fight, and prevent the necessity of those exertions, and that knowledge, which, when necessary to be called into action, would have shrunk inferior to the task of contest.

However different might be the first causes and impulses, they proved productive of nearly the same effect; the ships of France and Spain, in their several rates, far exceeded, as already observed, those of every country in Europe, and the marine architects, especially of France, were bold enough to suppose, their ships, carrying 80 guns, two-deckers, but of dimensions very little, if in any degree, inferior to a British first rate, were capable of contending, under the circumstances before related, with a ship of that class. Notwithstanding certain stubborn facts proved the futility and vanity of this idea, there existed, in reality, certain peculiar excellencies, which reason admitted the propriety of, and were, therefore, not to be controverted, or even disputed. The example consequently spread, though slowly, and it is a bare act of justice to the fame of the French ship-builders, that to their studious exertions and experiments is primarily owing the energetical improvement made in modern times on the form, dimensions, and general contour of vessels, be the purpose to which it was intended they should be applied, whatever it might.

CHAPTER THE NINTH.

Account of the Avidity with which all the different Nations of Europe began to enter into Maritime Pursuits in the Middle of the Eighteenth Century.—Reflections on the Incapacity which certain Countries laboured under, of not being able to raise themselves into the slightest Maritime Consequence.—The different Classes into which the Maritime Powers of Europe might be divided.—The varied Conduct severally adopted by them.—Extraordinary Exertions made by France and Spain to revive, refit, and augment their Marine.—State of the French Marine, as it stood in 1756, *showing all the Additions which had been made to it, subsequent to the Peace.—Account of the Spanish Navy, as it stood in* 1759, *with Information when, where, and under whose Directions, the greater Part of the Ships had been built.—Remarks on the Employment of British Builders in the Spanish Dock Yards.—Comparative View between the Dimensions of French, Spanish, and British Ships of the same Rate.—The Shrewsbury and the Magnanime, the Monmouth and the Princessa, the Essex and the Fougueux, the Isis and the Tavistock, with many other Ships of the same Class.—Practice adopted by the French Merchants of employing very large Ships, properly fitted for War, in Commercial Purposes.—Losses sustained by France and Spain during the War.—Extraordinary Augmentation which still continued to be adopted by the Spaniards in the Dimensions of their Vessels.—Account of the Navy of the United Provinces.—The declining Condition of that Part of it belonging to the State.—Extraordinary Magnitude of their Merchant Vessels, particularly those belonging to the East-India Company.—Observations on the Peculiarity of their Form.—The Navies and general State of the Shipping belonging to Russia, to Denmark, and to Sweden—to Venice, and other Countries.—State of the British Navy at the Commencement of the War with France,* 1756.—*Its Losses during the Continuance of it, and Condition at the Conclusion.—Remarks on the British Commercial Marine, as well as on the Mode of building and sheathing both Ships of War and Merchant Vessels in* 1763.—*General Remarks on the Improvement and State of Marine Architecture in Asia and America.*

MARITIME pursuits, speaking generally of the science, including as well the art of navigation, as the study of that species of architecture, with the various branches of mechanics connected with them, having been cultivated in Europe as the grand emporium for many centuries; the mind of the inquirer becomes

comes almost irresistibly fixed to that quarter of the world, disregarding, almost with contempt, the custom and practice of all nations who may hold in public opinion, an inferior and ſecond rank. This, however, is a very unfair mode of decision, if human knowledge abstracted from ſcientific study is not to be stripped wilfully of thoſe honours which have hitherto been paid to it; since no person will be hardy enough to deny, that there may not be as much ingenuity in the primary invention of the canoe used by the uncivilized Eskimaux, as in the moſt judicious construction of an European ship of war. Of this there will be occasion to speak in its proper place.

In respect to Europe, every state, or nation, which it contained, that possessed the slender advantage of a single port, had for many years arrived at the possession of as much shipping as their means would allow them to maintain, or employment could be found for, in the service of any other state, or people. Prussia, and even Austria, began to boast of their trade, and the flags of both countries have in later years been displayed in the river Canton, as well as other quarters, where, till the pursuit became thus general, none but those nations who assumed to themselves the pre-eminent title of the Maritime Powers of Europe, had the boldness to penetrate. Poland, Hungary, Switzerland, and the Principalities of Germany, sighed in vain for a participation in those advantages which, they enviously beheld, were derived by their neighbours, and were led to condemn the dispositions of Providence which had withheld from them the privilege of engaging in the naval wars, or the commerce of the world. General however as the pursuit had become, the distinct classes continued to be preserved, and no attempt appeared to be made by the inferior to encroach on the privileges, or assume, even nominally, the title and rank held by the ſuperior. The subordinate class was extremely contracted; it contained those nations which, although they engaged in naval commerce with no less eagerness and avidity of mind than others whose powers were infinitely more enlarged, were content with quietly enjoying the benefits accruing from it by the passive sufferance of their neighbours, without presuming to shew the smalleſt intention of defending, by force, that pursuit which they had entered into, as it were by the connivance or permission, to use a less harsh term, of the greater maritime powers. It would appear singular, were not the reason rendered instantly apparent by an inspection of the map of Europe, that two nations, whose armies have certainly proved equal in point of numbers, and in discipline, to any which

either the continent, or the islands of the same quarter of the world have furnished, should at this moment be unequal to the task of entering unsupported by alliances into naval contest with the most inferior maritime power which it contains. The political prudence of other countries, aided by the natural impediments which so strongly oppose the naval grandeur of those just mentioned, should the acquisition of it be ever attempted, will, in all probability, continue to prevent a monopolization of power, which could not fail soon to become dangerous, if not destructive, to their safety.

Under the description of maritime powers, are to be reckoned Russia, Sweden, and Denmark, Great Britain, the United Provinces of Holland, France, Spain; and in the second class, Portugal, the kingdom of Naples, with the republic of Venice. The firſt class it may not, perhaps, be again improper to subdivide for the purpose of separating those countries whose naval force, fitted for the purposes of war, is so extensive as to enable them to decide public disputes without the intervention of armies, should their inclination lead them to such mode of settlement, from those, whose navies have appeared calculated purely for the defence of their commerce, and of their country. Very immaterial variation, indeed, took place from the commencement of the century till nearly two-thirds of it had passed, when the sudden start made by one of the powers which had, till then, been humbly content with inferior rank, appeared to indicate an ambition of elevating its consequence to the power of remote conqueſt, and the protection of extensive dominion. The cause which produced this very extraordinary exertion, will be explained in its proper chronological order. During the space of more than twenty years after the general peace in 1748, had, for a time, appeared to cancel those animosities which so furiously subsisted betwen Great Britain and the allied powers of France as well as Spain, all the Northern Powers, as they are by way of distinction styled, of Sweden, Denmark and Russia, seemed, according to that species of conduct which there has already been frequent occasion to remark upon, content with the most perfect state of quietude which public communities are capable of embracing, and the condition as well as strength of their navies seemed perfectly adequate to the necessities, and apparently to the wishes of the people. The Hollanders observed the same trait of conduct, so long as they were permitted to enjoy unmolested those pecuniary advantages, which they experimentally found were almost invariably attached to commerce, and particularly that more than equitable share in propor-

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tion to their political right in the scale of Europe, which the supineness of other countries had permitted, or their own industry had raised and matured. With France and Spain the case was far otherwise. Smarting under the heavy losses and those events of the preceding war which had reduced their marine, when speaking comparatively with that of Britain, almost to a state of annihilation, they laboured almost indefatigably during that short interval of peace, which their own restless temper afforded, added to a naturally arrogant and most vindictive spirit, in the hope of placing themselves once more in a condition of annoyance. At the conclusion of the preceding war the French marine was reduced to 31 ships of two decks, including those carrying 50 guns only, which, except on extraordinary emergencies, were of too small a force to be put into a line of battle, with seven frigates; but, in 1756, it became augmented to seventy-two ships of the line, ten of fifty guns, together with sixty frigates or corvettes*; a resuscitation, than which nothing can more strongly prove the energy and powers of the enemy, especially when it is recollected, that of the fleet which remained to them in 1748, twelve ships of the line with ten frigates, had

* Of 84 guns, the Duc de Bourgogne*, Formidable*, Foudroyant*, Ocean*, Soleil-royal, and Tonnant. Of 74 guns, The Centaur, Conquerant*, Courageux*, Couronne*, Defenseur*, Diademe*, Entreprenant*, Florissant*, Glorieux*, Guerrier, Hector*, Heros*, Herissant*, Invincible*, Intrepide, Juste, Magnifique*, Minotaur*, Palmier*, Protecteur*, Prudent*, Redoutable*, Robuste*, Sceptre*, Souverain*, Superbe*, Temeraire*, Thesée*, Zodiaque*. Of 70 guns, The Hardi*, Dauphin Royal*, Northumberland. Of 64 guns, The Achille, Actif*, Belliqueux*, Bienfaisant*, Bizarre, Brillant, Capricieux*, Celebre*, Content, Dragon, Eveillé*, Fantasque*, Lion*, Orphée*, Opiniatre*, Hercule*, Illuſtre*, Inflexible*, Prothée*, Raisonnable*, Sage*, Solitaire*, Sphinx*, St. Louis, Terrible*, Triton, Vaillant*, Modeste*, Vengeur*. Of 60 guns, The Leopard*, Le Corbillon*, St. Michel*, Eole*, Argonaut. Of 50 guns, The Alcion*, Aigle*, Amphion*, Apollon*, Aquilon, Arc-en-ciel, Hippopotame*, Fier*, Oriflame*, Tigre. A navy, containing 6 ships of 84 guns, 29 of 74, 3 of 70, 29 of 64, and 5 of 60. In the whole, 72 ships of the line, exclusive of 10 of 50 guns. There were also the following frigates: The Junon of 46; the Saphyre, and Loire of 44; the Hebe of 40, the Danae of 38, the Hermione of 36; the Diana, Aigrette, Atalante, Amethyste, Bellone, Brune, Arethuse, Comete, Concorde, Fleur-de-Lys, Licorne, Sauvage, Sirene, Surprise, Oiseau, Vestale, and the Blonde, of 32 guns each. Parfait, Echo, Rose, Zephyr, Emeraude, Felicité, Fidele, Gracieuse, Nymphe, Valeur, Terpsichore, Friponne, and Pleyade, of 26 guns each; Herione, Opale, Thetis, Pomone, Omphalé, Topase, Mutine, Minerve, Guirlande, and Malicieuse, of 24 guns each; with the Galathée, of 22 guns. Likewise, the following sloops: Oracle, Escarboucle, Biche, Chevre, and Tourterelle, of 16 guns, with the Ecureuil, Penelope, Levrette, Anemone, Amaranthe, Hiacinthe, and Cigogne, of 12 guns each. Of these, all the ships of 84 guns, the Tonnant excepted, had been launched since the conclusion of the preceding war, as all thoſe had been which are marked with an asterisk: together with the whole of the Frigates, the Zephire, Atalante and Valeur, excepted. Of thoſe which had remained to France, at the conclusion

had either been captured by the British in the course of the year 1755, or being found by survey, during the peace, unfit for sea, on account of their age and the damages they had sustained in the course of their service, had been condemned and in all probability broken up.

Spain had been no less energetic, as it will appear by the list subjoined; for of fifty-one ships of the line including thoſe of fifty guns which her marine consisted of in 1759, together with forty-three frigates or vessels of inferior description; thirty-four ships of the line, with nineteen frigates or inferior vessels, were then either building, and nearly completed, or had been launched subsequent to the year 1750*. A very singular and striking circumstance

clusion of the war, the following had been either captured, or, having been condemned, had been broken up, sold, or in some other way put out of the public service. The Magnanime, or Margravine, Duc d'Orleans, L'Esprit, Ferme, and Dauphin, 74 guns each; Fleur de Lys, 70; Solide, and Leopold, 64; Thoulouse, and Constance, 60; Bourbon, Mars, Esperance, Alcide, Heureux, and Neptune, 36 guns each; Carillon, and Triton, 34 guns each. Frigates, Anglesey, 44 guns; Volage, 20 guns; Venus and Flora, 20 guns each.

* *A List of the Spanish Navy as it stood in the Year* 1759.

Ships' Names.		Where built.	When launched.	Builders' Names.
El Phœnix	80	Havanna	—— 1751.	
El Rayo	80	Havanna		
La Reyna	70	Havanna	Rebuilt, 1757.	
El Tigre	70	Havanna	Launched, 1751.	
La Princessa	70	Havanna		
La Gallicia	70	Havanna		
El Infante	70	Havanna		
El San Philipe	70	Havanna	Repaired.	
El Oriente	68	Ferrol	August 15, 1753.	Rich. Rooth.
El Leola	68	Ferrol	—— 28.	*All the ships built at Ferrol, subsequent to the year* 1751, *were put together under the inspection of this person; as were also some of the ships launched at St. Andero.*
El Aquilon	68	Ferrol	March 10, 1754.	
El Neptune	68	Ferrol	July 6.	
El Brillante	68	Ferrol	August 20.	
El Glorioso	68	Ferrol	February 5, 1755.	
El Guerrero	68	Ferrol	March 27.	
El Vincedor	68	Ferrol	May 11.	
El Soberano	68	Ferrol	August 8.	
El Hector	68	Ferrol	September 22.	
El Galardo	68	Ferrol	October 18.	
El Magniminte	68	Ferrol	November 30.	
El Dichoso	68	Ferrol		
El Diligente	68	Ferrol	September 25, 1756.	

El

presents itself on the face of the annexed paper; which, whatever cause it may afford for lamentation at that depravity of the human mind which can suffer the

Ships' Names.		Where built.	When launched.	Builders' Names.
El Triumphante	68	Ferrol		
El Monarcho	68	Ferrol	January 27, 1758.	
El Serio	68	Ferrol	December 10, 1753.	
El Arogante	68	St. Andero		
El Superbe	68	St. Andero		
El Podoroso	68	St. Andero		
El Contento	68	St. Andero	November 6, 1755.	
El Hercules	68	St. Andero	October 21.	
El Principe	68	St. Andero	Building.	Rich. Rooth.
El Victorioso	68	St. Andero		
El Septentrion	68	Carthagena	November 26, 1752.	Edw. Bryant, director
El Terrible	68	Carthagena	November 16, 1754.	at Carthagena.
El Atlante	68	Carthagena	September 28.	
Africa	68	Cadiz	November 20, 1752.	Mat. Mullan, director
El Firme	68	Cadiz	June 22, 1754.	at Cadiz.
El Aquilles	68	Cadiz	September 3.	
La Espana	62	Cadiz		
Ferdinando	60	Ferrol	September 8, 1751.	Rich. Rooth.
Asia	60	Ferrol	March 17, 1752.	
El America	60	Havanna	Repairing at Carthagena	
El Dragon	60	Havanna	——— at Cadiz.	
El Europa	60	Havanna	Built, 1727.	
La Castilla	60	Havanna	—— 1729.	
El S. Fernando	60	Havanna	Serves as a hulk at Cadiz.	
El Campion	58	Ferrol		
El Tridente	58	Carthagena	July 15, 1754.	
El Conquestador	58	Cadiz		
El Fuerte	50	Havanna		
El Astuto	50	Havanna	Building.	
Adventurero	30	Carthagena	May 12, 1723.	
La Esmeraldo	30	Carthagena	May 12, 1753.	
El Andalusia	30	Cadiz	July 29, 1759.	
La Pallas	26	Carthagena	February 14, 1755.	
La Astrea	26	Carthagena		
La Juno	26	Carthagena	August 30, 1755.	
La Ventura	26	Cadiz	October 21, 1755.	
La Venus	26	Cadiz	September 13, 1755.	
La Industrea	26	Cadiz	June 12.	

La Liebre

the native of any country to transfer himself and the knowledge of any art he possesses into the service of a foreign power, whose constant views are hostile to the country which gave him birth: yet, it certainly stamps no inconsiderable degree of splendor on the opinion which even the arrogance of Spain felt itself compelled to hold in regard to the superior practical knowledge possessed by the British shipwrights in the construction, and art of putting a vessel together,

Ships' Names.		Where built.	When launched.	Builders' Names.
La Liebre	26	Cadiz	July 26, 1755.	Mat. Mullan.
La Venganza	24	Cadiz	——— 1753.	
La Victoria	24	Cadiz		
La Ermiona	24	Cadiz		
Galgo	22	Ferrol	March 2, 1751.	Rich. Rooth.
La Dorado	22	Carthagena	February 15, 1753.	
La Perla	22	Carthagena	February 14.	
La Aquila	22	Cadiz		
La Flecha	22	Cadiz		
El Gazotta	22	Haveques		
El Catalan	22			
El Ibicineo	22			
La Flora	20	Cadiz		
El Jason	20	French built; employed as a store-ship.		
La Conception	20			
El Gabillan	20			
El Diligente	20			
Gitano xebec	18	Carthagena	April 21, 1723.	Ed. Bryant.
El Mercurio	18	Cadiz	April 2.	
El Jupiter	18	Cadiz		
El Volante	18			
El Casador	18			
Mars	16	Ferrol	August 9, 1751.	
El Esterope	16	Bomb-ketches.		
El Breuse	16			
El Pieramonte	16			
El Bulcano	16			
El Lubre	16	Majorca.	Since the peace, but the precise time unknown.	
El Golgo	16			
El Majorquin	16			
El Valanciano	14			
El Truexo		Fire-ships.		
El Ralampazo				
El Rayo				

when

when brought in comparison with that of their own people. The builders in all the royal dockyards and arsenals, the Havanna excepted, were Britons; and the circumstance is a corroborative proof, that though the science of improved formation was in the most eminent degree, perhaps, possessed by the French, whose example the Spaniards followed, it was, in some measure, understood by the British shipwrights; while, on the other hand, the latter had more than an equally superior advantage in the mechanical part. Similar instances of greater excellence in particular instances are to be found in the history of many other countries, as will be hereafter seen; even the vessels of Holland itself, which appear the most uncouth to the civilized European, have many peculiar advantages which render them better adapted to the use of their employers than those of a form esteemed less ridiculous undoubtedly would be.

To give a complete illustration of the different ſyſtems, and for the purpose of doing it fairly, it will be necessary to begin with a comparative view of the dimensions given, at the conclusion of the preceding war, to some of the two-decked ships belonging to the three nations. To extend the comparison farther would be improper, till a future occasion shall render it expedient, inasmuch as neither the French nor Spaniards possessed, as before pointed out, a single ship of three decks till after the peace, which took place in 1763, nor did the British boast any one carrying 84 guns, on two decks, till the capture of the Foudroyant, in 1758, enabled them to imitate the beauties and advantages which were found to arise on the contemplation of them, as well as the experience. To commence the regular investigation, it will not be improper to select the Shrewsbury, of 74 guns, built in the river Thames, and launched 1750, which ship was, in extreme length, one hundred sixty-six feet and one inch; in breadth, forty-seven feet and one inch; and, according to the British calculation, of fifteen hundred and ninety-four tons burthen. The proportions just given did not experience any material augmentation, except in the instances of the Triumph and Valiant, as already stated, till after the close of the dispute with France, Spain, and the American colonies; and even then a new system began to be very sparingly pursued; the dimensions in general made choice of being, even so late as the year 1786, one hundred sixty-eight feet and three inches extreme length, forty-seven feet and four inches in breadth, and the computed burthen sixteen hundred and forty-four tons.

In the opposite scale is found the Magnanime of 74 guns, captured from the French three years before the Shrewsbury was completed. It measured in length one hundred seventy-three feet and seven inches; in breadth forty-nine feet

seven inches and an half; and, according to the English method of calculating tonnage, was of eighteen hundred and thirty-two tons burthen. To pursue the comparison farther, the Princessa of 70 guns, taken from the Spaniards in the earlier part of the war, and before that which commenced with France, though of force somewhat inferior, was in length one hundred and sixty-five feet one inch, in breadth forty-nine feet eight inches, and one thousand seven hundred and nine tons, Engliſh burthen*. To the capture of this ship has been improperly attributed, by many scientific and ingenious British writers on the subject, the first introduction of those superior dimensions and the different contour given to some of the British ships of war; but it is a well-known fact, that the first British ships built by way of experiment were from French models, as the Valiant, which was copied from the Invincible, and the Triumph.

The comparison between the ships in the inferior rates bore scarcely less proportionate difference: the Essex, a ship of 64 guns, launched in 1740, measured one hundred fifty-one feet in length, forty-three feet ſix inches in breadth, and was only twelve hundred and twenty-six tons in burthen; while the French ship, Fougueux, captured in 1747, was in length one hundred and fifty-nine feet eleven inches; in breadth forty-four feet two inches and an half; in burthen, measured according to Engliſh computation, fourteen hundred and three tons. The Isis of fifty guns captured from France, merely owing to the circumstance of her being out of trim, and called by British seamen, on account of her peculiar excellence in sailing, the flying Isis, was in length one hundred forty-two feet three inches, in breadth forty feet three inches and three quarters, and measured one thousand and thirteen tons. Her cotemporaries belonging to Britain were not so dissimilar in respect to tonnage, measuring, the greater part of them at least, nearly one thousand tons, while some of them, as the Severn, Tavistock, and Assistance, were nearly two feet longer, and one foot wider; the Bristol of the same force was nearly ten feet longer, and of very immaterial difference as to the breadth; but, owing to her inferiority of depth in the hold, very trivially exceeded the French ship in tonnage. A demonstrative proof arises from the excellence of the Isis, that its relative proportions,

* The Monmouth, a British ship, of 70 guns, launched two years afterward, was in length only one hundred and fifty-one feet; in breadth, forty-three feet five inches; and of 1225 tons burthen. Historians have been so fond of the marvellous, in respect to the Princessa, that they have represented her as larger than any British first rate then existing. This certainly is an exaggeration; but it must be admitted, however, that the Royal William, the largest ship in the British navy, was only two hundred and nine tons superior. The Royal Anne, which, in her day, had been considered as the finest ship ever built, was only one hundred, having measured exactly eighteen hundred and nine tons.

not

not improbably the result of accident, may be considered as the most perfect that were then given to a ship of war in that class. The same species of disparity pervaded every inferior rate; but it were perhaps a useless waste of time to carry it farther, or do more than state the mere existence of that fact.

The mercantile interest, that is to say, the merchants of France, appear about the middle of the eighteenth century to have struck into a new, and on some occasions, perhaps, not impolitic measure, though it never has been adopted by Britain, of equipping large ships, some of which mounted sixty or sixty-four guns, for the transport of their commodities, instead of employing, as is the custom and practice of private persons in all other countries, much smaller, and, for the most part, unarmed vessels. The arguments that might be drawn, and fairly too, on both sides of the question, would fill, of themselves, volumes, without being able, perhaps, to produce any satisfactory decision on the measure, as to its propriety, or impropriety. The use of large ships armed properly for war, may be said to augment the maritime strength of a country; but, the hope of gain, on the other hand, may not only induce their commanders to delay their voyages, but to run much greater risks, than prudence can render warrantable. The same species of question and explication might be continued, without losing or gaining much advantage on either side, to the end of the chapter.

Great as had been the exertions of France during peace, her losses sustained in the war which followed it*, reduced her marine to a state scarcely less deplorable

* *A List of French and Spanish Ships of War taken, destroyed, or lost, from the Commencement to the Conclusion of the War.*

	Guns.	Dates.	French ships taken.
Foudroyant	84	1758	By admiral Osborne's squadron in the Mediterranean
Formidable	80	1759	By sir Edward Hawke's fleet, Nov. 20
Esperance	74	1755	The Orford and Revenge, in the bay of Biscay
Temeraire	74	1759	By admiral Boscawen's fleet, off cape Lagos
Centaur	74	1759	
Courageux	74	1761	By the Bellona
Alcide	64	1755	By the Dunkirk and Defiance, two of admiral Boscawen's fleet, in North America
Lys	64	1755	
Duc d'Aquitaine	64	1757	Eagle and Medway, off Lisbon
Orphée	64	1758	Admiral Osborne's squadron, in the Mediterranean
Raisonnable	64	1758	By the Dorsetshire, in the bay of Biscay
Belliqueux	64	1758	By the Antelope, in the British channel
Bienfaisant	64	1758	By the boats of the fleet at Louisburg
Modeste	64	1759	By admiral Boscawen's fleet, off cape Lagos
Bertin	64	1761	By the Hero and Venus

rable than had before been the case, in 1748, as the subjoined list will, without any comment, evince. Nor was the injury sustained by that of Spain, in any degree

St. Ann	64	1761	Admiral Holmes's squadron on the Jamaica station
Achille	64	1761	Sir Charles Saunders's squadron in the Mediterranean
Duc de Chartres	60	1759	By the Windsor
ComtedeSt.Florentine	60	1759	By the Achilles
Warwick	60	1761	By the Minerva frigate
Arc-en-ciel	50	1756	By Lichfield and Norwich in North America
Oriflame	50	1761	By the Isis
Loire	44	1756	By St. Alban's in the Mediterranean
Marshal de Belleisle	44	1760	Æolus, Pallas, and Brilliant
Entreprenant	44	1760	By the Vengeance
Bien Acquis	38	1757	Sheerness and Chichester
Danae	38	1759	Southampton and Melampe
Royal Chariot	36	1756	Torbay in the bay of Biscay
Diana	36	1758	By the Boreas and Juno, two ships of admiral Boscawen's squadron off Louisburg
Bellone	32	1759	By the Vestal
Arethusa	59	1723	By the Chatham, Venus, and Thames
Blonde	32	1760	Æolus, Pallas, and Brilliant
Syrenne	32	1760	By Boreas and Lively, two of admiral Holmes's squadron at Jamaica
Bouffon	32	1761	By sir Charles Saunders's squadron in the Mediterranean
Vestale	32	1761	By the Unicorn
Comette	32	1761	By the Bedford
Baleine	32	1761	By the boats of the fleet under admiral Stevens off Pondicherry
Brune	32	1761	By the Venus and Juno
Emeraud	28	1757	By the Southampton off Brest
Hermione	26	1757	By the Unicorn
Echo	28	1758	By the Boreas and Juno, two of admiral Boscawen's squadron
Hermione	28	1761	By the boats of the fleet off Pondicherry
Hermione	26	1759	By admiral Cotes's squadron at Jamaica
Terpsichore	26	1760	Æolus, Pallas, and Brilliant
Zephyr	26	1762	Torbay and Lion
Opale	26	1762	Phœnix
Oiseau	26	1762	Brune
Tyger	26	1762	King George privateer of Bristol
Pondicherry	24	1756	Dover
Robuste (*flute*)	24	1758	By the Alcide and Acteon in the bay of Biscay
Valeur	24	1759	By the Favourite sloop
Galathée	22	1758	By the Essex off Brest
Guirland	22	1758	By the Rochester and Renown off Cherburg
Hardi	20	1759	By admiral Cotes's squadron at Jamaica
Mignonne	20	1759	By the Æolus and Isis

Berkeley

gree inferior, considering the short time that she had the hardiness to suffer herself, and her ally, to continue the dispute after she had become a party to the quarrel.

Berkeley	20	1759	By the Crescent
Valeur	20	1760	By the Boreas and Lively, two of admiral Holmes's squadron at Jamaica
Bien Aimé	20	1761	By the Trent in the West Indies
Boulogne	20	1762	By the Venus
Boutin	20	1762	By the Blonde
Sloop, name unknown	16	1757	Phœnix privateer of Jersey
Pheasant	16	1761	Albany
Subtile	16	1761	Aquilon
Duc d'Hanovre	14	1758	By the Lizard off Brest
Epreuve	14	1760	Niger
Anemoine	14	1761	Mars and Orford in the bay of Biscay
Sardoine	14	1761	
Escurial	10	1761	Fame
Crozen	6	1762	Venus

Spanish Ships taken:

Tigre	70	1762	
Reyno	70	1762	Surrendered with the city of Havanna
Soverano	70	1762	
Infanta	70	1762	
Aquilon	70	1762	
Neptuno	70	1762	Sunk at entrance of the harbour of Havanna
Asia	64	1762	
America	60	1762	Surrendered with the city of Havanna
Conquestador	60	1762	
San Genaro	60	1762	Sunk at the entrance of the harbour
San Antonio	60	1762	
Europa	60	1762	
Santissima Trinadada	66	1762	Taken at the Manilas
Hermione	26	1762	Taken by Active and Favourite sloop
Ventura	26	1762	By the Panther and Argo
Venganza	24	1762	Taken off the Havanna
Thetis	22	1762	Fowey, Weſt Indies
Marte	18	1762	Defiance, Mariel harbour
Phœnix	10	1762	Alarm, old streights of Bahama

The French and Spanish Navies experienced the additional diminution in the following Ships of war, which were either destroyed by the British in the course of the war, or lost.

French Ships destroyed or lost.

Le Soleil Royal	80	Burnt by sir Edward Hawke the day after the action off Belleisle
L'Ocean	80	Burnt by the fleet under admiral Boscawen near Lagos in Portugal

L'Heros

quarrel. With respect to dimensions, the French ships of war built during the peace, preserved *nearly* the same scale; for although none of those which were captured

L'Heros	74	Burnt by sir Edward Hawke the day after the action off Belleisle
Le Redoutable	74	Burnt by the fleet under admiral Boscawen near Lagos in Portugal
Le Thesée	74	Sunk in the engagement on the 20th of November off Belleisle
Le Prudent	74	Burnt during the siege of Louisburg
L'Entreprenant	74	
Le Bien Aimé	74	Received so much damage in the engagement with admiral Pocock, that the enemy were obliged to run her ashore
Le Juste	74	At the mouth of the Loire
La Superbe	70	Sunk in the engagement on the 20th November off Belleisle
Le Opiniatre	64	In Conquet Road (French account)
Le Dragon	64	Lost going into Cape François
Le Capricieux	64	Burnt during the siege of Louisburg
Le Celebre	64	
Le Leopard	60	Burnt at Quebec, having the plague on board
L'Apollon	50	Sunk at the entrance of Louisburg harbour
—— unknown	50	Burnt on the stocks at St. Malo
L'Alcion	50	Sunk by the Hussar
Greenwich	50	In Conquet Road (French account)
L'Aigle	50	Lost coming through the streights of Belleisle, North America
L'Aquilon	48	Run ashore and destroyed by the Antelope
La Junon	40	Lost off Mahon
La Fidelle	36	Sunk at the entrance of Louisburg harbour
La Rose	36	Run ashore and destroyed on the island of Malta, by the Monmouth
Le Rhinoceros	36	Taken and afterwards burnt by the Isis
—— unknown	36	Burnt at St. Malo
La Nymphe	36	Run ashore and destroyed on the island of Majorca, by the Hampton Court
La Pomona	36	At Quebec, by commodore Swanton, in 1760
La Felicité	32	Destroyed on the coast of Holland by the Richmond
Le Prince Edward	32	In the West Indies, by admiral Holmes's squadron
Le Fleur de Lys	32	
Le Machault	32	In the Bay de Chaleur, by captain Byron
L'Atalante	32	At Quebec, by commodore Swanton, in 1760
L'Hermione	32	Lost coming out of Dunkirk
La Zenobie	26	Lost on the island of Portland
La Mutine	24	Lost on the Dogger Bank
La Minerve	24	Lost near Villa Franca
Le Marq. de Marley	18	In the Bay de Chaleur, by captain Byron
La Chevre	16	Sunk at the entrance of Louisburg harbour
La Biche	16	

The Spaniards were much more fortunate than their allies, in one respect. They had not, as is currently believed, a single ship destroyed by the British, or loft by accident, except those at the Havanna,

captured fully reached eighteen hundred tons, yet they still maintained so great a superiority over those of Britain, as scarcely to render any statement of diminution necessary. The Spanish ships of the same force, far exceeded in bulk, those of the ally; since few, or none of the seventy-four gun ships (a particular class not introduced into use by the builders in the service of Spain till the middle of the eighteenth century) sunk below eighteen hundred tons, while some nearly reached two thousand.

The United Provinces, in conformity with that pecuniary policy which they had displayed during the preceding war, seemed absolutely determined to persevere as long as they should be permitted, in pursuing the same line of injurious conduct towards Britain, which their merchants had not entirely the fortitude to resist, even during the wars of Anne, when their country was engaged as a principal in the dispute. Their marine, materially diminished in its extent and number, had experienced full as much injury in its condition. The few ships which they still continued to maintain, were, for the greater part, confined in a dismantled state, perhaps to the very harbours in which they were constructed, till they were literally ready to fall to pieces. Some few alone were occasionally sent with their fleets under the pretence of protecting their trade, though frequently their commodities consisted of little else than stores, or warlike implements specifically intended for the service of the enemies of Great Britain*, although there subsisted between

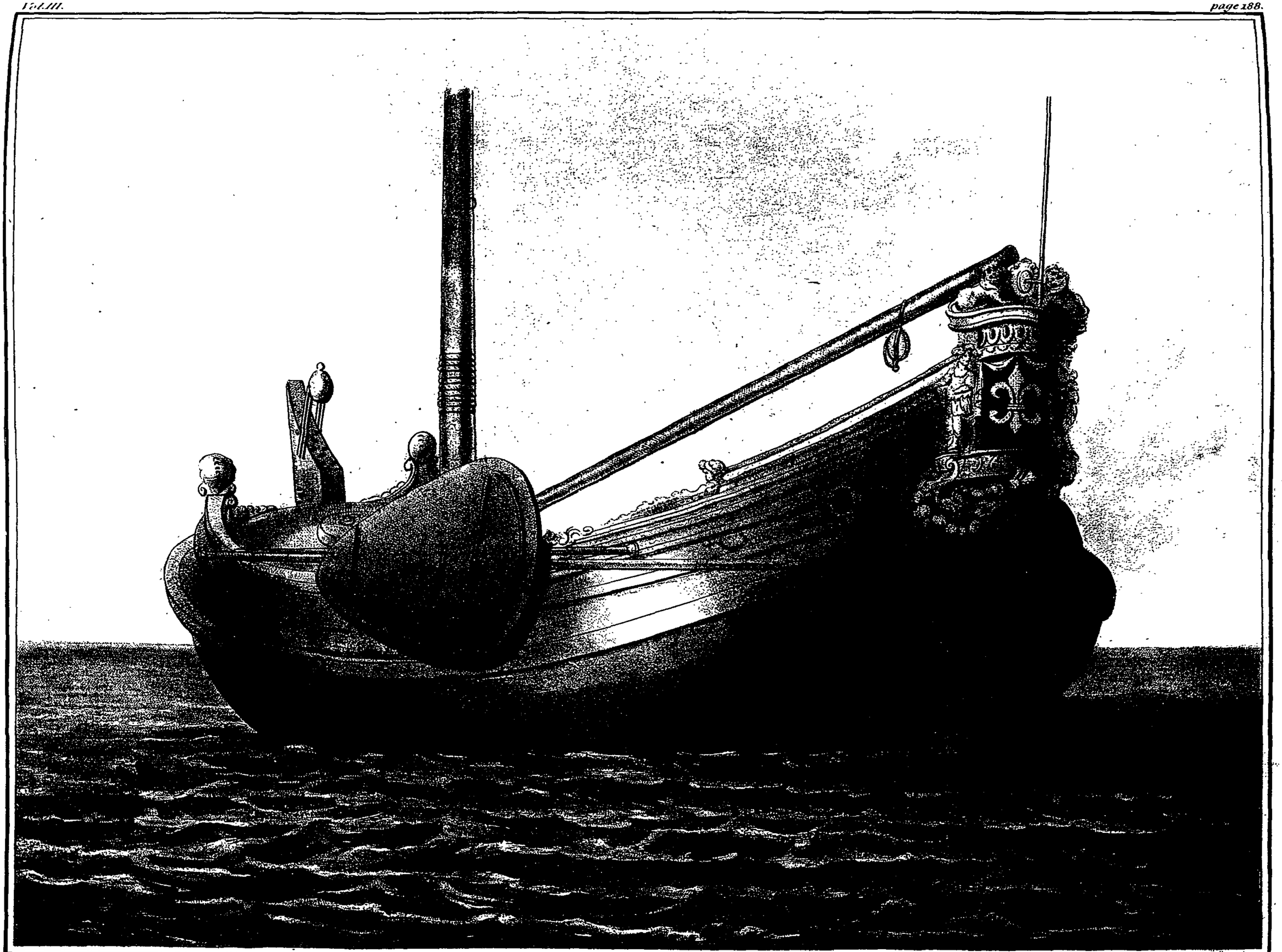
vanna, of which mention has been before made. The general total will, however, be found to amount to the following number of ships: Four of eighty guns, eleven of seventy-four guns, seven of seventy guns, sixteen of sixty-four guns, four of fifty guns, one of forty-eight, seven of forty-four, one of forty, two of thirty-eight, seven of thirty-six, sixteen of thirty-two guns, six of twenty-eight guns, nine of twenty-six guns, six of twenty-four guns, four of twenty-two guns, seven of twenty guns, three of eighteen guns, four of sixteen guns, four of fourteen guns, one of ten guns, and one of six—a marine in itself consisting of no less than one hundred and twenty-eight sail.

* Commodore Moore commanded in the Downs, and had his broad pendant on board the St. George. His cruizers found more employment from the Dutch than either the French, or Spaniards; for the subjects of the States-General still persisted in supplying the enemies of Great Britain with all sorts of naval and warlike stores, and were also employed in carrying the produce of the French colonies from the West-Indies to Europe. They had been so very clamorous against the vigilance of the British cruizers in searching their ships, and preventing their illicit commerce; that, in order to put a stop to them, their High Mightinesses had found it necessary to put some ships of war in commission, in order to protect their trade. Four of their merchant ships under convoy of a frigate of thirty-six guns, in the month of September, fell in with the Hunter sloop, the captain of which, in conformity to his orders, sent his boat on board one of the merchant ships, in order to search her. This the captain of the frigate would not permit; and the Hunter sloop not being of sufficient strength to enforce the orders, her captain made the best of his way to the Downs, where he made a report to commodore

tween that country and the United States, an alliance, professed to be of the strictest and most friendly kind. Exclusive of this, a miserable force, of which scarcely any part was ever known to return to Europe, was kept on foot at Batavia for the ridiculously declared intention of protecting their spice settlements, although the allotted safeguard was scarcely ever competent to contend with more than two or three British, or French ships of the line. In respect to the dimensions, and form adopted by the Hollanders, in the construction of their vessels, as well as those intended for the purposes of war, as of commerce, they had varied in them as immaterially as they probably had in the habiliments of their persons, or the propensities of their minds *. It were unfair, indeed, to attribute this circumstance entirely to an obstinate wish of differing from all the rest of the world, the necessity and restrictions imposed upon them by their situation as well as the condition of their ports, appear to leave very few points in the whole science, on which they are perfectly at liberty to act according to their own fancy and pleasure. The shallows and sands which environ their coast, had long taught them, that although they might surpass Xerxes in numbers, they could never emulate Ptolemy Philopater in magnitude and magnificence. The burthen, or at least the limited draught of water, which by consequence is almost the same thing, and which they could not exceed, reduced them to the necessity of making their first rates as floatsome as possible in order that they might carry their lower guns at a sufficient height from the water,

modore Moore of what had happened. The commodore immediately sent captain Adams in the Diana, having with him the Chester of fifty guns and the Hunter and Trial sloops, with orders to search the merchant ships, and to use force, if necessary. The day following captain Adams came up with them, and told the captain of the Dutch frigate, that he must know what his convoy were loaded with. He answered, that he would not allow his convoy to be searched, and would certainly defend the ships committed to his care. On this, captain Adams ordered a boat with a British jack in her bow, to be sent on board each of the Dutch merchant ships, letting the captain of the frigate at the same time know, that he would not suffer the British flag to be insulted. The Dutch frigate fired a gun at the headmost boat, loaded with grape-shot, by which one man was wounded. On this, captain Adams fired a gun at the frigate, in order to bring her to; this was answered by a broadside, and an action immediately commenced between the Diana and the Dutch ship of war, which lasted about a quarter of an hour, when the Dutch ship struck, and, with her convoy, was brought into the Downs. In the action the Dutch had four men killed and five wounded; among the latter was the captain, who lost a part of his nose. The Diana had not a man hurt. The merchant ships were found to be laden with naval stores for the use of the French navy, and were detained. The war ship was dismissed.

* The annexed plate represents a Dutch vessel, built in 1684. The variation between it and one of the most recent construction, is perhaps difficult to be pointed out.



Vandevelde del. *Barlow sculp*

View of a Dutch Yacht.

London. Published as the Act directs. March 25th 1802. by D. Steel, Union Row Little Tower Hill.

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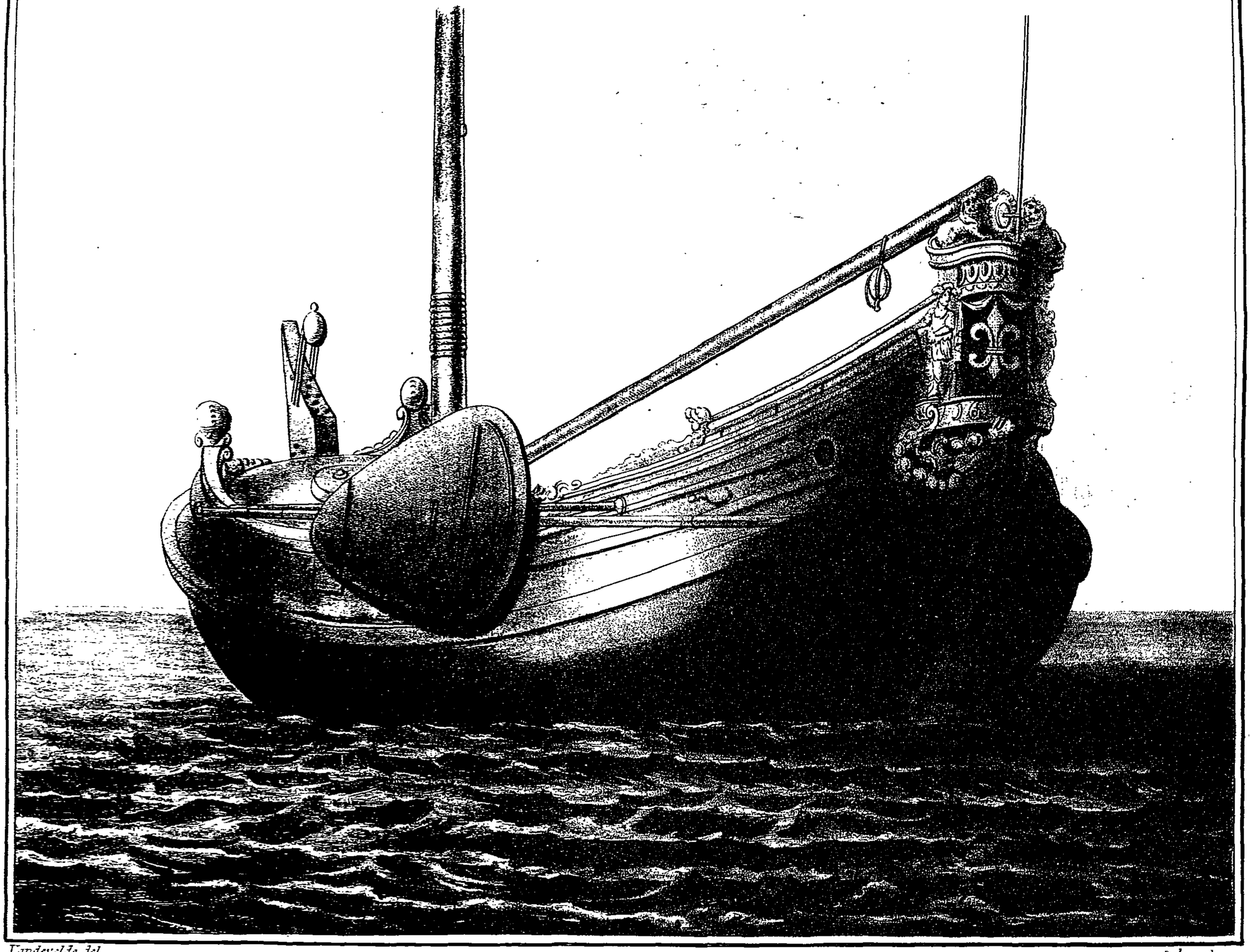
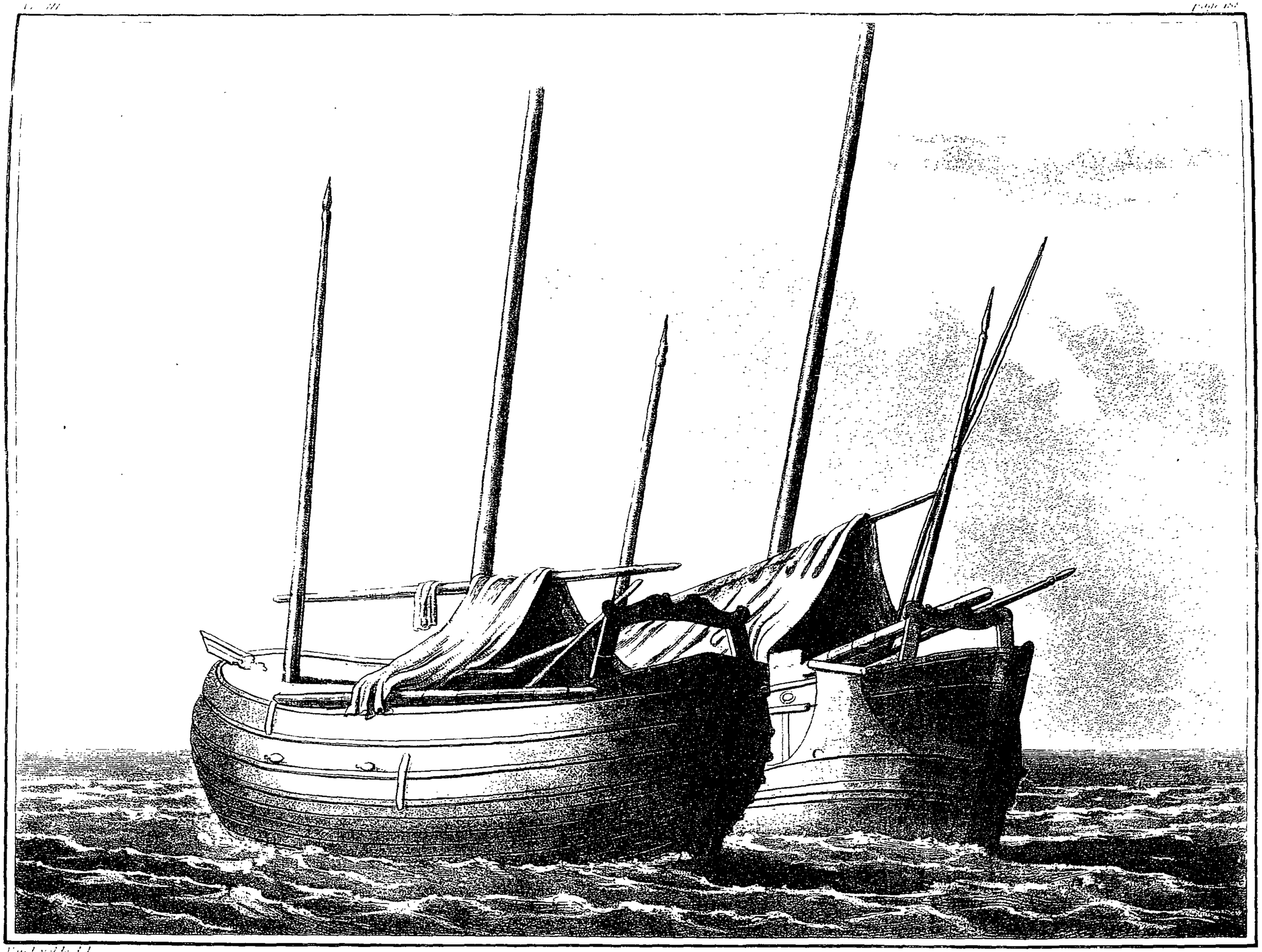


Vandevelde del. Barlow sculp

View of a Dutch Yacht.

London Published as the Act directs March 25th 1802 by D. Steel, Union Row, Little Tower Hill.



Van de Velde del.

Farlow sculp.

Views of Dutch Vessels 1681.

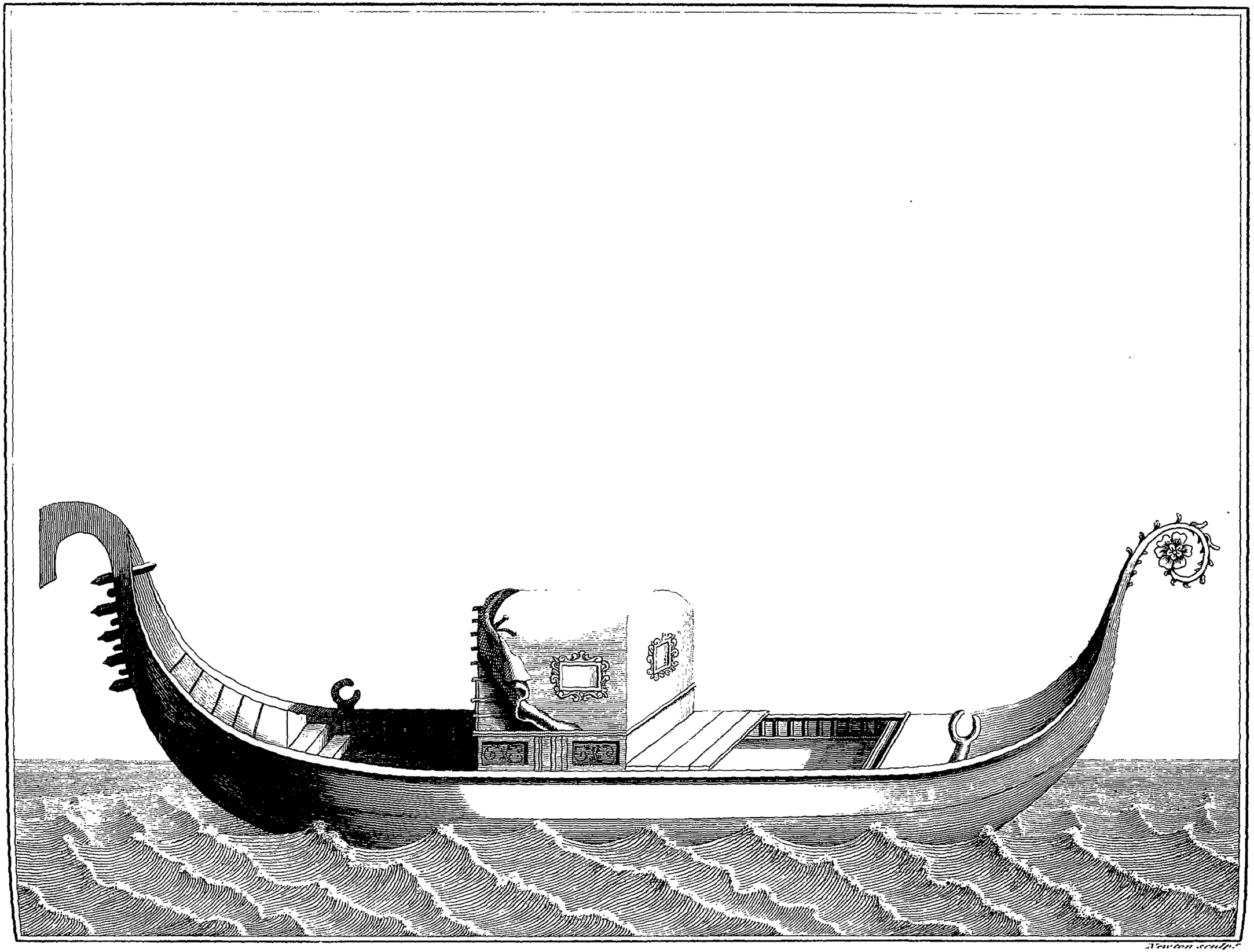
so that the ports might be opened even in a swell. The same cause operating in greater or less degree, produced the same effect through every class and department of the Dutch marine, and through every port of the United Provinces, from the first rate to the schoot, from the Texel to the shallowes fishing creek.

The principles of construction adopted by the Hollanders will hereafter be treated of at sufficient length; in the present instance, their political conduct, the extent of their state navy, and their commercial marine, are the only points under consideration. Of the state of their navy sufficient observation has been already made: Their commerce appears to have reached the utmoſt summit to which industry and ingenuity of a particular kind were capable of raising it. Their trade with India was immense; nor, through the wonderful assistance which they contrived to derive, more particularly in time of war, from St. Eustatia, was that with the West-India islands and the continent of America itself less consequential. The vessels employed in the Asiatic trade exceeded in dimensions those of every country in Europe, very few of them being of less than one thousand tons burthen, while several reached as high as twelve hundred. The rest of the ships employed in foreign commerce were proportionally consequential in their dimensions; while the flotilla engaged either in the inferior departments of commerce, or in pursuits occasioned by it, compensated by its superior numbers for any inferiority to which it might be seemingly sunk, when compared with the *petite* marine of any other country in the universe. This however was far from being the case; for if the actual burthen, or faculty of portage, is to be considered as the sole or grand excellence of vessels, those of Holland, like the junks of China, had long vied with, and at times (as was actually the case in the middle of the eighteenth century) surpassed those of every nation in the universe. The schoot, the dogger, and the galliot, always equalled, and very frequently exceeded, the tonnage of the sloop, the snow, and the brigantine, of those European countries which were accustomed to look down, rather contemptuously perhaps, on the Dutch vessels, owing to their singular form, and those peculiarities which the eye rejects as disagreeable, because they have not become completely familiar to it. If, however, as will be hereafter shown, the properties of the galliot shall be found much better calculated for the occupations in which it is engaged, and the seas through which it is intended to be navigated, than those of any other species of vessel hitherto contrived would be, contempt will be immediately converted into admiration; while satire injudiciously

diciously and incorrectly levelled, will revert in tenfold force on the quarter from whence it issued, and render its inventor completely confounded by the folly of his own erring and misdirected shaft.

The northern states of Europe, a term chiefly implying those of Russia, of Sweden, and of Denmark, preserved the same independant quietude which had already marked their conduct; their disputes were confined merely to the narrow limits of their own contracted circle; they were in general accommodated and settled without even the necessity of displaying the ensigns of war; and their different navies, as well as their commerce, seemed for many years totally stationary. That of Russia amounted to about eighteen or twenty ships of the line, none of them exceeding eighty guns, with eleven or twelve frigates of rather considerable force; but, what was somewhat extraordinary, few or no smaller vessels. That of Sweden consisted of fifteen or sixteen ships of the line, with as many large frigates, and two or three advice-boats or smaller vessels; while that of Denmark exceeded not eighteen ships of the line, with twelve or fourteen stout frigates. The principle on which the governments of these secluded countries acted at this period, is sufficiently apparent from the very statement just given of the maritime force they severally maintained; and the immaterial difference in strength that existed between their respective fleets, fully demonstrated that they were mutually actuated by the humble desire of being able to repel an injury, instead of grasping at the possession of such a power as would have enabled them to inflict one. In the form and fashion of their ships they seemed to pay much greater attention to the practice of the Hollanders, and other inhabitants of the United Provinces, than to those of any other country: The reason is indeed obvious, and it had been a matter of no small wonder, had the case been otherwise. The navigation of the same seas, or of those in addition to them which laboured under precisely the same inconvenience with respect to sand-banks, tempestuous weather, and shallow harbours, naturally induced an adoption of the system of which the Dutch (to use the general appellation) had before shown them the utility. The same species of imitation pervaded the commercial branch of marine, particularly in respect to the Swedish and Danish nations: so close was the imitation, that the most critical observer could scarcely distinguish, even by actual and direct comparison, any existing difference between the galliots, or other inferior vessels, belonging to Danish or Swedish subjects, and those built in the ports of Holland, which may be considered as their native country.

The same spirit of imitation also generally prevailed, though not without some exceptions,



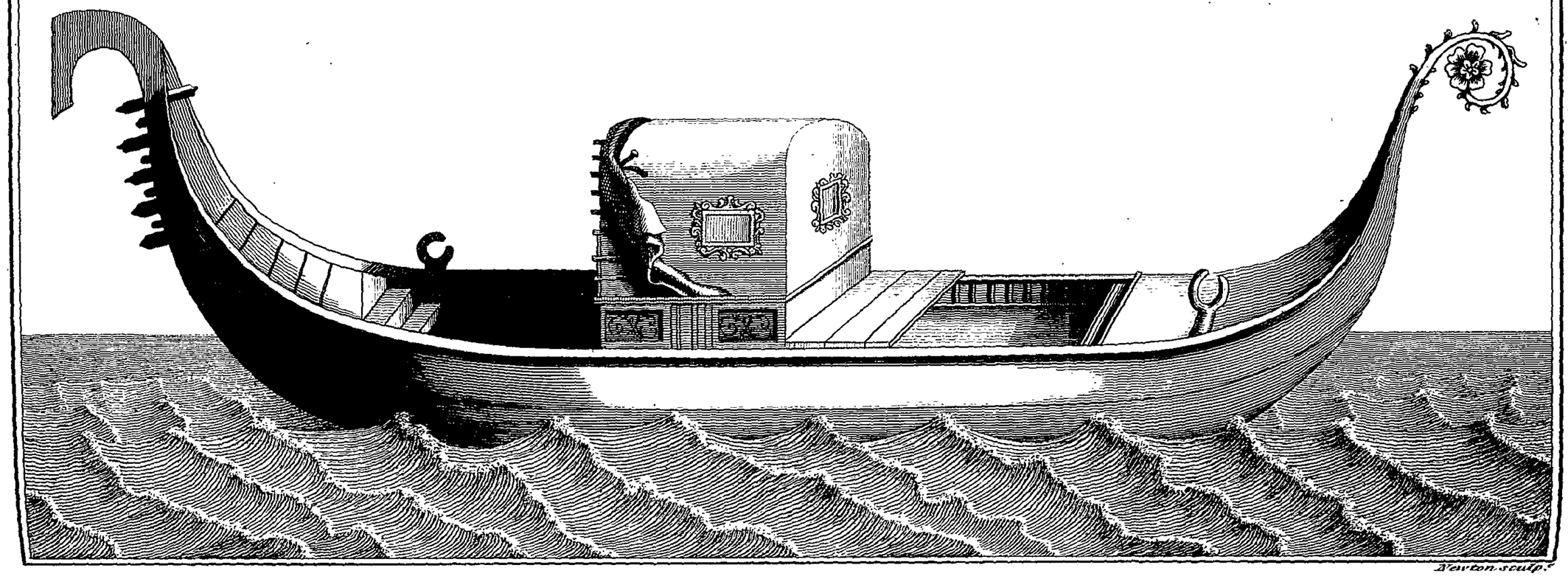
Newton sculp.

A VENETIAN GONDOLA.

Published by Longman and Hurst 1809 Paternoster Row

exceptions, in respect to the superior class of shipping, the same causes naturally producing the same effects. The inhabitants of Norway and those of the northern parts of Russia, particularly Archangel, which had suddenly become the emporium of marine architecture in that quarter of the world, appeared to have outstepped in an instant the limits which custom seemed to have prescribed to vessels built merely for the purposes of commerce. A considerable number of vessels issued from Archangel and the ports of Norway which equalled in magnitude British ships of fifty or sixty guns, some of them being of nearly twelve hundred tons burthen. They were built principally of fir: The materials of which they were formed were almost new in modern practice, and the extent of the adjacent forests, which produced scarcely any other species of timber, certainly gave birth to the experiment. The result fully answered the expectations and hopes of the architects who contrived them, but the cargoes which they conveyed, being principally analogous to those of which the ship itself was constructed, in great measure insured them from misfortune; but when, by degrees, success created confidence, and caused the extended introduction of the same vessels into other occupations incapable of contributing to the safety of the vessel so fully as the first, they were found by no means dangerous or unsafe, particularly in the earlier part of their lives, if the term be allowable. Sweden, after a short time, followed the example of her neighbours, and instances are not wanting of ships under this description having been employed in the time of war, by the southern powers, particularly France, as transports and as storeships.

Long fallen from that height which she had for so long a space of time held in the maritime world, whether considered as a warlike or as a commercial state, Venice, contracted within herself, appeared content with that share in mercantile pursuits of which the acquiescence and liberality of states more powerful than herself permitted her the enjoyment. The share which was allowed her seemed perfectly sufficient to the maintenance of that splendour, that luxury, and those dissipated habits of life, which the Venetians had gradually entered into from the time when the dazzling brightness of the warlike character which they once possessed began to tarnish and lose its lustre. Their conduct seemed similar to that of a ruined man, who wishes to drown the memory of the state of affluence from whence he has fallen in a continued round of riot and debauchery. Their insignificance secured them from the envy of other countries, and their agreeable manners produced a constant influx of wealthy foreigners to their city, who, pleased for a time with



A VENETIAN GONDOLA.

Published by Duncan and Malcolm, Paternoster Row, 1840.

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the variety of pleasures which surrounded them, were happy in contributing towards the future maintenance of those gaieties from whence they had themselves derived so much amusement and satisfaction. What remained of their state marine appeared analogous to the temper of the people; the form of their ships was light, airy, and apparently ill calculated to brave the horrors of a tempest, or of those tremendous seas which frequently occur even in the Adriatic, and the Mediterranean. Their decorations were equally characteristic, as it were, of the public mind, gay and gaudy; their ships of war, and some even of their merchant vessels, appeared better fitted for the yachts of princes than for the purposes of naval contest.

The Genoese, and some others among the Mediterranean or Italian states, had never shown themselves ambitious of possessing a navy, since the use of galleys as the sole vessels of combat had become exploded. Their public navies consisted of a few vessels under this description, incapable of rendering any further service to their country than by occasionally checking the boldness of the inferior corsairs belonging to the Barbary states, who were in the habit of maintaining frequent warfare with them. Their commerce was almost equally insignificant; so that the impotence of the protectors became less felt, because the duty that was required of them was consequently so inconsiderable. An exception must, however, be made in respect to the kingdom of Naples. Exclusive of rather a formidable fleet of galleys, the Neapolitans possessed a squadron, not sufficiently consequential indeed to strike terror into or create any apprehension in the minds of the higher maritime powers, but fully sufficient to their necessities, and to the protection of their own state against those enemies whose anger they had cause to dread. The knights of Malta, who derived from their profession the peculiar privilege of disturbing the peace of all the adjacent countries which were inhabited by Mahometans, maintained in a constant state of equipment a fleet of galleys, with an inconsiderable number of ships of war and frigates; but the decline of that intolerant spirit of hereditary warfare, which had been carried on with the utmost animosity on both sides during a number of centuries, has tended very materially to diminish the force and consequence of their navy. The battle of Lepanto appeared to have given the death stroke to this species of folly or insanity; and except the unavoidable disputes with the Barbary states, whose trade and sole maritime occupation was, and in some measure still continues to be, piracy, the wars between the Christians and Turks became at least as unfrequent as they were among the Christians themselves. The naval strength of the Mahometans was at last on a par with that of their natural opponents; and

and were it not indeed that the states of Barbary stood in some measure overawed by the higher maritime powers, the trade of the Italians would run no small risk of being continually plundered, and reduced almost to a state of annihilation. Along the shores of Africa the use of galleys appears to have considerably declined, and that of feluccas, or xebecs, has been substituted in their room. These vessels, particularly the latter, have it in their power, from the form of their hull as well as sails, not only to spread more canvas, and consequently use more speed either in flight or pursuit, but may also be armed to such an extent as to render them no contemptible opponents to a frigate, even of the highest class. They are, therefore, certainly better adapted to the purposes of indiscriminate hostility than galleys, which, it must be evident, are of inferior power, and their superiority may well account for their general use among a people to whose habits they appear particularly serviceable. To the vessels just mentioned may be added a few ships of war, the force of which sufficiently proves there is no dereliction from those political principles which have been the favourite and leading maxims of these states, most probably from their very foundation. War, commenced on the ordinary grounds of public dispute, unconnected with, and unaccompanied by, plunder, being considered by them as a measure totally inadmissible into the code by which the conduct of their government is regulated, the possession of any shipping superior in force to the commercial vessels against which their attacks are destined, or that of the small ships of war which may occasionally attend them for their protection, would be an useless act of profusion. In respect to commerce, and the vessels employed in that occupation throughout the whole states of Barbary, to which may be added the empire of Morocco itself, the extent of the one, and the number of the other, are so trivial, that they may almost be compared to a speck, scarcely discernible by the naked eye, when taken in comparison with the marine of Europe alone: the few vessels, however, which they possessed at the period now spoken of, were chiefly feluccas, and the principal part of their mercantile concerns confined merely to the port of Gibraltar.

The dignity of the Ottoman empire not suffering it to descend into those acts of depredation, without the existence of a public quarrel, which their tributaries and dependants had forced themselves to believe were by no means contrary to what are called the laws of nations, the Turkish navy has constantly borne a far more respectable appearance. It has constantly carried with it every semblance of a regular establishment, intimately connected with and intended, as is the practice of the most powerful maritime states, first, for the protection of the

the country itself; and secondly, for the annoyance of all foes who should be hardy enough to molest it. Not entirely emancipated from the prejudices and customs of times long since past, no inconsiderable portion of the Turkish marine consists of galleys, many of which are, however, of considerable dimensions, and mount very heavy guns. Independant of these, the Grand Signior possessed in the middle of the eighteenth century a naval force not materially inferior to that which the northern powers of Europe respectively considered as sufficient to their protection and their wants. In form, in force, and in decorations, the Turks, with no inconsiderable assiduity, followed the example of their once implacable foes, the Venetians. Their ships of war rarely exceeded eighty guns, which, according to the practice of their enemies and tutors, were almost invariably brass. All the gaudy splendour of gilding, of painting, and carved-work, became intermingled with the powers and implements of warfare; so that it might, at first sight, admit of some dispute whether the floating fabric was not intended merely for the purposes of state, instead of the commission of those acts of hostility, or the sustainment of that species of conflict, which threatened the demolition of all its grandeur. Upon the whole, however, the Turkish marine was by no means insignificant, or intended merely for the purposes of show and parade. Artists from foreign countries, allured by the general inducements of promised profit and visionary honours, submitted to transfer all those principles of the science which they possessed to Constantinople, and under equally scientific management, the Ottoman squadron might have proved capable of making no contemptible defence against that of any country in the world. The frigates, or vessels of force too inferior to take their stations in the line of battle, according to the arrangements of European tactics, were still superior in quality to their larger ships; many of them being exceeding good sailers, and of large dimensions, as well as formidable force, allowing for the class in which they stood. Their sloops of war, and vessels of still inferior note, which are the constant and necessary attendants on fleets, were either xebecs, galleys, feluccas, or even faicques; for though, in some particular instances, the Turks may condescend to imitate the example of foreign countries, yet they rigidly adhered to that of their ancestors in others. It were, perhaps, as extravagant to expect that the Indian should abandon his canoe, and construct a ship according to the European method, as that the Turks should relinquish the use of latteen sails, or the peculiar forms adopted by them in the construction of those smaller ships of war and vessels intended for commercial purposes, which custom, convenience, and the experience of their peculiar utility in the seas and climate of which they

they may be considered natives, have caused them to be esteemed as the most perfect in that class of any built throughout the known world. In respect to commerce, that of the Turks with foreign countries carried on in shipping belonging to themselves, is extremely limited, and the sight of the Ottoman flag flying in a Christian port might be considered nearly as singular an object as the standard of Japan or China would be in the same situation. The terror of the plague naturally deters the inhabitants of all countries, not fatalists, from encouraging such an intercourse, while the natural temper and inclination of the Turks appear by no means disposed to use the smallest endeavour towards gaining that reception which they themselves are as careless about as their neighbours are averse to. The mercantile concerns of Turkey are, however, among the most considerable in the world: It is only owing to the peculiar manner in which they are conducted that they have such trivial effect on the marine of the country, and that so small a portion of vessels should suffice to support it in the extent to which it was carried, particularly about the middle of the eighteenth century. The apparent mystery may, however, be easily developed, and explained in a very few words. A very considerable part of the Turkish commerce is carried on, as it was in the days of Mahomet, through the medium of caravans, to which, in subsequent ages, has been added the aid of inland navigation. The Caspian and the Euxine seas, together with the numerous and consequential rivers which intersect the country, have rendered the intercourse between the remotest parts of India and Russia by no means difficult, though perhaps somewhat tedious, even without the intervention and assistance of what may be properly called the science of navigation. By the means just pointed out, the different commodities, as well those which were the immediate production of Turkey itself as those which were transferred thither from other countries, were with apparent ease conveyed to any port which necessity, or the wish of the merchant, might require. In cases where this measure became inconvenient without the assistance of shipping, the flotilla of the country, which fully supplied by its numbers the want of extensive individual burthen, immediately afforded its aid; and the vessels of France, of Spain, of Britain, and other nations, repairing to the mart agreed on, the Turkish merchant, in his own person, derived every advantage that could result from commerce. He rose indeed far superior to the foreigner with whom he traded, inasmuch as he sat down perfectly at ease, with respect to those dangers which are naturally attendant on a sea voyage, and was exempt from all loss on the instant his commodities were delivered to the purchaser from his own store, instead of being under the necessity, as is the general custom with other people,

people, of conveying them at their own risk to the place of their destination. This arrangement was, nevertheless, extremely injurious to what may be considered the naval consequence of the country itself; but that is a circumstance which the political directors of the government have had the wisdom to discover cannot be remedied, and have therefore possessed sufficient prudence not to make the vain attempt, conscious that those countries of Europe, whose navies have acquired them the appellation of maritime powers, would not suffer the most distant attempt to be made that might appear likely to erect a force which might come in competition with their own. The equipment of a Turkish fleet has always therefore appeared as a constrained act of necessity, imposed on the government of the country, and a violence done to the wishes of the people, who considered the defence of their sovereign and themselves could not be confided to better hands than the ardour of their janissaries and their spahis.

According to the arrangement and order heretofore pursued, the navy of Great Britain comes next under consideration. Its flourishing state at the conclusion of the war with France and Spain in 1748, has been already descanted on. During the peace, which succeeded to it, there was no relaxation from those energetic measures which had been adopted towards its improvement, more particularly subsequent to the year 1745. If the number of ships newly built should be thought insignificant when compared with those launched by France and Spain during the same period, ample amends were undoubtedly made for the deficiency in this respect, by the diligence used in the repair of such ships as either age, or the incidents which took place during the preceding state of warfare, had rendered unfit for engaging in any further contest, or, perhaps, even being employed on services where no encounter was to be apprehended, without the previous adoption of those precautions which were prudently and necessarily to be taken. So successful were the quiet measures pursued by Britain, that notwithstanding the boasted energy and exertions made by France, in what may fairly be considered the re-formation of her navy, (a circumstance which, though it proclaims the low and insignificant state into which it had fallen, reflects considerable honour on those under whose auspices its revival in so short a time was effected) no apprehensions of misfortune would have been roused, though Spain, the quondam ally to France, and whose efforts in the same line had been no less strained, should have thought proper to join herself as a partner in the dispute, even at its very commencement.

In 1755, a rupture with France being daily expected, the British fleet actually in commission, and ready for immediate service, amounted to two first rates, of one hundred guns each; five second rates, of ninety guns; twenty-

seven

seven third rates; four of seventy-four; twelve of seventy; two of sixty-six; and nine of sixty-four guns: fifteen fourth rates; nine of sixty guns each; six of fifty; and five frigates: making, in the whole, a fleet of fifty-four sail. When hostilities seriously commenced in the ensuing year, the British navy comprised five first rates, of one hundred guns each; ten second rates of ninety guns each: fifty third rates; nine of eighty; six of seventy-four; twenty-seven of seventy; three of sixty-six; and five of sixty-four guns: sixty-six fourth rates; thirty-six of sixty; and thirty of fifty guns: thirty-eight fifth rates, of forty-four and forty guns each; fifty-four sixth rates, of twenty and twenty-four guns; three bomb vessels, thirty-seven sloops, and eleven yachts: a navy containing two hundred and seventy-four sail. The annexed account of the ships either discarded from, or added to, the British service, within the several stated periods, will clearly point out the several alterations and additions which took place between the years 1748 and 1756. Those whose names are inserted beneath* were either condemned or broken up, while on the other hand, those in the lift

* *List of the Ships which were either lost, sold, or broken up, between the Years* 1748 *and* 1756.

		guns.	sw.			guns.	sw.
Sandwich,	broken up,	90		Terrible,	sold,	12	14
Dorsetshire,	broken up,	80		Drake,	sold,	14	14
Neptune,	broken up,	80		Merlin,	sold,	14	14
Shrewsbury,	broken up,	80		Saxon,	sold,	14	14
Glorioso,	broken up,	70		Shirley,	sold,	14	14
Mars,	broken up,	64		Spence,	sold,	14	14
Argyle,	broken up,	50		Spy,	sold,	14	14
Portland's Prize,	broken up,	50		Warren,	sold,	14	14
Le Rubis,	broken up,	50		PrincessRoy. st.ship,	sold,	24	
Assurance,	broken up,	44		Deptford store ship,	sold,	24	
Feversham,	sold,	44		Apollo hospital ship,	lost,	34	
Folkstone,	broken up,	44		Blenheim hos. ship,	sold,	20	
Humber,	broken up,	44		Britannia hos. ship,	sold,	20	
Milford,	broken up,	44		Chester hos. ship,	sold,	20	
Richmond,	broken up,	24		Enterprize h. ship,	sold,	20	
Conqueror,	sold,	16		Rochester h. ship,	sold,	20	
Duke,	sold,	16		Solebay hosp. ship,	sold,	20	
Salamander,	sold,	16		*Yachts.*			
Vulcan,	sold,	16	14	Charlotte,	broken up		
Basilisk,	sold,	12	14	Discovery transport,	sold,	10	6
Carcass,	sold,	12	14	Forester transport,	sold,	10	6
Comet,	sold,	12	14	Heyling transport	sold,	10	6
Mortar,	sold,	12	14	Lion transport,	sold,	10	6
Serpent,	sold,	12	14	Plymouth transport,	sold		
Terror	sold,	12	14	Royal Escape hoy,	sold		

list B had been added during the peace, independent of several that were rebuilt; that is to say, were new ships to which the names of others, which had become unserviceable, had been affixed, together with many that had experienced a complete repair. The list marked C, contains the names of those ships which

Sheerness waterboat hoy, sold
Supply waterboat hoy, sold
Truclove waterboat hoy, sold
Unity waterboat hoy, sold
Woolwich waterboat hoy, sold

	guns
Northumberland	70
Orford	70
Vanguard	70
Swiftsure	70
Weymouth	60
Greenwich	50
Glory	44
Humber	44
America, built in America,	40
Jason	40
Boston	24
Hind	24
Dursley galley	20

B.

	guns.
Fox	20
Garland	20
Inverness	20
Lyme	20
Renown	20
Dispatch	14
Peregrine	10
Happy	8
Peggy	6
Ranger	8
Savage	8
Wasp	8
Wolf	8

C.

		guns.
Britannia,	newly built,	100
Neptune,	newly built,	90
Ocean,	newly built,	90
Sandwich,	newly built,	90
Foudroyant,	taken from France,	84
Formidable,	taken from France,	80
Arrogant,	newly built,	74
Bellona,	newly built,	74
Centaur,	capt. from France,	74
Courageux,	capt. from France,	74
Dublin,	newly built,	74
Fame,	newly built,	74
Hercules,	newly built,	74
Hero,	newly built,	74
Mars,	newly built,	74
Shrewsbury,	newly built,	74
Temeraire,	capt. from France,	74
Valiant,	newly built,	74
Warspight,	newly built,	74
Dorsetshire,	newly built,	70
Tigre,	capt. at the Havan.	70
Reyna,	capt. at the Havan.	70
Moro,	capt. at the Havan.	70
Infante,	capt. at the Havan.	70
Soverano,	capt. at the Havan.	70
Aquilon,	capt. at the Havan.	70
Africa,	newly built,	64
Alcide,	newly built,	64
Belleisle,	newly built,	64
Belliqueux,	taken from France,	64
Bienfaisant,	taken from France,	64
Edgar,	newly launched,	64
Modeste,	capt. from France,	64
Achilles,	newly launched,	60
St. Ann,	capt. from France,	60
St. Antonio,	capt. at the Havan.	60
Conquestador,	capt. at the Havan.	60
Firm,	newly launched,	60
St. Florentine,	taken from the Fr.	60
Panther,	newly launched,	60
Isis,	newly launched,	50
Feversham,	newly launched,	44
Phœnix,	newly launched,	44
Loo,	bought into the ser.	30

Danae,

which were added to the British navy, either by capture or otherwise during the war; and that to which the letter D is affixed, shows the diminution which it experienced within the same period. It

		guns.			guns
Danae,	taken from France,	38	Milford,	newly launched,	28
Brilliant,	newly launched,	36	Trent,	newly launched,	28
Melampe,	taken from France,	36	Terpsichore,	taken from France,	26
Shannon,	newly launched,	36	Valeur,	taken from France,	24
Venus,	newly launched,	36	Antigua,	newly launched,	10
Pallas,	newly launched,	36	Barbadoes,	newly launched,	10
Aurora,	newly launched,	36	Bonetta,	newly launched,	16
Adventure,	newly launched,	32	Cygnet,	taken from France,	18
Alarm,	newly launched,	32	Diligence,	newly launched,	12
Arethusa,	newly launched,	32	Druid,	newly launched,	10
Æolus,	newly launched,	32	Escort,	taken from France,	14
Balleine,	taken from France,	32	Favourite,	newly launched,	
Bologne,	newly launched,	32	Flamborough,	prize taken from F.	38
Blonde,	taken from France,	32	Goree,	prize taken from F.	8
Diana,	newly launched,	32	Hunter,	newly launched,	14
Juno,	newly launched,	32	Laurel,	newly launched,	8
Minerva,	newly launched,	32	Lurcher,	newly launched,	8
Montreal,	newly launched,	32	Lynx,	newly launched,	10
Niger,	newly launched,	32	Merlin,	newly launched,	18
Quebec,	newly launched,	32	Nautilus,	newly launched,	18
Repulse,	newly launched,	32	Pomona,	newly launched,	18
Richmond,	newly launched,	32	Pelican,	newly launched,	14
Southampton,	newly launched,	32	Postillion,	newly launched,	18
Stag,	newly launched,	32	Racehorse,	newly launched,	16
Thames,	newly launched,	32	Senegal,	newly launched,	16
Tweed,	newly launched,	32	Sardoine,	taken from France,	14
Vestal,	newly launched,	32	Spy,	newly launched,	10
Acteon,	newly launched,	28	Tamer,	newly launched,	16
Active,	newly launched,	28	Zephyr,	newly launched,	10
Aquilon,	newly launched,	28	Blast,	newly launched,	8
Argo,	newly launched,	28	Carcass,	newly launched,	8
Boreas,	newly launched,	28	Infernal,	newly launched,	8
Cerberus,	newly launched,	28	Mortar,	newly launched,	8
Coventry,	newly launched,	28	Terror,	newly launched,	8
Crescent,	newly launched,	28	Thunder,	newly launched,	8
Emerald,	newly launched,	28	Ætna,	newly launched,	8
Echo,	taken from France,	28	Cormorant,	purchased,	8
Hermione,	taken from France,	28	Lightning,	purchased,	8
Levant,	newly launched,	28	Pluto,	purchased,	8
Lizard,	newly launched,	28	Roman Emperor,	purchased,	8
Maidstone,	newly launched,	28	Proserpine,	purchased,	8

It were needless, and, indeed, highly improper to enter into any detail of the circumstances and events which took place during the war, as it would lead to a very different species of history from the present: it will be only necessary to state,

		guns.			guns.
Salamander,	purchased,	8	S. Sea Castle, do.	purchased,	18
Strombolo,	purchased,	8	Augusta Yacht,	rebuilt,	8
Vesuvius,	purchased,	8	Royal Charlotte,	rebuilt,	10
Crown, store ship,	purchased,	8			

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Ramillies,	lost,	90	Prince Henry,	broken up,	40
Princess Royal,	broken up,	90	Humber,	broken up,	44
Prince George,	burnt,	90	Jason,	broken up,	40
Russel,	broken up,	80	Kinsale,	broken up,	40
Invincible,	lost,	74	Roebuck,	broken up,	44
Marlborough,	lost,	70	South Sea Castle,	broken up,	44
Princessa,	convert. into an hk.	70	Biddeford,	sold,	24
Suffolk,	broken up,	70	Bridgewater,	sold,	20
Cumberland,	left in India unfit for service,	66	Blandford,	sold,	20
			Centaur,	sold,	20
Fougueux,	broken up,	64	Dursley Galley,	sold,	20
Ipswich,	broken up,	64	Flamborough,	sold,	20
Trident,	broken up,	64	Fowey,	sold,	20
Vigilant,	broken up,	64	Fox,	lost,	20
Kingston,	broken up,	60	Inverness,	sold,	20
Strafford,	broken up,	60	Leostoffe,	sold,	20
Sunderland,	broken up,	60	Lys,	sold,	20
Tilbury,	lost,	60	Lyme,	sold,	20
Tyger,	broken up,	60	Margate,	sold,	20
Warwick,	taken, but retaken afterward,	60	Mermaid,	sold,	20
			Queenborough,	sold,	20
Advice,	broken up,	50	Seahorse,	sold,	20
Greenwich,	taken,	50	Shoreham,	sold,	20
Harwich,	broken up,	50	Triton,	sold,	20
Litchfield,	lost,	50	Winchelsea,	sold,	20
Leopard,	broken up,	50	Falcon,	sold,	14
Newcastle,	lost,	50	Peregrine,	sold,	10
Oxford,	broken up,	50	Raven,	sold,	12
Portland,	broken up,	50	Shark,	sold,	10
Salisbury,	broken up,	50		*Yachts.*	
Severn,	broken up,	50	Royal Caroline,	broken up,	10
Tavistock,	broken up,	50	Bolton,	broken up,	8
Ambuscade,	broken up,	44	Chatham,	broken up,	8
Chesterfield,	broken up,	40	Drake,	sold,	8
Crown,	broken up,	40	Portsmouth,	broken up,	
Diamond,	broken up,	40	Queenborough,	broken up,	
Expedition,	broken up,	44			

state, that after the loss of 31 ships and vessels*, an injury, however, wonderfully trivial when compared with that of the enemy, the British navy had increased,

* *List of the Ships and Vessels belonging to the British Navy, that were either lost, destroyed, or captured by the Enemy, during the War.*

Ships' Names.	Force.	Year.	Circumstances of their Loss, &c.
Ramillies	90	1760	Lost on the Bolt head
Prince George	90	1758	Burnt going to the Mediterranean
Invincible	74	1758	Lost near St. Helen's
Resolution	74	1759	Lost on the Fore Bank in pursuit of the enemy
Conqueror	70	1760	Lost on St. Nicholas island near Plymouth
Marlborough	70	1762	Foundered on their passage from the Havanna
Temple	70	1762	
Mars	64	1755	Lost going into the harbour of Halifax
Essex	64	1759	Lost on the Fore Bank in pursuit of the enemy
Duc d'Aquitaine	64	1761	Foundered off Pondicherry
Raisonnable	64	1762	Lost at Martinico
Warwick	60	1756	Taken in the West Indies
Sunderland	60	1761	Foundered off Pondicherry
Tilbury	60	1757	Lost on the rocks near Louisburg
Cumberland	56	1760	Lost near Goa in the East Indies
Greenwich	50	1757	Taken in the West Indies
Litchfield	50	1758	Lost on the coast of Africa
Harwich	50	1760	Lost in the West Indies
Newcastle	50	1761	Wrecked near Pondicherry
Chesterfield	40	1762	Lost in the old streights of Bahama
South Sea Castle	40	1762	Lost at Manilla
Humber	40	1762	Lost on the Happesborough Sands
Griffin	28	1760	Lost on the island of Barbuda
Lyme	28	1760	Lost in the North Sea
Lowestoffe	28	1760	Lost in the river St. Lawrence
Hussar	28	1762	Lost in the West Indies
Tartar's Prize	24	1759	Sprung a plank in the Mediterranean
Mermaid	24	1760	Lost near Bahama
Blandford	20	1755	Taken off Brest, but afterwards restored
Winchelsea	20	1758	Taken conveying the South Carolina fleet; soon after retaken
Eurus	20	1760	Lost in the river St. Lawrence
Penguin	20	1760	Taken on the coast of Portugal, afterwards retaken
Queenborough	20	1761	Wrecked near Pondicherry
Bridgewater	20	1758	Run ashore at Fort St. David, in the East Indies, to prevent
Triton	20	1758	their falling into the enemy's hands
Biddeford	20	1762	Lost on the Hazeborough Sands
Grammont	18	1762	Taken in the harbour of St. John, Newfoundland
Scorpion	16	1762	Lost in the Irish Sea
Pheasant	16	1761	Foundered in the Channel
Peregrine	16	1762	Foundered on her voyage to the West Indies

creased, even under the pressure of hostilities, from two hundred and seventy-four to three hundred and forty sail. In this augmentation there were comprised twenty-one ships of the third rate, which experience had proved to be the most useful class of vessels constructed for the weightier purposes of war.

The attention both of government and of private individuals was not confined to the mere augmentation of the marine, in respect to numbers, but every effort and experiment that prudence, study, and ingenuity, could suggest, were progressively tried, for the purpose of effecting improvement in it. Those dimensions, which had a few years before been in general use and adoption, but, whose inconvenience having long been complained of, began ere the conclusion of the preceding war to be partially removed, were during the succeeding peace totally abolished. The third rates carrying eighty guns on three decks were completely laid aside; the Cambridge and Princess Amelia being the last ships of that class which were launched, the latter in the year 1759; the Cambridge four years earlier: nor would those have been, in all probability, constructed, had not the timber and materials been prepared for the purpose ere mature consideration and observation had raised so perfect a judgement of the defects, as to cause a determination of totally abandoning the system of building three-decked ships carrying less than 90 guns. The ships mounting seventy guns as well as those of sixty became also exploded, and were replaced by others carrying seventy-four and sixty-four guns. By augmenting the tonnage of the former from 1230 to 1560 tons, which was the general burthen of the new third rates, they became infinitely more equal to the task of contending with the enormous ships belonging to the enemy, which though nominally of the same force, would in all probability have been able, under ju-

Epreuve	14	1762	Lost in her return from South Carolina
Hawke	12	1759	Taken off Cape Clear, retaken in 1761
Virgin	12	1760	Taken in the West Indies; retaken the end of the year
Ferret	12	1757	Foundered off Louisburg
Merlin	10	1757	Taken off Brest, retaken next year
Stork	10	1758	Taken in the West Indies
Speedwell cutter	10	1761	Detained in the harbour of Vigo
Basilisk bomb	8	1763	Taken by the Audacieux privateer
Falcon bomb	8	1759	Lost in the West Indies
Savage	9	1762	Lost in Torbay

In the preceding list, however, it is to be remarked, that one ship only of 60 guns; one of 50; three of 20; one of 18; two of 12; three of 10: one of 8 guns each; making, in the whole, 12 sail, were captured, of which two only were of two decks, and all the rest of the most contemptible force. Several of the ships lost had been launched during the war; an additional proof of the extent to which British exertion was carried.

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dicious management, merely in consequence of being larger in size, to baffle the attack of two ships of 70 guns each, belonging to the old class. The advancement of more than three hundred tons at one stroke, in vessels of the same rate, was undoubtedly a grand stretch in mechanics; but still the improvement was not perfect, and it remained for future architects, who had the advantage of contemplating on the benefits and superiority possessed by ships either built by the French, or in imitation of them, to complete that work of reformation, which their predecessors had successfully commenced. The sixty gun ships, which, on account of the wonderful augmentation of the French vessels, became quite unfit to be stationed in the line of battle, except in cases of the greatest necessity, were increased from something less than eleven hundred tons, which was the quantum of tonnage in general apportioned to ships of that class, to 1350; which, with the addition of four guns to their force, rendered them, though still inferior in dimensions, far more capable of coping with their antagonists of the same rate. The smaller class of fourth rates, which were those carrying 50 guns, were increased about one hundred tons; those having two decks which carried only 44 were entirely laid aside; one only, the Phœnix, having been launched during the space of twenty-five years subsequent to the middle of the century. The French having paid no less attention to the augmentation of their * frigates than they had to their ships of the line, a new class of vessels was introduced into the British navy; they carried 36 guns, and were of about 730 tons burthen. They were constructed with every possible attention to their being swift sailers. The endeavours of the builders proving by no means unsuccessful, the few that were built by way of experiment, became regarded with an admiration bordering almost on enthusiasm, so that the command of them was coveted as highly as that of the most powerful and complete ships in the British service. The class was not, however, extensive, although held in the greatest estimation; and, after holding so preeminent a place in public opinion for twenty years, became superseded by a superior system of vessels bearing the same description, which were introduced by France. According to the establishment of the British navy previous to the year 1745, there was not, as before remarked *, any intermediate class of British built vessels between those of 44 and of 24 guns. This inconvenience became, however, materially remedied by the introduction of one carrying 32 guns, being from 670 to 720 tons burthen, and of a second mounting 28 guns, if measuring 600 tons. The sloops of war, and even the vessels of still inferior consequence, experienced a proportionate augmentation, so that no exertions were wanting to keep pace with the different improvements introduced by the enemy,

* See page 159.

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who ſtrained every nerve to counteract by theoretical study the practical effects of the British seaman's ardour.

Nor was improvement solely confined to the form and dimensions of ships, but extended to the materials of which they were in part built. In order to counteract the peculiar quality of swift sailing which the French frigates possessed in so eminent a degree, an experiment was made of building vessels of the same force with fir. They in some measure answered the intended purpose, being built, as they were, on the spur of the occasion; but the want of durability (for none of them continued, though the utmost care was taken of them, more than six or seven years in a condition fit for service) prevented a perseverance in the practice. It had been the constant subject of complaint for a series of years that the French ships, independent of that advantage in sailing which they derived from their form, possessed that, which was of scarcely inferior consequence, of having their bottoms much cleaner than those of the British were. The different mode in which hostilities were carried on by the two countries contributed to produce this effect. It was the constant practice with the French government to keep their ships in port till they found a favourable opportunity offered of making, or attempting to make, their intended ſtroke, so that, whenever they appeared at sea, they were always in prime order. On the contrary, it was the custom with Britain to keep the fleets constantly at sea, as well in the Atlantic as the Mediterranean; the natural consequence of which conduct was, that in a few months the ships became so foul as to be utterly incapable, except by the intervention of some change in the wind, or other fortunate accident, of overtaking their antagonists. The injury which the worm invariably effects against the bottoms of vessels which are unprotected by that species of covering called sheathing, is well known; and has, some centuries since, in the infancy of the British marine, occasioned the loss of many excellent ships, till the remedy just mentioned was brought into general use. The first mode that was adopted, continued to be practised for a considerable number of years, till the substitution of a new contrivance, or covering, respecting which the first experiment was made in the year 1758, caused the former, after a sufficient trial of the new invention, to be totally laid aside, at least in respect to the ships belonging to the royal navy. It will here be necessary to enter into a particular description of the different methods that have been practised in the sheathing of ships, from the original adoption of the measure to the present time: the first was a thin covering of deal or fir plank, into which the worms penetrated, but which, consequently, preserved the bottom itself till they so far demolished the covering as to acquire an easy passage into the interior part, an injury which took these destructive insects some time to effect.

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An attempt was made towards the end of the seventeenth century, that is to say, about the year 1675, to introduce sheet lead, for the thin deal, as a more lasting substitute; but after some experiments, which proved not so successful as were wished, the project was totally abandoned, and the original method continued to be persevered in. Some years afterwards an addition was made to the wood covering, from which much advantage was looked for, and no inconsiderable benefit derived: the bottom of the ship having first received a coat of pitch, the whole was completely covered with brown paper, which, of course, closely adhered to it; a second paying of pitch, mixed with tar, was then laid on the paper, and a fourth coating of short hair carefully attached to the tar; the deal sheathing was then brought over the whole, and being firmly fastened to the bottom by an almost incredible number of nails, the whole operation was rendered complete. A number of experiments with various materials introduced between the wood sheathing and the bottom, among which, that of coating the latter with lime is to be remembered, have been tried at different times; but none of them have proved so effectual, or useful, as that just described. About the year 1758, a trial was made on a small British frigate, of the effect which a covering or sheathing of copper would produce in the double purposes of preserving the bottom from the injury occasioned by the worm, and contributing to the swift sailing of the vessel. It was conjectured, and, as experience proved, with truth, that no adhesion of barnacles or any other substances, the collection of which became so quickly and extensively detrimental to the speed of ships sheathed with wood, could take place on the copper; so that not only the expense as well as time of graving and cleaning them would be saved, but that they might remain, so long as they continued fit for service in other respects, in the same condition with respect to sailing, as they were the first hour when they were sent to sea. The hope was realised in every respect, and the new practice was found to be unattended by any inconvenience except one, which subsequent care easily removed, but the explanation of which is necessarily deferred till the ensuing chapter, the remedy not having been applied till after the dispute with the American colonies, which seriously commenced in 1774, had taken place.

In conformity with the custom usually adopted in all experiments, the practice of sheathing with copper extended not beyond the vessel first selected to make the trial upon; so that the advantages which were subsequently found to result from the introduction of the new method, were not brought forward during the course of the pending war, with any effect against the enemy, and

the latter were consequently left to as full an enjoyment of that superiority in particular points, as the ships captured from themselves, and afterwards received into the British service, with the addition of such as were built in imitation of them, would allow. But though the improvement of the British marine did not advance so rapidly as though it had been effected by magic, yet the steps which it gained, particularly during the war, were both consequential and numerous. The abolition of certain classes, the substitution of others better calculated to meet those opposed to them, a variety of improvements introduced into the form of ships of war independent of the augmentation of their dimensions, which rendered them not only infinitely more able to endure the combined attacks of the wind and sea, but improved their quality in sailing, were benefits of the highest concern. To these may also be superadded the superior care and caution used in the mere mechanical branches of marine achitecture, to what had been the practice in times past. The neglect had proved of the most injurious and destructive kind, having caused, on a variety of occasions, repeated shipwreck and loss, not only in regard to the vessels themselves, but of the lives of the unfortunate persons who navigated them. In the latter respect, indeed, the ships of Britain had long begun to acquire an ascendency over those of every country in Europe, a superiority which they have ever since continued to maintain, not merely in public and popular opinion, but in reality. Though it may be, in some degree, an anachronism, yet it may be warrantable nevertheless to state, that the condition of the different ships captured from France *, as well those belonging to the navy, as to private persons, and the short duration even of the greater part of those which were almost newly launched, so as to be in a proper condition for service, though all possible care was taken of them, undeniably prove the careless haste and inattention with which the practical part of ship-building was carried on in that country, and the inferiority of the materials, particularly timber, speaking comparatively with that which is in general used by Britain, and considered applicable to that purpose.

The commercial marine was by no means behind that of the state, in respect to the improvements introduced into it. The rapidity of their adoption in the lat-

* Many of the ships captured in the course of the war from France were, though in high estimation among the enemy, considered in such bad condition by the British, that they were never fitted out, or sent to sea. Among these was the Formidable of 80 guns, a ship almost new, and chosen on account of its supposed excellence to bear the flag of Monsieur de St. Andre du Verger, rear admiral of the fleet placed in 1759 under the orders of the Marquis de Conflans.

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ter, far exceeded what took place in the former class; but the reason was natural and obvious. The stake of the individual was trivial, and though the proposed alteration should turn out to be useless or even injurious, the loss would have proved of immaterial consequence. On the other hand, the introduction of any new system or contrivance into the royal navy till repeated experiment had confirmed its utility, might have been followed by the most fatal public disasters: so that the above may stand as a very sufficient reason for the apparent delay with which a variety of inventions and improvements in the art of ship-building have been adopted, which have been found so extremely useful and beneficial, as to cause wonder and admiration in some persons, because the general use did not instantaneously follow the promulgation of them.

America, and the few districts in Asia which condescended to imitate and follow European practice, appeared totally in the rank of pupils, and consequently ventured not to deviate materially from the instructions and practice of their separate tutors. In respect to numbers, the marine of America began to acquire consequence rapidly; the different materials necessary to the purposes of its creation were all of them produced in the country itself, and in greater abundance, perhaps, than in any other on the face of the globe. The inferiority, however, of the timber, owing to causes already assigned *, and its very rapid decay, tended very materially to check that mercantile consequence, which British America would otherwise, in all probability, have soon acquired, in spite of every obstacle. The construction of ships of war, except privateers, or such as should be intended for the public service of Great Britain itself, was restrained as a matter of course, and about the year 1748, a ship of 40 guns was built for the British navy at Boston, which was called the America, in honour of the country; but being found, on its arrival at Portsmouth, totally unfit for the public service, was never again fitted for sea, and it is almost unnecessary to add, that the experiment just mentioned was never again repeated.

The quantity of timber with which the country, juſt mentioned, abounds, and the very extended value of it, when transported to many parts of Europe, notwithstanding its generally admitted inferiority of quality, gave birth to a singular description of vessels, which, owing to the miserable fate which attended many of them, became soon exploded and laid aside. The method was simple, and, had it been found safe also, might have proved of singular advantage to the country. A quantity of timber was felled, and, being roughly squared, was con-

* See page 171, et seq.

veyed to the water side, where it was formed into a solid hull, the balks being clamped together with iron, and the whole hewn into that species of form which resembled the bottom of a ship. In the centre of the vessel, if it could be said to deserve that name, was a hollow, which served not only for the lodgment of the crew, but as a receptacle for the few stores and provisions which were necessary to their maintenance. It was supposed, that the natural buoyancy of the float, or raft, for the latter seems to be the most appropriate term that can be applied to it, would not only totally prevent those accidents which frequently attend navigation, but that the natural security from danger was so strong as to remove every possible apprehension of danger, or risk. The event, however, proved this opinion to have been too hastily formed; for of eight or ten vessels, or floats, so constructed, which sailed from America, not half of them ever reached the intended port of their destination. The remainder having never been heard of, were supposed to have foundered at sea; a misfortune which, in general opinion, was occasioned by the cramps of iron, which confined the balks in their intended place, having proved insufficient to the performance of their office: when the joint agitation and force, as well of the wind as the sea, acted on the float, and necessarily caused that violent strain, the effects were not to be parried, except by that species of mechanism, called, in ship-building, the frame of a vessel. The latter being cased with plank, so as to exclude the water, forms an irregular kind of elliptical arch, in which all the parts mutually support and afford such protection to each other, as enables them to resist with success, those assaults which, without such combination, would inevitably, and almost instantaneously, destroy the whole mass*.

By far the greater part of the American marine was, as already observed, intended solely for the purposes of commerce, and the deviation from the practice of Britain in the same branch, at this period, was so extremely immaterial as to render any distinct description of it unnecessary. But there exists a class of vessels peculiar, not indeed, to the continent itself, but to one of the

* Instances are not wanting which clearly prove, that the preservation of vessels has frequently been owing to the constant pressure of the fluid on the hull, by which action all the component parts of it have been confined in their proper and allotted place, which from the form, and circumstances above stated, were enabled to resist its further impulse. Ships, although known to be in a condition very unfit for sea, have, nevertheless, frequently completed their voyage in safety; but when taken into dock for the purpose of repair or examination, on becoming deprived of that continual support which they derived from the water which surrounded them when in a floating state, have actually fallen to pieces, owing to the deprivation just mentioned.

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islands belonging to it, which it were no small act of injustice to pass over in contemptuous silence. Notwithstanding the insignificance and contracted extent of the country which has produced them, might, and certainly has, prevented the number of those which are properly denominated natives, from reaching any height, the adoption of the same principles by other countries, (which, although they have affected to apply themselves scientifically to the study of the same subject, ſeem, nevertheless, to have proved incapable of surpassing the efforts of natural genius which the native Bermudian possesses and exercises,) may not only stamp an indelible credit on them, but raise the vessels which they have constructed into the rank of a distinct class. These islands, when they were first peopled from Europe, were covered almost entirely with wood,—at least, all those districts where nature had afforded a depth of soil sufficient for vegetation: the greater part of the timber was cedar, a species peculiarly adapted, as well on account of its lightness as its durability, to the purposes of marine architecture, more especially in reſpect to vessels of small dimensions,—though the Spaniards have not failed to introduce it, and with success, into their largest ships of war, particularly those built at the Havanna, where it also abounds in the greatest plenty. The first attention of the inhabitants of all countries is naturally directed to the supply of their actual or supposed neceſſities. The new settlers, finding the secluded spot which they had chosen for their residence, destitute of many among those productions which the improved state of society, and the consequent increase of wants when compared with that which existed in the earlier ages of the world, had by their constant use rendered necessary to the comfort of mankind, immediately sought to obtain the supply by the most obvious and ready means which offered. The produce of their woods, for the limits of the country were so contracted as to render the appellation of forests rather a satire on the term, added to their own industry, easily supplied the means; the form of their vessels depended on their own ingenuity, and they were guided in great meaſure alſo, by the peculiar circumstances of the navigation in which they were intended to be employed.

As the property of individuals was but small, pecuniary considerations neceſsarily contracted the dimensions of their vessels; and as the amount of their cargo was thereby narrowed, all possible means were adopted that the natural strength of the human mind could suggest, to lessen the first inconvenience, by rendering the voyages as short as possible. This, considering the peculiar circumstances of the climate, was a point requiring no small difficulty to effect:

effect: assiduity, however, proved, ere long, completely successful. The frequent necessity these self-taught navigators were under of steering as close to the wind as possible, being, in most of their expeditions, compelled to work for a considerable distance almost in the direct face of it, naturally produced the strictest attention to that particular point. The frequent experiments made in the first instance, perhaps at hazard, were soon productive of the accomplishment of their projects and their hopes; so that the Bermudian vessels soon became almost proverbially distinguished for their superior quality as to sailing, and working in every possible direction, whether from the wind, or lying as close to it as the action of it on the sails would permit.

From the innocent purposes of commerce, the commencement of a war naturally, as it may be said, converted vessels so peculiarly adapted to those of private hostility, into corsairs. To the great discomfiture and loss of the French as well as the Spanish merchants, the seas which surrounded the valuable possessions of those countries, in that part of the world called the West Indies, were covered with a flotilla of this description; and though the force was individually insignificant, yet it sufficed to cope with, and, generally speaking, to capture the foreign merchant vessels. The depredations they effected were among the principal causes of that stretch used by the French nation in particular, for extension of their commercial marine; so that, by arming many of their merchant ships, till, in some instances, they almost bore the semblance of ships of the line, they might boldly bid defiance to any foe, except those which were solely fitted for the purposes of war, and were, at least, entitled to the appellation of frigates.

The marine of Asia experienced about this time a sudden augmentation, not much dissimilar to that of America. The Malays, a people whose principal occupation for a series of years had been one continued scene of piracy and plunder, began before the middle of the eighteenth century to display more than ordinary exertions in their favourite avocation. Added to these, Angria, an Indian chieftain, by a long continued course of successful depredations, had raised himself into such consequence, that he attacked, and for many years with impunity, the ships of all countries whatever, not even sparing those belonging to Britain itself. The vessels, by means of which both he himself, and the people first mentioned, principally carried on their system of indiscriminate plunder, were peculiar in their form, and to the country where they were used. They were distinguished by the name of grabs; and though individually of no great force, they became extremely formidable, not merely on account of their numbers, but owing to their peculiar

peculiar construction, and the singular manner in which the few guns they carried were mounted; for, their elevation above the surface of the water being less than in any which were then used by the more polished nations, their attacks were extremely difficult to be resisted, even by a force apparently so superior as to throw almost into absolute contempt their impending attack. Constructed, in a great measure, on the same principle with the modern gun-boat, their shot skimmed the surface of the water, scarcely ever failing to take place in such elevated objects as the ships which they attacked were, while the cannon from the latter in vain displayed an impotent fury, it being almost next to a miracle, if their balls proved effectual against objects so much below what is scientifically called the line of fire. To counteract the mischievous assaults of such daring foes, the British East-India company soon found it expedient and necessary to cause a sufficient number of vessels of the same description to be built and equipped. Not that the marine of Angria was solely confined to grabs, but the few ships which, with his accumulation of wealth and consequence, he had the assiduity to collect, were of force not superior to a British frigate. As the grabs form a particular species, or description of vessels, peculiar to India, it becomes necessary to give some detail of their form and properties. Built in conformity to those principles which uniformly actuate the mind, and direct the movements of all nations, with whom piracy has become so interwoven with government itself as to become a state measure; swiftness in sailing, so as to quickly overtake the chace, and the means of retreating from an antagonist, who may chance to prove ſuperior in force, have been the only points materially attended to. Some of them are of dimensions which may be considered by no means contemptible, even by Europeans. The ſmaller are of about one hundred and fifty tons burthen, from whence they increase to upwards of three hundred tons, while there are some which even exceed that burthen. They are extremely low and flat in the water; a circumstance which, as just before remarked, not only renders them peculiarly fitted for the annoyance of a vessel built according to the European method, and consequently rising considerably above the surface of the sea, but also preserves them in a very great degree from the shot of the adversaries, who from their superior elevation find it extremely difficult to strike with any effect an object so much below them. They are of great breadth, particularly in the midship; a form which enables them with safety to carry a press of sail, even though the wind should rise almost into a tempest, while, at the same time, the sharper contour of the fore body, and the clear run of the stern, or after part, enable them to pass with considerable swiftness through the water, especially if it be smooth, and the wind moderate. In addition to the already recited points, the flatness of their

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floor, and their consequent shallow draught of water, allow them with very little difficulty to elude the pursuit of an enemy built according to those principles which are common in Europe. If not in imitation of, at least in similitude to, the Mediterranean galleys, these vessels are furnished with long projecting prows, which are covered, like the body of the vessel, with a deck, the whole forming one continued line, but is divided by a bulkhead, which terminates what may be considered the forecastle. This peculiarity of the form rendering the grab extremely liable to pitch with considerable violence in a head sea, the prow deck is not defended, as that in the midship and aftermost part of the vessel is, by a bulwark, or breast-work, so that the water of the waves, in which it is frequently buried if there is an heavy swell, may run off as expeditiously as possible, meeting with no interruption.

The force of these singular vessels, which bear very strong resemblance to the large or first rate galleys used by the Venetians, more than two centuries since, consists, to speak generally, of sixteen or eighteen cannon. Two of these, used as chace guns, which are always of superior calibre to those mounted on the broadside, point forward, and fire over the prow, being worked through two port-holes, cut through the bulkhead of the forecastle. These guns are in general twelve, but are never less than nine pounders; those mounted on the broadside are, according to the dimensions of the grab, either six or nine pounders. The success which had attended the piratical and other measures of those states adopting the use of the vessels just described, caused the addition and introduction of a diminutive class of vessels, in the principle of construction very much resembling the former, which are called gallivats. Though of far inferior force to them, they have, nevertheless, proved not less destructive to the commercial interest of that quarter of the world than their more formidable colleagues. They are frequently, particularly in the immediate hour of attack, worked with oars as the galleys are, though, like them, they have the benefit of sails whenever the use of them appears advantageous. The largest of these naval hornets are about one hundred and fifty tons burthen, but there are very few of that tonnage; the general extent being seventy, and they but seldom exceed that size; they are furnished with two masts, like a ketch, the aftermost, or mizen, being very slight. The main mast is furnished with one sail only, which is extremely large, and of a triangular shape; since the peak of it, when hoisted, rises much higher than the mast itself. The gallivats are, in general, furnished with a slight deck, which, for the purpose of rendering the vessel as light as possible, is most commonly formed of split bamboos. The gallivats of this description are only furnished with patararoes, or swivels,

swivels, and may be rowed by their crews, which are very numerous, at the rate of four knots, or miles, an hour.

The mode of attack generally practised by these naval marauders was extremely formidable, and difficult to be resisted, insomuch that they had frequently the boldness to attack, and, very often make themselves masters of, vessels whose force was deemed considerable. Angria's fleet, in particular, had the resolution to assail three Dutch ships at one time, the largest of which mounted fifty guns: two of these were burnt, and one captured. It was their custom to slip their cables, and put to sea on the instant of discovering any one, or more vessels, which they thought proper to attack. Provided there happened to be a fresh breeze, they relied solely on their sailing, which seldom failed to bring them quickly up with their prey: if it chanced to be calm, the grabs were towed by the gallivats, and by that means gained on the chace, which had in neither instance any chance of escape. As soon as they arrived within point blank shot, they all, commonly, drew up in a line under the stern, the grabs commenced a cannonade from their prow guns, and firing constantly at the masts, were, in general, fortunate enough to render the chace so completely defenceless and powerless, as to prevent escape; the gallivats then rowing up, poured in their crews on all sides, when all further resistance became an act of folly and desperation.

CHAPTER THE TENTH.

Comparative View of the Conduct and Condition of the different Naval Powers in Europe.—Insignificance of the Portuguese Navy when that Country was, towards the Conclusion of the preceding War, invaded by Spain.—Account of the Turkish Marine.—State and Quality of the Shipping belonging to the North American Colonies then subject to Great Britain, and also to those districts under the Dominion of Spain.—Destruction of the Turkish Fleet in the Bay of Chisme.—Commencement of the Dispute between Great Britain, and the American Colonies.—War with France and Spain.—Naval Force of those Countries.—Rupture with Holland.—Statement of the Strength of the Russian, Swedish, and Danish Navies.—Power of the Armed Neutrality.—Circumstances which led to Occasion it.—Effects of the War.—New Regulations introduced by the French in the Dimensions of their Ships of War in 1786, *together with a Statement of various Regulations and Principles adopted by the latter as a Public Ordinance.—Exertions made by them, as well as the Spaniards, in Augmentation of their Marine.—Rupture between France, Britain, and Spain, as the Confederate of the Latter.—Spain deserts the Confederacy and attaches herself to France.—State of the Neapolitan Navy.—Consequent Rupture with Spain and Defeat of her Fleet off Cape St. Vincent.—Losses sustained by her in other Parts of the World.—General Account of Events which took place previous to the Close of the Eighteenth Century, with the Condition and State of the British Marine brought down to that Time.*

THE events of the preceding war, and the comparative condition of the belligerent powers at the conclusion of it, appeared to have clearly defined the rank and precedence of every maritime state in Europe. The quiescent state of other nations, while Great Britain, France, and Spain, were engaged in furious contest, formed no slender proof that they either considered themselves unfit, on account of their inferiority, to enter the lists, or that they rested content with that less exalted situation which they found less exposed to contest, expense, and blood-shed; preferring the comforts of national harmony to the various distresses and inconveniences which the struggle, and not unfrequently the actual acquisition of splendid power, fails not to bear with it, as

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an alloy to the value of the treasure, and an imbitterment of the draught of pride. It will be necessary to divide the time comprehended between the arrangement of peace, which took place in respect to the warring kingdoms of Britain, France, and Spain, in 1763, and the conclusion of the eighteenth century, into two parts; the first section of which, will end with the year 1780. Almost immediately subsequent to that æra, a revolution, which had for some time been forming in the public minds of those countries whose apparent apathy has just been remarked, forms too remarkable an event not to require some comment, which may be made with more ease, perhaps, by adverting to the relative situation of all the maritime states of Europe, at that time, and causing the general narrative to start again from thence, as from a new basis.

The employments and conditions of every country in Europe at the commencement of the year 1763, may be defined and stated with precision, in very few lines. The northern nations, comprehending Russia, Sweden, and Denmark, were content with the sale of such commodities as those districts produced, to any consumers who thought proper to become their customers, affording no apparent preference to the inhabitants of one particular nation before those of another. They had profited very materially by the war, inasmuch as, during its continuance, the price of the several articles which they had to dispose of became, from the natural consequence of increased consumption, very considerably augmented. As to their commerce in any other branch, it was trivial in the extreme. The establishment of distant colonies was a political speculation, which neither Russia nor Sweden had ever ventured to enter into; that of Denmark was so extremely contracted, that the idea of a naval force being necessary to its defence, would have been ridiculous in the extreme. Both the Swedes and Danes had, indeed, manifested some inclination to maintain such a quantum of commercial intercourse with India, as should be sufficient to the supply of their wants; and the latter had gained a fettlement there; but, if the grossness of the allusion be admissible into the gravity of history, it bore stronger resemblance to the condition of a parish pauper praying relief and a resting-place for his feet, than it did to the national dignity of an illustrious people. Russia was indifferent and careless as to this extension of probable wealth and consequence, by maritime commercial speculation. Nature had furnished her with the means of supplying her wants, overland, from China; and, while these were in any degree satisficd, she appeared regardless

as to the means by which such necessities or luxuries were supplied. Thus circumstanced, it might have become a matter of wonder, had her conduct displayed more ambition, and maritime exertion than it actually did.

Proceeding regularly to the Southward, the United Provinces come next under consideration. They had long disclaimed every idea of entering into war so long as it could possibly be avoided, and then on no other ground but their own immediate defence, and the protection of their commerce. Two circumstances extremely opposite in their nature, supported this apparently inoffensive conduct: they professed themselves the allies of Britain; and the latter country was either of too liberal or too undiscerning a disposition to doubt the truth of the assertion, though some events had taken place which might have caused a national inclination, though perfectly void of jealousy, to suspect it. On the part of their antient ally, therefore, the Hollanders conceived no danger was to be apprehended; and the only concern that remained was to arrange matters in such a manner with those countries whose tempers were actually hostile to their friend, and might consequently be supposed inimical to themselves, that no interruption of the tranquillity, so much coveted, should take place from those quarters. The address with which this parole and unwritten treaty was managed, aided by the weighty political considerations which supported it, effectually answered the wishes and purposes of Holland and her six colleagues. Possessing what might be considered the confidence of both parties, they were happy in being able to supply the wants of France and Spain, as the price of peace; and the magnanimity of Britain was too great not to permit the injury to pass as though unobserved, when the notice and the prevention of the continuance of it, might have involved in distress those parties who had ceased to be considered as enemies for the space of more than a century. Such were the causes which prevented the maritime exertions of the United Provinces from rising from a state of commercial torpidity, into a public display of warlike, though inanimate and contemptible threat.

Portugal, the more inoffensive ally of England, did not experience the same generosity of treatment from the enemies of the latter. She had no clandestine commerce to promise, no secret succour to afford as the ignoble price of peace; and on the instant Spain thought proper to avow herself the friend and partisan of France, the invasion of the country convinced the court of Lisbon that it had no favour to expect. The marine of the state had, as might with great truth be said, been in the most deplorable state for centuries; its

trivial

trivial political weight in the scale of Europe exempted it from envy, and the annihilation of that which possessed not the power of effecting mischief, was not only an undertaking too ignoble for the might of nations, but would have, in all probability, excited such a portion either of jealousy, or compassion in other countries, as would have induced them to oppose the attempt. Its navy, if it be not ridiculous to use the term, had never exceeded, even in the moſt flourishing times, since disengaged from Spain, eight or ten ships of the line, ships of that force so called, according to the custom of the time, and six or seven inferior vessels. Its trade with India, which was lucrative, was assented to by its neighbours, because it did not interfere with theirs; and the possession of the Brazils, which might have been considered as a spur to avarice or ambition, was never disputed, because those countries in whom the lust of either might have been excited, already possessed a greater extent of transmarine dominion than they were capable of defending, in case of any vigorous attack. Such was the situation of Portugal, and such the causes which had produced it, when the irruptive force of Spain entered into the country. Destitute of the means by which the horrors of the storm might, through her own exertions, be averted, succour was sought for from Britain, and the temporary depredations which attend even successless expeditions of that nature, proved the only mischiefs which Portugal was reduced to the necessity of sustaining, in consequence of an event which, in former ages, had proved the complete annihilation, in respect to public character, and political importance, of many impotent states, which the unfeeling minds of their neighbours surrendered to the fangs of their merciless oppressors.

On the preceding occasion no maritime exertions were necessary. It was fortunate for Portugal that they were not so, for she was in no condition to have made them. Britain, her ally and protectress, possessed fleets superior to Spain, the immediate enemy, and even to the united force of herself, with France her coadjutress, so that the marine of Portugal emerged not from its preceding insignificancy.

The disposition of the Turks had long been apparently tranquil. Providence, which appears, on some occasions, to be an enemy to the extension of power beyond certain limits, had prevented, for the space of considerably more than two centuries, any enlargement of their worldly dominion, or further propagation of their religious tenets. The event of the battle of Lepanto seemed to have convinced them of their naval inferiority, when their powers in that line were

were brought in contact with those of their antagonists. Except in petty acts of warfare against the Knights of Malta, and petty they may be fairly styled, when the comparative condition and numbers of the Turks and Maltese is considered, the history of the Grand Signior's navy would occupy but a very uninteresting page in that of the world. The Porte was not, however, destitute of what was considered a fleet, and a fleet sufficient to its necessities, but it seemed rather as an ornamental appendage to the state, than as constituted for the purpose of rendering it any effectual service. Venice, the antient antagonist to the court of Constantinople, had long rested satisfied with the zeal she had, in former times, displayed for the religion of her anceftors; she had sunk considerably in political weight, and manifested not the smallest disposition towards making any attempt towards forcibly regaining it, because, perhaps, she possessed sufficient political discernment to discover that the attempt would be unattended with success. She was content with the profits of her commerce, she abandoned ambition to the possession of those who were better qualified to gratify it, and left the defence of the Catholic faith against the inroads of Mahometanism to those who were more capable of protecting it. The Genoese were exactly of the same opinion, and had resolutely persevered in it for the same space of time. America, so far as was subject to the British dominion, which certainly comprised the whole of its northern division, was almost in an infantine state in respect to commerce. Plentiful as were all the requisites for the construction of a navy or marine, considered purely in a civil light, it was found totally unequal to the talk. Its inhabitants, dispersed over an immense tract of country, were too scattered to become formidable, even when protected by the fostering aid of Britain, except in the *petite guerre*. Their vessels were diminutive in size; and though their numbers, when collected into one amount, together with their tonnage, conveyed an imposing idea of consequence, yet, it faded on investigation. The proclaimed myriads of vessels swarming from the ports of North America, certainly did honour to the exertions of a people, having reference to their numbers only; but when compared to the extent of the country they inhabited, proved most contemptibly inferior to the powers of Europe when calculated, as is generally the case, according to the same square of surface. This circumstance is mentioned solely for the purpose of showing how the human mind, in the height of argument, is apt to be warped from the true point on which it ought to rest. The Spanish marine, on the opposite coast

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of the southern division, was confined merely to what was necessary to maintain that intercourse between different parts of the same coast which necessity, luxury, or profit rendered necessary; and the extraneous provision of a very limited naval equipment for the interchange of treasure or commodities between the eastern and western world. No difference in principle or conſtruction existed between the shipping of Old and New Spain; the marine just alluded to, is only mentioned for the purpose of rendering the universal account perfect, and keeping, as is almost uninterruptedly the case, the marine employed in this secluded quarter apart from that of, what is called, the mother country. Of China, of the Indian nations, it is unnecessary to make any further remark, than the mere observation, that the preceding history of the last forty years may, with the mere change of dates, be rendered strictly applicable to that of a subsequent period nearly of the same length. The civil improvements and practice of the countries last mentioned will be hereafter particularly adverted to, and described.

Of Africa the maritime history is extremely contracted. The empire of Morocco, possessing neither public nor private consequence as a naval or commercial state, and the governments of Algiers, Tunis, Tripoli, and Sallee, which in the reign of impotent princes, were accustomed to levy an unlimitted tribute on the commerce of all Christian countries whatever, began to learn a respect, which they had never before been accustomed to pay, to the laws of nations, and, in some degree, depend on the district they inhabited, for support, instead of almost solely relying on adventitious plunder. From this cursory view of every continent and quarter of the world, the mind is compelled to return to Europe, and those particular countries, whose histories make the most conspicuous figure as maritime states.

France, Spain, and Britain, by their preceding contests, had not improbably caused secret satisfaction in the minds of those states which moved in the inferior rank, inasmuch as they supposed themselves profiting by the mutual contest; for, though it did not primarily affect themselves, they could not but dread the future effects of it, on any ground captiously taken, even by the most inferior of the trio. The preceding account may serve for the statement and comparative view of the maritime power possessed by every different country meriting that appellation over the face of the whole globe, with the exception of those remarks and observations hereafter given in respect to them.

By the events of war, as shown in the former chapter, the naval power of

of France had experienced a diminution of three-fifths. Spain also had materially suffered, although her losses had been confined to an abstract department of her navy, detached by custom almost entirely from European service, and the protection of the fountain head, or mother state. Exertions were necessary to repair its fallen consequence, and they were accordingly made, with the same degree of energy that on former occasions had raised both countries from apparently a desperate condition. Other events, however, more consequential than the quiescent demeanour of France and Spain, or their exertions for war, while content with a share of peace, claim previous notice. Russia, whose fleet, or even single ships fitted for war, had scarcely ever ventured beyond the Sound, or entrance into the Baltic, became suddenly engaged in a most serious dispute with the Ottoman power. The contest by land was simple. It could be decided by one single operation, the mutual march of armies to a central point. But this plain mode of decision, which had been the only one resorted to on former occasions, was considered insufficient on the present. It was considered necessary to the termination of the pending dispute, that the fleets as well as armies of Turkey and of Russia should meet. Europe then, for the first time, beheld the squadrons of Russia issuing from the Baltic, and seeking in the distant waters of the Levant a foe worthy of her exertions, in respect both to gallantry and power, but far inferior in skill and nautical experience. The fleet of the Grand Signior, which comprised by far the greater part of the naval force he then possessed, was surprised, attacked, and completely destroyed in the bay of Chisme. The consternation of the vanquished, in consequence of this unexpected disaster, is said to have been so great, that, if certain impediments, which it is unnecessary to state, had not arisen, it is more than probable the insult and distresses of Vienna, in the preceding century, might have been then fully avenged by a people esteemed at that time barbarous, and beneath the dignity of the Grand Signior's notice, or resentment.

The trivial dispute between Britain and Spain, almost cotemporary to the foregoing event, scarcely deserves notice on any other ground than to show that the latter country, notwithstanding its recent chastisement, was still alive to every opportunity of encroachment. But the dispute was adjusted without hostilities being committed on either side. It proved the harbinger, though a totally unconnected one, of a most serious contest, which commenced between Great-Britain and her colonies in North America. It may appear extraordinary, if not incredible, to future ages, how a country destitute as that just mentioned

was

was of a navy, could venture an opposition to one, whose fleets were, beyond dispute, superior to those of every single nation on the face of the globe. It is in the power of any country whatever to declare war against another, and to send forth the most powerful fleets in a determined state of hostility, but it remains with the country attacked, provided its force be not central, or nearly so, to determine whether it will refer the decision of the contest to that species of arbitration, or eke out its own inefficient means by such policy and arrangement as shall appear most likely to counterpoise the superior weight of its adversaries. America possessed not the shadow of a force entitled to the appellation of a navy; the whole of its state marine, even after the war had been continued for a considerable space of time, amounted to no more than ten or twelve frigates, including some vessels which were scarcely entitled to so high a rank: the resistance of America was, however, far from ineffectual, or unprofitable, even in the first hours of warfare. The prospect and hope of advantage encouraged a multitude of adventurers to equip vessels whose force, though trivial when compared to a frigate, or even a sloop of war, was sufficiently able to cope with, and master, whatever merchant ships might fall in their way. On account of the constructors' attention being directed almost solely to one point, and owing to a certain portion of skill which they possessed and had derived from a long experience in the art of building, with reference and regard to swiftness only, the heavy sailing vessels employed in the purposes of British commerce fell before them an easy prey. Even the ships of war which were, in order to check the depredations of these naval wasps, sent to protect the unarmed merchants, became not unfrequently foiled in their pursuit; and increasing success, as a natural consequence, created increasing exertions.

The American marine, however, soared not, but with very few exceptions, in its private capacity, beyond the classes of brigs or schooners; those of the former denomination proved particularly destructive. Their dimensions were far enlarged beyond those limits which it had been customary to give vessels in that class, and their force, on many occasions, exceeded the greater part of the British sloops of war, nearly equalling some of the minor frigates. In defiance of the common prejudice then entertained against long and narrow vessels, the American builders ventured their opposition, and the success which attended the principles they introduced, materially differing from the practice of any country at that time, proved their superior skill in the construction of corsairs.

Notwithstanding the country, as already shown, so peculiarly abounded with all the materials necessary to constitute a powerful navy; its newly erected government either found itself too weightily occupied in affairs of greater moment, or considered it the wiser system to oppose the individual exertions of its subjects, allured by the hopes of advantage, against the pockets of its antagonists, than attempt the speedy creation of a force which would have strained all the sinews of the country, without being able to effect its purpose in any extent likely to become serviceable. At the same time it would have exposed, by the very attempt, every species of vulnerability to which a state, rendered nearly defenceless by so impolitic a measure, could have been liable in other respects. The very inconsiderable number of frigates and inferior vessels which belonged to the state were, most generally speaking, formed with the greatest attention to speed. But the Hancock, which was considered the finest vessel in their service, having been frequently purſued without success by the fleetest frigates in the British navy, was at last captured after a chace exceeding in duration what had, perhaps, ever before taken place in the annals of naval war, and entirely owing to misconduct in her commander, who, injudiciously supposing, that by lightening the vessel he should contribute to her swiftness, caused a considerable part of her water to be started and pumped out; by which means she was put completely out of trim, and, almost immediately, overtaken. This event may not only form an useful lesson to future officers who may be in the same situation, but proves, in conjunction with other known facts, on what delicate points the quality of swift sailing frequently depends. The American vessels were on some occasions said to have acquired the faculty of swift sailing from their weakness, or rather pliability of construction. It is an anecdote too singular and interesting to be omitted in an history like the present, that American vessels, particularly those of the smaller description, are supposed to have frequently owed their escape and safety to the operation of cutting through the topside in the midships from the gunwale to the upper side of the port, thereby allowing the vessel to work and yield to the impression of the sea, and wind, in a greater degree than it could have done, while the frame or whole structure continued bound in by the tension, and confinement imposed on it by the gunwale.

In respect to the quality of the vessels in question, independent of their mere faculty in sailing, or, it were probably more correct to say, that of the materials from which they were formed, they were inferior to those of any European country.

country. The American oak, owing to causes before assigned, has long been notorious for its propensity to rapid decay; and the theorist who formed the plan to be pursued and executed by the manual labour of the practical artist, proved infinitely superior in his branch, to the mechanical colleague, who generally manifested but trivial knowlege, and still less diligence. From among the infinity of vessels fitted for war, and which, including those belonging to private individuals, rewarded the activity of the British cruizers, not one tenth part were considered worthy of employ when in the hands of their captors, although nearly the whole of them had been represented by their first possessors as far exceeding in condition, as well as construction, those of every country in the universe. This circumstance is, however, to be considered as in great measure merely temporary, and owing to particular causes, among which, the existing pressure of the times may be considered as the principal. Nature, however, appears to have constituted insurmountable obstacles to an equality of duration, when brought in competition with the shipping of Europe; so that, although the ingenuity of their architects may, in many respects, be entitled to the most unqualified applause, it would be an act bordering on gross flattery, judging from what has happened, to extend the approbation further.

After a continued contest of nearly two years duration, America found herself incompetent to effect her purpose of successful resistance without the extraneous aid of naval alliance. It was found indispensably necessary on many occasions, for the purpose of covering a variety of operations, which could not be undertaken without the most evident rashness, in the presence even of the limited squadron employed by the mother country in that quarter ofthe world. France had long beheld with envy the increasing consequence of Britain, and an opportunity so apparently favourable to the task of humbling a rival whom she both feared and detested, was not to be overlooked. America required succours, and the ministers of Louis XVI. were ready to afford them even before they were demanded. From the moment the late war had concluded, the utmost exertions had unceasingly been made to restore the maritime consequence of the country last mentioned, and renovate that navy which had been reduced by the events of the preceding war to less than one hundred sail, including those of the most inferior class. Their builders during the preceding peace, appeared to have abandoned their former system, of constructing no vessels higher in rate than such as mounted eighty-four guns on two decks, no less than six three-decked

ships having made their appearance in the course of the ensuing hostilities*. It were nugatory to enter into any particular detail of events so recent; first, because

* *List of the Ships of War, having two and three Decks, belonging to the Navy of FRANCE, which either appeared at Sea, or were known to be in some degree employed during the War which commenced in* 1778 *and concluded* 1782.

	guns.
First rates.	
La Bretagne	110
L'Invincible	110
Le Majestueux	110
Le Royal Louis	110
Le Terrible	110
La Ville de Paris (taken by sir Geo. Brydges Rodney, Aug. 12, 1782	104
Second rates.	
Le St. Esprit	86
Le Languedoc	86
Third rates.	
L'Auguste	80
La Couronne	80
Le Duc de Bourgogne	80
Le Monarque	80
Le Neptune	80
Le Tonnant	80
Le Triomphant	80
L'Actif	74
L'Alcide	74
L'Altier (lost in the East Indies)	74
L'Amerique	74
L'Annibal	74
L'Argonaute	74
Le Bien Aimé	74
La Bourgogne	74
Le Brave	74
Le Cesar (taken, afterwards burnt April 12, 1782	74
Le Censeur	74
Le Citoyen	74
Le Conquerant	74
Le Dauphin Royal	74
Le Defenseur	74
Le Destin	74
Le Diademe (sunk April 12, 1782,)	74
Le Dictateur	74
Le Diligent	74
Le Fendant	74
Le Glorieux (captured Apr. 12, 1782)	74
Le Guerrier	74
Le Hector (taken April 12, 1782)	74
Le Hercule	74
Le Heros	74
L'Illustre	74
L'Intrepide (burnt in the West Indies)	74
Le Magnanime	74
Le Magnifique (lost)	74
Le Marseillois	74
Le Minotaure	74
Le Northumberland	74
L'Orient (lost in Trincomalè bay after an engagement	74
Le Palmier (lost in the West Indies)	74
Le Pegase (taken by the Foudroyant)	74
Le Pluton	74
Le Protecteur	74
Le Puissant	74
Le Robuste	74
Le Sceptre	74
Le Scipion (driven on shore in the West Indies by the London)	74
Les Six Corps	74
Le Souverain	74
Le Suffisant	74
Le Temeraire	74
La Victoire	74
Le Zélé	74
Le Zodiaque	74
L'Actionnaire (taken)	64
L'Ajax	64
L'Alexandre	

because it could prove at best but a reiteration of facts that cannot be forgotten; and secondly, since in the narrowed relation that must, through necessity, be given, it would rather resemble a mere index, than an actual history. Mankind, as it were, by custom, and certainly a ridiculous one, require a narrative to be infinitely more circumstantial as it approaches the ken of their own recollection, than they do that of the events which took place at a more distant period, when information must, consistent with the true principles of reason, be infinitely more valuable.

France had, during the preceding peace, paid infinite attention not only to the augmentation, but the improvement of her marine. The most ingenious mathematicians were consulted, and experiments repeatedly made in ascertainment or decision of all points which were considered in the smallest degree doubtful. The most wonderful increase of tonnage and dimensions had taken place, particularly in frigates of the first class or size, as was evident in the instance

L'Alexandre - -	64
L'Ardent (taken by the French, re-taken by the English)	64
L'Artesien - -	64
Le Bizarre - -	64
Le Brillant - -	64
Le Broglio - -	64
Le Caton - -	64
Le Content - -	64
Le Comte d'Artois (private ship of war captured by the Bienfaisant)	64
L'Eveille - -	64
Le Dauphin (*armé en flute*, taken by the Argo, of 44 guns)	64
Le Fantasque - -	64
Le Hardi - -	64
Le Hazard - -	64
L'Indien - -	64
Le Jason (taken in Mona Passage)	64
Le Lion - -	64
Le Prothée (taken) - -	64
Le Reflechi - -	64
Le Sage - -	64
Le St. Michel - -	64
Le Severe - -	64
Le Solitaire (taken by the English)	64
Le Sphinx - -	64
Le Triton - -	64
Le Vaillant - -	64
Le Vengeur - -	64

Fourth rates.

L'Amphion - -	50
Le Bourdelois - -	50
Les Deux Amis - -	50
L'Experiment - -	50
Le Fier - -	50
Le Fier Rodrique (private ship of war)	59
Le Flamand - -	50
Le Petit Hannibal - -	50
Le Hippopotame - -	50
L'Oriflamme - -	50
Le Sagittaire - -	50
Serapis (taken from the English)	44
Romulus (taken from the English)	44

Making in the whole, six first rates; two second rates; eighty-six third rates; and eleven fourth rates: a navy amounting to one hundred and five ships of the line, with two of forty-four guns, captured from Great Britain.

of

of the Artois and Aigle, captured from them by the British in the years 1781 and 1782, whose dimensions, as forming a part of the British navy, will be found in the ensuing chapter. The former of these vessels was contributed to the service of the country by the voluntary gift of the people inhabiting that province in France bearing the same name, and was constructed according to such mathematical and experimental principles as studious theory had declared the excellence of. The labour of the architect was soon discovered to have been well applied, but the execution of the design by no means kept pace with the ingenuity of it. After being received into the British navy, while it continued in a condition for service, it answered the expectations which had been formed of it, in respect to its form; but owing to the very careless, slovenly manner, in which it was put together, as well as the inferior quality of the materials used on the occasion, it scarcely continued in a condition for sea during the short remainder of the war, a space of time hardly exceeding two years.

An equal attention to the same principle had been paid to the higher rates. Those of fifty guns on two decks, which had in former wars constituted a numerous class, became considerably reduced, nor was a single new recruit launched to supply the place of those which, through casualties, or by the hand of time, were either annihilated, or condemned as worthless. Those of 64 guns were held in almost the same species of disrepute; but the class immediately above them, not only considerably outnumbered every other, but exceeded all of them combined, far as comprehended those classes which were denominated as of the line. From the agility, capacity, velocity, stability, and ease, with which the French ships, mounting 74 guns, were able to bring the whole of their force into action, or, in plainer terms, to open their lower ports, even in stormy weather, they were, independent of their numbers, justly considered as the strength of the French navy. Their dimensions, as may be seen by referring to those of the Pegase, in the ensuing chapter, far exceeded the general establishment of British ships in the same class, though there were some which had been built many years earlier, as an experiment, which equalled, or even exceeded some of them. Of this circumstance, the Triumph and Valiant, already noticed, stand as a sufficient proof; by ascending still higher, to those of ships mounting 80 guns, which in the preceding war had been considered as first rates, it will be found the augmentation was still more extensive, many of them having equalled, and some exceeded, in burthen, the largest first-rates in the British service. Among

the

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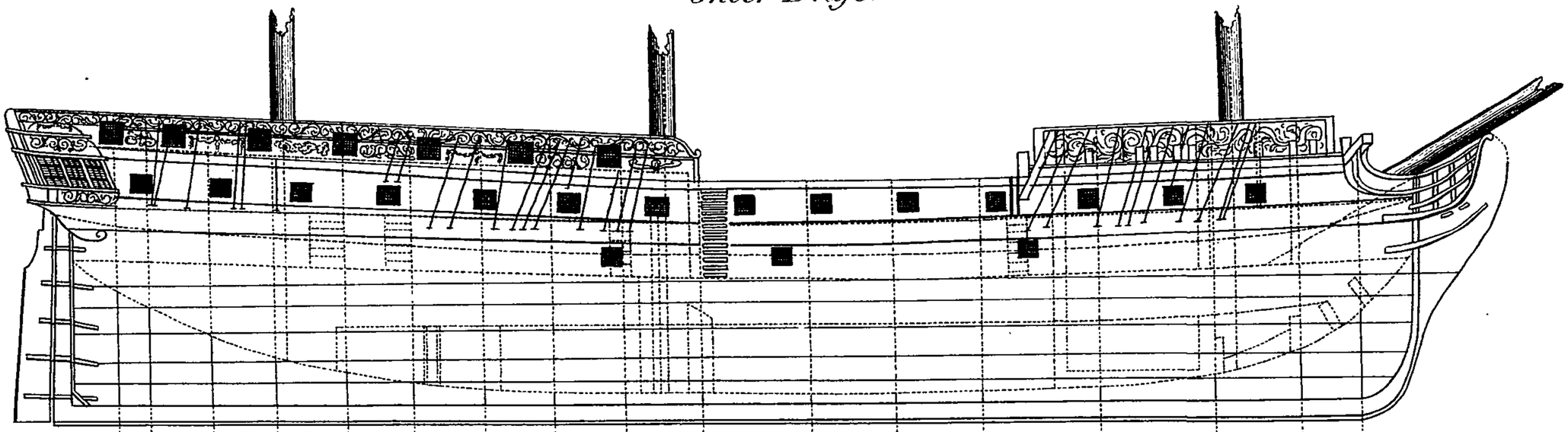

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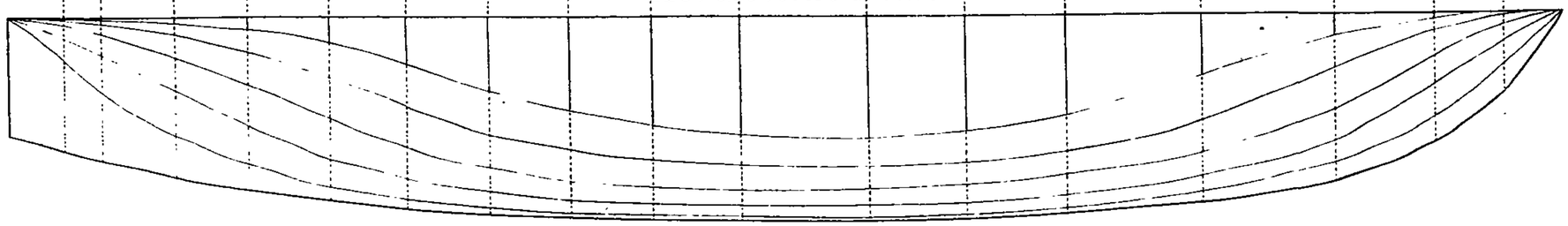

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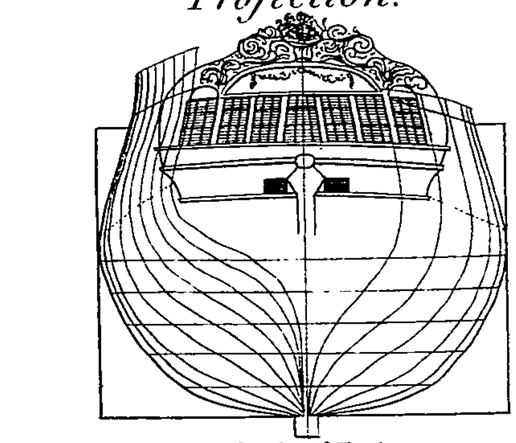

Scale of Feet.

J. Charnock redux.

Newton Sculp.

Draft of a Heavy Frigate, according to the French method in 1780.

Published by David Steel, Union Row Little Tower Hill, London.

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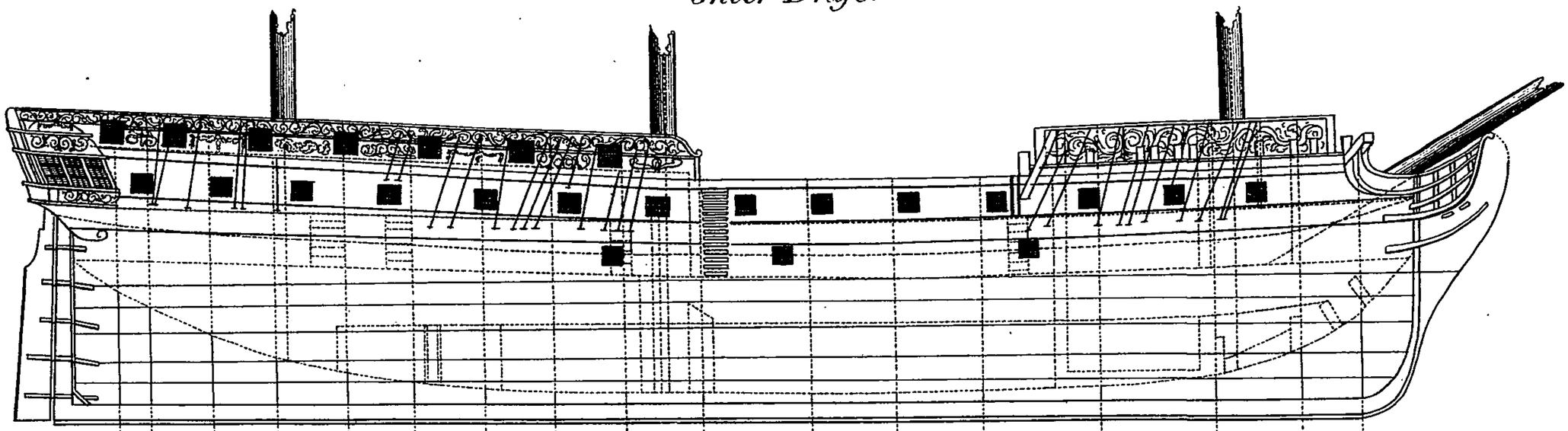

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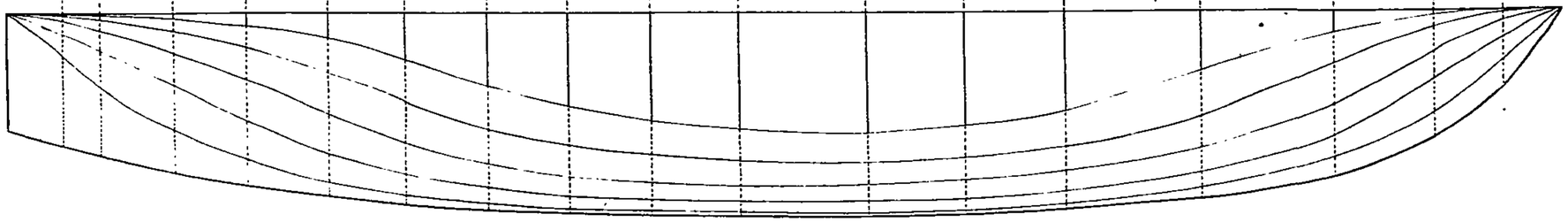

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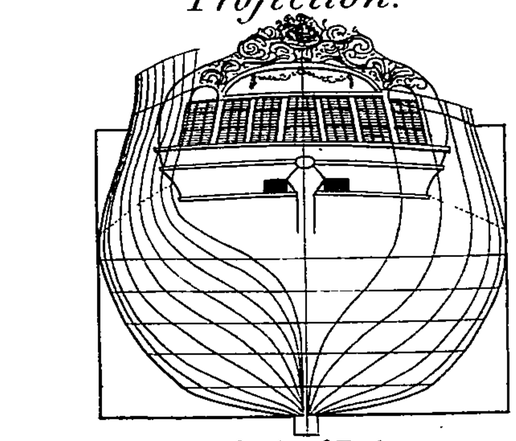

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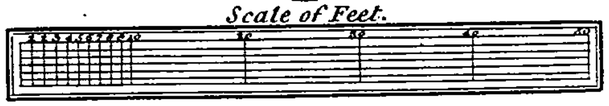

J. Charnock redux.

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the first-rates, the Bretagne*, which was by no means the most superior among them, far exceeded not only all the English first-rates which were cotemporary with it, but even surpassed those which, in augmentation of the former establishment, were ordered to be constructed some years later, after the war had concluded. Spain conducted herself on the same principle. Every effort had been made, from the hour the declaration of peace restored tranquillity to the public mind of government, towards increasing and materially improving its marine. A restless, unquiet temper, at that time pervading those who were entrusted with the public direction of her political concerns, rendered such exertions still more necessary, to satisfy the public mind, than those of France had been. The dispute which took place ere peace was more than seven years old, might have convinced any serious observer of the public demeanour of nations, that the continuance of peace depended merely on the absence of sufficient power to disturb it. Nevertheless, there were certain considerations peculiarly affecting this country, which caused her to continue rather an inactive spectator of the feuds existing beween Great-Britain, and her colonies, till the persuasions of France, and the trivial progress made in reducing to subjection the immense eastern coast of North America, formed an opportunity of oppressing Britain too gratifying for the pride of a country to resist, that had been reduced on former occasions to the humiliating situation of supplicating peace †.

With

* The Bretagne was in length, from the after part of the stern-post to the fore part of the stem, 196 feet 3 inches 2 tenths. Her moulded breadth, 53 feet 4 inches; surpassing that of the Royal George now existing, which was one of the ships built on the augmented plan.

† *The Navy of SPAIN comprised the following Ships.*

First rates.		El San Vincente	80
La Santissima Trinidada	114	El Terrible	74
La Purissima Conceptione	100	El Africa	70
Second rates.		El Angelo la Guarda	70
El Rayo	86	El Arrogante	70
El Tonante	86	El Atlas	70
Third rates.		El Brillante	70
El Glorioso	80	El Diligente, 1st. (taken)	70
El San Carlos	80	El Diligente	70
El San Ferdinando	80	El Espagne	70
El San Louis	80	El Firmo	70
El San Nicolas	80	El Galliardo	70
El Phœnix (taken)	80	El Gallicia	70

El Guerrero

With a navy more flourishing and powerful than she had ever before been mistress of, Spain entered into the dispute as a party, but derived no other gratification than the empty parade of sending an armament as auxiliary to the French, to encounter the perils of the British channel for a few weeks. The ostensible superiority of force was found insufficient to the task of undertaking any enterprise that might have reflected glory and honour on the exertions and intrepidity of the confederates, and a few months only elapsed ere complete satisfaction was obtained for the apparent insult, by the total discomfiture of a formidable squadron, and the capture of three or four of the ships, whose excellence had been most proudly boasted of, when forming a part of the Spanish navy. Their dimensions and rate may be seen at one view, and may serve to

El Guerrero	70	El San Pedro Apostelo	70
El Magnanimo	70	El San Raphael	70
El Magnificente	70	El San Remond	70
El Mercuro	70	El Sebastiano	70
El Monarco (taken)	70	El Serioso	70
El Minotoro	70	La Sirena	70
El Oriente	70	El Velasco	70
El Poderoso	70	El Vigilante	70
La Princessa (taken)	70	El Vincédor	70
El San Damasco	70	L'America	64
El San Domingo (blown up off cape St. Vincent)	70	L'Asia	64
El San Eugenio	70	El Astuto	64
El San Evedro	70	El Casado	64
El San Gabriel	70	El Dragon	64
El San Genaro	70	El Guipuscoana (belonging to the Caracca company)	64
La Santa Isabella	70	El San Domingo	64
El San Jago	70	El San Peruviano	64
El San Joachim	70	El San Philippe	64
El San Juan Baptiste	70	El Triomphante	64
El San Juan Nepomuceno	70	El Victorioso	64
El San Julian (destroyed 1779)	70	Fourth rates.	
El San Julien	70	El Castilla	60
El San Justo	70	El San Isidore	60
La Santa Matilda	70	El San Lorenzo	60
El San Miguel (taken at Gibraltar)	70	El Septentrione	60
El San Pablo	70	El San Leandro	50
El San Pasquali	70	El Minho	50
El San Pedro Alcantara	70		

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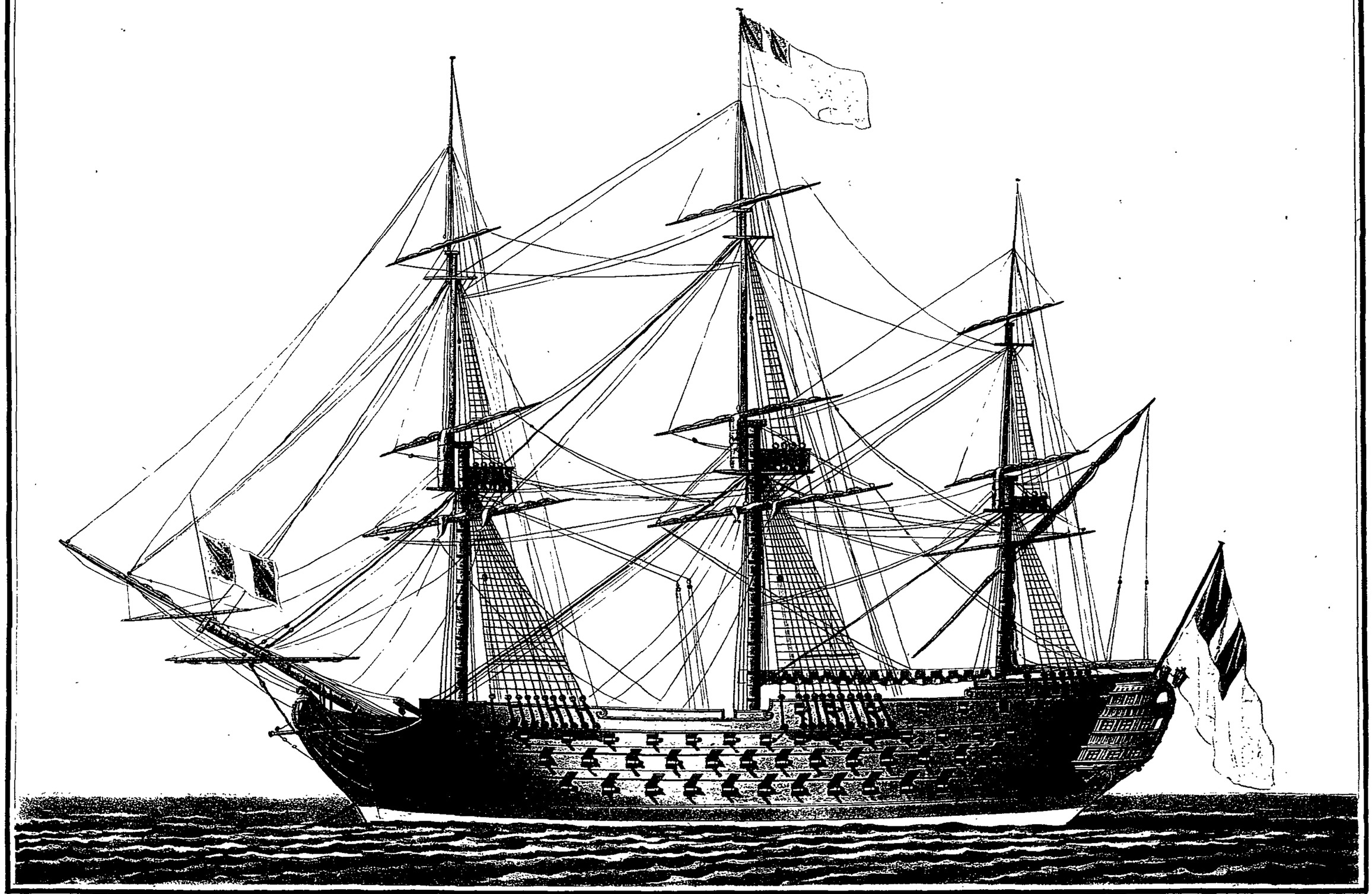

Shipster Delin. *Tomkins Fecit*

Commerce de Marseilles.

Published as the Act directs by J. Sewell, Cornhill. March 21st 1801.

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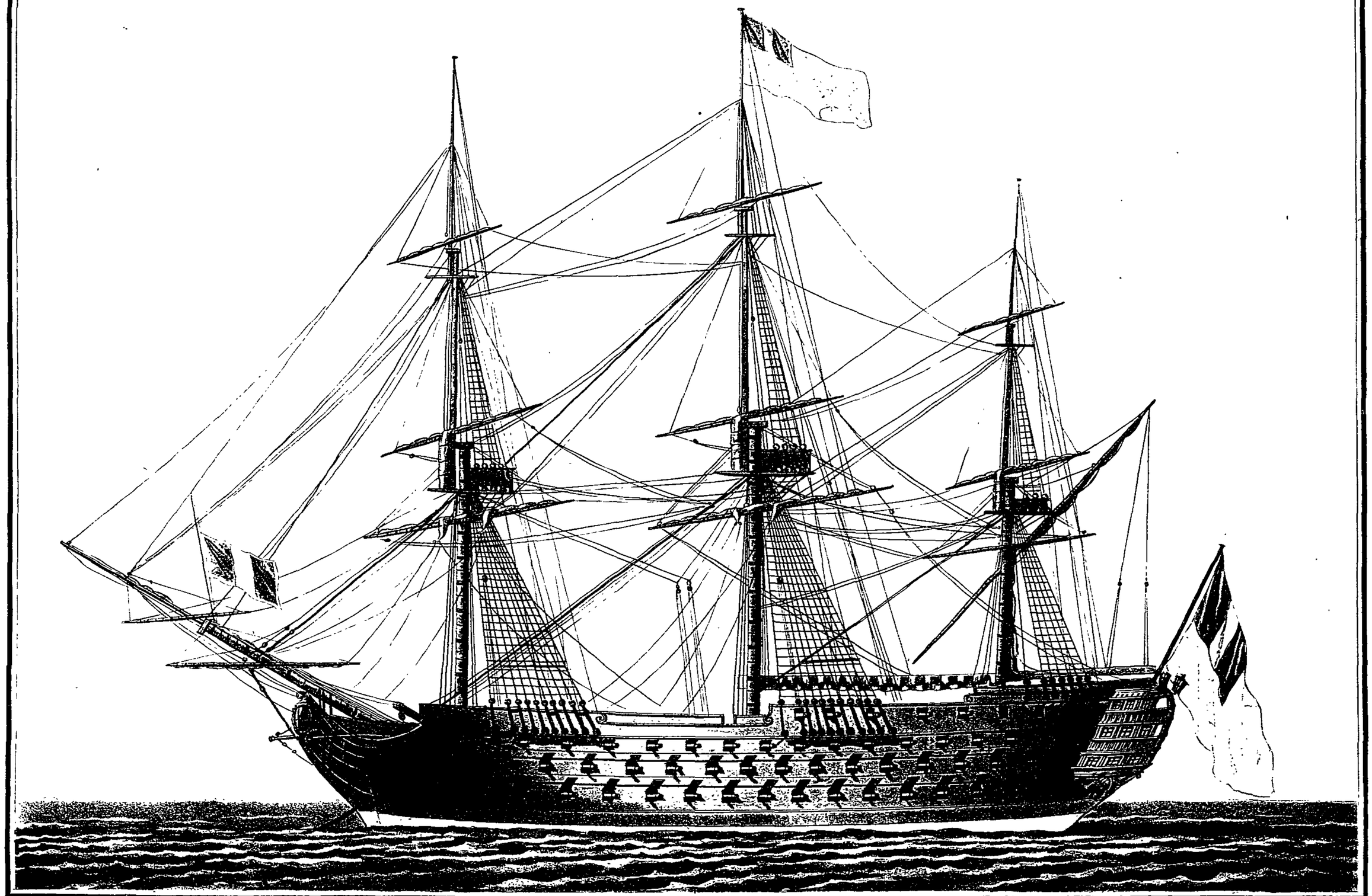

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render useless a tedious description, by referring to the Gibraltar, which when in the service of Spain, was called the Phœnix, in allusion to her superiority to the Princessa and the Monarca, which were of an inferior rate, and the Diligente, their companion, in which latter, the excellence of theory having been deteriorated by the abuses in construction, it became through necessity degraded by the British shipwrights to the humiliating, inactive condition of a guardship during the remainder of the war.

Britain, on her part had not paid such serious attention to the scientific study of the subject as her rivals; she had contented herself with merely possessing a navy formidable in numbers, and rendered truly so by the skill and address of those employed to direct and command it, but certainly inferior to that of her antagonists, considered either in a philosophical, or advantageous light. The numerous foes she had to contend with at one and the same period of time, required exertions of the most extraordinary nature, and varied so widely in their circumstances, as almost to require two separate establishments. The dispute with the colonies required a flotilla capable of penetrating every inlet, and sufficiently numerous to form one uninterrupted chain, which should, if possible, prevent the unseen passage of a single vessel from the Gulph of St. Lawrence to the Bay of Mexico. In Europe, the united fleets of France and Spain demanded the opposition of armaments more powerful than had at any preceding period quitted the ports of Britain; but the resources of the latter proved equal to the pressure, and every country on the face of the globe beheld with astonishment, some of them, probably, not without dissatisfaction, the gradual dispersion of difficulties, which had, at first, been considered insurmountable, together with an establishment, not merely competent to the purposes of security, but to the discomfiture of that league which had proudly threatened and, perhaps, vowed in secret, its destruction.

Such was the maritime condition of Europe at the close of the year 1780. and it becomes almost totally unnecessary to step in the smallest degree beyond the limits of that quarter of the world during the remainder of this history. An event took place, at the period just mentioned, which threatened at its commencement to create a complete revolution in the naval world, and prescribe laws not only to all those nations which were then at war, but establish an universal code, by which the public conduct of all countries, when in a state of hostility with each other, was to be regulated. Although the avowed object of the confederacy, which had long been forming, and was then on the point of being published, held forth as a firſt maxim, a general restriction in particular points, yet it was most convincingly evident to the most shallow politician, that

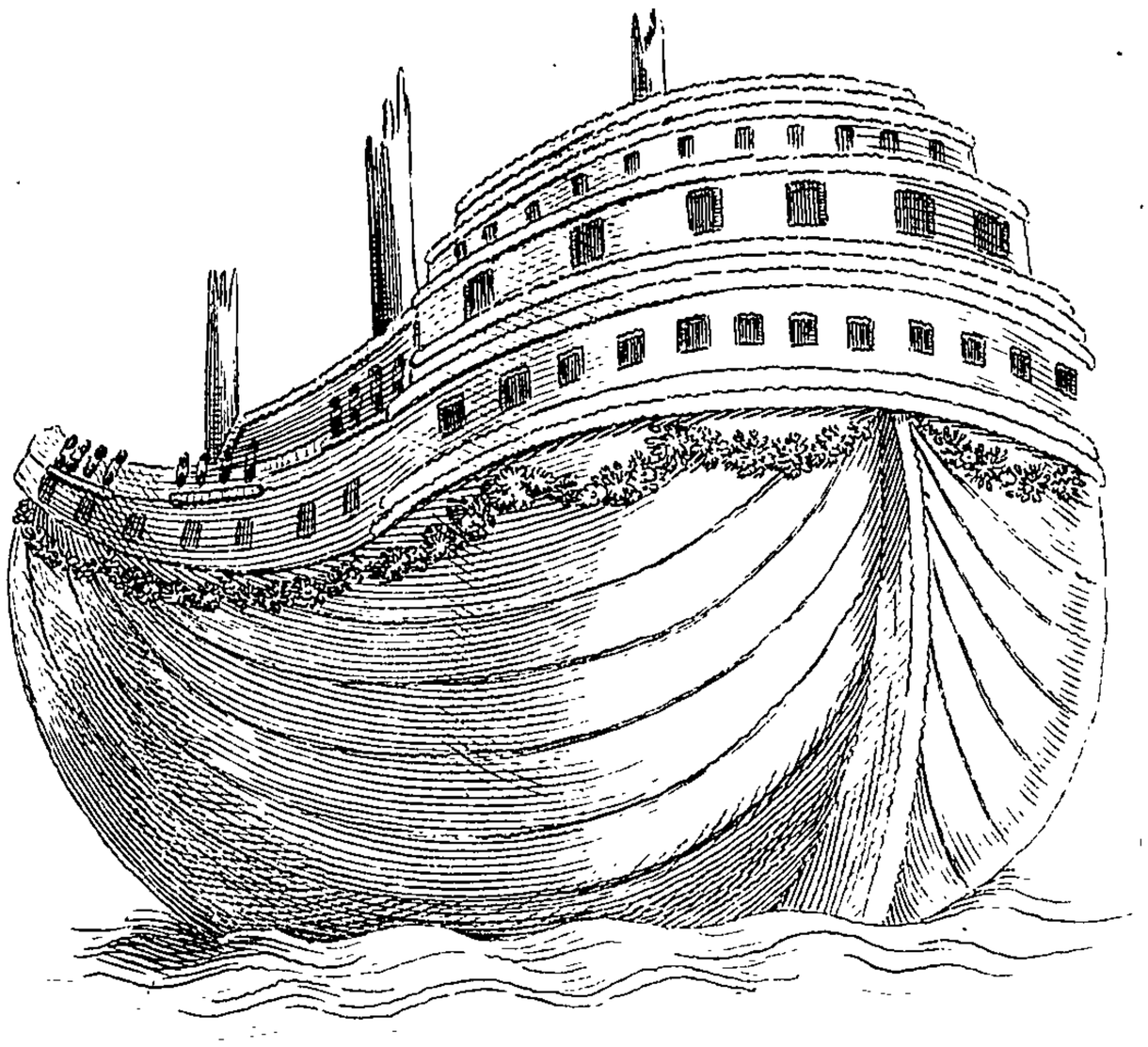
that the growing power and consequence of Britain, surrounded as she at that time stood by her numerous enemies, was the real spring which gave motion to the newly created league, and that the ulterior intentions, or principles of which, were by no means meant to affect other countries. By strictly conforming to that general system of promoting commerce, even through channels which reason might consider impolitic, Holland, and the United Provinces had, contrary to the faith of existing treaties, and what had, till that time, been considered the law of nations, supplied the enemies of Britain with a variety of commodities which formed, as it were, the power of carrying on war, and without which *civil* aid the fleets of France and of Spain, together with the cruizers of America, could scarcely have ventured to sea as they did, in defiance of the force prepared to oppose them. This inequitable and injurious conduct had long been in vain complained of. Britain, after disavowing all encouragement to a contrary practice on her part, (for, in truth, she stood in no need of such assistance,) insisted on the propriety of every country, when at war, relying solely on its own means of support and provision, instead of claiming the extraneous help of any foreign country whatever. Her complaints were disregarded; the interception even of fleets so laden as to have established complete proof of the inequitable conduct which created public murmur on the part of the Britiſh nation, caused no relaxation of the principle. Slight and equivocating answers soon swelled into a peremptory refusal of compliance, and at length an avowed determination on the part of the Holland government to persevere in the conduct which had given offence, and defend the resolution by the grand ultimatum and arbiter of national disputes, produced a regular warfare *.

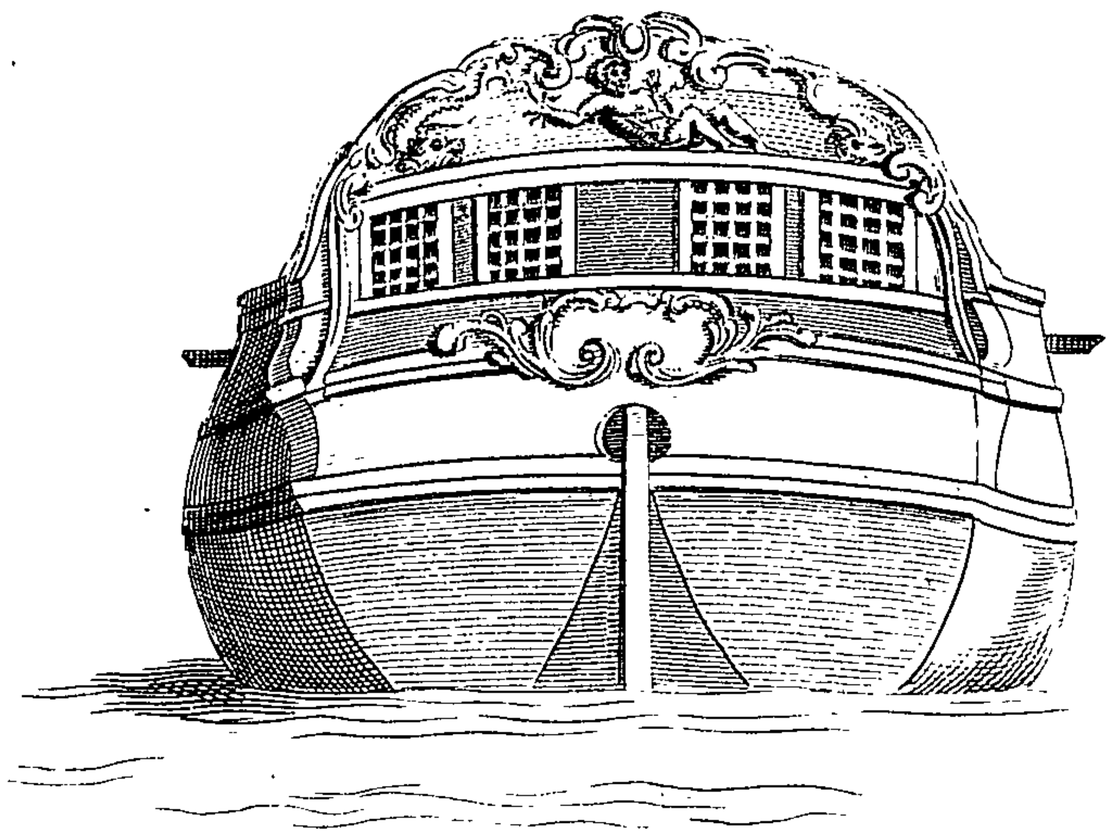
The

* *The DUTCH Navy, added to those Vessels brought forward during the continuance of the War, consisted of the following Ships.*

Ammirael General	-	76	Nassau	-	64
Prins Willem (lost)	-	74	Stillingwerf N	-	64
Jupiter N	-	4	Unie	-	64
Maese	-	74	Wasselmonde N	-	64
Sept Province N	-	74	Wassenaaer N	-	64
Venganza N	-	70	Zelandia N	-	64
Ammirael Ruyter	-	68	Zudbeveland	-	64
Hollandia (sunk off Dogger Bank)		68	Hercules N	-	60
Van Leyden	-	68	Kortenaer	-	60
Utrecht N	-	68	Mars (taken in the West Indies)		60
Amsterdam	-	64	Prins Frederic	-	60
Gueldreland N	-	64	Zeirichsee	-	60

Glinthorsh





J. Charnock del.ᵗ

Greig Sculp.ᵗ

Sterns of a Russian Frigate and Merchant Vessel.

London. Published as the Act directs. March 25. 1802. by John Sewell. Cornhill.

The northern governments of Russia, Sweden, and Denmark, who had also long beheld with envy that power which they dared not attempt to repress, or even murmur at, in times past, considered the existing state of public affairs at that period as one of the most favourable occurrences that might probably ever take place of repressing that might which prevented the exercise of what was fancifully denominated by them, a free trade. This, according to the true, and fair definition of the term, in the sense the countries just mentioned wished to use it, consisted in an allowed permission of continuing in a state of peace themselves, of profiting materially by the war's raging between other countries, and carrying the sinews of it, unmolested, to those parts where they were most wanted, and where they would, consequently, fetch the higheſt prices. It requires but little force of argument to prove, that the power of preventing mischief is far more consonant to the laws of humanity than that of punishing it; that it is infinitely more conducive to public tranquility among all civilized nations. That in times so enlightened, as it is boasted, the present are, when a mere acknowlegement of national superiority is considered as almost a sufficient atonement for national injury, it must undeniably be admitted to be more philanthropic to destroy the supply of those means by which human blood is shed, than after first permitting the former, being consequently compelled, as a matter of defence, to give way to, and encourage the latter. Interest, avarice, and, as it was strangely considered, national equity, denied the force of this argument, and in order to combat it most effectually, a certain confederacy was entered into, which became dignified with the appellation of the armed neutrality *.

Notwith-

Glinthorsh - -	56	Princess Louisa - -	54
Nassau Weilbourg -	56	Princess Maria Louisa -	54
Princess Royale - -	56	Rotterdam (taken) - -	54
Ammirael Piet Heyn -	54	Azent - -	50
Batavia - -	54	Ammirael Van Tromp -	50
Centaur - -	54	Princess Wilhelmine -	50
Ers Prins - -	54	Rhynland - -	50
Lienne - -	54	Schiedam - -	50
Princess Caroline (taken) -	54	Van Goes - -	50

* *The Force destined to support its Pretensions consisted of the following Navies.*

RUSSIAN Fleet.

Jesekil - -	76	Slova Rossey - -	64
St. Sedair - -	76	David - -	66
St. Panteleimon - -	76	Spiridon - -	66
Azai - -	66	Derisi - -	66

Notwithstanding the force equipped on this occasion and pretence declared no specific intention of acting hostilely to Britain, it could not but be considered as averse to her views and her interests, inasmuch as her enemies only could be benefited, and she alone injured, by this expansion of commerce beyond those limits within which it had till then remained confined. Like many other confederacies, however, it fell harmless to the ground, and Britain enjoyed the honour, if it could be called one, of having stood, without a single ally, keeping the whole force of Europe and America at bay on the same instant. The different principles of marine architecture pursued by the various countries, parties to the league just described, have already been given. The amount of the force they severally possessed, according to the best information that can be procured, will be found subjoined.

Although, in respect to Sweden and Denmark, the political convulsion just mentioned, for such it might be considered, occasioned little or no enlargement either

Texerdoi	-	-	66	Vologda	-	-	50
Hermolaudia	-	-	66	Moscou	-	-	40
Knees Volodimer	-	-	66	Perma Veliski	-	-	42
St. Alexander Newsky		-	66	Pleskow	-	-	42
St. Nicolai	-	-	66	Frigat Voine	-	-	34
America	-	-	64	Alexander	-	-	32
Blano Polutschii	-	-	64	Maria	-	-	32
Nebren Aleuju	-	-	64	St. Patriche	-	-	32
Europa	-	-	64	Semeone	-	-	32
Victor	-	-	64	Smolensko	-	-	26
Parnel Jestroff	-	-	64	Nisi Novogorod	-	-	26
Kargopol	-	-	50	Kola	-	-	24
Rezan	-	-	50	Volga	-	-	24

DANISH Fleet.

Justitia	-	-	74	Mars	-	-	50
Dannebrog	-		70	Wagrien	-	-	46
Olephant	-	-	70	Soc Rider	-	-	40
Jutland	-	-	70	Alsen	-	-	36
Prins Frederic	-	-	70	Bornholm	-	-	26
Princessa Sophia Frederica		-	70	Kronenburg	-	-	36
Holstein	-	-	64	Moen	-	-	36
Infeods Rechten	-	-	64	Perla	-	-	36
Norvegia Lejon	-	-	64	St. Thomas	-	-	36
Groenland	-	-	60	Kiclo	-	-	32
Princess Sophia Magdelana		-	60	Fehmera	-	-	30
Princess Wilhelmina Carolina			60	Christiana	-	-	20
Ebenezer	-	-	50				

SWEDISH

either immediately, or presently subsequent to that time, of the maritime force which they had before possessed: yet both those countries gave every possible encouragement to commerce: the subsisting war, to which they were not parties, produced them an incomparable harvest, and they were too sagacious not to profit to the utmost of their power, by the advantage which fortune appeared to have thrown in their way. On the part of the United Provinces the utmost energy was apparent, the arsenals and dock-yards belonging to the state exhibited a scene of activity and determined conduct extremely unusual, and perhaps unprecedented. It was, however, only the paroxysm of a moment, as on finding Britain was not to be intimidated either by the desertion of her antient allies, or the accession of new foes; the Dutch were content after an action in which one of their principal ships was sunk, to remain the silent sullen spectators of the flames of war which raged round them, instead of presuming to interpose either in feeding, or attempting to extinguish them. The actually belligerent powers seemed to have reached the utmost limits to which their exertions could be carried, so that the remainder of the war was conducted on rather a more regular routine of operation than had been generally customary on such occasions. It displayed none of those volcanic bursts which had frequently appeared in former contests of the same nature, and with the single interruption to an uninteresting series of occurrences occasioned by the total defeat of the French fleet, under the orders of the Count de Grasse, the embers of war might rather be said to have gradually died away by the operation of time and nature, than to have been extinguished by

SWEDISH Fleet.

Gotha Lejon	70	Livonia	40
Koenig Adolf Frederick	70	Uplandia	40
Koenig Gustaaf III	70	Zwarte Oern	38
Louisa Ulrica	70	Hoken	36
Prins Carl Frederic	70	Jaramas	36
Sophia Magdelana	70	Illerim	36
Prins Carl	64	Prins Gustaaf	36
Dux Ferdinand	90	Sodermanlandia	36
Finlandia	60	Fredermanlandia	32
Frederic Rex	60	Gothlandia	32
Prins Frederic Adolf	66	Jacobdahl	32
Richfens Stader	60	Postillon	32
Sophia Albertina	60	Abo	30
Wasa	60	Upsal	28
Gryph	94	Triton	10

any strong and philanthropic disposition in the parties which had so long encouraged them, towards putting a sudden and forcible period to their existence. At the conclusion of the war,* the navy of Britain amounted to 649 sail, including vessels and ships of all descriptions, from first rates down to cutters and advice boats. Its losses had, comparatively speaking, been trivial; its successes, considering the enormous pressure which surrounded and inveloped it, extensive; so that the cursory recital made by historians in future ages of what passed during the period just alluded to, (should they not enter into a more ample detail of facts, and produce some stronger collateral evidence of their own attention to truth, than is generally the case with respect to the history of times far remote,) will most probably be considered as at least exaggerated, if not fabulous.

The return of peace produced the same reiteration of energetic measures towards augmentation in respect to the marine of France, that had been apparent during the two preceeding periods bearing the same character. Nor did she rest there, for, in conformity with the same conduct which had been before displayed, every effort was made, as well in the production of improvement

*The losses sustained by Great Britain during the whole of the preceeding contest, reckoning from the commencement of the dispute with the American colonies, amounted to nearly 180 sail, reckoning the whole of the vessels captured, destroyed or lost by accident. Among these there were thirteen ships of the line and three of 50 guns, four of the smallest rate of two-decked ships, mounting 44 guns each, thirty-two frigates, with twenty seven post ships of inferior rate, and one hundred sloops of war or vessels of less considerable consequence. Out of this mighty navy, however, for such it might be truly considered in comparison with that of any country in Europe; France and Spain excepted, no ship of the line actually fell into the possession of the enemy, except the Ardent, which was afterwards recaptured, the remainder were either victims to the natural disasters attendant on an extensive scene of warfare, or were destroyed by the hands of the British themselves, under various circumstances. The remainder of the prizes remaining to the enemy were two ships of 50 guns, as many of 44, sixteen frigates or vessels mounting from 20 guns upwards, four of which was afterwards recaptured, with forty nine sloops and small vessels of all descriptions, from among which fifteen of the most consequential reverted back to their original possessors. The losses of the foes confederated against Great Britain, amounted in actual captures only, to nearly one hundred and fifty vessels, among which were nineteen sail of the line, thirteen of which were actually in commission at the time the preliminary articles of peace were signed, together with nearly fifty frigates, many of them considered as the finest vessels in their class belonging to France and other countries. In the course of the preceeding contest a new species of vessel, or rather some vessels fitted at an immense expence, after a new and extraordinary manner, made their appearance being intended to cooperate as floating batteries in a general attack on the fortress of Gibraltar. Their fate proved that either the expectations of the projector had been too sanguine, or that his plan had not been executed fully according to his wishes, for the whole of them, amounting to nine in number, fell victims to the red-hot shot of the British within the space of a few hours.

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in regard to construction, as in augmentation of the numbers which actually composed its * navy. From the extraordinary increase in the several dimensions apparent in the subjoined table, it is evident that France diligently applied the first interval of peace to the immediate contemplation of the same subject, and in precisely

* *Principal Proportions of French Ships of War, according to the Ordinance of* 1786.

	Ships of 120 guns.	*Ships of* 110 guns.	*Ships of* 80 guns.	*Ships of* 74 guns.	*Ships of* 64 guns.
	ft. in.	*ft.*	*ft.*	*ft. in.*	*ft. in.*
Length, from head to stern,	196 6	186—185	184—180	170 0	156 0
Breadth from outside to outside of the frame,	50 0	49 6	48 0	44 6	41 0
Depth in the hold,	25 0	24 6	23 9	22 0	20 0
Draught of water abaft when light,	17 6	17 4	17 0	15 8	14 6
Draught of water forward when light,	14 0	13 8	12 0	10 10	11 1
Draught of water abaft when laden,	25 0	24 8	22 6	21 6	19 9
Draught of water forward when laden,	22 8	22 2	21 0	19 10	18 9
Total weight of the ship and stores when victualed and furnished for a six-month's cruise,	*tons.* 5246	*tons.* 4910	*tons. cwt. lb.* 3825 0 0	*tons. cwt. lb.* 3548½	*tons.* 2300
Difference between ships of the same rate,	237	210	126 0 0	115 0 0	65
Weight of fluid displaced, when light, measured by the inch,	23½	21	19 0 0	15⅔ 0 0	12¾
Displacement when laden, measured by the inch,	29	26	22 1 23	20 4 19	16¼
Height of the lower battery from the surface of the water,	*ft in.* 5 4	*ft. in.* 5 0	*ft. in.* 5 6	*ft. in.* 5 6	*ft. in.* 5 0
	Nature of the guns, i.e. weight of their respective shot.				
Weight of metal in the lower tier or battery,	32—36	30—36	30—36	28—36	26—24
On the middle,	34—24	32—24			
On the upper,	34—12	32—12	32—24	30—18	28—12
On the quarter deck and forecastle,	20 8	16 8	18 8	16 8	10 6

6 Equipage

precisely the same point of view as had before under similar circumstances so completely occupied her attention. Among the first rates constructed on this occasion was the Commerce de Marseilles, a first rate which in 1793 came into the possession of the British under a convention with the Toulonese. Its

	Ships of 120 guns.	*Ships of* 110 guns.	*Ships of* 80 guns.	*Ships of* 74 guns.	*Ships of* 64 guns.
Equipage or numbers of the crew in time of war,	*men.* 1098	*men.* 1037	*men.* 839	*men.* 690	*men.* 623
Numbers of the crew in time of peace,	764	727	581	472	354
	tons.	*tons.*	*tons.*	*tons.*	*tons.*
Weight of the hull and masts,	2500	2400	1804	1437	1120
	ft. in. lin.	*ft. in.*	*ft. in. lin.*	*ft. pts.*	*ft. in. lin.*
Height of the center of gravity from the keel,	13 6 0	13 0	12 7 5	$11\frac{48}{100}$	11 8
Distance of the center of gravity from the center of the vessel,	2 3 6	1 4	1 7 10	$2\frac{58}{100}$	1 6
Height of the metacentre above the center of gravity,	12 4 10	12 0	12 2 0	$12\frac{16}{100}$	10 10 6

Particulars of the Weight of the different Articles composing the Equipment of Ships of the Line, when stored for six Months Service in time of War, according to the French Regulations established 1786.

	tons.	*tons.*	*tons.*	*tons.*	*tons.*
Weight of the ordnance,	496	489	375	314	200
Weight of the cordage and rigging, independent of the masts,	330	268	245	220	160
Water for three months,	315	293	236	192	146
Weight of the butts or casks,	52	49	40	32	24
Provisions for six months,	617	$608\frac{1}{2}$	$447\frac{1}{2}$	$367\frac{1}{2}$	$278\frac{1}{2}$
Weight of the equipage,	137	$129\frac{1}{2}$	$104\frac{1}{2}$	86	66
Stores of the captain and officers,	64	58	35	30	$25\frac{1}{2}$
Clothing of the men and weight of the boats	40	36	30	25	20
Iron ballast,	500	400	360	245	180
Stone or shingle ballast,	195	184	148	100	80
Total weight of equipment	2746	2510	2021	$1611\frac{1}{2}$	1180
Total weight of hull, &c.	5246	4910	3825	$3048\frac{1}{2}$	2300

Length

Its dimensions were considered so extraordinary, and excessive beyond the natural limits prescribed by necessity, that it was pronounced, as Mr. Willet has asserted in his Naval Memoir, unwieldy and unfit for service. This opinion has, however, been proved by subsequent experience, premature and incorrect. The ship in question was among those first equipped by France at the close of the year 1792, and the circumstance of her non-employment since it has formed a part of the British navy, is said to have been owing not merely to its magnitude

Principal Proportions of French Frigates and Corvettes.

	Frigates carrying 18 pounders.	Frigates carrying 12 pounders.	Corvettes of 20 guns.	Advice boats carrying four 4 pounders.
	ft. in.	*ft. in.*	*ft. in.*	*ft. in.*
Length from head to stern,	144 0	136 0	112 0	80 0
Breadth from outside to outside of the frame,	36 6	34 6	28 4	24 0
Depth in the hold,	18 0	17 6	14 4	12 0
Draught of water abaft when light,	12 6	11 3	9 6	8 4
Draught of water forward when light,	8 7	8 6	8 5	8 0
Draught of water abaft when laden,	16 0	15 4	13 3	11 6
Draught of water forward when laden,	15 2	13 9	11 9	10 0
	tons. cwt.	*tons. cwt.*	*tons. cwt.*	*tons. cwt.*
Total weight of the vessel and stores when victualled for a six months' cruise,	1479 0	1162	546	266
Difference between ships of the same class,	52 0	44	23	22
Weight of the fluid displaced when light, measured by the inch,	11 10	9 10	6 10	4 15
Displacement when laden, measured by the inch,	13 7	11 5	7 10	3 10
Weight of the hull and masts,	665	583	266	141
		Number and Calibre of Guns.		
Weight of metal on the gun-deck,	28 18	26 12	20 6	4 4
On the quarter-deck and forecastle,	12 8	6 6		
Equipage or numbers of the crew in time of war,	314	261	120	50
Numbers of the crew in time of peace,	222	181	120	50
	ft. in.	*ft. in. lin.*	*in. lin.*	*in. lin.*
Height of the guns from the surface of the water,	6 0	6		
Height of the centre of gravity from the keel,	9 1	8 5 9	6 4	6 10
Distance of the centre of gravity from the centre of the vessel,	1 2	1 11 6	2 5	4 1
Height of the metacentre above the centre of gravity,	11 8	10 8 9	8 9	6 8

magnitude and dimensions, but to the weakneſs of its frame, and the careless manner in which it was originally constructed, or put together. It must, however, be admitted, that had those dimensions been more contracted, the inconveniences complained of, would certainly have been leſs felt; for, as is shrewdly remarked by Mr. Willet himself, in the memoir before mentioned; "The size of our ships seems now to have reached its ultimatum, for nature itself in some measure fixes its limits: it is man who is to navigate and manage them; and unless our bodily strength could be increased likewise, every manœuvre on board them must be conducted with difficulty and delay; for though the mechanic powers are almost boundless, the application of them for the purposes of navigation is more confined. The cordage, when made larger, will be rendered difficult to pass through the pulleys, and so large at last, as not to pass at all. Timber, the growth of nature as much as man, cannot be made to grow larger, and the very element (in harbours at least) in which they are to navigate, hath only certain depths that cannot be increased. Let it also be remembered, as a certain axiom in mechanics, that what we gain in power, we must be contented to lose in time. Every operation on board will therefore become laborious, dilatory, and even uncertain." Apparently enormous as the size of the ship just mentioned certainly is, as may be seen by referring to the succeeding Chapter, it is said to have been materially exceeded by a Spanish first rate called the Santissima Trinidada, concerning which ship, Mr.

Particulars of the Weight of the different Articles composing the Equipment of French Frigates, Corvettes, and Advice Boats, when stored for six Months Service in Time of War, according to the French Regulations established 1786.

	Frigates carrying 18 Pounders.	Frigates carrying 12 Pounders.	Corvettes	Advice Boats.
	tons.	*tons.*	*tons.*	*tons.*
Weight of the ordnance,	131	86	39	3
Weight of the cordage and rigging, independent of the masts,	128	92	48	24
Water for three months,	90	73	34	19
Weight of the butts or casks,	15	12	5	3
Provisions for six months,	167 1/4	137	44	26 1/4
Weight of the equipage,	39	32	15	6 1/4
Stores of the captain and officers,	20	18	9	6
Clothing of the men, and weight of the boats,	18	15	13	9
Iron ballast,	146	90	55	20
Shingle or stone ballast,	60	24	18	10
Total weight of equipment,	814	579	280	126
Total weight of hull, &c.	1479	1162	546	266

Willet,

Willet, thoughg enerally correct in his information, has certainly been mistaken in asserting, on its being sent to sea, it was found so unwieldy, that it must have been lost, had not the precaution been taken of sending two ships out with it, as companions or protectors, which, witnessing its unfitness to contend with the furious temper of the waves, immediately towed it back into port, as well for the purpose of preventing it from foundering, as of saving the lives of the persons employed on board it as mariners. It certainly may be a fact that the ship just mentioned was so lofty, and consequently, perhaps, so crank, as to be inconvenient, or even, in some measure, dangerous to be worked in the state it was when first launched; but it is equally certain that those defects were so far remedied as to permit the same vessel being employed on various occasions and services, among which was that of being the flag ship of the Spanish admiral in Chief, during the encounter with the British fleet of Cape St. Vincent's in 1797.

The same current of attention continued uninterrupted, and almost totally undiverted, as well with respect to France as Spain (for the lowring clouds which appeared hovering and collecting at a distance in respect to France in 1788, and Spain in 1790, were too soon dissipated to merit attention, or observation) till the year 1792, when, as may be well remembered, there took place, a most serious, political convulsion, to give it the term most mild, and consequently least liable to exception. The navy of France was at that time, owing to the exertions made during the preceding period of tranquillity, in a more formidable state than it had ever before risen to, even under the auspices of that most zealous, and aspiring prince, Louis the fourteenth. In the department of Toulon, there were at the hour of its surrender under the convention in 1793, in an actual state of readiness for sea, or in that of extreme forwardness either with respect to building or equipment, no fewer than two first rates of 120 guns each, the Commerce de Marseilles, and Dauphin Royal; four second rates of 84 guns, and twenty-six of 74 guns; making in the whole, thirty-two sail of the line, to which are to be added twenty-three frigates, many of them of very large dimensions, and twenty corvettes, or sloops of war, the whole forming an armament of seventy-five sail. Equal vigilance had been apparent in the other departments of Brest and Rochfort; the naval force in those ports at the same time, amounted to fifty-four sail of the line, with thirty-eight frigates, and a proportionate flotilla of corvettes or attendant vessels,—so that the marine of France, taken in the aggregate, had, to a certainty, never before displayed so flourishing a condition: but though her force had been by previous exertions during

the peace, raised to that summit of power and consequence which it had never before reached, and the same display of might, was by every possible and energetic exertion, attempted to be supported in the same height, after the commencement of hostilities, yet did the losses it sustained in the vain attempt towards its maintenance, exceed all former example, even of those times when she was involved in the most disastrous of her contests. The dimensions adopted by France in all such ships as were caused to be new built, have been just given; and the comparison between them, and the British vessels of the same rate and force built at the same time, may be drawn with the utmost facility, by referring to the ensuing chapter, in which it will be found there is not a single class of vessels, where such reference cannot be made, as well in respect to dimensions, as theory of form, or contour, from the actual possession of bona fide examples, which have fallen into the possession of Britain. At the close of the eighteenth century, the latter country had actually acquired during the contest no fewer than twenty-four sail of the line, forty-one frigates, and a multitude of inferior vessels, which were then actually employed in her service; while the total loss sustained by her adversary, including ships destroyed in fight, or wrecked in the course of expeditions fruitlessly undertaken, amounted to no less than three hundred and thirty-two sail, among which were forty-eight of the line, and fifty-three frigates of the largest dimensions: a navy in itself, which in times not very far remote, particularly when the quality of the vessels concerned is taken into the account, would have been considered sufficient, under a proper direction and management, to have overawed the united force of every maritime power on the face of the earth. *

* Out of the whole force belonging to the department of Toulon at the commencement of hostilities, four ships only of the line, and three small frigates remained to France at the conclusion of the century, while the Guillaume Tell and Languedoc of 84 guns, the Genereux, the Souverain, Themistocle, the Leopard, and the Lys of 74 guns each, the Arethuse, the Fortunée, the Alceste, the Mignonne, the Vestale frigates, and a considerable number of corvettes had been captured or destroyed at Toulon, and the Mediterranean, which were detached from the departments of Brest and Rochfort. Four ships of the line and a small frigate sent away by the British admiral soon after the convention took place, also belonged to the department of the Atlantic. During the continuance of the contest, the exertions made by France to repair the disasters she had sustained, considering the various quarters and points to which her force was directed, and by the multiplicity of which, her attention must have been of necessity distracted, were certainly unprecedented, and may, to very remote ages, appear incredible. But, although in the midst of those flames of war which that people were brandishing and spreading on all sides, upwards of twenty sail of the line, and

Owing either to the natural political fickleness of most countries, to those intrigues which, at times, have universally pervaded the cabinets of all potentates whatever, or to that fear which the proximity and threatened inroad of an invading army rarely fails to spread through an indolent or less potent nation; Spain, who had some time before withdrawn herself from the confederacy entered into with Britain and other foreign powers against the new form of government adopted by France, became the actual ally of the latter, and declared defiance to the assaults of Britain. The fallen and critical state of the French navy peremptorily required such aid, and the event proved that an accumulation of foes, even though they become totally inert, are sufficient to divide, and so far distract the attention of an enemy superior in actual force, to the united strength of the confederacy, that the former shall become totally unable to effect the complete destruction even of the most impotent among the latter. The attempts made by the newly raised antagoniſts towards fair and open contest, were extremely inauspicious *, and compelled an immediate change in the

and more than forty large frigates were built, the French navy consisted at the close of the eighteenth century, of no more than fifty-four ships of the line, and scarcely thirty frigates, including, as is well known, those which were not in a condition for service, as well as those that were. In order to place the situation of the French marine, the exertions of the country during the war, and the various losses previous to the termination of the eighteenth century in one simple and plain point of view, the different ships according to a list said to be extremely correct, that were progressively employed prior to that time, amounted to one hundred and eight sail of the line, together with one hundred and three frigates. So that, by subtracting what remained at the close of the year 1800, the losses will be found very nearly to coincide with the account first given. In the marine of France, according to the best authorities, there have been no fewer than eight first rates, mounting from 110 to 120 guns each, though owing to the practice extremely prevalent among the French during the preceding contest, of frequently changing the names of the ships composing their marine, it has been extremely difficult to collect with precision the number of ships which have been employed during the war.

* In the well remembered contest off Cape St. Vincent, fought on the 14th of February 1797, the Spanish fleet, consisting of 27 ships of the line, among which were seven of three decks, were completely defeated by that of Britain, which opposed them under the orders of Sir John Jervis, amounting to no more than fifteen sail of the line. Two of their firſt rates, one ship of 84 guns, and another of 74, were the reward of the victory; and the Santissima Trinidada, supposed to be the largest ship in the world, very narrowly escaped falling also into the hands of the British. Nor was this the only misfortune which befel the Spanish marine; for, three days only after the event just mentioned had taken place, one of their squadrons stationed in a very distant quarter of the globe (in the Gulph of Paria on the coast of South America) was in great part destroyed by the hands of those who ſhould have defended it; one ship of 84 guns, two of 74, and a frigate of 36 being burnt by the Spaniards themselves, to prevent their falling into the hands of the British, as was the fate of the only survivor, a ship of 74 guns.

mode

mode of continuing the warfare, if the constant imprisonment of the fleet of Spain within the harbour of Cadiz by a force very frequently inferior, stationed off the entrance of the port, for the purpose of blocking it up, could be said to deserve that term. This state of inactive quietude continued totally uninterrupted for the space of more than two years; when France, whose navy had been compelled for a still longer period to submit to nearly the same species of imprisonment, considered it necessary not merely in respect to her honour, but her safety, to make some attempt, however hazardous it might be, towards relieving the distresses of her faithful allies.

Accordingly, the French fleet consisting of twenty-five ships of the line, deriving courage from the happy absence of its blockaders, put to sea, and proceeded to Cadiz; where having arrived almost miraculously, without encounter, it effected a junction with its imprisoned friends, whom to the amount of eighteen sail of the line, five frigates, and four smaller vessels, it escorted in a state little differing from that of prisoners of war, back to the harbour of Brest. Notwithstanding this accumulation of strength, the allied fleets shewed no disposition whatever to tempt the, sometimes capricious, fortune of war, but were content with furnishing a continuance of the same inglorious employment to the ships of their adversary, which had before been so long forced on them as the most irksome occupation they could have been engaged in, both in respect to the port of Cadiz, and that of Brest. Inactive as misfortune appears to have induced, or perhaps compelled, that the Spanish fleet should remain, the builders of that country had not been wanting in their endeavours to render it excellent in respect to the principles of the vessels which composed it, while at the same time the government had been no less sanguine in providing for the augmentation of it. Among the ships of the line which made their appearance at sea during the continuance of hostilities; there were no less than ten first rates, mounting from 112 to 130 guns each. The most inferior of these in respect to dimensions, though not equalling the Commerce de Marseilles of France, considerably exceeded those of Britain in the same class. The St. Joseph captured in the action off St. Vincent's, measured 2457 tons, being more than one hundred exceeding the Ville de Paris, which was the largest British built ship in the royal navy. The whole of their fleet found to have been actually employed in Europe during the continuance of the war, by adding together the names of the different ships which progressively appeared at sea, amounted to about fifty ships of the line, independent of those which were unfit for service without repair, or

remained in harbour unequipped. This force is also to be considered as exclusive of the squadrons at Cuba, as well as those employed in the South American and other services, the force of which, though not precisely known, is considered, far as numbers and apparent force extended, to have been far from insignificant.

Holland, the quondam pretended ally, but newly created inveterate foe to Britain, was not less active in bearing her part for the service of the confederacy, than her colleagues of France and Spain had been. Her marine had been increased both in number and in quality; in the former respect, although at least the moiety of her marine had been torn from her by capture, or the various disasters attendant on war; there still remained to her a fleet at the close of the eighteenth century, amounting to eighty sail, taking in ships of war of all descriptions, as well those of the line as sloops of war. The augmentation of quality in respect to burthen may be easily discovered by referring to the ensuing Chapter, where the dimensions, except in the higher rates, of which there were none taken in the former war, may be accurately compared between those built towards the close of the century, and such as had been launched twenty years earlier. The attention of the Northern Powers, far as their abilities extended, had been no less alert. Russia, which had during the preceding conteſt, and till the very close of the century, been the active ally of England, had increased her marine to fifty ships of the line, among which were seven or eight mounting one hundred guns each, nearly sixty frigates, with a sufficient flotilla for its necessary attendance, and a very considerable force in galleys. This force was exclusive of a fleet in the Black Sea and the Mediterranean, which according to report amounted to nearly twenty ships of two decks, besides frigates. The Danes raised their marine to nearly forty ships of the line, twenty frigates, and as many smaller vessels as were numbered in the two preceeding classes. Even Sweden, the least powerful of the three, boasted a navy containing twenty-seven ships of the line, twelve frigates, and forty galleys or smaller vessels; so that the acquisition of marine strength appeared to be a national fashion, and those who were most behind in the race, seemed to consider themselves in a state of disgrace and of dishonour.

Amidst all these mighty preparations, surrounded by actual foes, and in some degree menaced by those who did not display an actual hostile intention, the marine of Britain unremittingly maintained that character which it had before acquired, and appeared like an arch to derive additional strength from the pressure

which

which it had proudly sustained from the beginning of the year 1793; that is to say, the first commencement of the hostilities. Its navy then consisted of 424 sail, among which were 157 of the line, 22 carrying 50 guns, 138 frigates, and 107 smaller vessels. At the close of the year 1800, it had increased to 197 sail of the line, 27 of 50 guns, 251 frigates, and 314 vessels of inferior rate. Among the causes and means of augmentation, may indeed be reckoned the actual navy*, for to use an inferior term were to depreciate the exertions of the captors, which the manual labour of her enemies have furnished her with; but, independent of these, there were at the end of the year 1800, twenty two sail of the line, two of 50 guns, thirty five frigates, and sixty nine vessels ranking as sloops of war, exclusive of an infinity inferior in consequence and note, which had been launched since the commencement of hostilities.

* The number of ships and vessels actually belonging to the governments of France, Spain, and Holland, captured or destroyed by Britain, added to those lost in the course of service during the war, amounted to 470 sail; of which 81 were of the line, 35 French, 8 Spanish, and 18 Dutch; 8 of fifty guns; 181 Frigates, 135 of which were French, 14 Spanish, and 32 Dutch; and, 194 Sloops of war or vessels of inferior rate; 140 of which belonged to France, 22 to Spain, and 32 to Holland: added to these, were nearly eight hundred vessels belonging to the different nations before mentioned, all which were armed for war though the property of private adventurers, and many of them though mere privateers were of considerable force. 46 Ships of the line, 59 Frigates, and 54 Corvettes or light vessels, which had been captured from the different enemies during the contest, actually formed a part of the British marine at the close of the year 1800.

CHAPTER

CHAPTER THE ELEVENTH.

Names, principal Dimensions, and Tonnage, as well of the Ships and Vessels purposely built for the Royal Navy, from the Year 1700 *to the End of the Year* 1800, *as those which, though not so built, have, at different Periods, been received into it, on being either captured from the Enemy, purchased from Merchants, or hired for a Time as chartered Vessels—The Names of the Surveyors, as far as it has been possible to collect them with Accuracy, as well as those of the Builders who severally directed the Construction of the different Vessels; the Establishments on which many of them were constructed, and the Fate of the greater Part of those which were not regularly worn out and condemned as unfit for any farther Service.—Brief Remarks on the Alteration of Construction in the progressive Periods, and a short comparative View of the Augmentation of Tonnage and Dimensions; with a general Statement of the supposed Advantage derived from the Increase of them.*

Rates. 1st.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No of Men.	No of Guns.	Surveyors.	When and where built, and Builders Names.
Brokn up.	Royal-Ann .	1706	171 9	139 7	49 3	19 6	1809	750	100		Re-b. 1713, Wool. J. Ackworth.
Ditto.	Royal-Sovereign	1719	175 0	140 7	50 3½	20 1	1883	850	100		Re-b. 1728, Chat. J. Rosewell.
Lost.	Royal-George	1733	178 0	143 5½	51 9½	21 6	2047	850	100		Built 1756, Wool. J. Pownall.
	Britannia . .	1745	178 0	145 2	52 0½	21 6	2091	850	100		Built 1762, Ports. J. Bucknall.
	Victory . . .		186 0	151 3⅝	52 0	21 6	2162	850	100	Sir T. Slade	Built 1765, Chath. E. Allen.
Lost.	Ville de Paris .		185 7½	153 0	53 8½	22 2	2347	850	104		Taken fr. French 1782.
	Royal-Sovereign		184 0	150 6	52 0	22 3	2164	850	100	Sir J. Williams	Re-b. 1787, Plym. J. Pollard.
	Royal-George .		187 0	153 6	52 4	22 4	2236	850	100	Edw. Hunt	Built at Chatham 1788.
	Queen Charlotte		190 0	156 5	52 4	22 4	2279	850	100	Ditto	Ditto 1789.
	Ville de Paris .		190 0	156 1⅛	53 0	22 4	2332	850	110	Sir J. Henflow	Ditto 1795.
	Hibernia . .		190 0	156 1⅛	53 0	22 4	2332	850	110	Ditto	Building at Plym.
	Commerce de Marsielles .		208 4	172 0⅛	54 9½	25 0½	2747	875	120		Taken at Toulon.
	Caledonia . .		205 0	170 11	53 6	23 2	2602	875	120	Sir W. Rule	Building at Plymouth.
	San Josef . .		194 3	156 11½	54 3	24 3	2457	840	114		Taken from Spainiards 1797.
	Salvador del Mundo .		190 9	152 11	54 3½	23 1	2398		11		Ditto.

Rates.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
2nd.											
Brok^{n} up.	Princess Royal	1706	162 7½	131 5	47 4¾	18 7½	1570	750	90		Built 1711, at Deptford.
	Barfleur . .	1706	163 0	131 9	47 3	18 6	1565	700	90		Re-built 7716, at ditto.
Brok^{n} up.	Duke . . .	1733	166 2	134 0	47 9	19 6	1625	750	90		Re-b. 1739, Wool. by Haywood
Ditto.	St. George .	1733	165 9	133 7⅞	48 3	19 6	1655	750	90		Built 1740, Portsm. by J. Allen.
	Ramillies . .	1745	163 0½	137 0	48 1	20 2	1685	750	90		Built 1749, at Portsmouth.
	Prince . . .	1741	168 7	136 10	48 0	20 0	1677	750	90		Built 1750, Chatham, J. Ward.
Hulk 84.	Neptune . .		171 0	141 5	48 11	20 6	1798	750	90	Sir J. Allen	Built 1756, Portsm. Ed. Allen.
	Namur . .		174 11½	144 4	48 7½	20 6	1814	750	90	Admiralty	Built 1756, Chath. J. Lock.
	Union . . .		171 2	141 5	48 8	20 6	1781	750	90	Sir J. Allen	Built 1756, ditto, ditto.
	Sandwich lazarr.		176 1	145 8	49 1½	20 11½	1869	750	98	Sir T. Slade	Built 1759, ditto, ditto.
	Blenheim . .		176 1	142 3	49 1	21 0	1827	750	90	Ditto	Built 1761, Woolw. J. Pownall.
	Ocean . . .		176 1½	148 2	49 0⅜	21 0	1833	750	98	Ditto	Re-built 1761, Chath. J. Lock.
	London . .		177 6	144 1⅛	49 8⅜	21 0	1894	750	98	Ditto	Built 1766, Chath. E. Allen.
Rep. 1780	Barfleur . .		177 8	144 0½	50 5	21 0	1947	750	98	Ditto	Built 1768, Chath. J. Harris.
	Queen . . .		177 6	144 0	49 6	21 9	1876	750	98	W. Bately	Re-built 1769, Wool. W. Gray.
	Prince-George		177 6	143 10⅝	50 6⅜	21 0	1955	750	98	Sir T. Slade	Built 1772, Chath. G. Harris.
	Princess-Royal		177 6	145 5	50 6	21 3	1978	750	98	Ditto	Re-built 1773, Ports. E. Hunt.
	Duke . . .		177 6	145 3	50 0	21 2	1931	750	98	Sir J. Williams	Re-b. 1776, Plym. J. Pownall.
	Formidable .		177 6	144 0¾	50 3	21 0	1934	750	98	Sir T. Slade	Built 1777, Chath. ditto.
	Atlas . . .		177 6	145 3	50 0	21 2	1931	750	98	Sir J. Williams	Re-built 1782, Chath.
	St. George .		177 6	145 3	50 0	21 2	1931	750	98	Ditto	Built 1786, Ports. G. White.
Lost.	Impregnable .		177 6	146 6	49 0	21 0	1871	750	98	Sir T. Slade	Built 1786, Deptford.
	Glory . . .		177 6	145 3	50 0	21 2	1931	750	98	Sir J. Williams	Re-built 1788, Plymouth.
	Prince . . .		177 6	146 6	49 0	21 0	1871	750	98	Sir T. Slade	Re-built 1788, Woolw. Nelson.
Burnt.	Boyne . . .		182 0	149 3	50 3	21 9	2010	750	98	Edward Hunt	Built at Woolw.
	Windsor-Castle		177 6	146 6	49 0	21 0	1871	750	98	Sir T. Slade	Built at Deptford.
	Prince of Wales		182 0	149 8	50 3	21 9	2010	750	98	Edward Hunt	Built at Portsm. 1794.
	Dreadnought		185 0	152 6⅝	51 0	21 6	2111	750	98	Sir J. Henslow	Built ditto. 1801.
	Neptune . .		185 0	152 6⅝	51 0	21 0	2111	750	98	Ditto	Ditto 1797, Deptford.
	Ocean . . .		196 0	164 0	51 0	21 6	2270	738	98	Ditto	Building at Woolw.
	Temeraire . .		185 0	152 3	51 2	21 6	2121	738	98	Ditto	Built at Chath. 1798.
	Impregnable .		196 0	163 7	51 0	22 0	2264	738	98	Sir W. Rule	Building at Chath. E. Sifon.
3d.											
Red. 1757	Royal-William	1719	175 4	142 7	50 3½	20 1	1918	750	84		Rebuilt 1719, Portsm. J. Naish.
	Prince-George	1719	164 0	132 2	47 6	18 10	1586	700	80		Re-built 1728, Deptf.
	Cornwall . .	1719	158 0	128 2	44 6	18 2	1350	600	80		Ditto 1726, Deptf.
Brok^{n} up.	Prino.-Caroline	1719	157 10	128 0	44 7	18 2	1353	600	80		Built 1731, Woolw.
	Marlborough .	1719	164 0	132 5	47 2	18 10	1567	600			Ditto 1732, Chath.
	Russell . .	1719	158 0	128 2	44 6	18 2	1350	600	80		Built 1735, Deptf.
	Boyne . . .	1733	158 0	127 2	45 5	18 7	1390	600	80		Ditto 1789, Deptf.
Brok^{n} up.	Newark, lazarett.	1741	161 0	130 0	46 2	19 4	1521	650	80		Ditto 1747, Chath. J. Waid.
	Cambridge .		166 0	137 6	47 0	20 0	1615	650	80	Sir J. Allen.	Ditto 1755, Deptf. A. Hays.
Ditto.	Foudroyant .		180 5	147 3	50 3	23 0	1979	650	80		Taken from the French 1758.
	Princess-Amelia	1745	165 0	133 0	47 3	20 0	1579	650	80		Built 1759, Wool. J. Pownall.
Ditto.	Formidable .		188 0	155 4½	49 2¾	21 4½	2002	650	80		Ta. fr. Fr. 1759, by sir E. Hawke
	Gibraltar . .		178 10¾	144 6	53 3¾	22 4	2184	650	80		Taken from Spaniards 1780.
	Cæsar . . .		181 0	148 3¾	51 3	22 4	1991	650	80	Edw. Hunt	Built at Plym.
	Le Juste .		193 7	159 5⅛	50 3⅛	23 2½	2144	600	84		Taken from the French 1794.
	Sans Pareil .		193 0	158 11¼	51 6⅛	23 4	2242	600	84		Ditto ditto.
	Foudroyant .		184 0	151 5⅝	50 6	22 6	2055	600	80	Sir J. Henslow	Built at Plymouth. 1798.
Ditto.	L'Achille . .								80		Taken from the French 1794.
	Impetueux .		182 0	149 8½	48 7⅞	21 6	1884	600	78		Taken ditto.
Brok^{n} up.	Northumberland		178 8	146 6	48 2⅛	21 1	1811	600	78		Ditto.
	Pompee . .		182 2	148 7	49 0½	21 10	1901	718	80		Ditto.
	Spartiate . .		186 0	151 0	48 3	21 10	1869	718	80		Ditto.
	San Nicholas		179 9	148 4	49 7	20 1	1942	719	82		Ditto 1797.
	Tonnant . .		197 6	160 11	50 7	23 7	2190	718	80		Ditto 1798.
	Canopus . .		197 6	160 8	51 0	23 3	2223	718	80		Ditto ditto.
	Genereux . .		185 7	147 10	49 2	20 9	1926	718	80		Ditto 1800.
	Malta . . .		194 4	159 7	51 6	23 4	2255	730	84		Ditto ditto.

Rates. 3d.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
Brok^{n} up.	Culloden, b. f. 80.	1745	161 4½	130 6⅛	46 3⅛	19 6½	1487	600	74		Built 1747, Dept. J. Pownall.
	Invincible . .		171 3	139 0½	49 3	21 3	1793	700	74		Taken 1747 from the French.
Sold.	Monarque .		174 10	149 10	47 2⅐	20 1½	1776	650	74		Taken ditto from the French.
Brok^{n} up.	Magnanime .		173 7	140 7½	49 6	21 7	1832	650	74		Taken fr. French ditto.
	Terrible . .		164 1	133 11	47 3	20 7½	1590	650	74		Taken 1747 ditto.
Sunk.	Shrewsbury .		166 1	135 2½	47 1	19 9	1594	600	74		Built 1750, River, Wells & Co.
Brok^{n} up.	Norfolk . .		165 6	134 4¼	46 8	19 9	1556	600	74	Sir T. Slade	Built 1757, Dept. A. Hayes.
	Lenox . . .		165 5¼	134 5	47 0	19 8½	1579	600	74	Ditto	Built 1758, Chath. J. Lock.
	Warspight .		165 9½	134 11¼	46 11	19 9½	1580	600	74	Ditto	Built ditto, River, J. Welt.
Lost.	Resolution . .		165 6	134 3⅝	46 10½	19 9	1546	600	74		Built 1758, Northam.
Ditto.	Centaur . .		175 8	145 5	47 5	20 0	1739	650	74		Tak. 1759, fr. Fr. by Boscawen.
	Dublin . .		165 6	134 4	46 9	19 9	1561	600	74	Ditto	Built 1759, Dept. A. Hayes.
Sold.	Fame . . .		165 6	135 8	46 7	19 10½	1565	600	74	W. Bately	Built 1759, Dept. H. Bird.
Brok^{n} up.	Hercules . .		166 6	135 11	47 2	19 9	1608	600	74	Sir T. Slade	Built 1759, Dept. A. Hayes.
	Hero . . .		166 6	135 10¾	46 8	19 9	1574	600	74	Ditto	Built 1759, Plym. J. Bucknall.
	Mars . . .		165 6	134 4⅜	46 8	19 9	1556	600	74	Ditto	Built 1759, Woolw. J. Pownall.
	Temeraire .		169 2	137 2⅝	48 0¾	20 9½	1685	600	74		Taken fr. French, 1759.
	Valiant . .		171 2¼	139 0	49 4	21 2¾	1799	600	74		Built 1759, Chath. J. Lock.
Lost.	Thunderer .		166 6	136 0	47 2	19 9	1609	600	74		Built 1760, Woolw. J. Pownall.
	Bellona . .		168 0	138 0	46 11	19 9	1615	600	74	Ditto	Built 1760, Chath. J. Lock.
	Dragon . .		168 0	137 11⅞	46 11	19 9	1614	600	74	Ditto	Built 1760, Dept. A. Hayes.
	Superb . .		168 0	137 11¼	46 10½	19 9	1612	600	74	Ditto	Built ditto, ditto, ditto.
	Torbay, re. fr. 80.		164 0	132 5	47 3	18 10	1572	600	74		Built 1760, Wool. J. Haywood.
Sunk.	Cornwall . .		168 3½	137 0¼	47 4⅓	19 9½	1634	600	74		Built 1761, Dept. Wells & Co.
	Arrogant . .		168 3	138 0⅜	47 4	19 9	1644	600	74	Ditto	Built 1761, Har. Barnard & Co.
Lost.	Courageux .		172 3	140 1⅜	48 0¾	20 10½	1721	650	74		Tak. fr. Fr. 1761, by Bellona.
Sold.	Infanta . .		171 6	137 4	51 3	22 5	1918	650	74		Ta. fr. Sp. 1762, at the Havanna.
Destroy^{d}	Terrible . .		168 8	138 3	47 3⅓	19 9	1644	600	74		Built 1762, Har. Barnard & Co.
Brok^{n} up.	Moro . . .		175 3	134 6	49 7½	20 5½	1880	650	74		Ta. fr. Sp. at the Havanna.
Ditto.	Acquilon . .		175 5	134 6⅞	49 7½	20 5¼	1880	650	74		Ditto.
Ditto.	Reyna . . .		175 0	141 8½	48 7	22 1	1849	650	74		Ditto.
Ditto.	Soverano . .		175 0	148 4⅜	49 7	21 0	1875	650	74		Ditto.
	Kent . . .		168 0	137 10⅛	47 11½	19 9	1617	600	74	Ditto	Built 1762, Dept. A. Hayes.
	Tyger . . .		169 3	136 4	51 0	21 8	1886	600	74		Taken fr. Sp. 1762.
Lost.	Ramillies . .		168 6	138 2	46 11⅛	19 9	1619	600	74		Built 1763, Chat. E. Allen.
Ditto.	Albion . . .		168 0	139 0	47 5	18 10	1662	600	74		Built 1763, Dept. A. Hayes.
	Defence . .		168 0	138 0	46 9	19 9	1602	600	74	Ditto	Built 1763, Plym. J. Pownall.
	Robust . .		168 8½	138 3	47 6	19 9¼	1624	600	74	Ditto	Built 1764, Har. Barnard & Co.
	Russell . .		168 6	138 11½	47 5¾	19 9	1642	600	74	Ditto	Built 1764, River, T. Weft.
	Triumph . .		171 3	138 8	49 9	21 3	1825	600	74		Built 1764, Wool. J. Harris
	Invincible . .		168 6	137 3¾	47 3	19 9	1631	600	74	Ditto	Built 1765, River, Wells & Co.
Brok^{n} up.	Prince of Wales		168 7	138 2	46 11	19 9⅓	1623	600	74	Ditto	Built 1765, Milford, Bird & Co.
	Suffolk . .		168 1½	138 9	46 9⅝	20 2½	1616	600	74	W. Bately	Built 1765, River, J. Randall.
	Canada . .		170 0	133 1	46 9	20 6	1605	600	74	Sir T. Slade	Built 1766, Wool. J. Harris.
	Magnificent .		168 6	140 0	46 10	19 9	1612	600	74	Ditto	Built 1766, Dept. A. Hayes.
	Monarch . .		168 5	138 2¾	46 10	19 9	1612	600	74	W. Bately	Ditto, ditto, ditto.
Brok^{n} up.	Ajax . . .		167 10	138 5⅛	47 5	20 3	1615	600	74	Ditto	Built 1767, Ports. J. Bucknall.
	Marlborough .		168 8½	140 3⅛	46 11	19 9	1642	600	74	Sir T. Slade	Built 1767, Dept. A. Hayes.
Brok^{n} up.	Egmont . .		168 6	140 0⅛	46 11½	19 9	1643	600	74	Ditto	Built 1768, Dept. A. Hayes.
Brok^{n} up.	Elizabeth . .		168 6	137 9⅛	46 11¾	19 9	1617	600	74	Ditto.	Built 1769, Ports. T. Bucknall.
	Montague . .		169 0	138 5¼	46 11	20 0	1620	600	74	Sir J. Williams	Built 1769, Chat. J. Pownall.
	Royal Oak .		168 6	138 2	46 9	20 0	1606	600	74	Ditto	Built 1769, Plym. ditto.
	Resolution .		168 6	138 3⅜	46 10	19 9	1612	600	74	Sir T. Slade	Built 1770, Dept. A. Hayes.
	Grafton . .		168 0	139 1⅓	47 3	18 10	1652	600	74		Built 1771, ditto, ditto.
Brok^{n} up.	Conqueror .		168 6	138 2	46 9	20 0	1606	600	74	Sir J. Williams	Built 1773, Plym. J. Pownall.
	Cumberland .		168 6	138 3⅜	46 10	19 9	1674	600	74	Sir T. Slade	Built 1774, Dept. A. Hayes.
Lost.	Culloden . .	1733	170 0	140 1	47 2	19 11	1659	600	74	Ditto	Ditto, ditto, ditto.
	Hector . . .		168 7	138 1	47 0	20 0¼	1622	600	74	Sir J. Williams	Built 1774, Tha. Adams & Co.
	Vengeance .		168 10	138 5	47 0	20 0	1627	600	74	Ditto	Built 1774, River. Randal & Co.
	Bedford . .	1791	168 6	138 6	46 9	20 0	1606	600	74	Ditto	Built 1775, Wool. H. Phillips.

Rate.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
Taken.	Berwick . .		168 6	133 1⅛	47 0	19 9	1623	600	74	Sir T. Slade	Built 1775, Portsm. Ed. Hunt.
	Sultan . . .		168 6	137 11	46 11	20 0	1614	600	74	Sir J. Williams	Built ditto, Harwich.
	Alexander . .		169 0	138 3¼	46 11	20 0	1620	600	74	Ditto	Built 1778, Deptf. A. Hayes.
	Alfred . . .		169 0	138 3¼	46 11	20 0	1620	600	74	Ditto	Built ditto, Chath. N. Phillips.
	Aleide . . .		168 0	139 0	47 5	18 10	1662	600	74		Re-built 1779, Dep. A. Hayes.
	Edgar . . .		168 3	133 0	47 4	19 9	1644	600	74	Sir T. Slade	Re-built ditto, Wool. J. Jenner.
	Fortitude . .		168 6	138 6¾	47 3	18 9½	1645	600	74		Bu. 1780, River, Randall & Co.
	Warrior . . .		169 0	138 5¼	46 11	20 0	1621	600	74	Sir J. Williams	Built 1781, Portsm. White.
	Goliath . .		168 0	138 0	46 9	19 9	1604	600	74	Sir T. Slade	Built ditto, Deptford, A. Hayes.
	Ganges . . .		169 6	138 11¼	47 4	20 3	1655	600	74	Edward Hunt	Bu. 1782, River, Randall & Co.
Lost.	Irresistible .		168 0	139 1	47 0	18 10	1634	600	74		Built 1782, Harwich.
Ditto.	Bombay-Castle		168 6	138 5⅜	46 10	19 9	1612	600	74	Sir T. Slade	Built ditto, River, Perry & Co.
	Pegase . . .		178 1¼	145 3¼	47 11½	21 5	1778	600	74		Taken fr. French in 1782.
Ditto.	Le Hector . .							600	74		Taken ditto.
Sold.	San Miguel . .		176 0	160 0	49 0	21 0	1925	700	74		Taken from Spaniards 1782.
	Glorieux . .							600	74		Ditto.
	Defiance . .		169 0	138 0	47 4	19 9	1645	600	74		Bu. 1783, River, Randall & Co.
	Powerful . .		168 6	138 1	47 0¼	19 9½	1626	600	74		Built ditto, ditto, Anckey.
	Thunderer .		170 8	139 5	47 7	19 11	1699	600	74		Built ditto, ditto, Wells and Co.
	Culloden . .		169 6	138 11	47 4	20 3	1655	600	74	Edward Hunt	Built ditto, ditto, Randall & Co.
	Majestic . .		170 0	140 7½	46 9	20 6	1623	600	74		Built ditto, Blackw. Dudman.
	Victorious . .		170 0	140 1⅞	47 2	19 11	1659	600	74		Built ditto, ditto, Perry and Co.
	Venerable . .		170 8	140 11⅞	47 2	19 11	1659	600	74		Built 1784, ditto, Anckey.
	Terrible . .		170 0	140 1⅞	47 2	19 11	1659	600	74		Built ditto, River, Wells & Co.
	Tremendous .		170 0	138 11½	47 4	20 3	1656	600	74	Ditto	Built ditto, ditto, Barnard.
	Ramilies . .		170 0	140 1⅛	47 2	19 11	1669	600	74	Sir T. Slade	Built 1785, ditto, Randall & Co.
	Carnatic . .		172 3	140 5¼	47 9	20 10½	1703	600	74		Built ditto, ditto, Dudman & Co.
	Audacious .		168 0	138 0	46 9	19 9	1604	600	74	Ditto	Built ditto, ditto, Randall & Co.
	Zealous . .		168 0	138 0	46 9	19 9	1604	600	74	Ditto	Built ditto, ditto, Barnard.
	Saturn . . .		168 3	138 0	47 4	19 9	1644	600	74		Built 1786, Northam, Redmond.
	Elephant . .		168 3	138 0	47 4	19 9	1644	600	74		B. ditto, Bursledon, H. Parsons.
Lost.	Illustrious . .		168 3	138 0	47 4	19 9	1644	600	74		Bu. ditto, Bucklershard, Adams.
	Bellerophon .		168 3	138 0	47 4	19 9	1644	600	74		Built ditto, Roch. Graves & Co.
	Hannibal . .		168 6	138 3¾	46 10	19 9	1613	600	74		Built ditto, Blackw. Perry & Co.
	Theseus . .		170 0	140 1⅛	47 2	19 11	1659	600	74	Ditto	Built ditto, ditto, ditto.
	Bulwark . .		169 0	138 5¼	46 11	20 0	1620	600	74	Sir J. Williams	Built 1787, Portsm.
Ditto.	Colossus . .		172 3	140 5¼	47 9	20 9	1703	600	74		Built ditto, Gravesend, Cleverly.
	Vanguard . .		168 3	138 0	47 4	19 9	1644	600	74		Built ditto, Dept. H. Peake.
	Excellent . .		168 3	138 0	47 4	19 9	1644	600	74		Built ditto, Harwich.
	Swiftsure . .		168 6	138 0⅜	46 10	19 9	1612	600	74	Sir T. Slade	Built ditto, River, Wells & Co.
	Orion . . .		170 0	138 0	46 9	20 6	1604	600	74	W. Bately	Built 1788, River.
	Captain . . .		170 0	138 0	46 9	20 6	1604	600	74		Built ditto, ditto, Batson.
	Cæsar . . .		169 0	138 5⅛	46 11	20 0	1620	600	74	Edward Hunt	Built 1789, Plym.
	Leviathan . .		172 3	140 5¼	47 9	20 9	1703	650	74		Built ditto, N. Phillips. Chath.
	Brunswick .		176 2½	145 3	48 9	19 6	1836	600	74		Built 1790, Deptford, M. Ware.
	Minotaur . .		172 3	140 1½	48 0¾	29 10½	1721	600	74		Built 1793, Woolw.
	Mars . . .		176 0	144 3	49 0	20 0	1842	600	74	Sir J. Henslow	Built 1794, Deptf.
	Le Tigre . .		182 0	149 0	48 9	21 8	1887	540	74		Taken from the French 1795.
	Belleisle . . .		184 5	149 5⅛	48 9	21 7½	1889	690	74		Ditto.
	Centaur . .		176 0	144 3	49 0	20 0	1342	600	74	Ditto	Built 1797, Woolw. J. Tovery.
	San Ysidro . .		176 0	144 1	48 11	20 1	1836	590	74		Taken from Spaniards 1797.
	Vryheid . .		167 7	138 5	46 3	18 9	1562		72		Taken from the Dutch 1797.
	San Damaso .		175 2	143 4	48 9	21 1	1812		74		Taken from Spaniards, 1797.
	Northumberland		182 2	150 4	48 10	21 7	1907		74		Built 1798, Thames, Barnard.
	Renown . .		182 2	150 4	48 10	21 7	1907		74		Ditto Dudman.
	Superb . .		182 2	149 9	49 0	21 10	1916		74		Ditto.
	L'Achille . .		182 2	149 9	49 0	21 10	1916		74		Ditto Cleverly.
	Ajax		182 3	149 8	49 3	21 3	1931	540	74		Ditto Perry and Co.
	Kent . . .		182 3	149 8	49 3	21 3	1931	690	74		Ditto Perry and Co.
	Conqueror . .		176 0	144 3	49 0	20 9	1842		74		Building at Harwich.

Rates. 2nd.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No of Men.	No of Guns.	Surveyors.	When and where built, and Builders Names.
	Dragon		178 0	146 6	48 3	20 6	1815	590	74		Built 1798, River Thames.
	Conquerant		181 4	147 9	46 3	21 10	1681		74		Taken 1798, from the French.
	Aboukir		185 5	150 5	48 4	21 0	1869		74		Ditto.
	Hercule		180 9	149 8	48 6	21 9	1876		74		Ditto.
	Fame		175 0	144 0	47 8	20 6	1740		74		Built at Deptford.
	Donegal		182 4	149 8	48 9	21 11	1892		76		Taken from the French 1798.
	Courageux		181 1	150 9½	47 1	19 10	1772	590	74		Built 1800, Deptford.
	Plantagenet		181 0	151 3	47 0	19 9	1777	590	74		Built 1801, at Woolw.
	Scipio		182 0	150 8	49 0	20 6	1925		74		Building at Portsmouth.
	Spencer		180 10	148 7	49 3	21 10	1917		74		Built 1800, Bucklershard.
	Revenge		182 0	150 3	49 0	20 9	1919	590	74	Sir J. Henslow	Built at Chatham.
	Colossus		180 0	148 3	48 10	21 0	1881	590	74	Ditto	Ditto Deptford, 1801.
	Warspight		180 0	148 3	48 10	21 0	1881	590	74	Ditto	Ditto Chatham.
	Hero		175 0	144 2	47 6	20 0	1730	590	74		Built, Thames, Perry & Co.
	Illustrious		175 0	144 2	47 6	20 0	1730	590	74		Ditto, Randall and Co.
	Albion		175 0	144 2	47 6	20 0	1730	590	74		Ditto, Messrs. Perry and Co.
	Eagle		174 0	143 2	47 4	20 0	1706		74	Sir W. Rule	Ditto, Mr. Pitcher.
	Sceptre		174 0	143 2	47 4	20 0	1736		74	Ditto	Ditto, Mr. Dudman.
	Repulse		174 0	143 2	47 4	20 0	1706		74		Ditto, Mr. Barnard.
	Milford		181 0	149 3¾	49 0	21 0	1906		74		Built at Milford, M. Barsalier.
	Bedford		150 10½	121 6	43 7½	17 10	1230	480	70		Re-built 1740, Ports.
	Princessa		165 1	130 3	49 8	22 3	1709	650	70		Taken from Spaniards 1740.
Brok[n] up.	Monmouth		151 0	123 2	43 5	17 9	1225	480	70		Built 1742, Deptford.
	Berwick		151 0	125 9	43 9	17 9	1280	480	70		Ditto 1743, Deptf.
Re[d] 1747	Devonshire		161 2	130 4	46 0¾	19 4	1471	520	70		Built 1745, Wool. J. Holland.
fr. 80 guns	Kent		154 6	124 9	44 5	19 0	1309	480	70		Built 1746, at Deptford.
Brok[n] up.	Vanguard		160 0	130 9½	45 2	19 4	1419	520	70		Built 1748, Cowes, R. Ewer.
Sold.	Orford		160 2	131 4	45 0	19 4	1414	520	70		Built 1749, Woolw. T. Fellows.
Brok[n] up.	Lancaster reduc[d] from 80		161 0	130 10	46 1	19 4	1478	520	70		Ditto, ditto, ditto.
Ditto.	Swiftsure		160 0	131 4	45 2½	19 4	1426	520	70		Built 1750, Deptf. J. Holland.
Lost.	Northumberland		160 0	131 4	45 0	19 4¾	1414	520	70		Built 1750, Plym. B. Slade.
Ditto.	Buckingham		160 0	131 4	45 4	19 8	1436	520	70		Built 1751, Deptf. J. Holland.
Brok[n] up.	Chichester		160 0	131 6½	44 9	19 6⅛	1401	520	70	Sir J. Allen	Built 1753, Portsm. P. Lock.
	Burford		162 1	134 0	44 8½	19 8	1424	520	70	Ditto	Built 1757, Chath. J. Lock.
Brok[n] up.	Dorsetshire		162 0	134 4⅜	44 10	19 8	1436	520	70	Ditto	Built 1757, Portsm. Ed. Allen.
Ditto.	Boyne		162 0	134 6	44 8	19 4	1426	520	70	Ditto	Built 1766, Plym. J. Pownall.
	Monarca		174 4½	148 10½	49 10	20 7	1911	560	70		Taken from Spaniards, 1780.
Brok[n] up.	Diligente		176 4½	148 10½	49 10	20 7½	1966	560	70		Taken ditto.
Sold.	Princessa		170 2½	138 3	51 2½	22 1	1966	560	70		Ditto.
	Marlborough		164 0	132 5	47 2	18 10	1567	550	68		Re-built 1732, Chath.
Sold.	Grafton		160 0	131 4	45 0	19 4	1414	520	68		Built 1750.
Lost.	Conqueror		160 0	132 0	45 2	19 4	1432	520	68		Built 1758, Harwich.
Ditto.	Temple		159 11½	131 11	45 1½	19 4	1429	520	68		Ditto ditto, Hull
Ditto.	Cumberland		158 0	127 8	45 5	18 7	1401	520	66		Built 1739, Wool.
Brok[n] up.	Lancaster		161 0	130 10	46 1	19 4	1478	520	66		Built 1749, Wool.
	Ipswich		151 0	123 2	41 9	17 4	1142	470	64		Built 1730, Portsm
	Elizabeth		151 0	121 8	43 6	17 9	1224	480	64		Ditto 1737, Chath.
	Suffolk		151 0	122 1	43 5	17 9	1224	480	64		Built 1739, Woolw.
Lost 1759	Essex		151 0	121 10	43 6	17 9	1226	480	64		Ditto 1740, ditto.
Sold.	Pr.-Fredericklar.	1733	151 0	122 2	43 5	17 9	1225	480	64		Ditto 1740, Deptf. R. Stacey.
Brok[n] up.	Nassau	1741	151 0	121 9	43 6	17 9	1225	480	64		Re-b. 1740, Chath. J. Ward.
Ditto.	Royal-Oak		160 2	122 2⅜	43 5	17 9	1224	480	64		Re-built 1741, Plymouth.
Lost.	Sterling-Castle		151 0	121 9	43 6	17 9	1225	480	64		Built 1742, Chath.
	Revenge		151 0	124 6⅛	43 7	17 9	1258	500	64		Ditto 1742, Deptf. R. Stacey.
	Captain	1741	151 0	122 0	43 6½	17 9	1230	500	64		Built 1743, Woolw. J. Holland.
Brok[n] up.	Edinburgh	1741	154 0	124 9	44 0	18 11	1285	500	64		Built 1744, Chath. J. Ward.
Ditto.	Hampton-Court		154 0	124 7	44 0	18 11	1283	480	64		Re-built 1744, Deptf. J. Allen.
	Yarmouth		160 0	130 6¼	44 3	19 0	1359	500	64	Sir J. Allen	Built 1745, Dept. J. Allen.
	Intrepide		151 7	124 11½	44 0	19 4¼	1300	470	64		Taken from the French 1747.

Rates. 3d.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
Brok^{n} up.	Fougeux . .		159 11	135 0	44 2½	18 6½	1403	500	64		Taken 1747, from the French.
Sold.	Trident . .		151 6	123 7	43 9	19 8	1258	500	64		Built 1748, Chath. J. Ward.
Lost.	Somerset . .	1741	160 0	131 4	45 4	19 4	1436	520	64		Ditto.
Brok^{n} up.	Alcide . .		159 0	128 4½	44 10½	18 2¾	1375	500	64		Tak. 1755, fr. Fr. by Boscawen.
Lost.	Duc D'Aquitaine		159 5	129 11¼	44 4	19 5	1358	500	64		Taken from the French 1757.
	Bienfaissant .		153 9	129 1½	44 6	19 4½	1360	500	64		Taken 1758 at Louisburg.
Ditto.	Raisonable .		159 2	129 7	43 10½	19 6¾	1327	500	64		Taken 1758, from the French.
Brok^{n} up.	Belliqueux .		157 10½	128 0½	44 10½	19 10	1372	500	64		Ditto 1759, from the French.
	Modeste . .		158 6	129 0	44 5½	19 8	1357	500	64		Ditto.
	Essex . . .		158 1¼	129 6⅞	44 8¾	18 10	1379	500	64		Bu. 1760, River, Stanton & Co.
Brok^{n} up.	Africa . . .		158 0	129 6	44 4	18 10	1354	500	64	Sir T. Slade	Built 1761, Thames, Perry & Co.
	St. Anne . .		165 0	136 2	44 1	19 7½	1407	500	64		Taken from the French 1761.
	Belleisle . .		168 5½	138 5½	45 0½	20 7	1494	500	64		Ditto.
Burnt.	Augusta . .		159 0	130 6⅜	44 7⅞	18 10	1381	500	64	Ditto	Built 1763, River, Wells & Co.
	Exeter . .		158 5	129 7¼	44 1¼	19 3	1340	500	64	W. Bately	Bu. 1763, Med. Henniker & Co.
Sold.	Ardent . . .		160 0	131 8	44 4	19 0	1376	500	64	Sir T. Slade	Built 1764, Hull, Blaydes.
	St. Albans . .		159 3¾	130 9½	44 6½	18 9¾	1380	500	64	Ditto	B. 1764, Thames, Perry and Co.
	America . .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built 1764, Dept. A. Hayes.
	Asia . . .		158 0	129 6½	44 6	18 10	1364	500	64		Built 1764, Ports. J. Bucknall.
	Europa . .		159 0	130 9	44 4½	19 4½	1369	500	64	W. Bately	Built 1764, H. Adams.
	Prudent . .		159 0	130 10	44 4	19 4	1367	500	64	Ditto	Re-b. 1768, Woolw. W. Gray.
Lost.	Raisonable . .		160 1	131 6	44 6	19 0	1386	500	64	Sir T. Slade	Re-bu. 1768, Chath. J. Harris.
	Ruby . . .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built 1768, Wool. N. Phillips.
	Trident . .		159 0	130 9	44 4	19 4	1366	500	64	W. Bately	Re-b. 1768, Plym. J. Pownall.
Brok^{n} up.	St. Antonio .		159 6	132 2	44 6	20 0	1392	500	64		Ta. at the Havanna, fr. the Spa.
	Worcester . .		159 0	130 1¾	44 7¾	19 0	1379	500	64	Sir T. Slade	Built 1769, Ports. T. Bucknall.
Lost.	Defiance . .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built 1769, Woolw. W. Gray.
	Intrepid . .		159 6	131 0	44 5	19 0	1374	500	64	Ditto	Built 1770, at ditto, by ditto.
	Lion . . .		159 0	130 7½	44 6	19 0	1374	500	64	Sir T. Slade	Built 1770, Ports. E. Hunt.
	Monmouth .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Re-b. 1772, Plym. J. Pownall.
	Eagle . . .		159 8½	131 3	44 4	19 0	1372	500	64	Ditto	Re-built 1774, Thames.
	Nonsuch . .		159 5	130 10½	44 4⅞	19 0	1372	500	64		Built 1774, Plym. J. Pownall.
	Vigilant . .		159 6½	130 10½	44 5½	19 0	1376	500	64		Built 1774, Buck. Adams & Co.
	Sterling-Castle		159 0	130 7½	44 6	19 0½	1374	500	64	Sir T. Slade	Built 1775, Chath. I. Pownall.
Lost.	Nassau . .		160 2	131 10¾	44 5	18 10	1384	500	64		Built at Bristol.
	Magnanime r. 38		159 6	131 0	44 4	19 0	1369	500	64		Built 1780, Deptf.
	Belliqueux . .		160 0	131 6⅞	44 4¾	19 0	1379	500	64		Built ditto, River, Ankey & Co.
	Inflexible . .		159 8	131 1	44 7	18 0½	1386	500	64		Built ditto, Harwich.
	Prothee . .		164 1	140 0⅞	44 7	19 0	1480	500	64		Taken from the French, 1780.
	Prince-William		153 2½	130 3⅛	44 1	19 9½	1346	500	64		Taken from the Spaniards, 1780.
	Anson red. to 38		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Re-built 1781, at Plymouth.
	Sampson . .		159 6	131 0	44 4	19 0	1369	500	64	Ditto	Built ditto, Wool J. Jenner.
	Africa . . .		159 6	131 0	44 6	18 0	1379	500	64		Built ditto, Riv. Dudman & Co.
	Ano^{r} measurem^{t}		160 10	132 9	44 9	18 1	1415	500	64		Built 1781, Dudman and Co.
	Aganiemnon .		161 0	131 8	44 4	19 0	1376	500	64		Bu. ditto, Bucklershard, Adams.
Lost.	Repulse . .		159 6	130 11	44 7½	19 0	1387	500	64	Ditto	Built 1781, Cowes.
Ditto.	Sceptre . .		159 9	131 3	44 9	18 0	1397	500	64		Built 1781, River, Randal & Co.
	Crown . .		160 6	131 8½	44 6	19 5	1387	500	64	Edward Hunt	Built ditto, ditto, Anckey & Co.
	Ardent . . .		160 6	131 8½	44 6	19 5	1387	500	64	Ditto	Re-built 1782, Bursledon.
	Polyphemus .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built ditto, Sheern. H. Peake.
	Crown, an^{r} meas^{t}		160 5	131 5½	44 10	19 5	1405	500	64		Built 1781, Riv. Anckey & Co.
	Diadem . .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built ditto, Chath. N. Phillips.
	Scipio . . .		160 6	131 8½	44 6	19 5	1387	500	64	Edward Hunt	Built 1782, Dept. Green.
	Standard . .		159 6	131 0	44 4	19 0	1369	500	64	Sir J. Williams	Built 1782, Dept. A. Hayes.
	Caton . . .		166 0	136 4¾	44 6¼	19 4	1407	500	64		Ta. 1782, fr. Fren. by Ad. Hood.
	Jason . . .		166 4	136 8¼	44 8½	19 1	1451	500	64		Ditto, ditto, ditto.
	Polyphemus by other meas.		160 0	133 3	44 7	19 0	1409	500	64	Ditto	Built 1782, Sherness, H. Peake.
	Anson, America } other meas^{t}		160 0	132 3	44 7	19 0	1499	500	64	Sir J. Williams	Ditto.

Rate. 3d.	Ships Names.	Estalishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
	Scipio, by ditto		160 8	131 8½	44 8½	19 5	1402	500	64		Bu. 1782, Riv. Deptford, Green.
	Argonaut . .		163 0	136 0	45 4	18 1	1521	470	64		Taken 1782, from the French.
	Dictator . .		159 6	131 0	44 6	18 0	1379	500	64		Bu. 1783, River, Batson & Co.
	Stately . . .		160 0	131 8	44 4	19 0	1376	500	64		Built 1783, Northam, Redmond.
	Director . .		159 0	130 7½	44 4	18 10	1365	500	64		Built ditto, Gravesend, Cleverly.
Sold.	Solitaire . .							500	64		Ta. fr. Fr. 1783, by the Ruby.
	Indefatigable .		160 0	131 8	44 4	19 0	1376	500	64		Built 1784.
	Veteran . . .		160 6	131 8½	44 6	19 5	1387	500	64	Edward Hunt	Built 1785, Cowes.
	Ardent . .		173 3	144 0	43 1	19 8	1422	490	64		Built 1796, River.
	York . . .		174 3	144 4	43 2	19 7	1433		64		Ditto.
	Monmouth .		173 1	144 1½	43 4	19 8	1439		64		Ditto.
	Agincourt . .		172 8	143 9	43 4	19 9	1439	490	64		Ditto.
	Overyssel . .		153 6	124 8	43 0	18 1¼	1226	490	64		Taken from the Dutch 1796.
	Zeeland . .										Ditto.
	Prince-Frederick		156 9	129 4	42 11	16 3	1267	490	64		Ditto.
	Dordrecht . .		159 0	130 0	45 0	17 0	1437				Ditto.
	Lancaster . .		173 6	144 3	43 3	19 9	1430	490	64		Built 1797, Thames.
	Admir. de Vries		157 5	128 0	44 8	16 2	1360	490	64		Taken fr. Dutch, 1797.
	Camperdown . .		167 4	136 4	46 5	18 2	1559				Ditto.
	Haarlem . .		156 7	127 2	44 3	17 3	1324				Ditto.
	Wassenaar . .		159 2	131 1	42 8	20 2	1269				Ditto.
	Gelykheid . .		155 8	126 9	44 0	17 1	1305				Ditto.
	Delft . . .		157 2	129 6	42 10	16 11	1266				Ditto.
	Plymouth . .		144 7	118 0	39 0	16 5	954	400	60		Built 1722, Chath.
Red. 1748	Prince of Orange		151 0	123 2	41 6	17 4	1128	400	60		Built 1734, Dept. R. Stacey.
Red. 1748	Worcester .		144 0	116 4	41 5	16 11	1061	400	60		Built 1735, Ports.
Sold.	Jersey . . .		144 0	116 4	41 3	16 11	1069	400	60		Built 1736, Plym. P. Lock.
	Augusta . .		144 0	116 7	41 5	16 11	1068	400	60		Built 1736, Dept.
	Dragon . . .		144 0	116 7	41 6	16 11	1067	400	60		Built 1736, Wool.
	Lion . . .		144 0	116 7	41 5	17 2	1068	400	60		Built 1738, Dept.
Brok[n] up.	Rupert . . .	1733	144 0	116 7	41 6	16 11	1070	400	60		Built 1740, Sheer. J. Roswell.
Sold.	Kingston . .		144 0	116 7	41 5	16 11	1068		60		Built 1740, Plym.
	Dreadnought		144 1	118 2	41 7½	16 11	1093	400	60		Bu. 1742, Tham. Brandon&Co
Ditto.	Princess-Mary		144 0	117 1	41 5	16 11	1068	400	60		Built 1742, Portsm.
Brok[n] up.	Windsor . .	1741	157 0	133 0½	42 4½	17 10½	1201	420	60		Re-built 1743, Wool. J. Holland
Ditto.	Canterbury . .	1741	147 0	118 9	42 0	18 1	1117	400	60		Ditto 1744, Plym. T. Fellows.
Sold.	Defiance . .		147 4¼	119 5¼	42 3½	18 1¼	1136	420	60		Built 1744, Dept.
	Exeter . . .		144 0	116 7	41 6	16 11	1068	400	60		Built 1744, Plym.
Brok[n] up.	Princess-Louisa		148 0	119 2½	42 5½	18 1	1143	420	60		Built 1744, Thames.
Loft.	Sunderland .		147 0	119 9	42 0	18 1¼	1123	420	60		Built 1744, Portsm.
Sold.	Nottingham .		144 0	116 7	41 8	16 11	1077	400	60		Re-built 1745, Sheer. J. Poole.
	Eagle . . .		147 0	119 9	42 1½	18 2	1130	420	60		Built 1745, Harw.
Lost.	Tilbury . .		147 0	119 9	42 0	18 1	1124	400	60		Built 1745 Portsmouth.
Sold.	Vigilant . .		153 9	130 0	43 8	18 2½	1318	480	62		Taken fr. French in 1745.
Brok[n] up.	Anson . .		150 2	122 8½	42 10	18 5¼	1197	420	60		Built 1747, Bursledon, P. Ewer.
	St. Albans .		149 10	121 4⅛	43 3	18 6	1207	420	60		Built 1747, Dept.
Hulk.	Tiger . . .		150 9	123 3½	43 1¼	18 6	1218	420	60		Built 1747, Thames.
Brok[n] up.	Weymouth .	1749	150 0½	122 8½	42 10	18 6	1198	420	60		Built 1752, Plym. Sir T. Slade.
Ditto.	York . . .	1749	150 2	123 0½	42 10½	18 6	1203	420	60		Built 1753, ditto, J. Lock.
	Dunkirk . .		153 2	127 0	42 9½	18 9	1230	420	60	Sir J. Allen	Built 1754, Woolw. Ed. Allen.
	Ano. measurem.		153 2	127 0	42 9½	18 9	1246	420	60		
	Medway . .	1745	149 4	123 0½	42 10	18 6	1204	420	60		Built 1755, Dept. Sir T. Slade.
	Achilles . .		153 10	127 6	42 8	18 9	1234	420	60	Ditto	Built 1757, J. Barnard.
Ditto.	America . .		154 0	127 6	42 11	18 9	1248	420	60	Ditto	Bu. 1757, Tham Stanton & Co.
Ditto.	Montague . .		157 0	129 10	42 0	18 6	1218	420	60		Built 1757, Sheern. J. Harris.
Hulk.	Pembroke . .		156 0	128 7	42 3½	18 0	1222	420	60		Built 1757, Plym. J. Bucknall.
Brok[n] up.	Edgar . .		154 6	127 0	43 10	18 3	1297	420	60	Sir T. Slade	Bu. 1758, River, J. Randall
	Panther .		154 0	127 0	43 7½	18 4½	1285	420	60	Ditto	Bu. 1758, Medw. Martin & Co.
	Rippon .		155 5	128 0	42 7	18 7	1242	420	60	Sir J. Allen	Built 1758, Woolr. J. Pownall.
	Firm . .		154 8	127 0	43 7	18 7	1297	420	60	Sir T. Slade	Built 1759, River, J. Perry.

Rates. 4th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
	St. Florentine		147 9½	120 6½	41 7	17 10	1109	420	60		Taken fr. French 1759.
Ditto.	Conquestadore		155 9	128 6	43 3	19 3	1278	420	60		Ta. fr. Sp. 1762, at the Havanna
	Alkmaar		142 4	117 10	40 9	15 6	1041	420	60		Taken from the Dutch 1797.
	Tromp		143 10	117 10	40 9	15 3	1040	420	60		Ditto.
	Prince Edward		143 8¾	116 3⅝	41 8½	16 0	1075	400	60		Taken from the Dutch 1781.
	Prin. Caroline		129 1	107 5	38 10	15 3½	877	850	54		Taken 1781.
Hulk.	Rotterdam		134 4	111 4	38 6	17 2½	987	350	54		Ditto.
	Abergavenny		160 0	131 6	41 1	17 0	1182	320	54		Purchased 1795.
	Calcutta		156 11	129 8	41 3	17 2	1176	320	54		Ditto.
Lost.	Grampus		157 1	130 4	41 3	15 6	1165	320	54		Ditto.
	Hindostan		160 3	132 0	42 1	17 1	1249	320	54		Ditto.
	Malabar		161 0	132 3	42 2	17 6	1252	350	54		Ditto.
	Brakel							350			Taken from Dutch 1796.
	Madrass		175 1	144 0	43 2	17 6	1426	340	56		Purchased 1795.
	Weymouth		175 5	144 1	43 3	17 6	1434		56		Ditto.
	Coromandel		169 0	140 0	42 5	17 2	1340	320	56		Ditto.
	Glatton		168 11	133 4	42 1	17 0	1256	340	56		Ditto.
	Oxford		134 6	109 10	36 3	15 2	767	350	50		Ditto.
Sold.	Centurion		144 1	117 5	40 1½	16 5	1005	350	50	Sir J. Allen	Built 1727, Ports.
Hulk.	Deptford, b. f. 60	1733	144 0	117 7	39 0	16 5	951	350	50		Built 1732, Portsm. J. Allen.
Ditto.	Guernsey	1733	134 0	108 6	38 8	15 9	863	350	50		Built 1732, Dept. R. Slacey.
Sold.	Antelope	1733	134 3	108 8	38 7	15 9	860	350	50		Built 1740, Chat. J. Ward.
Brokn up.	Hampshire	1733	134 2	108 3	38 6½	15 9	854	350	50		Built 1741, Wool. J. Haywood
Ditto.	Sutherland		134 2	109 10½	38 8	15 9	874	350	50		Built 1741, Ipsw. J. Barnard.
Brokn up.	Leopard		134 0	109 8	38 8	15 9½	872	350	50		Built 1741, River, J. Taylor.
Ditto.	Nonsuch		133 3	107 8⅛	38 9¼	15 10	852	350	50		Built 1741, Blackwall.
	Buffalo		151 0	122 0	43 6½	17 9	1230	350	50		Built 1741, River.
	San Carlos		125 9	104 3	34 11	14 0	676	350	50		Built 1743, Woolwich.
	Antelope		150 0	123 8½	41 0	17 8	1106	350	50		Taken from the Spaniards.
	Diomede		151 0	124 7½	41 0	17 8	1114	350	50		Built at Sheerness.
	Tiger		151 0	164 7	41 0	17 8	1114	350	50		Built at Deptf.
	Chester		139 11½	113 5⅞	40 2⅜	17 2	977	350	50		Built at Portsm.
Sold.	Isis		142 3	117 3	40 2¾	17 2½	976	350	50		Built 1743, Dept.
	Portland		140 3	113 4⅛	40 2⅛	17 2½	974	350	50		Built 1743, Har.
Ditto.	Winchester	1741	140 6	114 3¾	40 3½	17 2½	987	350	50		Built 1744, River.
	Falkland		140 2¾	113 6½	40 2½	17 5¼	974	350	50		Bu. 1744, River, Edw Bird.
	Gloucester		140 8½	114 7½	40 2½	17 2¼	986	350	50		Re-b. 1744, Burfledon, P. Ewer.
	Ruby		141 5	114 6	40 3½	17 3	989	350	50		Built 1744, Thames.
Brokn up.	Salisbury	1741	140 0	113 10	19 2	17 2½	976	350	50		Built 1745, Burfledon.
Ditto.	Norwich		140 2½	114 1	40 5⅛	17 2½	993	350	50		Re-built 1745, Cowes.
	Litchfield	1745	140 2	113 9	40 2¾	17 3	979	350	50		Re-bu. 1745, River, P. Perry.
Ditto.	Bristol	1741	152 0	126 0	40 0	16 10	1021	350	50		Built 1746, at Harwich.
Ditto.	Colchester		140 4	114 0	40 2	17 2½	978	350	50		Built 1746, Wool. J. Holland.
Sold.	Severn		144 0	117 8½	41 2	17 8¾	1061	350	50		Built 1746, Southn. R. Carter.
Hulk.	Tavistock	1745	144 0	117 8½	41 2	17 8½	1061	350	50		Built 1747, Harw.
Brokn up.	Assistance		144 0	117 8½	41 2½	17 8	1063	350	50		Built 1747, Hull.
Sold.	Isis		142 3	117 3	40 2⅜	17 2	1013	350	50		Bu. ditto, Medw. Coyben & Co.
Brokn up.	Rochester		146 0	120 6	40 2	16 10	1034	350	50		Taken fr. French 1747.
Lost.	Newcastle		144 0	117 8½	41 0	17 8	1052	350	50		Built 1749, Dept. J. Holland.
	Greenwich	1745	144 6½	116 1½	41 3	17 7	1053	350	50		Built 1750, Portsm.
Brokn up.	Falmouth	1745	144 0	116 1½	41 2	17 8	1047	350	50		Built 1752, Wool.
Hulk.	Preston		143 3	115 4	41 3	17 8	1044	350	50		Built 1752, Woolw. A. Hayes.
Sold.	Arc-en-ciel						1100	350	50		Built 1757, Deptf. J. Holland.
	Chatham		147 0	122 2	40 3	17 8	1052	350	50	Sir J. Allen.	Taken fr. French, 1758.
	Romney		146 0	120 8½	40 4½	17 2	1046	350	50	Sir T. Slade	Built 1758, Portsm. Ed. Allen.
	Warwick		151 0	122 9	40 2	18 3	1053	350	50	W. Bately	Built 1762, Wool. J. Harris.
Lost.	Salisbury		146 3	120 5½	40 6¼	17 4	1051	350	50	Sir T. Slade	Built 1765, Ports. J. Bucknall.
	Another measmt		146 0	119 9	40 6	17 4	1044	350	50		Built 1769, Chat. Jos Harris.
	Bristol		146 0	119 9	40 7	17 6	1045	350	50		Built 1775, Sheerness.
	Portland		146 0	119 9	40 6	17 6	1044	350	50	Sir J. Williams	Built 1777, Sheerness, E. Hunt.

Rates.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No° of Men.	No° of Guns.	Surveyors.	When and where built, and Builders Names.
4th.											
	Centurion . .		146 0	120 2	40 5	17 8½	1044	350	50	Sir T. Slade	Re-b. 1774, Harw. Barnard & Co.
	Renown . .		146 0	119 8	40 7½	17 4½	1044	350	50	Sir J. Williams	Re-b. 1774, North. Henniker.
Brok^n up.	Another measu^t		146 0	119 8	40 7½	17 4½	1050	350	50		
	Experiment .		140 9	115 9	38 8½	16 7	923	350	50		Built 1774, River Thames.
Taken.	Bristol . .		146 0	119 9	40 7	17 6	1044	350	50		Re-built 1775, Sheerness.
	Jupiter . .		146 0	119 9	40 6	17 6	1044	350	50	Sir J. Williams	Bu. 1775, Tham. Randall & Co.
	Hannibal . .		146 0	119 9	40 6	17 6	1044	350	50	Ditto	Built 1772, Bucklershard.
	Isis		146 0	119 8¼	40 7	17 6	1050	350	50		Buillt 1779, Medway.
	Adamant . .		146 3	120 9	40 9	17 7½	1059	350	50	Sir J. Williams	Built 1780, Liverpool.
	Leander . .		146 0	119 9	40 6	17 6	1044	350	50	Ditto	Built 1781, Chatham, Phillips.
	Another measu^t		146 0	119 7¾	40 8	17 5	1052	350	50		Built ditto, ditto, ditto.
	Assistance . .		146 0	119 9	40 6	17 6	1044	350	50	Sir J. Williams	Re-built 1781, Liverpool.
	Europa . .		146 0	119 9	40 6	17 6	1044	350	50		Built 1781, Woolw.
	Cato		148 0	121 9¼	40 6	17 9	1062	350	50	Edw. Hunt	Built 1782, Gravesend.
Lost.	Grampus . .		148 0	121 9½	40 6	17 9	1062	350	50	Ditto	Built 1782, Liverpool.
Brok^n up.	Trusty . .		150 0	123 9¼	40 6	17 9	1080	350	50	Ditto	Built 1782, Bristol.
	Medusa . .		140 6	115 6	38 6	16 7	910	300	50		Re-built 1785, Plymouth.
Lost.	Leopard . .		146 0	119 9	40 6	17 6	1044	350	50	Sir J. Williams	Built 1790, Sheerness.
	Antelope . .		150 0	123 8½	41 0	17 8	1106	350	50		Building at Sheerness
	Diomede . .		151 0	124 7½	41 0	17 8	1114	350	50		Built at Deptford, 1798.
	Tiger . . .		151 0	124 7½	41 0	17 8	1114	350	50		Building at Portsm.
	Oxford . .		134 6	109 10	36 3	15 2	767	350	48		Built at Portsmouth, 1727.
Sold.	Centurion, b.f.60		144 1	117 5	40 1½	16 5	1005	350	48	Sir J. Allen	Built 1732, Portsm. J. Allen.
Hulk.	Deptford, b.for60		144 0	117 7	39 0	16 5	951	350	48		Ditto. 1732, Deptf. R. Stacey.
Ditto.	Guernsey . .	1733	134 0	108 6	38 8	15 9	863	350	48	N. B. The	Re-b. 1740, Chath. J. Ward.
Sold.	Antelope . .	1733	134 3	108 8	38 7	15 9	860	350	48	greater part of	Re-b. 1741, Wool J. Haywood.
Brok^n up.	Hampshire .	1733	134 2	108 3	38 6½	15 9	854	350	48	these ships,	Built 1741, Ipswich, J. Barnard.
Ditto.	Sutherland .	1733	134 2	109 10½	38 8	15 9	874	350	48	from the Ox-	Built 1741, Tham. J. Taylor.
Brok^n up.	Leopard . .		134 0	109 8	38 8	15 9½	872	350	48	ford to the San	Built 1741, Blackwall.
Ditto.	Nonsuch . .		133 3	107 8⅛	38 9¾	15 10	852	350	48	Carlos, inclu-	Built 1741, Thames.
	Buffalo, b. f. 60		151 0	122 0	43 6½	17 9	1230	350	48	sive, were ori-	Built 1743, Woolwich.
	Chester . .		139 11½	113 5⅞	40 2¾	17 2½	977	350	48	ginally intend-	Built 1743, at Deptford.
	Isis . . .		142 3	117 3	40 3¼	17 2½	1013	350	48	ed to carry 50	Taken from the French 1747.
Sold.	Portland . .		140 3	113 4⅛	40 2¼	17 2¼	974	350	48	guns, but af-	Built 1744, Thames.
	Winchester .		140 6	114 3¾	40 3½	17 2½	987	350	48	terwards re-	Built 1744, Tham. Edw. Bird.
Ditto.	Falkland . .		140 2¾	113 6¼	40 2¼	17 5¼	974	350	48	duced, in order	Re-b. 1744, Barsledon, P. Ewer.
	Gloucester . .	1741	140 3	114 7½	48 2½	17 2½	986	350	48	to lighten	Built 1744, Thames
	Ruby . . .		141 5	114 6	40 3½	17 3½	989	350	48	them.	Ditto 1745, Bursledon.
	Salisbury . .		140 0	113 10	40 2	17 2½	976	350	48		Built 1745, Cowes.
Brok^n up.	Norwich . .		140 2½	114 1	40 5½	17 2½	993	350	48		Re-built 1745, Tham. P. Perry.
Ditto.	Litchfield . .	1741	140 2	113 9	40 2¾	17 3	979	350	48		Built 1746, Harwich.
	Bristol . . .		152 0	126 0	40 0½	16 10	1021	350	48		Built 1746, Woolw. J. Holland.
Ditto.	Colchester .	1745	140 4	114 0	40 2	17 2½	978	350	48		Built 1746, Southam. R. Carter.
Ditto.	Severn . .	1741	144 0	117 8½	41 2	17 8½	1061	350	48		Built 1747, Harwich.
Sold.	Tavistock . .		144 0	117 8½	41 2	17 8½	1061	350	48		Built 1747, Hull.
Hulk.	Assistance . .		144 0	117 8½	41 2½	17 8½	1063	350	48		B. 1747, Medw. Hoyben and Co
Brok^n up.	San Carlos . .	1745	125 9	104 3⅝	34 11	14 0	676	350	48		Taken from the Spaniards.
5th. Rate.											
Sold.	Enterprize, r.fr50		130 0	108 0	35 0	14 4	703	250	44		Re-b. 1719, Chath. R. Rosewell.
Ditto.	Romney . .		134 0	109 8	36 0	15 2	756	280	44		Re-built 1726, Deptford.
	Eltham . . .		124 0	100 3	35 8	14 6	678	250	44		Re-built 1736, Deptford.
Ditto.	Dover . . .		124 5	101 4⅜	35 10¼	14 5½	689	250	44		Built 1740, Thames.
Brok^n up.	Hastings . .		124 1½	100 3	35 9	14 6	682	250	44		Built 1740, Liverpool.
Sold.	Lynn . . .		124 1	101 8⅛	35 8	14 5	688	250	44		Built 1740, Thames.
Ditto,	Gosport . .	1733	124 0	101 9⅛	35 8⅜	14 7	691	250	44		Ditto, ditto, ditto, J. Snellgrove
	Launceston .	1733	124 7	102 6½	35 10½	14 4½	701	250	44		Built 1741, ditto, J. Baxton.
	Kinsale . .						711	250	44		Ditto 1741.
Ditto.	Torrington .		126 0	102 6	36 1½	15 5½	701	250	44		Built 1742, Southampton.
Ditto.	Hector . . .		126 0	102 6	36 4	15 5½	720	250	44		Built 1743, Hull.

Rates.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
Given up.	Roebuck		126 0	102 6	36 0½	15 5½	708	250	44		Re-built 1743, Southampton.
Sold.	Mary galley		126 2¾	102 6	36 3	15 6½	716	250	44		Built 1744, Thames.
Sold.	Pearl		126 0	102 4¼	36 2	15 5½	712	250	44		Built 1744, Liverpool.
	Ludlow-Caſtle		126 10⅝	103 8	36 3	15 5½	725	250	44		Built 1744, Thames.
Lost.	Cheſterfield		127 5	102 8¾	36 3½	15 5	719	250	44		Built 1745, ditto.
	Looe		126 3	102 5	36 3	15 5½	716	250	44		B. 1745, Liv. made a breakwater
	South-Sea-Caſtle		126 1	102 3½	36 2	15 5½	712	250	44		B. 1745, ditto, made a ſtoreſhip.
Sold.	Prince-Edward	1741	126 6½	103 1½	36 1¼	15 10	715	250	44		Built 1745, Thames, H. Bird.
Ditto.	Pool		126 0	102 6	36 0	15 5½	706	250	44		Built 1745, Hull, H. Blaydes.
Brokⁿ up.	Angleſea	1741	126 1	102 3	36 3	15 10½	715	250	44		Built 1746, Liverp. Gerril & Co.
Sold.	Jaſon		131 3	108 4	37 6	16 0½	810	280	44		Taken from the French 1747.
Sold.	Glory		130 7	108 3	35 11½	15 7½	748	250	44		Taken 1747, from the French.
Ditto.	Expedition	1745	133 3	108 10	37 6½	16 0	816	280	44		Built 1747, Liverpool, J. Skell.
Ditto.	Prince-Henry	1745	133 3	109 0	37 7	16 0	819	280	44		Built ditto, ditto, J. Gorrill.
Ditto.	Penzance	1745	134 9	109 4	37 7½	15 10½	823	280	44		B. 1747, Chicheſtr Chitty & Co.
Recs Ship	Rainbow		133 3	108 9½	37 10¼	16 0	831	280	44		Built 1747, Thames, R. Carter.
Lost.	Humber		133 6	109 1¼	37 9½	16 0	829	250	44		Built 1748, Bursledon.
Sold.	Woolwich		133 4	108 6	37 9¾	16 0½	825	280	44		Ditto 1749, Bewley.
Sold.	Boſton		139 1	114 2	37 8½	16 0	862	280	44		Built 1749, New England.
Lost.	Phœnix		140 9	116 10¾	37 1⅜	16 0	856	280	44	Sir T. Slade	Built 1759, Thames, M. Batson
	Roebuck		140 0	116 4⅜	37 10¾	16 4	886	300	44		Built 1774, Chatham.
Taken.	Serapis		140 0	116 4	37 10¾	16 4	886	300	44		
Ditto	Romulus		140 0	115 8½	37 11	16 4	885	300	44		B. 1777, Bucklershard, H. Adams
Brokⁿ up.	Charon		140 3	116 1	38 0	16 4	891	300	44		Built 1778, Harwich.
	Acteon		140 0	115 9	37 9½	16 4	879	300	44		Built ditto, River.
	Endymion		140 0	115 7	38 1½	16 4	893	300	44		Ditto 1779, ditto.
	Ulyſſes		140 2	115 5⅝	38 0½	16 4¼	887	300	44		Built 1779, Liverpool.
Storeship.	Janus		140 0	115 9	37 9½	16 4	879	300	44		Built 1780, River.
	Aſſurance		140 4	115 11½	38 2	16 4½	898	300	44		Ditto, ditto, ditto.
	Diomede		140 0	115 9	37 9½	16 4	891	300	44		Built 1781, Briſtol.
	Dolphin		140 0	115 9	37 9½	16 4	879	300	44	Sir T. Slade	Built 1781, Chath. N. Phillips.
Burnt.	Reſiſtance		140 0	115 9	37 9½	16 4	879	300	44		Built 1781, River.
	Argo		140 0	115 9	37 9½	16 4	879	300	44		Re-built 1781, River.
	PrincesCaroline		129 1	107 5	38 10	15 6	862	300	44		Taken from the Dutch 1781.
Storeship.	Mediator		140 0	115 9	37 9½	16 4	879	300	44		B. 1782, Southamptⁿ Redmond.
	Serapis		140 0	115 9	37 9½	16 4	879	300	44	Sir T. Slade	Built 1783, Briſtol.
	Gladiator		140 0	115 9	37 9½	16 4	879	300	44		B. 1783, Bucklershard, H. Adams
	Regulus		140 0	115 9	37 9½	16 4	879	300	44		Built 1783.
	Experiment		140 0	115 9	37 9½	16 4	879	300	44	Sir T. Slade	Built 1784, East Cowes.
Lost.	Guardian		140 0	115 9	37 9½	16 4	879	300	44		Built 1784, Limehouse, Batson.
	Adventure		140 0	115 2½	38 3	16 10	896	300	44	Edward Hunt	Built 1784, River, Ankey & Co.
	Expedition		140 0	115 2½	38 3	16 10	896	300	44	Ditto	Bu. 1784, River.
	Gorgon		140 0	115 2½	38 3	16 10	896	300	44	Ditto	Built ditto, ditto, Anckey & Co.
	Woolwich		140 0	115 2	38 3	16 10	896	300	44	Ditto	B. 1785, Bursledon, J. Luckhue
	Chicheſter		140 0	115 2½	38 3	16 10	896	300	44	Ditto	Built 1785, Itchenor.
	Dover		140 0	115 2½	38 3	16 10	895	300	44	Ditto	B. 1786, Bursledon, H. Partay.
	Severn		149 0	115 2½	38 3	16 10	896	300	44	Ditto	Rebuilt at Briſtol.
	Sheerneſs		140 0	115 2½	38 3	16 10	896	300	44	Ditto	Bu. Bucklershard, H. Adams.
	Medusa		140 6	115 6	38 6	16 7	910	300	44	Sir J. Williams	Built 1788, Plym.
	La Pomone		159 2⅜	132 4½	41 11⅜	12 4	1239	300	44		Taken from the French 1794.
	La Sybille		154 3	127 5	40 1½	12 4	1091	300	44		Ditto ditto.
	Pandour		134 3	108 11	39 3	15 4	894	300	44		Taken from the Dutch 1799.
	Lavinia		158 0	132 8	40 8	14 0	1167	300	44		Building at Milford.
Sold.	Artois		158 8	133 5⅝	40 4	13 6	1152	280	40		Taken 1780.
	Beaulieu		146 11⅜	122 4⅜	39 5⅜	14 11	1011	280	40		Built 1791, Bucklershard.
Lost.	L'Arethuse		152 0	126 10	39 8	12 4	1064	280	40		Ta. fr. Fren. 1793, at Toulon.
	LaSeine		156 9	131 4	40 6	12 4	1146	280	40		Taken 1797, from the French.
	La Loire		153 8	128 3	40 2	13 0	1100	280	40		Ditto, ditto, ditto.
	Cambrian		154 0	128 3	41 3	14 0	1160	320	40		Built 1797, Bursledon.
	Acasta		154 0	128 11	40 9	14 3	1142	320	40		Built ditto, River.

Rate. 5th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
	Endymion .		159 3	132 3	42 7	12 4	1277	320	40		Built 1797, River.
	Saldanha . . .		147 3	122 0	40 4	12 4	1065	280	40		Taken from the Dutch 1797.
	Danae . .		147 6	123 11	37 9½	11 4½	941	250	38		Taken 1759, from the French.
	La Prudente .		136 0	118 11	37 9¾	10 10	897	255	38		Taken 1779, from the French.
	Minerva . .		141 0	117 3⅜	38 10	13 9	940	280	38	Edward Hunt	Built 1780 Wool. J. Jenner.
	Fortunée . .		143 6	124 6¼	37 10	12 2½	948	280	38		Taken fr. French, 1780.
	Arethusa . .		141 0	117 0¾	38 10	13 9	938	280	38		Built 1781, Bristol.
	Latona . .		141 0	116 7	38 10	13 0	985	280	38		B. 1781, Thames, Limehouse.
	Phaeton . .		141 0	117 0⅛	38 10	13 9	938	280	38	Ditto	Built 1782, Liverpool.
	Thetis . . .		141 6	117 1¾	39 1½	13 8	954	280	38	Ditto	Built 1782, River Thames.
	Hebe . . .		150 1½	125 4½	39 11	12 10	1062	280	38		Taken 1782, from the French.
	L'Aigle . .		147 5	122 3	39 3	12 2	1002	270	38		Ditto.
	La Topaze .		144 7	120 7	37 10	12 1	916	250	38		Ditto 1793.
	Apollo, Artois, Diamond, Diana, Jason, Seahorse.		146 0	121 7⅛	39 0	13 9	984	280	38		Built 1794, River Thames.
Lost.	Artois, an[r] meas[t]		146 3	121 10	39 2	12 2	1002	270	38		Ditto.
	Apollo, ditto .		146 3	121 10	39 2	13 9	996	280	38		Built 1794.
	Diana, ditto .		146 3	121 8	39 3	13 9	998	280	38		Ditto.
	Diamond, ditto		146 0	121 6	39 3	13 9	996	280	38		Ditto.
Lost.	Jason . . .		146 3	121 9	39 3	13 9	998	280	38		Ditto.
	Anson . . .		159 6	130 11	44 5	12 3	1375	330	38		Was a 64 gun ship.
	Indefatigable .		160 1	131 11	44 5	12 3	1384	300	38		Ditto.
	Magnanime .		159 6	131 0	44 4	12 3	1370	300	38		Ditto.
	Imperieuse .		148 6	124 10	39 7	12 8	1040	280	38		Taken fr. French in 1794.
	LaRevolutionaire		157 2	131 10	40 5½	12 6	1148	290	38		Ditto ditto.
	Minerva . .		154 4	130 0	39 11	13 0	1102	280	38		Ditto 1795.
	Clyde . .		146 0	122 1	39 3½	13 9	1002	280	38		Built 1796, Chatham.
	Tamer . .		146 0	121 10	39 3½	13 9	999	280	38		Ditto.
	Virginie . .		151 4	126 8	39 10	12 8	1066	280	38		Taken from the French 1796.
	Amelia . .		151 4	126 1	39 9	12 6	1059	280	38		Ditto.
	La Perle . .		150 4	124 6	39 5	12 10	1029	280	38		Ditto 1797.
Lost.	Ethalion . .		146 1	121 7	39 2	13 9	992	280	38		Built 1797, Harwich.
	Tortue . . .		154 5	128 8	40 2	13 0	1100	280	38		Taken from the French 1797.
	Naiad . . .		147 0	122 7	39 6	13 9	1020	280	38		Built 1797, River.
	Hydra . . .		148 3	123 3	39 6	12 8	1024	280	38		Ditto.
	Boadicia . .		148 6	123 10	39 11½	12 8	1052	280	38		Built 1797, Bucklershard.
	Fishgard . .		160 0	134 2	40 8	13 3	1182	280	38		Taken 1797, from the French.
	Lively . .		154 0	129 7	39 5	13 6	1071	280	38		Built Woolwich.
	Active . . .		150 0	125 2	39 10	13 9	1058	280	38		Ditto 1799, Chatham.
	Hussar . . .		150 3	125 8	39 6	13 9	1048	280	38		Built 1799, Wool.
	Amazon . .		150 0	125 7	39 5	13 9	1038	280	38		Ditto.
	Prin.-Charlotte		150 0	126 4	39 6	12 0	990	280	38		Taken 1799, from the French.
	Leda . . .		150 2	125 4	40 1	12 9	1071	280	38		Built 1800, Chatham.
Sold.	Brilliant . .		128 4	106 2⅛	35 8	12 4	718	240	36	Sir T. Slade	Built 1757, Plym. J. Bucknall.
	Pallas . . .		128 4	106 4	35 10	12 4	728	240	36	Ditto	Bu 1757, Thames, Wells & Co.
Sold.	Melampe . .		134 6	111 6½	35 6	11 3½	747	240	36		Taken from the French 1758.
	Venus . . .		128 4½	106 3	35 9	12 4	722	240	36	Ditto	Built 1758, Liverpool, J. Skill.
	Aurora . . .		144 0	118 9	38 8½	15 2	946	250	36		Taken fr. French 1758.
	Caroline, Phebe, Dryad, and Doris. . .		142 6	118 10½	38 0	13 5	913	270	36		Built 1795, in the River.
	Oiseau . .		146 3	126 9⅜	34 1	9 10¾	783	260	36		Ta. by the Apollo, 1779, fr Fr.
	La Prudente .		136 0	118 11	37 9¾	10 10	897	240	36		Taken 1780, from the French.
	Santa Margarita		145 6	123 6	38 10⅝	11 8½	992	260	36		Taken from Spainiards 1780.
	Flora . . .		137 0	113 1	38 0	13 3	868	240	36	Sir J. Williams	Re-built 1780, Dept. A. Hayes.
	Santa Ammonica		145 0⅛	122 0⅞	38 8	11 10	956	260	36		Taken fr. the Spaniards, 1780.
	Monsieur . .		139 2¼	115 3⅜	36 6½	17 5	818	240	36		Taken from the French, 1780.
	Belle Poule .		140 0½	113 7⅛	37 10	11 11	902	240	36		Ditto.
	La Nymphe .		141 5½	124 4½	38 3¼	11 9	937	240	30		Ditto.

Rates. 5th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N of Men.	N of Guns.	Surveyors.	When and where built, and Builders Names.
	Unicorn		137 0	131 1	38 0	13 3	869	240	36		Built at Burfledon.
	Perseverance		137 0	113 3½	38 0	13 5	871	240	36	Edw. Hunt	Bu. 1781; Tham. Randall&Co,
	Santa Leocadia		144 10	119 8	38 8	11 7¼	952	240	30		Taken from the Spaniards 1781.
Brokn up.	Confederate		159 7½	133 5¾	36 9	12 1	959	260	36		Taken 1781, fr. the Americans.
	Mars		131 9	108 10	34 10	11 10	703	260	36		Taken from the Dutch 1781.
	Thalia		137 1	113 3¾	38 3	13 3	881	250	36	Ditto	B. 1782, Bursledon, H. Parsons.
	La Aigle		150 1½	125 4½	39 11	12 9	1062	240	36		Taken 1782; from the French.
	South Carolina							260	36		Ditto, ditto, from America.
	Concorde		142 11	118 10	37 6	11 7	889	236	36		Taken from France in 1783.
	Inconstant		137 9	114 2	38 3½	13 5	890	240	36	Ditto	Built 1783, River.
	Leda		137 4½	113 7⅝	38 2½	13 5	881	240	36	Ditto	Built 1783, River, Randall&Co.
	Phœnix		137 1	113 2⅜	38 3¼	13 5	884	240	36	Ditto	B. 1783, Bursledon, H. Parsons.
	Crescent		137 0	113 1	38 0	13 3	869	240	36	Ditto	Built 1784, ditto, Cockhune.
	Romulus		137 0	113 1	38 0	13 3	869	270	36	Sir J. Williams	Built 1784, River.
	Melampus		141 3	117 0⅛	38 10	13 9	939	240	36	Edward Hunt	Built 1786, Bristol.
	Re-union		144 0	118 4⅜	38 10½	12 1	951	255	36		Taken from the French, 1793.
	L'Oiseau		145 7¼	120 8⅝	37 8½	11 11¼	910	255	36		Ditto.
	Modeste		143 7	118 3	38 8	12 1	940	270	36		Ditto.
	Emerald, Amazn		143 0	119 6	38 2	13 6	926	270	36		Bu. 1793, River.
	La Gloire		141 2	116 8	37 7	11 11	877	250	36		Taken from the French, 1795.
	La Prevoyante		143 0	121 10	35 2	13 4	803	260	36		Ditto.
	Thulin							260	36		Taken from Dutch 1796.
	Trent, Tweed.		143 0	119 6	38 2	13 6	926	260	36		Built 1796, Woolwich.
Lost.	Hamadryad							260	36		Taken from Spaniards, 1797.
	Mahonisa							260	36		Ditto.
	Syrius		148 10	124 0	39 10	13 3	1049	260	36		Built 1797, River.
	Nereide		139 11	118 11	37 7	11 7	892	250	36		Taken 1797, from the French.
	Penelope		150 0	125 4	39 8	13 0	1051	260	36		Built 1798, Bursledon.
	Immortalite		145 2	123 10	39 2	11 5	1010	260	36		Taken 1798, from the French.
	Sensible		146 3	118 11	38 8	11 10	946	260	36		Ditto.
	Decade		143 8	119 1	38 0	11 8	915	250	36		Ditto.
	Ambuscade		143 0	120 0	37 8	11 6	906	250	36		Ditto.
	Amethyst		150 0	125 6	39 7	13 0	1046	260	36		Built 1799, Deptford.
	Apollo		145 0	122 4	38 4	13 3	956	250	36		Bu. 1799, River.
	Alceste		145 0	121 8	39 0	11 6	932	240	36		Tak. 1799, from the French.
	Aigle		146 0	122 1	38 6	13 0	963	260	36		Built 1800, Bursledon.
	Jason		150 2	125 5	39 9	13 1	1053	250	36		Built 1800, Bursledon.
	Ethalion		152 0	129 2	38 0	13 0	992	250	36		Built 1802, Woolw.
	Desirée		148 10	124 8	39 1	11 6	1015	260	36		Taken from the French, 1800.
	Florentina		146 8	119 6	37 8	10 6	900	260	36		Taken from Spaniards, 1800.
	Carnain		147 2	119 9	37 9	11 0	908	260	36		Ditto.
	Blanche		145 0	121 9	38 2	13 3	944	260	36		Built 1800, Thames.
	Fortunée		142 8	119 0	38 1	13 5	921	260	36		Ditto.
	Resistance		146 0	122 1	38 6	13 0	963	260	36		Built 1801, Bursledon.
Reduced.	Sapphire, r. fr. 44		124 3	100 6⅓	35 9⅗	11 6	680	240	34	J. Ackworth	Bu. 1740, Tham: R. Carter.
Sold.	Ambuscade		132 6	107 5½	36 0	11 0	740	260	34		Taken 1746, from the French.
	St. Fiorenzo		148 8	124 4	39 6	13 3	1032	250	34		Ditto 1793.
	Pique		144 1	119 5	37 9	11 8	906	270	34		Ditto 1795.
	Surprize		126 10	103 6	31 8	10 0	579	240	34		Ditto 1796.
Lost.	Tribune		143 7	119 1	38 0	11 6	916	190	34		Ditto.
	Santa Dorothea		146 9	118 4	39 0	12 0	958	250	34		Ditto 1798, from the Spaniards.
Sold.	Adventure	1733	124 3	100 3	35 10	11 6	683	220	32		Built 1741, Hull, H. Blades.
Ditto.	Diana		124 6	103 11⅛	34 11	12 0	668	220	32	Sir T. Slade	Built 1757; Tham. Batson.
Burnt.	Juno		127 10	107 0½	34 3	11 10	667	220	32	Ditto	Built 1757, Tham. Alexander.
	Southampton		124 4	103 1	35 0	12 1	671	220	32	Ditto	Built 1757, Tham. R. Inwood.
	Vestal		124 4	102 1	34 10	12 0	650	220	32	Ditto	B. 1757, Harw. Barnard & Co.
	Alarm		125 0	103 4	35 0	12 0	689	220	32	Ditto	Built 1758, ditto; ditto.
Hulk.	Crescent		130 5	107 6½	35 9	11 2	731	220	32		Taken 1758, from the French.
	Eolus		125 5½	103 6⅝	35 9	12 0	704	220	32	Ditto	B. 1758, Thames, John West.
	Stag		125 2½	103 8½	35 9½	12 0	706	220	32	Ditto	B. 1758, Thames, Stanton & Co.

Rates. 5th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
	Thames . .		127 0	104 8½	34 4	11 9	656	220	32	W. Bately	Bu. 1758, Beaulieu, H. Adams.
Brok^n up.	Arethusa . .		132 1	110 10⅝	34 5½	10 8	700	220	32		Taken 1759, from France.
Taken.	Minerva, retaken		124 4	102 2¼	34 11½	12 0	664	220	32	Sir T. Slade	Built 1759, Thames, J. Quallet.
	Niger . . .		125 0½	103 4	35 2	12 0	679	220	32	Ditto	Built 1759, Sheerness, J. Harris.
Lost.	Repulse . .		122 7	104 1	34 11½	10 10½	676	220	32		Taken 1759, from the French.
	Richmond .		127 1½	107 1⅛	34 1¼	11 10	664	220	32	W. Bately	Built 1759, Thames, J. Baxton.
	Tweed . . .		128 4½	107 9	33 11½	10 4	660	220	32		Built 1759, Hull, H. Blaydes
Lost.	Blonde . . .		133 0	109 0¼	34 10	10 7	703	220	32		Taken from the French 1760.
Burnt.	Quebec . .		125 0	103 3	35 4	12 0	685	220	32	Sir T. Slade	Bu. 1760, Harw. Barnard & Co.
Sunk.	Flora . . .		131 7	110 1¼	34 6½	12 0	698	220	32		Taken 1761, from the French.
	Lowestoffe .		130 6	108 1½	35 3¼	12 6	717	220	32		Built 1761, Tham. T. West.
Taken.	Montreal . .		125 0⅛	103 4	35 2⅝	12 0	681	220	32	Sir T. Slade	Built 1761, Sheerness, J. Harris.
	Boston . .		127 5	107 8	34 4½	12 0½	676	220	32	W. Bately	Built 1762, Thames, R. Inwood.
	Boulogne . .		133 8	111 10⅝	33 3	13 4	657	220	32		Taken from the French 1762.
	Brune . . .		131 2	108 11¼	34 7	10 8	694	220	32		Ditto 1762.
Brok^n up.	Emerald . .		125 0	103 4½	35 2½	12 0	681	220	32	Sir T. Slade	Built 1762, Hull, Blaydes & Co.
Sunk.	Lark . . .		127 2	108 0⅛	34 5	12 9½	680	220	32	Ditto	Built 1762, Thames. H. Bird.
	Pearl . . .		125 0¾	103 4⅓	35 3	12 0	683	220	32	Ditto	Built 1762, Chatham, J. Lock.
	Glory . . .		125 0	103 4	35 2	11 0½	679	220	32	Ditto	Built 1763, Hull, J. Hodgson.
Sold.	Jason . . .		127 4	106 10½	34 10	12 0½	689	220	32		Bu. 1763, Tham. Batson & Co.
Brok^n up.	Apollo . .		125 0	103 4	35 2	12 0½	679	220	32		Built 1763, Hull.
	Winchelsea .		125 0	103 4	35 2	11 9½	679	220	32	Ditto	Built 1764, Sheern. J. Williams.
	Aurora . .		125 0	103 4	35 2	12 0	679	220	32	Ditto	Built 1765, Chath. Ed. Allen.
Lost.	Amazon . . .		126 4	104 6	35 2	12 2½	687	220	32	Sir J. Williams	Built 1773, River, Wells & Co
Brok^n up.	Ambuscade . .		126 3	104 1	35 1¼	12 2	684	220	32	Ditto	Bu. 1773, River, Adams & Co.
Taken.	Thetis . . .		126 1	104 0½	35 2	12 2	684	220	32		Built 1773, Bucklershard.
Lost.	Orpheus . .		130 0	108 2½	35 1	12 6	708	220	32		Built 1773, Harwich.
	Diamond . .		130 6	108 5	35 1	12 6	710	220	32	Sir T. Slade	Built 1774, Hull.
	Iris . . .		137 1	116 6	34 8¼	10 11	730	220	32		Taken 1777, from America.
Sold.	Convert . .		127 9	106 2⅛	35 4½	13 9¼	705	220	32		Taken 1778, from France.
Sold.	Licorne . .		127 1	106 7½	34 7⅞	10 6¼	679	220	32		Ditto.
	Cerberus . .		126 3½	104 2	35 7	12 2	701	220	32	Edw. Hunt	Re-b. 1779, River, Randall & Co.
	Cleopatra . .		126 5	104 6¼	35 2½	12 1¾	689	220	32	Sir J. Williams	Built 1779, Bristol.
	Alemene . .		131 0	111 2	35 8	11 6	731	220	32		Taken 1779, from the French.
Sold.	Danae . . .		129 3	107 2	34 9	10 6½	689	220	32		Ditto.
Ditto.	Active . . .		126 0	103 9⅛	35 7	12 2	697	220	32	Edward Hunt	Built 1780, Redmond. Woolw.
	Dædalus . .		125 5¾	103 1	38 8	11 0	702	220	32	Ditto	Built 1780, Liverpool.
	Fox		126 2¾	104 1	35 5¾	12 12	697	220	32	Ditto	Ditto 1780, Bursledon, Parsons.
	Iphigenia . .		126 2	104 3	35 0½	12 2	681	220	32	Sir J. Williams	Built 1780, Mistleythorn.
	Orpheus . .		126 4	104 5⅛	35 2½	12 2	688	220	32	Ditto	Built 1780, River.
	Proselyte . .		134 9¾	114 9	33 6½	10 9	687	220	32		Purchased 1780.
	Clinton . .		134 0	113 0	35 0	13 9	786	220	32		Taken from the French, 1780.
	Raleigh . .		131 5	110 7½	34 5	11 0	697	220	32		Ditto, ditto, from America.
	Juno . . .		126 6½	104 7	35 2¼	12 1½	689	220	32	Ditto	Built 1780, Thames, Batson.
	Providence .		126 6½	104 10¾	33 8	10 5	632	220	32		Taken 1780, from America.
Sold.	Andromache .		126 0	104 0	35 0	12 2	677	220	32	Ditto	Built 1781, River.
	Quebec . .		126 3	104 2	35 6½	12 1½	690	220	32	Edward Hunt.	B. 1781, Bursledon, H. Parsons.
	Success . .		126 0	103 10⅛	35 2	12 2	683	220	32	Ditto	Built 1781, Liverpool.
	Astrea . . .		126 0	103 9⅝	35 4	12 2	689	220	32	Ditto	Built 1782, Cowes.
	Amphion . .		126 1	104 3	35 0	12 2	679	220	32	Sir J. Williams	Built 1782, Chath.
Blown up	Ceres . . .		126 0	103 9⅝	35 4	12 2	689	220	32	Edward Hunt	Built 1782, Liverpool.
	Hermione . .		129 0	106 10½	35 5½	12 8	714	220	32	Ditto	Built 1782, Bristol.
	Syren . . .		126 0	103 10	35 3¾	12 2	679	220	32	Sir J. Williams	Built 1782, Mistleythorn.
	Aimable . .		133 5	109 4	36 8	11 0	782	220	32		Taken 1782, from the French.
	Andromeda .		129 0	107 0	35 4	12 8	711	220	32	Edward Hunt	Built 1783, Liverpool.
	Druid . . .		129 0	107 0	35 4	12 8	711	220	32	Ditto	Built 1783, Bristol.
	Iris		126 4½	104 3⅛	35 3½	12 2	688	220	32	Sir J. Williams	Built 1783, River.
	Penelope . .		129 4	107 6	35 6	12 7	720	220	32	Edward Hunt	Built 1783, Liverpool.
Brok^n up.	Heroine . .		130 11½	107 10½	36 0¼	13 3	779	220	32		Built 1783, Bucklershard.
	Solebay . .		126 0	104 0	35 0	12 2	678	220	32	Sir J. Williams	Built 1783, Mistleythorn.

Rates. 5th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns.	Surveyors.	When and where built, and Builders Names.
	Greyhound		126 0	104 0	35 0	12 2	678	220	32	Sir J. Williams	Built 1783, Mistleythorn.
	Terpsichore		126 0	104 0	35 0	12 2	678	220	32	Ditto	Built 1783, Mistleythorn.
	Blonde		126 0	104 0	35 0	12 2	678	220	32	Ditto	Ditto 1783, Mistleythorn.
	Mermaid		126 0	103 $9\frac{5}{8}$	35 4	12 2	689	220	32	Edward Hunt	Built 1784, Sheern. J. Pollard.
	Blanche		129 0	107 0	35 4	12 2	710	220	32	Sir J. Williams	B. 1784, Bursled. T. Cockhune.
	Meleager		126 0	104 0	35 0	12 2	678	220	32	Ditto	Built 1785, Frinsbury, Graves.
	Aquilon		129 0	107 0	35 4	12 7	710	220	32	Edward Hunt	Built 1786, River.
	Castor		126 0	104 0	35 0	12 2	678	220	32	Sir J. Williams	Built 1786, Harwich.
	Alcmene		135 0	112 $4\frac{1}{4}$	36 0	12 6	796	260	32		Ditto 1794, ditto, Graham.
	Cerberus		135 0	112 $4\frac{1}{4}$	36 0	12 6	796	260	32		B. 1794, Bucklershard, Adams.
	Galatea		135 0	112 $4\frac{1}{4}$	36 0	12 6	796	260	32		Built 1794, Bursledon, Parsons.
	Lively		135 0	112 $4\frac{1}{4}$	36 0	12 6	796	260	32		Built 1794, Northam.
	Maidstone		135 0	112 $4\frac{1}{4}$	36 0	12 6	796	240	32		Built 1795, at Deptford.
	Proselyte		133 1	110 8	35 8	12 0	742	200	32		Taken fr. Dutch, 1796.
	Janus		133 1	110 7	35 8	12 0	740	200	32		Taken from the Dutch 1796.
	Shannon		135 0	112 $4\frac{1}{2}$	36 6	12 6	796	240	32		Built 1796, Dept.
	Unité		142 5	118 5	37 8	11 0	893	250	32		Taken 1796, from the French.
	Triton		142 0	123 0	36 2	11 10	856	250	32		Bu. 1796, River.
	Erus							120	32		Taken from the Dutch 1796.
	Wilhelmina		133 0	109 1	37 9	12 4	827	215	32		Taken from the Dutch 1796.
	Amphion		144 0	121 7	37 7	12 6	914	250	32		Built 1798, Mistleythorn.
	Santa Teresa		143 10	120 7	38 6	11 0	952	250	32		Taken from Spaniards 1798.
	Latine		143 3	118 6	38 10	12 $1\frac{1}{2}$	950	240	32		Taken from the French 1791.
	Pique		146 7	123 1	39 7	11 10	1028	270	32		Ditto, ditto, ditto, 1800.
	Narcissus		142 0	118 5	37 6	12 6	886	260	32	Sir J. Henflow	Built 1801, Deptf. E. Tippet.
	Eolus		144 0	121 7	37 6	12 6	910	260	32	Sir W. Rule	Built Thames, 1801.
	Medusa		144 0	121 7	37 7	12 6	910	260	32	Ditto	Ditto 1801, Northfleet, Pitcher.
	Tartar		142 2	118 5	37 6	12 6	886	260	32	Sir J. Henslow	Ditto 1801, Frinsbury, Brindley.
Sold.	Renown		126 8	103 7	34 $10\frac{1}{2}$	11 8	669	220	30		Taken 1747, from the French.
Ditto.	Looe		124 3	100 3	35 9	14 6	681	220	30		Bought 1759.
	Dromedary								30		Ditto 1777.
Lost.	L'Espion		147 10	122 8	38 $10\frac{1}{2}$			986	215	30	Taken from the French 1794.
	Stag		135 0	124 $8\frac{1}{4}$	36 0	12 6	776	215	32	Sir J. Henflow	Built 1794, Chatham.
	Pallas		135 0	124 $8\frac{1}{4}$	36 0	12 6	776	215	32	Ditto	Built 1794, Woolwich.
	Unicorn		135 0	124 $8\frac{1}{4}$	36 0	12 6	776	215	32	Ditto	Built 1794, Chatham.
Taken.	Unicorn, sin. ret.		117 10	96 $5\frac{1}{2}$	32 8	10 2	581	200	28		Built 1748, Plymouth, B. Slade.
Lost.	Lyme		117 10	96 $4\frac{1}{2}$	33 10	9 10	587	200	28		Built 1748, Dept.
Ditto.	Tartar		117 10	96 11	33 9	10 3	587	200	28	Sir T. Slade	Built 1756, River, Randall&Co.
Ditto.	Lowestoffe		118 3	97 $7\frac{1}{8}$	33 10	10 4	594	200	28		Built 1756, River.
Taken.	Coventry		118 4	97 $0\frac{1}{2}$	34 $0\frac{2}{3}$	10 6	599	200	28		Bu. 1757, Beaulieu, H. Adams.
	Lizard		118 8	97 $2\frac{3}{4}$	33 11	10 6	595	200	28	Sir T. Slade	Built 1757, Thames, H. Bird.
Burnt.	Acteon		118 2	97 3	33 $7\frac{1}{2}$	10 $5\frac{1}{4}$	585	200	28		Built 1757, Chatham.
Taken.	Fox, since lost							200	28		
	Trent		118 5	97 5	33 8	10 6	587	200	28		Built 1757, Wool.
Sold.	Boreas		118 5	97 3	33 8	10 6	587	200	28	Sir T. Slade	Built 1757, Wool. J. Pownall.
	Hussar		118 3	97 $2\frac{5}{8}$	33 8	10 6	586	200	28		Ditto 1757, Chatham.
Brok^{n} up.	Emerald		115 4	93 $1\frac{5}{8}$	33 $11\frac{1}{2}$	9 $3\frac{3}{4}$	571	180	28		Taken 1757, from the French.
	Shannon		118 6	97 $5\frac{1}{8}$	33 8	10 6	587	200	28		Built 1757, Dept.
	Active		118 4	97 $5\frac{5}{8}$	33 $10\frac{1}{2}$	10 6	594	200	28	Sir T. Slade	B. 1758, Tham. Stanton & Co.
Sold.	Aquilon		118 7	98 $3\frac{1}{4}$	33 $10\frac{1}{2}$	10 6	599	200	28	Ditto	Built 1758, River, R. Inwood.
	Argo		118 $5\frac{3}{4}$	98 1	33 $11\frac{1}{2}$	10 6	601	200	28	Ditto	Built ditto, River, J. Bird.
Burnt.	Cerberus		118 7	97 $2\frac{1}{8}$	33 $10\frac{1}{2}$	10 6	593	200	28	Ditto	Built 1758, E. Cowes, P. Fenn.
	Levant		118 5	97 $3\frac{5}{8}$	33 11	10 6	595	200	28	Ditto	Bu. 1758, Beaulieu, H. Adams.
	Liverpool		118 4	97 $7\frac{1}{4}$	33 $8\frac{1}{2}$	10 6	590	200	28	Ditto	Built ditto, Liverp. J. Gorrill.
	Maidstone		118 4	97 5	33 10	10 6	593	200	28	Ditto	Built 1758, Rochester, Seward.
	Griffin		118 4	97 7	33 $11\frac{1}{2}$	10 6	598	200	28		B. 1758, Bursledon.
	Milford		118 3	97 5	33 9	10 6	588	200	28	Sir T. Slade	B. 1759, Milford, R. Chitty.
	Vengeance		116 11	95 $10\frac{3}{4}$	32 4	11 $3\frac{1}{2}$	533	200	28	Ditto	Taken 1759, from the French.
	Valeur		115 6	95 7	32 6	10 10	524	200	28	Ditto	Ditto, ditto, ditto.
	Mermaid		124 0	102 0	33 $6\frac{1}{4}$	11 0	613	200	28		Built 1761, Hull, Blaydes & Co.

Rate.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No° of Men.	No° of Guns.	Surveyors.	When and where built, and Builders Names.
6th.											
Burnt.	Guadaloupe		118 4	97 3	33 8	10 6	586	200	28	Sir T. Slade	Built 1763, Plym. J. Pownall.
Lost.	Hussar		114 4	102 8	33 10	11 0	627	200	28	Ditto	B. 1763, Thames, R. Inwood.
Ditto.	Solebay		124 0	102 8	33 8	11 0	619	200	28		Built 1763, Newc. Aisey & Co.
	Carysfort		118 4	97 3	33 8	10 6	599	200	28	Sir T. Slade	B. 1766, Sheerness, W. Gray.
Brok^{n} up.	Triton		124 1	103 4	33 7	11 0	620	200	28	Ditto	B. 1773, Bucklersh. H. Adams.
Burnt.	Syren		120 6	99 6	33 9	11 0	603	200	28	Sir J. Williams	Built 1773, Roch. Henniker.
Lost.	Greyhound		124 0	103 4¾	33 6	11 10	617	200	28		Built 1773, Bucklershard.
	Boreas		124 6	103 11	33 8	10 11½	626	200	28	Sir T. Slade	Built 1774, Hull.
	Enterprize		120 6	99 6	33 6	11 0	594	200	28	Sir J. Williams	Built 1774, Dept. A. Hayes.
Lost.	Sybil		120 6	99 6	33 6	11 0	594	200	28		Built 1774, Bucklershard.
	Surprize		120 6	99 6	33 6	11 0	594	200	28		Built 1775, Wool.
Sold.	Delaware		117 9½	98 0¼	32 10½	9 8½	563	200	28		Taken 1777, from America.
Lost.	Proserpine		120 6	99 6	33 6	11 0	594	200	28	Ditto	Built 1777, Harwich.
Ditto.	Andromeda		120 9	99 7⅝	33 8	11 10	609	200	28		Built 1777, E. Cowes.
	Acteon		120 6	99 6	33 6	11 0	594	160	26		Woolwich.
	Proteus		125 9	103 10	34 2	13 11	676	160	26		Bought 1777.
	Aurora		120 6	199 6	33 6	11 0	594	200	28	Ditto	Built 1778, Thames.
	Medea		120 6	99 6	33 6	11 0	594	200	28	Ditto	Built 1778, Bristol.
	Resource		120 8	99 7	33 9	11 0½	603	200	28	Ditto	Bu. 1778, Tham. Randall&Co.
Brok^{n} up.	Hinchinbroke		115 0	95 0	33 3	15 0	557	200	28		Taken 1778, from America.
	Pomona		120 6	99 3	33 6	11 0	594	200	28		Built 1778, Southampton.
	Sartine		132 6	118 0	35 9	15 3	802	200	28		Taken 1778, from the French.
	Virginia		132 6	108 0	34 6	10 7	802	200	28		Ditto 1778 from the Americans.
	Brilliant		120 6¼	99 6	33 8	11 0	600	200	28	Ditto	B. 1779, Bucklershard.
	Cyclops		120 6	99 6	33 9	11 0	603	200	28	Ditto	Built 1779, River, Batson.
	Mercury		120 9¾	99 10½	33 9	11 0½	605	200	28	Ditto	Built 1779, Thames.
	Pegasus		120 0	99 6	33 6	11 0	594	200	28	Ditto	Built 1779, Deptford.
	Vestal		120 6	99 6	33 8¼	11 0½	601	200	28	Ditto	Built 1779, Thames.
	Crescent		120 8	99 5	34 0	11 0	611	200	28	Ditto	Built 1779, at Bristol.
	Laurel		120 8¼	99 6¼	33 8½	11 0	602	200	28		Built 1779, Southampton.
	Nemesis		120 7	99 6	33 7½	10 0	598	200	28	Ditto	Built 1780, Liverpool.
	Albemarle		125 3½	112 2⅜	31 7¾	13 7½	543	200	28		Purchased 1780.
Sold.	Grana		117 10	97 0	31 4⅓	9 4	528	200	28		Taken fr. the Spaniards, 1781.
	Sophie		132 6	108 0	34 6	10 7	802	200	28		Tak. 1782, from the French.
	Dido		120 6	99 6	33 6	11 0	594	200	28		Built 1783, Sandgate.
	Alligator		120 6	99 6	33 6	11 0	594	200	28		Built 1784, Sandgate.
	Hussar		120 6	99 6	33 6	11 0	594	200	28		Built 1784, ditto.
	Thisbe		120 6	99 6	33 6	11 0	494	200	28		Built 1784, Dover.
	Ariel		120 6	99 6	33 6	11 0	594	200	28		Built 1785, ditto.
	Lapwing		120 6	99 6	33 6	11 0	594	200	28		Built ditto, ditto.
	Rose		120 6	99 6	33 6	11 0	594	200	28		Built 1785, Sandgate.
	Tourturelle		120 6	99 6	33 6	11 0	594	200	28		Taken from the French, 1792.
	Undaunted		125 11	108 3	31 9	9 10	581	120	28		Ditto 1794.
	Matilda		129 2	105 7	32 10	9 10	573	180	28		Ditto 1794.
Brok^{n} up.	Perdrix								28		Ditto 1795.
	La Raison							190	28		Ditto 1795.
	Sardine								28		Ditto 1796.
	Vindictive		112 0		32 1		506		28		Taken 1796, from the Dutch.
	Jamaica		122 0	101 0	31 2	10 0	520	150	28		Taken 1796, from the French.
	Helder		122 1	102 4	34 2	10 5	635	190	28		Taken 1799, from the Dutch.
	Amaranth		112 6	92 10	31 9	10 6	498		28		Ditto ditto.
	Mercury		120 6	99 6	33 6	11 0	594	200	28		Built 1779, River Thames.
	Circe		120 6	99 6	33 6	11 0	594	200	28		Built at Sandgate.
	Hind		118 4	98 0	33 8	10 6	591	200	28		Ditto 1785.
	Laurel		118 4	98 0	33 8	10 6	591	200	28		Taken from the Dutch 1797.
	Success	1733	106 0	87 3	30 8	9 5	436	160	24		Built 1740, Hull, H. Blades.
Sold.	Experiment		106 7	87 6⅞	30 11	9 4½	445	160	24		Built 1740, Thames
	Port-Mahon		106 4	87 5⅝	30 8	9 4	437	160	24		Ditto.
	Winchelsea		105 10	87 6⅜	30 9½	9 7	441	160	24		Built 1740, Limehouse.
Sold.	Greyhound		108 1	88 3⅝	30 11½	9 10	450	160	24		Ditto, 1741, Tham. J. Snelgrove

Rates. 6th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N of Men.	N of Guns.	Surveyors.	When and where built, and Builders Names.
	Blandford		109 0	89 8¾	30 10½	10 1½	455	160	24		Bu. 1741, Thames.
Sold.	Solebay		106 0	87 0	30 6	9 5	429	160	24		Built 1742, Plym.
Ditto.	Sheerness		112 0	92 11	32 1	11 0	509	160	24		Bu. 1743, Tham. J. Buxton.
	Phœnix	1741	112 6¼	93 0¾	32 3	11 0	514	180	24		B. 1743, Thames.
Ditto.	Ludlow-Castle		126 10⅝	103 8	36 3½	15 5½	725	180	24		Built 1744, Tham. J. Taylor.
	Bridgewater	1741	112 2½	91 6	32 0½	11 0	500	160	24		Built 1744, Southampton.
	Shoreham		112 8½	91 6	32 6	11 0	514	160	24		Built 1744, Hull.
	Wager		112 6	91 7¼	32 4½	11 0¾	511	160	24		Built 1744, Tham.
	Syren		112 2½	92 2¾	32 0⅝	11 0½	504	160	24		Ditto 1745, Thames.
	Surprize		112 6	91 10	32 8	11 1	528	160	24		Bu. 1745, Bewley, Wyatt & Co.
Ditto.	Amazon	1741	115 0	92 0	31 1	10 10	471	160	24		Taken from the French 1745.
	Rye		112 7	92 0	32 3½	11 0	510	160	24		Built 1745, Southampton.
	Triton		112 7½	91 6	32 1	11 0	501	160	24		Built 1745, Bursledon.
	Nightingale		113 3	94 5	32 0	11 1	522	160	24		Built 1746, Thames, H. Bird.
	Centaur		112 0	92 6	32 0	11 0	504	160	24		Built 1746, Hull.
	Arundel		111 8½	90 10¾	32 5½	10 11¼	509	160	24		B. 1746, Chichester.
Lost.	Queenborough		113 3½	93 3⅞	32 4	11 0	519	160	24		Built 1747, River Thames.
	Garland		113 0	93 4	32 0	11 0	508	160	24		Built 1748, Sheerness, J. Poole.
	Seahorse	1741	114 0	95 4	32 0	10 0	519	160	24	J. Ackworth	B. 1748, Harw. J. Barnard.
	Sphinx		113 8	93 6	32 4¼	11 0	520	160	24		Built 1748, Tham. J. Allen.
Brok[n] up.	Fowey	1745	113 2¾	93 3	32 2	11 0½	513	160	24		Built 1749, Beaulieu.
	Hind	1745	112 10	91 10¼	32 2¾	11 0	510	160	24		Ditto, ditto, Chich. Chitty & Co.
Lost.	Mermaid	1745	114 10½	96 10	32 2	10 2½	533	160	24		Ditto 1749, Beaulieu.
Sold.	Dolphin		113 0	93 4	32 1	11 0	511	160	24		Ditto 1751, Woolw. Fellowes.
	Glasgow	1745					451				Built 1757.
Lost.	Tartar's prize		117 3	99 5¼	28 4	13 3	424	160	24		Taken fr. French in 1757.
Sold.	Echo		118 2	96 9⅜	32 4½	9 11½	539	160	24		Taken fr. French 1758.
	Erynnis		121 9½	101 6	31 10	10 6	547	160	24		Ditto.
Ditto.	Terpsichore		113 9	93 2½	30 9	14 3	468	160	24		Ditto 1760.
	Camel		113 0	96 11⅓	31 7¾	13 3½	516	160	24		Bought 1776.
	Pelican		114 7	94 9¼	32 2	10 3	521	160	24	Sir J. Williams	Built 1777, River Thames.
	Porcupine		114 7	94 9½	32 2	10 3	521	160	24	Ditto	Ditto.
Lost.	Amphitrite		114 3	94 3½	32 0	10 3½	513	160	24	Ditto	Built 1776, Dept. A. Hayes.
	Hydra		109 4½	90 7¾	30 8½	10 6½	454	160	24		Bought 1778.
	Penelope		114 7	94 9⅜	32 3	10 2¼	524	160	24	Ditto	Built 1778, Liverpool.
	Champion		114 5	94 3	32 2	10 4	519	160	24	Ditto	Built 1779, Ipswich.
Lost.	Pandora		114 7	94 9½	32 2	10 3	520	160	24	Ditto.	Built 1779, Liverpool.
	Syren		114 3	94 3½	32 0	10 3	514	160	24	Ditto,	Buillt 1779, Howden.
	Eurydice		114 3	94 3½	32 0	10 3	513	160	24	Ditto.	Built 1781, Portsm. C. White.
	Hyæna		114 4	94 3	32 3	10 3½	522	160	24	Ditto.	Built 1781, Portsmouth.
	Myrmidon		113 9	92 2	31 0	10 2	481	160	24	Ditto.	Built 1781, Dept. A. Hayes.
	Crocodile		114 3	94 3	32 2	10 4	519	160	24		Built 1781, Portsm. G. White.
	Squirrel		119 0	99 0	32 5	10 3	553	160	24		Built 1785, Liverpool.
	Daphne		117 10	97 1	33 4	11 10	574	150	24		Taken from Dutch 1797.
	Waakzaamheidt		114 6	94 9	31 7	10 6	504	150	24		Taken from the Dutch, 1798.
	Braak		116 6	95 8	34 8	10 6	613	150	24		Taken 1799, from ditto.
	Bourdelois		138 6	116 6	31 9	15 1	625	190	24		Taken 1799, from the French.
Taken.	Penguin		106 8	87 0	30 5	9 2	428	160	20		Built 1731, Dept.
	Gibraltar		107 8½	88 0	30 4	9 8	430	160	20		Built 1756, Beaulieu, H. Adams.
	Seaford		108 11½	89 4½	30 2¾	9 6	434	160	20		Built 1754, Portsm. P. Lock.
	Squirrel		107 3	89 5½	29 1	9 2	403	160	20		Built 1754, Dept. Sir T. Slade.
	Sphynx		108 0	89 7⅜	30 1	9 8	431	160	20	Sir J. Williams	Built 1755, Woolw. E. Allan.
Brok[n] up	Aldborough		107 8½	89 4½	30 5	9 8	440	160	20		Built 1755, Portsm. E. Hunt.
Lost.	Deal-Castle		107 3	88 6½	29 2	9 2	400	160	20		Built 1756, Tham. P. Perry.
Sold.	Kennington		107 8	88 0⅝	30 6½	9 8	437	160	20		Ditto. 1756, Deptf. A. Hayes.
	Flamborough		108 5½	83 11	30 4	9 8	435	160	20		Ditto 1756, Tha. Batson.
	Kennington		100 8	88 0⅝	30 6¼	9 8	437	165	20		Built 1756.
	Lively, Frigate		108 0	89 0¼	30 5¼	9 8	438	165	20		Bu. 1756, Hamble, M. Janvrin.
Lost.	Severn		108 10	88 6	30 4	9 8	433	160	20		B. 1756, Harw. Barnard and Co.
Taken.	Scarborough		107 8	83 6	30 4	9 8	433	160	20		Built 1756, Hull, W. Blaydes.

Rates. 6th.	Ships Names.	Establishment, when.	Length of		Breadth.	Depth.	Tons.	N of		Surveyors.	When and where built, and Builders Names.
			on Deck.	Keel.				Men.	Guns. C. S.		
Lost.	Biddeford . .		105 0	85 7	29 9	9 2	403	160	20		Built 1756, Deptford.
Burnt.	Glasgow . .		109 4	91 2½	30 6	9 7½	451	160	20		Built 1757, Hull, Reed.
Sunk.	Rose . . .		108 11½	90 10½	30 6	9 7	449	160	20		Built 1757, Hull, H. Blaydes
	Ariadne . .		108 0	89 8	30 0	9 8	429	160	20	Sir J. Williams	Built 1776, Chat. J. Pownall.
	Camilla . .		108 1⅝	89 10¾	30 1	9 8	433	160	20		Ditto.
	Ariel . . .		108 0	89 5	30 3	9 7½	435	160	20		Built 1777, Tham.
	Vestal . . .		108 0	89 8	30 0	9 8	429	160	20		Built at Plymouth.
Taken.	Unicorn, sin. re-t.		108 0	89 4	30 2½	9 10	433	160	20	Sir J. Williams	Built 1778, River.
	Daphne . .		108 0	89 8	30 0	9 8	429	160	20	Ditto	Built 1780, Wool. N. Phillips.
	Galatea . .		108 0	89 8	30 0	9 8	429	160	20	Ditto	Built 1780, Dept. A. Hayes.
	Perseus . .		108 1	89 6½	30 1¾	9 8	432	160	20	Ditto	Built 1780, Thames.
	Charlestown .		114 3	94 3½	32 0	10 3	514	160	20		Taken 1780, from Americans.
	Providence .		114 3	94 3½	32 0	10 3	514	160	20		Ditto.
	Narcissus . .		108 0	89 8	30 0	8 8	429	160	20	Sir J. Williams	Built 1781, Plymouth.
	Eustatia . .		104 0	90 3½	27 6	10 3	514	160	20		Taken from the Dutch, 1781.
	Bellisarius . .		164 0	91 3½	27 6	10 3	514	160	20		Taken 1781, from Americans.
	Rover . . .		98 0	90 0	24 0	8 3	316	160	20		Ditto.
	La Prompte .		118 9	99 3¾	31 1½	9 5½	509	165	20		Taken 1793, from the French.
	La Babet . .		119 3	99 5½	31 1	9 4½	511	107	20		Taken from the French 1794.
	Jean Bart . .		107 0	88 6	30 0	8 7	424	150	20		Taken 1795, from the French.
Sold.	L'Etna . . .		119 4	98 2	32 10	14 9	564	150	20		Taken 1796, from the French.
	Constance .		121 8	103 5	31 1	9 5	582	170	20		Ditto 1797, ditto.
	Coureur . .		110 11	89 4	27 4	13 6	355	130	20		Ditto 1798, ditto.
	Volage . .		118 10	99 5	31 5	8 4	523	150	20		Ditto.
	Arab . . .		109 11	88 10	32 8	14 0	505	150	20		Ditto.
	Danae . . .		119 2	99 7½	30 11½	8 11	508	150	20		Ditto.
	Determiné . .		124 5	103 5	31 6	15 4	545	140	20		Ditto 1799, ditto.
	Poulette . .		120 8	100 5	31 0	13 4	513	150	20		Ditto.
	Heureux . .		127 8	102 9	33 1	16 2	598	150	20		Ditto.
	Gailand . .		124 5	100 5	31 6	14 1	530	130	20		Ditto 1800, ditto.
	Merlin . . .		100 2¾	83 7⅞	26 2¾	12 0	304	130	18	Sir T. Slade	Bu. 1757, River, Randall & Co.
Lost.	Beaver . . .		94 11½	76 5¼	28 7¾	11 1	338	120	18	12	Bought 1757.
	Cygnet . . .		110 11	90 9½	28 3¼	9 0	385	130	18		Taken 1779, from the French.
	Pomona . .		108 0	91 8	27 4	12 6	364	130	18		Purchased 1761.
	Harpy . . .		102 9	85 0	28 6	11 0	367	125	18		Ditto 1776.
	Raven . . .		108 0	91 8	27 4	12 6	361	130	18		Built 1776, Wool. N. Phillips.
	Ceres . . .		108 6	90 11¼	27 4	12 5	361	130	18		Built 1777, Wool.
	North-American							125	18		Bought 1778.
	Minerva . .		96 9	78 6	30 6	10 0	388	138	18	20	Built 1779, Mahon.
	Surprize . .							125	18		Built 1779.
	Merlin . . .		101 0	85 5¾	28 0	12 6	310	125	18		Built 1780, Dover.
	Zebra . . .		98 0	80 0	27 5½	13 4	320	125	18		Edward Hunt Built ditto, Gravesend, Cleverly.
	Mentor . .							125	18		Bought 1780.
	Termagant .		110 5	90 6¾	28 0	8 7	378	125	18		Ditto in her frame.
	Duc de Chartres		109 2	86 5¾	30 5½	11 11	426	125	18		Taken 1781.
	Orestes . .		90 4	81 6⅝	30 4	12 0	309	125	18		Taken 1781, from the Dutch.
	Pylades . .		90 4	81 6⅝	30 4	12 0	309	125	18		Ditto.
	Du[s] of Cumberl[d]							125	18		Bought 1781.
	Aglae . .		94 11	75 9½	27 6½	14 4	306	125	18		Taken 1782, from the French.
	Weazle . .		94 6½	76 4¾	27 6½	12 0	308	125	16		Bought 1745.
	Favourite . .		96 4	79 10	27 2	8 6½	313	125	16	Sir T. Slade	B. 1740, Sheer. Sparrow & Co.
	Tamar . . .		96 4	78 9	27 4	8 3	313	125	16	Ditto	Bu. 1758, John Snook, Saltash.
	Gramont . .		98 1		27 6½	8 8	325	125	16	14	Taken fr. French, 1758.
	Nautilus . .		98 0	80 7⅞	27 2	12 8	316	125	16		Built 1762, Hull, J. Hodgson.
	Brisk . . .		101 4	83 4	27 7	12 10	337	125	16		Edward Hunt Built 1774, Sandgate
	Atalanta . .		96 7	78 10	26 9	12 10	300	125	16		Sir J. Williams Built 1775, Portsm. G. White.
	Shark . . .		96 3	78 4	27 5	9 0	313	125	16		Bought 1776.
	Squid . . .		96 9	73 5⅝	27 0½	12 2	285	100	16		Ditto.
	Fly		89 3	79 10	27 0	8 6	309	125	16		Built 1779, Dept.
	Ostrich . .		91 0		26 0	11 7	280	120	16		Bought 1777.

Rates. 6th.	Ships Names.	Establishment, when	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Porpoise			86 0	29 7⅝	11 4¾	402	125	16			Bought 1777.
	Lynx		96 0	78 7½	28 0	11 11	324	100	16			Bu. 1777, Tha. Randall & Co.
	Dispatch		96 7	78 10	26 9	12 10	300	125	16			Built 1777, Deptford.
	Fairy		90 7	79 10	26 9	12 10	300	125	15		Sir J. Williams	Built 1778, Sheerness.
	Shark		96 11½	79 2½	27 0	12 9¼	304	125	16		Ditto	Built 1779, Hull, Randall & Co.
	Tobago							125	16			Taken 1779, from Americans.
Brok^{n} up.	Fury		97 0	78 10	26 9	12 10	300	125	16		Ditto	Built 1779, Leith.
	Rover		90 0	76 5	22 8	9 0	166	125	16			Taken ditto, from Americans.
	Porcupine			54 0		11 0	160	100	16	16		Bought 1780.
	Albacore		96 9	80 0	27 4	12 7	319	125	16			Taken 1781, from Americans.
	Ariel		98 1	80 8	27 4	13 4	319	125	16		Edward Hunt	Built 1781, Liverpool.
	Racehorse		101 7	83 3½	28 3¾	13 9	354	125	16			Bought 1781, Liv. in her frame.
	Duc d'Estisac		94 7½	79 0¼	24 0	11 1½	243	125	16			Taken 1781, from the French.
	Inspector		97 2½	80 5⅛	26 11½	13 3½	311	125	16			Built 1782, Wivenhoe.
	Wasp		78 8	56 11⅝	26 2	10 1	208	125	16			Bought 1782, Folkstone.
	Echo		101 6½	83 7½	27 9	12 10	342	125	16		Edward Hunt	Built 1782, Liverpool.
	Bulldog		98 1	80 1¼	27 3	13 4	317	125	16		Ditto	Built 1782, Dover.
	Calypso		101 6	83 6	27 9	12 10½	342	125	16		Ditto	Built 1783.
	Ratler		101 2	93 1⅛	27 9½	12 9	341	125	16		Ditto	Built 1783, Sandgate.
	Scorpion		101 4	83 4½	27 7	12 10	337	125	16		Ditto	Built 1783, Shoreham.
	Nautilus		100 9⅛	84 3⅝	27 9¾	12 9½	346	125	16		Ditto	Built 1784, Itchenor.
	Peregrine		90 0	73 7½	24 2	10 10½	229	110	14	14		Bought 1733.
	Otter		88 6	73 9⅛	25 1	6 6	247	110	14	14		Built 1742, Thames.
	Ferret		88 4½	75 2¼	25 3½	6 9½	255	125	14	14		Bought 1743.
	Fortune		91 3	74 9	26 2	12 0	272	125	14	14	J. Ackworth	Bu. 1744. Harw. Barnard & Co.
	Vulture		91 3	73 10⅞	26 0¾	12 0¼	267	125	14	14		Bu. 1744, Tham.
	Jamaica		91 5	75 0¾	26 1¼	12 0	273	125	14	14	Sir J. Allen	Built 1744, Dept. J. Allen.
	Tryal		91 6	74 11¼	26 1¼	12 0¾	272	125	14	14	Ditto	Ditto.
	Grampus		91 4½	74 4	26 2	12 0	271	125	14	14		Built 1745, Hull.
	Dispatch		91 0	74 9	26 0	12 0	269	125	14	14	Ditto	Bu. 1745, Shoreh. Stow & Co.
	Albany		91 1	74 6	26 0½	12 0	269	125	14	14		Built 1745, Gosport.
	Hornet		91 0½	73 9	26 4¼	12 2	272	125	14	14	J. Ackworth	Built 1745, Chichester.
	Badger		91 6½	74 7	26 3½	12 2½	274	125	14	14		Bu. 1745, Hamble.
	Hound		91 4	74 9	26 0	12 0	267	125	14	14	Ditto	Built 1745, Sheern. Stow & Co.
	Swan		91 0	76 7	26 2½	11 11½	280	125	14	14		Built 1745, Chester.
	Raven		91 0	74 9¾	26 2½	6 10	272	125	14	14		Built 1745, Hull.
	Swallow		91 10½	75 7½	26 3¼	6 10½	278	125	14	14	Ditto	Built 1745, Thames, H. Bird.
	Saltash		91 0	74 6½	26 1	12 1¼	270	125	14	14		Built 1746, River Thames.
	Scorpion		91 2	74 11½	26 4	12 0	276	125	14	14		Built 1746, Bewley.
	Porcupine		94 4½	76 3½	27 9⅝	12 0¼	314	125	14	14		Bought 1746.
	Escort		86 0	69 5½	24 3¼	9 1	220	110	14			Taken 1757, from the French.
	Antigua		71 6	53 0	23 7½	10 6	157	110	14	18		Bought 1757.
	Barbadoes		80 0	52 10	21 6		100	100	14	14		Bought 1757.
	Ferret		95 6	79 4	26 8	12 4	300	125	14	12	Sir T. Slade	Bu. 1760, Tham. Stanton & Co.
	Senegal		97 0	80 8¾	26 1	12 5	292	125	14	12	W. Bately	B. 1760, Thames, H. Bird.
	Beaver		96 7	79 10¼	25 11¼	12 6	285	125	14	12		Built 1761, Thames, R. Inwood.
	Epreuve		92 9½		25 9	13 5½	261	125	14			Taken 1761, from the French.
	Martin		96 11	80 1	26 0	12 6	289	125	14	12		Built 1761, Thames, J. Randall.
	Pheasant		106 2		24 7½	10 7	291	125	14			Taken from the French 1761.
Sold.	Sardoine		94 4½	78 9½	24 8½	10 1½	255	110	14	10		Ditto.
	Swift		91 6	74 3⅛	26 2	13 3¼	271	125	14	12	Sir T. Slade	Built 1763, Tham. H. Bird.
Brok^{n} up.	Vulture		91 4	73 7	26 2½	13 4½	269	125	14	12	Ditto	Ditto 1763, Northam, Davis.
	Otter		95 0	78 0	27 0	12 6	302	125	14	14	Ditto	Built 1768, Deptf. H. Hayes.
	Swan		96 5	78 10	26 9	12 9	300	125	14	12	Ditto	Built 1768, Plym, J. Pownall.
	Swallow		95 0	78 0	27 0	13 1	302	125	14	12		Ditto 1769, Deptf. H. Hayes.
Sunk.	Kingfisher		96 7	78 10	26 9	12 10	300	125	14	12	Sir J. Williams	Built 1770, Chath. Jos. Tomes.
	Resolution		110 8	93 6	30 5	13 1	461	110	14			Bought 1771.
	Raven		93 5	76 9	27 1	11 9	300	120	14	14		Ditto.
	Serpent		98 0	80 1½	27 2	13 5	314	125	14			Built 1771, Sandgate.
	Falcon		95 0	78 0	27 0	13 0	302	125	14	12		Built 1775, Portsmouth.

Rate.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
6th.												
	Spy		96 9½	79 3½	26 11¾	12 11¾	306	125	14			Built 1775, Portsmouth.
	Pegasus		96 7	78 10	26 9	12 10	300	125	14		Sir J. Williams	Built 1776, Thames.
	Grasshopper		94 0	88 5	26 8	11 0	276	100	14			Bought 1776.
	Fly		96 7	78 10	26 9	12 10	300	11[illegible]	14			B. 1776, Sheerness, G. White
	Discovery		91 5		27 5	11 5	299	70	14			Bought 1776.
	Cygnet		96 7	78 8¾	26 10	12 10	301	125	14	14	Ditto	Built 1776, Portsm. E. Hunt.
Lost.	Hornet		96 9	79 3	26 11	12 10	305	125	14	14		Built 1776, River Thames.
	Vulture		96 9¼	79 2	26 10	12 11	301	125	14	14	Ditto	Ditto.
	Cormorant		96 9	79 3	27 0	12 10	307	12[illegible]	14	14	Ditto	Built 1776, Ipswich.
	Albany							126	14			Bought 1776.
	Hound		96 10	79 3¼	26 10½	12 10	305	125	14	14	Ditto	Built 1776, Thames.
	Zebra		97 0	79 6	26 11	12 10	306	125	14			Ditto 1777, Ipswich.
Taken.	Snake								14		Sir J. Williams	Bought 1777.
	Cameleon		96 9	79 3	27 0	12 10	307	125	14	14	Ditto	Built 1777, Thames, Randall.
	Swift		96 7	79 0	26 10	12 10	308	125	14		Ditto	Built 1777, Ports. N. Phillips.
	Cupid		92 1	74 9¾	27 0	12 2	290	110	14			Bought 1777.
	Beaver's prize		88 0	73 0	26 6	13 0	264	110	14			Ditto 1777.
Sold.	Rattlesnake		69 4	52 0	25 10	10 9	186	70	14			Built 1777, Folkstone.
	Avenger		97 10	79 4½	28 4½	12 11	339	120	14			Bought 1778.
	Kite		77 5½	55 11	27 1	10 6	218	70	14			Ditto 1778.
	Delight		96 9	79 3	27 0	12 10	307	125	14	14	Ditto	Built 1778, River, Limehouse.
	Savage		96 7½	78 10	26 10	12 10	302	125	14	14	Ditto	Built 1778. Ipswich.
	Otter							125	14			Taken 1778, from Americans.
	Greenwich								14			Ditto 1778, from Americans.
	Fortune		96 7	78 10	26 9	12 10	300	125	14			Built 1778, Wool.
	Swift							125	14			Taken 1779, from Americans.
	Nymph		96 7	78 10	26 9	12 10	300	110	14		Ditto	Built 1779, Chatham.
	Fortune		70 0		24 0	8 6	120	45	14			Taken from Americans, 1779.
	Bonetta		96 7	79 3	27 0	12 10½	307	125	14	14	Sir J. Williams	Built 1779, Thames.
	Thorn		96 7	79 3	26 11	12 10	30[illegible]	125	14		Ditto	Built 1779, Mistleythorn.
Sold.	Mar. de Seignelly		97 2	76 10¾	26 3	14 1	282	110	14			Taken 1780, from the French.
	Pacahunta		91 0	82 10½	25 4	10 10	242	120	14	12		Bought 1780.
	Hannibal		94 6	79 8	24 8½	10 6	220	110	14	14		Ditto ditto.
Taken.	Alligator		96 7	78 10	26 9	12 10	300	120	14		Ditto	Built 1780, Liverpool.
	Beaumont								14			Taken 1780.
	Trouin		86 2	68 10½	26 2¾	12 8	252	110	14			Taken 1780, from the French.
	Albacore		96 9	80 0	27 4	12 7	319	125	14			Bought 1781.
Lost.	Swan		84 0	64 6½	28 2	11 3	272	110	14	10		Ditto 1781.
	Cormorant			74 8½	22 3½	8 10	198	90	14			Bought 1781.
	Allegiance							90	14			Taken 1781.
	Lisburne							90	14	12		Bought 1781.
Lost.	Braak							100	14			Taken 1780, from the Dutch.
Lost.	Hermes							100	14			Ditto, ditto.
	Serpent		100 0	82 9½	27 0	13 0	321	100	14			Built 1789, Plym.
	Discovery		96 0	79 0	27 3¾	12 4	337	100	14			Built 1780, Thames.
	Hound		120 0	82 9½	26 0	13 0	321	125	14			Built 1790, Deptford.
	Martin		100 0	82 9½	27 0	13 0	321	125	14			Built 1790, Wool.
	Fury		100 0	82 9½	27 0	13 0	321	125	14			Built 1790, Portsm.
	L'Espion		89 5	69 [illegible]	25 8¾	12 8	275	120	14			Taken from the French, 1790.
	Placentia		4[illegible]	[illegible]	15 0	8 4	42	100	14			Built 1790, Newfoundland.
	Cepessy		41 7	25 [illegible]	27 0	8 4	42	160	14			Built 1790, ditto.
	Patibon Jer		120 0	82 6[illegible]	27 0	13 0	321	12[illegible]	14			Ditto 1791, Chatham.
	Providence		10[illegible]	[illegible]	[illegible]	12 3	400	100	14			Built 1791, Thames.
	Arab		[illegible] 8	7[illegible] 0	[illegible] 9	11 4	31[illegible]	1[illegible]	14			Tak. 1791, from the French.
	Hawke		120 0	[illegible]	[illegible] 7	13 6	33[illegible]	1[illegible]	14			Built 1793 Deptford.
	Swift		120 0	[illegible]	[illegible] 7	13 6	[illegible]	1[illegible]	14			Ditto Portsmouth.
	Dorset		128 [illegible]	[illegible]	[illegible] 7	9 0	[illegible]	[illegible]	14			Ditto 1794, River Thames.
	Vengeance		148 4	[illegible]	[illegible] 7	9 6	[illegible]	[illegible]	14			Ditto, ditto.
	Favorite		128 4	[illegible]	29 7	9 6	[illegible]	[illegible]	14			Ditto, ditto.
	Hazard		100 4	96 [illegible]	[illegible] 7	9 6	[illegible]	[illegible]	14			Built 1785, Frinsbury.

Rates. 6th.	Ships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No of Men.	No of Guns.	Surveyors.	When and where built, and Builders Names.
	Lark		108 4	90 9⅝	29 7	9 0	423	125	14		Built 1794, Northfleet.
	Lynx		108 4	90 9⅝	29 7	9 0	423	125	14		Built 1794, Gravesend.
	Albacore		105 0	86 7¼	28 0	13 6	361	125	14		Bu. 1794, Thames.
	Alert		105 0	86 7¼	28 0	13 6	361	125	14		Ditto.
	Pylades		105 0	86 7¼	28 0	13 6	361	125	14		Ditto.
	Ranger		105 0	86 7¼	28 0	13 6	361	125	14		Ditto.
	Petterel		105 0	86 7¼	28 0	13 6	361	125	14		Ditto.
	Ratler		105 0	86 7¼	28 0	13 6	361	125	14		Ditto.
	Bravo		96 0	77 8	31 0	7 4	397	100	14		Ditto 1794, Woolw.
	L'Espiegle		91 7	74 5	26 2	11 3	271	100	14		Taken 1794, from the French.
	La Serin		92 5	88 11	26 0	11 0	320	90	14		Ditto, ditto.
	Beaver		94 3	77 16	25 6	13 4	269	120	14		Built 1795, Harwich.
	Stork		108 4	90 8	29 9	9 0	427	120	14		Built 1796, Deptford.
	Lily		92 6	72 0	22 0	12 0	200	80	14		Bought 1795.
	Zephyr		82 0	62 4	27 1	10 8	243	76	14		Built 1795, Dover.
	Albatross		96 0	73 9	30 6	12 9	365	120	14		Built Rochester, 1795.
	Dispatch		96 0	73 9	30 6	12 9	365	120	14		Built at Chath. 1795.
	Kite		96 0	73 9	30 6	12 9	365	120	14		Built 1795, Thames.
	Swallow		96 0	73 9	30 6	12 9	365	120	14		Built 1795, Thames.
	Star		96 0	73 9	30 6	12 9	365	120	14		Ditto.
	Pelican		96 0	73 9	30 6	12 9	365	120	14		Ditto.
	Raven		96 0	76 9	30 6	12 9	365	120	14		Built 1795, Thames.
	Sylph		96 0	76 9	30 6	12 9	365	120	14		Built 1795, Thames.
	Kangaroo		95 0	75 2	28 0	12 0	314	120	14		Ditto.
	Racoon		95 0	75 2	28 0	12 0	314	120	14		Ditto.
	Cameleon		95 0	75 2	28 0	12 0	314	120	14		Ditto.
	Suffisante		86 1	67 5	28 4	12 8	237	90	14		Taken from the French 1795.
	Hope								14		Taken from the Dutch 1795.
	Bermuda		80 0	59 6	23 6	11 6	170	80	14		Purchased 1795.
	La Victorieux		103 1	85 7	27 8	12 10	349	130	14		Taken fr. French 1795.
	Penguin		92 9	73 4	29 4	16 4	336	120	14		Taken from the Dutch 1795.
	Curlew		95 0	75 2	28 0	12 0	314	120	14		Built 1795, Thames.
	Seagull		05 0	75 2	28 0	12 0	314	120	14		Ditto 1795, Thames.
	Cynthia		113 2	94 5	28 7	12 0	410	120	14		Built 1796, Thames.
	Brazen		110 0	90 8	29 6	8 6	420	120	14		Built Portsmouth.
	Merlin		106 2	87 7	28 2	13 10	371	120	14		River Thames.
	Plover		110 0	90 8	29 6	8 6	420	120	14		Mistleythorn.
	Cyane		110 0	90 8	29 7	8 6	429	120	14		Built 1796, Frinsbury.
	Bittern		110 0	90 8	29 7	8 6	420	120	14		B. 1796, Bucklershard.
	Termagant		110 0	90 8	29 7	8 6	420	120	14		Built 1796, Thames.
	BonneCitoyenne		120 1	100 6	30 11	8 7	511	120	14		Taken fr. French in 1796.
	Scourge		102 9	83 5	29 0	12 10	372	120	14		Taken from the French 1796.
	Legere		116 2	94 8	30 0	9 7	453	120	14		Ditto.
	Dart		128 8		30 0	7 11	386	120	14		Built 1796, Redbridge.
	Arrow		128 8		30 0	7 11	386	120	14		Ditto.
	Musette		102 0	80 9	26 11	13 4	312	120	14		Taken 1796, from the French.
	Rambler		74 5	56 5	25 4	10 1	193	80	14		Bought 1796.
	Havick		101 10	83 5	25 8	12 9	365	120	14		Taken from Dutch 1796.
	Seagull		95 0	75 2	28 0	13 0	314	120	14		Built 1795, Tham.
	Diligence		95 0	75 2	28 0	13 0	314	120	14		Bu. 1796, Bursledon.
	Harpy		95 0	75 2	28 0	13 0	314	120	14		Built 1796, Dover.
	Hound		95 0	75 2	28 0	12 0	314	120	14		Built 1796, Sandwich.
	Mierman								14		Taken fr. Dutch, 1796.
	Amaranthe		86 1	68 8	28 2	13 3	290	80	14		Taken from the French 1796.
	Railleur		89 6	71 7	26 2	10 1	261	76	14		Ditto 1797.
	Snake		100 1	77 4	30 7	12 9	386	120	14		Built 1797, Bucklershard.
	Echo		96 1¾	75 2	29 2	12 9	341	120	14		Built 1797, Dover.
	Osprey		102 1	80 6	30 0	12 9	386	120	14		Built 1797, Northfleet.
	Gaiete		120 3	100 1	31 1	8 8	514	120	14		Taken 1797, from the French.
	Corso			72 8	24 7	11 7	234	100	14		Taken fr. the Spaniards, 1797.

Rates.	Sloops Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Espoir . . .		92 10	75 1	25 1	10 0	251	80	14			Taken 1797, from the French.
	Raillure . .		89 6	71 7	26 2	10 1	261	70	14			Ditto.
	Busy . . .		96 1	75 3	29 0	12 9	337	120	14			Built 1797, Harwich.
	Cruizer . . .		100 0	77 3	30 7	12 9	384	120	14			Built 1797, Ipswich.
	Jalouse . .		102 10	85 1	27 9	13 0	348	120	14			Taken 1797, from the French.
	Atalante . .		99 0	78 0	27 4	12 2	310	90	14			Ditto 1797, ditto.
	Eugenie . .		84 9	66 3	26 2	13 6	241	90	14			Ditto 1797, ditto.
	Mutine . .		104 6	84 10	27 10	13 0	349	120	14			Ditto.
	Pheasant . .		106 2	87 7	28 2	13 10	371	120	14			Built 1798, Shoreham.
	Victor . . .		100 1	77 4	30 7	12 9	386	120	14			Built 1798, Lynn.
	Renard . .		101 1	81 10	28 3	11 2	347	120	14			Taken 1798, from the French.
	Hermes . .		100 0	96 0	28 5	11 0	331	70	14			Bought 1798.
	Zenophon . .		100 4	97 0	28 5	11 0	334	70	14			Ditto.
	Nautilus . .		112 0	94 8	29 6	9 0	438	120	14			Milford.
	Albion . . .		102 10	99 8	29 11	13 0	366	80	14			Bought 1798.
	Ann . . .		104 2	101 0	28 6	13 9	345	80	14			Ditto.
	Selby . . .		100 0	83 1	28 3	12 7	354	80	14			Ditto.
	Epervoir . .		94 0	76 3	25 0	10 7	254	120	14			Taken from the French 1798.
	William . .		99 8	82 9	29 1	12 10	374	80	14			Bought 1798.
	Bellette . .		104 4	85 7	27 7	7 5	346	120	14			Taken 1798, from the French.
	Wolverene .							70	14			Bought 1798.
	Pandour . .		85 10	67 10	25 11	11 11	243	80	14			Taken 1798, from the French.
	Mondovi . .		81 6	63 8	25 0	10 0	211	70	14			Ditto.
	Port-Mahon .							70	14			Taken from Spaniards 1798.
	San Leon . .							70	14			Ditto.
	Les Huit Amis		103 1	85 5	27 8	13 0	348	120	14			Taken from France in 1798.
	Hunter . .		102 9	80 11	26 0	16 1	336	80	14			Purchased, 1798.
	Rover . . .		104 0	80 1	26 1	16 0	356	80	14			Ditto.
	Mercure . .		103 5	83 8	27 6	12 11	338	80	14			Taken 1798, from he French.
	Audacieux .		114 7	95 0	28 4	12 2	408	120	14			Ditto.
	La Fleche . .		92 9	74 4	26 6	11 0	279	70	14			Ditto.
	Sophie . . .		108 8	87 4	28 11	13 11	388	120	14			Ditto.
	Pylades . .		105 1	86 8	28 2	13 6	367	121	14			Built 1798, River Thames.
	Dispatch . .		90 4	71 1	25 1	11 3	238	90	14			Taken 1798, from the French;
	Buonaparte .		105 2	86 4	28 1	13 7	363	90	14			Ditto.
	Argus . . .		102 9	82 3	27 3	13 0	326	80	14			Ditto.
	Hussar . .		105 2	86 3	30 2	8 5	413	120	14			Ditto.
	Latine . . .		145 2	121 8	39 0	11 6	332	120	14			Ditto.
	Minerva . .		85 0	70 1	26 7	10 0	248	120	14			Ditto.
	Salamine . .		93 6	79 0	24 8	10 0	240	120	14			Ditto.
	Gier . . .		91 3	71 10	29 5	13 4	331	80	14			Taken 1799, from the Dutch.
	Galgo . . .		99 0	89 0	29 0	13 0	395	80	14			Taken from Spaniards, 1799
	Weazle . .		77 0	59 1	26 1	10 8	214	70	14			Bought 1799.
	Utile . . .		89 6	74 0	26 7	12 9	279	70	14			Taken 1799, from the French.
	L'Arethuse .		107 7	85 1	29 4½	13 7	390	90	14			Ditto.
	Moselle . .								14			Ditto.
	Avengeur . .								14			Ditto.
	La Guepe . .		101 6	83 5	25 11	12 2	298	100	14			Ditto 1800.
	Geronde . .		91 7	72 6	25 11	12 2	260	160	14			Ditto.
	Le Hardi . .		112 2	89 0	30 0	13 6	425	20	14			Ditto.
	Trompeuse .		100 10	80 4	29 10	13 1	380	90	14			Ditto.
	Le Vengeance		111 0	89 11	29 1	12 6	405	120	14			Ditto.
	Gannet . .		88 6	69 1	28 0	12 6	280	80	14			Bought 1800.
	Driver . . .		96 10	86 10	29 6		402	80	14			
	Dasher . . .			86 10	29 6		402	80	14			
	Lion . . .			58 6	22 6	10 7	157	22	12			Built 1753.
	Endeavour bark, sailed round the Globe . . .		97 7		23 9	11 4	368	85	12			Bought 1768.
	Penguin . .		44 0	31 0	14 6	10 7	34	50	10			Built 1772, Wool.

Rates.	Sloops Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	Nº of Men.	Nº of Guns. C.	Nº of Guns. S	Surveyors.	When and where built, and Builders Names.
	Peterel		58 9	56 0½	28 6	8 6	187	24	4	6		Bought 1777.
	Florida, S. S.		63 0	47 6	19 2	7 3	292	30	12			Ditto 1778.
	Egmont Snow		62 0	48 9½	19 7	10 4	199	30				
	Sorlings		52 1½	41 2⅞	17 0½	7 11	64	14				Ditto 1789.
	Royal-Caroline		90 1	72 2½	24 7	11 0	232	70	10			Built 1749, Dept.
	Swift		85 0	68 8¼	23 7½	9 6½	203	110	10	12		Built 1751, Thames.
	Bonetta		86 4	71 4	24 6	10 10	227	100	10	12		Built 1756 River, H. Bird.
	Stork		88 7	72 5	24 7	10 10½	232	110	10	12		Built 1756, Shoreham.
	Hunter		88 8	75 11⅜	24 3	7 0	238	110	10	12	Sir T. Slade	Built 1756, Tha. Stanton & Co.
	Spy		85 10	70 3⅛	24 5	10 10	222	110	10	12		B. 1756, Thames, R. Inwood.
	Viper		88 7½	72 11⅜	24 3	7 1	228	110	10	12		Built 1756, Thames, T. West.
	Zephyr		86 6½	70 2¼	24 5½	10 10	223	110	10	12		Built 1756, Thames, J. Quallet.
	Alderney		88 4	72 3	24 9	10 10½	235	100	10	12		Bu. 1757, John Snook, Saltash.
	Druid		87 6	72 11	23 4½	9 5	212	110	10	12		Bu. 1761, Harw. Barnard & Co.
	Hawke		88 10	72 10	24 1	10 10½	225	110	10	12		Ditto.
	Lynk		87 8¾	73 4	23 6½	9 5¾	216	110	10	12		Bu. 1761, River, Stanton & Co.
	Canceaux, A. S.		80 6	64 10	24 5½	10 10	223	100	10	12		Bought 1764.
	Diligence		88 5¾	73 0⅞	24 8	10 10	236	100	10	12		Built 1766, River, Wells & Co.
	Alert		69 2½	51 2½	25 11	10 9	183	70	10			Built 1777, Dover.
	Lynx		95 0	77 7¾	28 0	11 11	324	55	10			Bu. 1777, River.
	Racehorse		68 0	49 6	20 6	6 9	183	70	10			Bought 1777.
	Hazard		76 3	62 8	20 6	9 4	140	80	8		B. Slade	Built 1749, Deptf. J. Holland.
	Peggy		74 6	61 6½	20 9	9 6	141	80	8		Sir J. Allen	Ditto.
	Wasp		73 3	61 9	20 8	9 2	140	80	8		P. A. Lock	Built 1749, Portsm. P. Lock.
Taken.	Cruizer		75 6	62 3	20 7½	9 4	141	80	8			Built 1752, Deptf. J. Fellows.
	Fly		75 0	64 3	20 3	9 10	140	80	8			Built 1752, Portsm. P. Lock.
	Ranger		75 0	64 1	20 4½	9 10	142	80	8			Built 1752, Wool. H. Hayes.
	Speedwell		75 7	62 4	20 8½	9 4	142	80	8			Built 1752, Chat. Sir T. Slade.
Lost.	Happy		75 6	62 3	20 7½	9 4	140	80	8			Built 1754, Woolw. E. Allen.
	Wolf		75 6	62 3	20 7½	9 4	141	80	8			Built 1754, Chat. A Hayes.
	Supply, S. S.		79 4	64 11½	22 6	11 6½	175	55	18			Bought 1759.
	Dromedary		140 9	116 9	34 10	13 10	754	200	30			Bought as an armed ship 1777
	Greenwich		140 9	116 9	34 10	13 10	754	200	26			Ditto.
	Proteus		94 6	108 10	34 2	13 11	675	160	26			Ditto.
	Lioness		140 9	116 9	33 8	13 0	712	72	26			Ditto.
	Nabob		136 5	110 0	33 0	14 0	637	72	26			Ditto.
	Pacific		137 3	115 3	33 1¼	13 8	673	72	26			Ditto.
	Haerlem							50	12			Commissioned 1779 in America.
Sch.	Port-Morant		54 7¼	31 1	21 0	9 0	58	45	10			Bought 1780.
Sch.	Sandwich, A. S.							150	22			Ditto.
	Carolina											Bought 1781.
	Rhinoceros, S. S.											Ditto.
	Steady							40	10			Bought 1782.
	Robecque							281	125	18		Taken 1782.
	Bounty			69 11¾	24 4	11 4	220	45				Bought 1787.
	Trial		65 0	50 3⅞	21 5	7 2	123	45				Ditto 1790.
	Supply		97 4	84 0	29 5	16 5	388	50				Ditto 1793.
	Reliance		96 1	10 7¼	30 4	13 0	394					Ditto 1794.
	Advice							125				Ditto 1796.
	Euphrosyne											Bought.
	Buffalo, S. S.		109 2	90 6	31 0	13 2	463	30				Ditto 1797.
	Arab		60 7	45 6	18 11	8 7	86	80				Taken from French, 1797.
	Porpoise, S. S.		96 2	76 10	28 2	12 0	324	80				Bought 1798.
	Galleys.											
	Crane							30	1			Commissioned 1778.
	Cornwallis							40	5			Taken 1778; from Americans.
	Dependance							40	7			Ditto, ditto.
	Hussar							80	1			Commissioned 1778.
	Philadelphia							30	1			Ditto.
	Cornwallis							40	1			Ditto.

Rate.	Brigs Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Revenge . .											Bought 1764.
	Mar. d'Bretagny											Bought 1780.
	Vengeance .											Ditto 1793.
	Lugger.											
	Experiment .		72 6	56 0	18 6	9 0	101					Built 1793, Liverpool.
	ArmedSchooners											
	Chatham . .		93 0				92					Taken and re-taken.
	Alert . . .		75 6				88					Ditto.
	Diligent . .		97 5				89					Ditto.
	FloatingBatteries											
	Redoubt . .		111 6	81 $1\frac{1}{8}$	29 11	12 9	386	100				Bought 1793.
	Spanker . .		97 5		42 4	7 8						Built 1794.
	Prison Ships.											
	Security . .											
	Superbe . .											
	Vengeance .											
	Brigs.											
	Scorpion . .		94 4	76 $0\frac{5}{8}$	27 0	12 5	294	120	14	14		Bought 1771.
	Porcupine .								10			Ditto 1775.
	Badger . .							90	10			Ditto 1776.
	Pelican . .		85 $4\frac{3}{4}$	69 7	23 $4\frac{1}{2}$	9 4	202	45	8			Ditto 1776.
	Postillion . .							45	10			
	Alert . . .		78 7	60 8	25 0	11 0	202	50			Sir J. Williams	
	Childers . .		78 7	60 8	25 0	11 0	202	80	14	12		Built 1773, River Thames.
	Cabot . . .		74 $9\frac{1}{3}$	58 7	24 8	11 4	189	80	12			Taken 1778.
	Barbadoes .							90				Bought 1778, Leeward Islands.
	Keppel . .							75	14		Sir J. Williams	Taken 1778.
	Scourge .		80 6	60 $8\frac{3}{4}$	26 11	11 1	234	90	16			Built 1779, Dover.
	Drake . .		78 10	59 8	26 $4\frac{1}{2}$	10 9	221	80	14	12		Ditto.
	Helena . .		75 1	56 $5\frac{1}{2}$	26 9	10 8	220	80	14	14		Re-taken 1779.
	Lively . . .		78 3	58 8	25 $8\frac{1}{4}$	10 10	206	80	12			Bought 1779.
Lost.	Swallow . .		79 5	60 2	26 7	10 2	226	80	14			Built 1779, Dover.
	Fortune . .		70 0		24 0	8 $0\frac{1}{2}$	120	45	10			Bought 1779.
	Star . . .							70	10			Taken from the French, 1779.
	Victor . .											Taken 1779.
	Port-Antonio		59 6	44 10	21 0	8 6	69	70	10			Bought 1779.
	Rattlesnake .			74 $8\frac{1}{4}$	22 $3\frac{3}{4}$	8 10	198	90	12			Taken 1779.
	Trepassey . .							80	14			Built 1779.
	Zephyr . .		75 $5\frac{3}{4}$	60 6	24 1	9 3	187	80	14	12		Ditto 1779, River Thames.
	Active . .		71 0	59 $1\frac{1}{4}$	20 2	8 1	109	60	14			Bought 1779.
	Gibraltar . .		63 0	54 0	21 0	7 6	85	45	10			Taken 1779.
	Fortune . .		85 2	61 6	28 $10\frac{1}{2}$	11 10	272	80	14			Bought 1780.
	Scout . . .		82 0	59 $7\frac{1}{2}$	29 6	11 2	276	90	16			Built 1780, Folstone.
	St. Vincent .		83 0	58 9	24 0	12 0	276	80	14			Taken 1780.
	St. Fermin .		90 0	72 4	25 0	12 0	250	120	14			Ditto 1780, from the Spaniards.
	Sylph . . .		80 4	60 5	26 5	10 6	224	90	18			Bought 1780.
	Halifax . .								14			Taken ditto, from Americans.
	Placentia . .											Bought 1780.
	Prince-Edward											Ditto, ditto.
	Wasp . . .		72 8	56 $11\frac{3}{4}$	26 2	10 1	207	90	16			Built at Folkstone.
	Antigua . .							50	8			
	Hope . . .		91 6	75 6	26 6	10 $4\frac{1}{2}$	232	80	14			Bought 1780.
	Bustler . .		76 $1\frac{1}{2}$	60 9	25 5	10 0	209	70	14			Ditto ditto.
	Camelion . .			58 $7\frac{3}{8}$	29 $3\frac{1}{2}$	12 0	267	90	14			Ditto 1781.
	Loyalist . .		99 0	82 5	27 8	7 8	320	80	14			Taken 1781.

Rates	Brigs Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No of Men.	No of Guns. C.	No of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Stormont		80 0		23 7			100	14			Bought 1781.
	Experiment		90 0		26 0			110	14			Ditto.
	Vaughan		90 0		26 0			110	14			Ditto.
	Germain		88 0		26 4			110	14			Ditto.
	Swallow		78 1	58 7½	29 0	10 5	262	90	16			Ditto.
	Tickler			77 0	25 3			100	12			Ditto.
	Expedition		67 0	48 8	24 2⅗	80 0	152	50	10	12		Bought 1781.
	La Gloire		70 3	60 7½	18 10	7 10	114	40	8			Taken 1781, from the French.
	Falcon		78 11	60 8	25 0	11 12	201	90	14		Sir J. Williams	Built 1782, Sandwich.
	Speedy		78 3	59 0	25 10	10 10	208	90	14		Sir J. Williams	Built 1782, Dover.
	Otter		78 11	60 8	25 0	11 12	202	90	14			Built 1782, Sandwich.
	Flirt		78 3	58 11⅛	25 9¼	10 10	209	90	14			Built 1782, Dover.
	Lion							50	10			Bought 1782.
	Kingfisher		95 1	73 3	30 9½	7 6¼	369	100	18			Ditto.
	Trimmer		83 9	64 1	28 4⅕	10 9½	275	110	14			Ditto.
	Ferret		78 11	60 8	25 5	11 2	202	75	12			Built 1783, Sandwich.
	Weasel		78 11	60 8	25 5	11 2	202	90	12			Ditto.
	Trompeuse		91 9	73 0¾	29 7½	11 7	342					Taken 1794, from the French.
	L'Espiegle		91 7	74 5½	26 2	11 3	271					Ditto.
	Viper		95 7	78 0	26 5½	12 3	290					Ditto.
	L'Actif											Ditto.
	Diligent											Ditto 1777, from Americans.
	Le Lutin											Tak. 1793, from the French.
	Le Requin		71 2	53 11	24 0	10 3	165	60				Taken from Dutch 1795.
	Pandour		78 0	60 0	26 11	10 6	231	70				Taken from the French 1795.
	Mary		71 0	54 7	21 8	9 8	136	60				Ditto.
	Jack Tar											Taken from the French 1797.
	Anacreon		76 5	60 5	21 8	3 10	151					Ditto 1799.
	Cutters Names.											
	Swift		53 10	40 4⅝	19 7½	8 4½	83	30	10			Taken 1761, from the French.
	Lurcher		54 0	40 10½	19 4½	8 5	82	30	6			Ditto.
Sold.	Adventure		48 2	35 5	18 0¾		61	20	4	8		Bought 1763.
	Alarm		53 3	39 11	19 6½	8 3	31	30	6	10		Ditto.
Sold.	Anson		51 3	36 9	22 1	8 2	95	30	6	12		Ditto.
Sold.	Boscawen		42 5	30 9	17 2	7 6	48	24	4	8		Ditto.
Sold.	Charlotte		46 7	32 2⅛	20 4	7 10	70	28	4	10		Ditto.
Sold.	Cholmondely		57 4	44 8⅞	18 5½		79	28	4	10		Ditto.
Sold.	Endeavour		42 3	29 5⅛	18 10½	7 4	55	24	4	1		Ditto.
	Esther		50 1½	33 6¾	23 10	8 0½	101	30	6	12		Ditto.
Sold.	Fly		47 6	33 10	20 10½	8 0½	78	28	4	10		Ditto.
Sold.	Friendship		39 7½	28 11	19 10	7 6	60	24	4	6		Ditto.
Sold.	Prince-George		47 0	32 3½	19 0	8 0	62	26	4	8		Ditto.
Sold.	Goodwill		41 4	30 3	17 7	7 6	49	24	4	8		Ditto.
	Greyhound		52 2	38 7½	18 10	7 2	73	28	4	11		Ditto.
Brok up.	Grace		56 1½	40 8½	22 5½	7 9	103	30	6	12		Ditto.
Sold.	Hector		48 10	32 7	19 9½	7 10	67	26	4	12		Ditto.
Sold.	Hornet		50 1	36 7⅝	22 3¼		97	30	6	12		Ditto.
Sold.	Lord Howe		52 9	38 2½	20 2½	7 11	82	30	6	12		Ditto.
Sold.	Hunter		50 0	35 10½	19 6¾	8 0	72	28	4	10		Ditto.
Sold.	Laurel		45 8½	33 7⅞	17 3½		53	30	6	10		Ditto.
Sold.	Lyon		49 0	35 11¼	17 10¾	7 9	61	26	4	8		Ditto.
	Mecklenburgh		54 0	48 8	19 7	8 4¼	88	30	6	10		Ditto.
	Meredith		54 6	40 1⅛	19 9	8 5½	83	30	6	10		Ditto.
Sold.	Morning Star		47 6	38 3⅛	18 6		69	26	4	8		Ditto.
	Pitt		58 8	44 0	20 8	9 7½	100	30	6	12		Ditto.
	King of Prussia		50 10	37 4½	21 8½	7 10	90	30	6	18		Ditto.
Sold.	Spy		47 6½	34 10	17 9¾	7 1	58	24	4	8		Ditto.
	Swift		49 9½	35 8½	16 10½	7 11	54	24	4	8		Ditto.
	Partuffe		52 0	36 5¼	22 0	7 3	93	30	6	12		Ditto.

Rates.	Cutters Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Winchester .		46 11	32 7¼	19 11¼	7 10½	69	26	4	8		Ditto.
	Duke-William .		45 8	32 1½	19 6½	7 6¼	65	26	4	8		Ditto.
	Ferret . .		50 0	39 0	20 0	7 10	88	30	6	10	Sir T. Slade	Built 1763, Chath. E. Allen.
	Lurcher . .		50 0	39 0	20 0	7 10	88	30	6	10		Built 1763, Dept. A. Hayes.
	Sherborne . .		54 7	42 0	19 0	8 4	86	31	6	10		Built 1762, Wool. Jos. Harris.
	Folkstone . .		48 0	36 0	24 0	8 2	84	30	6	10		Built at Folkstone.
	Wells . . .		48 0	36 0	21 0	8 2	84	30	6	10		Ditto.
	Kite . . .		55 10	44 9	18 7	5 10	82	30	6	10		Built at Deptford.
Sold.	Duke of York		40 6	41 9¼	18 0	7 4	52	24	4	8		Bought 1763.
	Lapwing . .		47 9	34 10	21 1½	8 1½	82	30	6	10		Built 1764, B. Stairs, C. White.
	Quebec . .							30				Bought 1775.
	Placentia . .											Ditto.
	Hope, now Recov							50	8			Ditto.
	Rattlesnake .		69 4	52 0	25 10	10 9	185	70	12			Built 1777, Folkstone.
Lost.	Kite . . .		77 5½	55 11	27 1	10 6	218	75	12			Bought 1778.
	York . . .		65 0	52 0	22 0	10 0		50	10			Re-taken 1778.
	Expedition .		67 0	48 8	24 2½	10 0	152	50	10	12	Sir J. Williams	Built 1778, Dover.
	Flying Fish .		75 0	51 6	25 10	10 6	190	60	12	12		Bought 1778.
	Griffin . .		73 4	53 2½	25 7	10 6	186	60	10	12		Ditto.
	Nimble . .						185	60	10	12		Ditto.
	Pheasant . .		65 8½	47 8¼	24 3	9 6	149	50	12	12		Ditto.
	Rambler . .		65 7	49 0	22 6	9 6	139	50	10	12		Ditto.
	Sprightly . .		66 0	48 6	24 2	10 0	151	60	12	8		Built 1778, Dover.
	Busy . . .		75 0	51 6	25 10	10 6	190	60	12	12		Bought 1778, Folkstone.
	Pigmy . .		80 4	55 3⅞	26 1½	13 3¼	201	70	16			Ditto 1779.
	Alert . . .		78 10	60 7¼	25 3	11 6	205	80	14		Sir J. Williams	Built 1779, Dover.
	Advice . . .		56 0	38 2	21 8		95	50	8			Bought 1779.
	Lark . . .		74 4	54 5½	26 2	10 4	198	70	16	10		Ditto.
	Liberty . .		74 3	53 9	25 6¼	10 6½	187	70	14			Ditto.
	Mutine . .		79 11	59 5¾	26 1	10 1	215	70	14			Taken 1779, from the French.
	Pilote . . .		78 6	60 5⅜	26 0¼	10 2½	218	70	14			Ditto.
	Resolution .								14	10		Bought 1779.
	Repulse . .		64 3	49 3⅛	22 9		136	60	12	10		Ditto.
	Surprize . .		67 3	48 3	28 11	9 0	135	50	10			Ditto.
	Tapajeur . .							70	14	10		Taken from the French 1779.
	True-Briton .						190	60	10	12		Bought 1779.
	Ranger . .		80 4	55 3⅞	26 1½		201	70				Ditto.
	Cruiser . .		73 7	54 3	26 3	10 0	199	70	14	10		Ditto 1780.
	Hope . . .		67 9	48 2¼	24 8	10 4	156	60	12	8		Ditto.
	Speedwell . .						193	70	14	10		Ditto.
	Sultana . .		65 7	48 9	24 3	9 7	152	60	10	12		Ditto.
	Monkey . .		72 10	54 3	25 4	10 3	187	60	12	8		Ditto.
	Viper . . .							60				Ditto.
	Cockatrice .		69 4	52 0	25 7	10 9	181	60	10	12		Built 1781, Dover.
	Nimble . .			58 7	24 4		168	60	12	12		Purchased 1781.
	Cupid . .						181	60	12	12		Ditto.
	Brazen . .			44 4	22 10	9 6	122	60	10			Ditto.
	Jackall . .		72 10	54 3	25 4	10 3	187	60	10	18		Re-taken 1781.
	Pigmy . . .		69 4	54 1¼	25 7	10 9	180	60	10	12		Built 1781, Dover.
Sold.	Barracouta .		75 2	51 11	25 11½	10 6	197	60	14	12		Bought 1782.
	Dragon . .		61 2	46 4⅛	23 9¼	9 6¼	139	50	10	10		Ditto.
	Spider . . .		69 0	54 1¾	24 3	10 7	169	50	12			Ditto.
	Sea-Flower .		72 5	56 9¾	25 11	10 7	203	70	16			Ditto.
	Sparrow . . .		66 3	46 6	22 4	8 10	123	40				Ditto 1796.
	Cruelle . .											Taken 1798, from the French.
	Le Ranger .		74 7	56 0	25 7	9 5	195	50				Ditto.
	Fulminante .							40				Ditto.
	Entreprenante							40				Ditto.

Rates.	SchoonersNames	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Chaleur . .			51 6	20 8	8 0	117	30				Bought 1764.
Sold.	Kite . . .		55 10	44 9	18 7	5 9	82	30	6	10	W. Bately	Ditto 1764, Deptf. A. Hayes.
	Sultana . .		50 6	38 9 1/8	16 0 1/4	8 4	52	25	8			Bought 1768.
	Halifax . .		58 3	48 10 1/2	18 3	8 10	83	30	6	8		Ditto.
	Earl of Egmont							30				Built 1768, New York.
	Sir Edw. Hawke							33				Ditto.
	E. Northampton						48	16				Bought 1769.
	Endeavour .											Ditto 1775.
	Halifax . .											Ditto.
Brok^n up.	St. Lawrence .			50 6	26 8	8 0	114					Ditto.
	Badger . . .											Ditto.
	Racehorse .							45	10			Ditto.
	Porcupine . .											Ditto.
	Diligent . .											Ditto 1776.
	Dispatch . .											Ditto.
	Pelican . .						150	45				Bought 1777.
	Viper . .							45	10			Ditto.
	Coureur . .		68 10	52 5 3/4	23 3 1/4	9 10	138	30	6			Taken 1778.
	Sprightly . .											Bought 1779.
	Argo . . .											Bought 1780.
	Independance											Ditto.
	Kitty . . .											Ditto.
	Grenville . .		54 11	43 0	17 2 1/2	7 4	69	20	12			Bought Newfoundland.
Burnt.	Gaspee . .			49 0	19 10	7 10	102	30				Bought North America.
	St. John . .			48 0	18 8	8 4	90	30				Ditto.
	Magdalen . .			48 0	18 8	8 4	90	30				Ditto.
	Hope . . .			45 5	20 2	8 4	105	30				Ditto.
	Berbice . .		72 9	54 0	20 6	8 0	121					
	Alert . . .						88					Bought 1790.
	Chatham . .						93					Ditto 1790.
	Diligent . .											Taken from French, 1790.
	Flying-Fish .		62 7	52 0	17 0	6 0	80					Taken 1793, from the French.
	Spitfire . .		59 4	53 0	14 8	5 4	61					Ditto, ditto.
	Musquito . .		55 4	46 6	16 11	6 4	71					Ditto.
	Marie Antoinette											Taken 1794, from the French.
	Swift . . .											Ditto.
	Coureur . .											Ditto.
	Deux Amis .											Taken 1795, from the French.
	Recovery . .											Taken 1797, from the French.
	Musquito .											Taken 1799, from the French.
	Malta . . .		30 5	64 11	21 8	12 0	162					Taken from Spaniards, 1800.
	Fire Ships.											
	Grampus . .		91 4 1/2	74 4	26 2	12 0	271	45	8	3	Sir J. Allen	Built 1746, Hull.
	Lightning . .		91 0	74 9	26 1	12 1	270		8	6		Built 1746, Poole.
Sold.	Etna . . .		98 5	79 9 1/4	27 4	11 8 1/2	317	45	8	6		Bought 1756.
	Vesuvius . .		91 6	72 3 1/2	27 10	12 0	299	45	8	8		Ditto.
Sold.	Proserpine .		90 9	75 6 1/4	25 4 1/2	11 6	253		8	8		Ditto 1757.
Sold.	Salamander .		88 9	73 3	25 10	11 6	260		8	8		Ditto.
Sold.	Cormorant. .		100 8	81 3 5/8	30 7	13 6	408		8	6		Ditto.
	Racehorse .		96 7	77 1 1/4	30 8	13 4	385		8	6		Ditto.
	Roman Emperor		91 10	75 7 1/4	26 0	11 6	272		8	8		Ditto.
	Pluto . . .		96 4	78 9 5/8	27 4	8 3	313		8			Built 1758, Saltash.
	Strombolo . .		92 10	74 2 1/4	26 1	11 4	268					Bought 1767.
	Raven . . .		91 0		26 2 1/2	12 0	273		8	8		Built 1762, Hull.
	Strombolo . .		91 4 1/2		26 2	12 0	271		8	8		Ditto 1762, Hull.
	Comet . .											1767.
	Adventure .		99 3	78 9 1/4	28 4	13 0	336	35	10			Bought 1771.
	Basilisk . .		94 8	88 5	26 8 1/4	11 0	276	50	2	4		Ditto 1776.

Rates.	Fireships Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	No° of Men.	No° of Guns. C.	No° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Grasshopper .		94 0	88 0	26 8¼	11 0	276	54	2	4		Bought 1776.
	Blast . . .		89 3	73 5	27 0	12 2	285	55	2	4		Ditto.
	Lightening .		85 0	68 2⅞	27 6⅓	11 8½	274	55	8			Ditto.
	Sylph . . .		85 0	68 2⅛	27 6¼	11 8½	274	55	8			Ditto.
	Salamander .		96 3	78 4½	27 5	9 0	313	45	8	8		Ditto.
	Firebrand . .			86 0	29 7	11 4	401	50	8	8		Ditto 1777.
	Harpy . .		102 9	85 0	28 6	11 0	367	55	10			Ditto.
	Pluto . . .		86 3	69 11¼	27 2⅜	12 4	270	45	8	6		Fitted 1777, as a fireship.
	Vulcan . .		90 10	72 0⅛	27 6¾	12 3½	291	45	8	8		Bought 1777.
	Explosion . .											Originally the Swan sloop.
	Furnace . .		100 7	82 6	28 10	13 2	365	55	8	8		Bought 1778.
	Incendiary .		110 8	87 4	29 2	12 0	397	55	8	8		Ditto.
	Infernal . .		97 6	79 6¼	26 11	13 9	307	55	8	8		Ditto.
	Sulphur . .											Commissioned 1778 in America
	Volcano . .		89 0	70 10	25 7⅛	15 8	247	45	8			Commissioned 1778.
	Lucifer . .		97 10	79 4¼	28 4½	12 11	339	45				Bought 1778.
	Spitfire . .						193	70	14	14		Ditto 1780.
	Alecto . . .		108 9	90 6¼	29 7½	9 0	423	55	12			Built 1781, Dover.
	Tisiphone .		108 9	90 6¼	29 8	9 0	424		12	18		Ditto.
	Pluto . . .		108 9	90 6¼	29 8½	9 0	424	55	12			Built 1782, Sandgate.
	Incendiary .		108 9	90 6¼	29 8½	9 0	424	55	12	18		Built 1782, Dover.
	Comet . . .		108 9	90 6¼	29 0	9 0	424	55	12	18		Built 1783, Wivenhoe.
	Spitfire . .		108 9	90 6¾	29 8	9 0	424	55	12	18		Ditto 1783, Ipswich.
	Conflagration		108 9	90 6¼	29 8	9 0	424	55	12	18		Built 1783, Shoreham.
	Vulcan . .		108 9	90 6¾	29 8	9 0	424	55	12	18		Ditto.
	Megæra . .		108 9	90 6¼	29 8	9 0	424	55	12	18		Built 1783, Ipswich.
	Akers . . .		57 6	43 11	19 0	9 9	85					
	Amity . . .		67 6	54 5¼	19 2½	9 0	100					
	Catherine . .		58 6	43 1	20 4	10 5	95					
	Experiment .		62 9	50 7	17 9	9 7	85					
	Firebrand . .		60 1	46 5⅝	19 0	12 7	89					
	Friendship .		50 9	36 9¼	16 11	9 5	56					
	Heart of Oak .		51 8	37 5	16 5	9 2	54					
	Industry . .		59 6	45 2½	17 0	8 5	70					
	Lively . .		59 5¾	48 1½	17 0	8 9	74					
	Nancy . .		55 6½	43 0½	17 9	10 1	72					
	Olive Branch .		62 5½	48 5½	20 0	9 0	100					
	Satisfaction .		64 3	49 0	18 0	10 4	84					
	Bombs.											
	Furnace . .		91 6	78 11¾	26 4	11 0	273	60	14	14		Built 1740, River Thames.
	Baltimore .		89 0	73 10	25 3¾	6 0	251	60	8	12		Ditto 1742, River Thames.
	Firedrake . .		91 5½	75 4	26 6⅛	11 2¾	283	100	14	14		Ditto.
	Granado . .		91 1	74 9½	26 2	11 3	270	100	14	14		Ditto Ipswich.
Lost.	Falcon . .		91 7	74 8¾	26 1	11 11	270	60	14	14		Built 1745.
Sold.	Kingfisher .		91 6	75 1	26 3	11 11	275	60	14	14		Ditto.
Sold.	Falcon . . .		91 7	74 3¾	26 1	11 11⅜	270	60	8	12		Ditto.
	Kingfisher .		91 6	75 1	26 3	11 11½	275	60	14	14		Built 1745, Gosport.
	Pelican . .		86 10	71 7½	24 9	11 1	234	80	16	10		Bought 1757.
	Basilisk . .		91 7		28 1	12 1½	312	60	16	10		Built 1757, Deptford.
Sold.	Infernal . .		91 3	75 0⅞	27 9	12 1	307	60	8	14		Built 1757, Northam. T. West.
	Racehorse . .		96 7	77 1⅝	30 8	13 4	385	70	8	14		Bought 1757.
	Blast . . .		91 6	74 0	27 9	12 1	303	60	8	14	Sir T. Slade	Built 1759, Bird & Co. Northam.
Sold.	Carcass . .		91 8	74 2⅜	28 0	12 1	309	60	8	14	Sir T. Slade	Built 1759, Tha. Stanton & Co.
	Mortar . .		92 0	74 8⅞	28 1	12 1¼	313	60	8	14	Sir T. Slade	Built 1759, River, Wells & Co.
	Terror . . .		91 6	74 1⅜	27 8	12 1	301	60	8	14	Sir T. Slade	Bu. 1759, Harw. Barnard & Co.
	Thunder . .		91 6	74 1¾	27 8⅜	12 1	302	60	8	14		Bu. ditto, Medway, Henniker.
	Etna . . .		91 9	74 5	27 8	12 1	303	70	8	14		Bu. 1776, River.
	Vesuvius . .		91 6	74 2	27 8	12 1	302	70	8	14	Sir T. Slade	Bu. 1776, River, Anckey & Co.
	Terror . . .		92 1	74 7	27 10	12 0	307	70	8	14		Built 1779, River Thames.

Rates.	Bombs Names.	Establishment, when.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	Surveyors.	When and where built, and Builders Names.
	Thunder		92 1	74 4½	27 9	12 1½	305	70	8	14		Bu. 1779, Tham.
	Sulphur		96 11	79 8	29 0	13 0	355	60				Bought 1797.
	Explosion		96 4	80 4	27 6	12 9	323	60				Ditto.
	Volcano		99 9	83 0	29 0	12 11	371	60				Ditto.
	Strombolo		99 9	83 0	29 0	12 11	371	60				Ditto.
	Hector		92 9	76 0	27 2	12 5	300	60				Ditto.
	Tartarus		94 6	79 10	28 6	12 2	344	60				Ditto.
	Thunder											Taken from Dutch 1797.
	Yachts.											
	William & Mary		76 6	61 5½	21 7	9 6	152	40	8			Built at Chath. 1694, R. Lee.
	Medina		52 10	42 10	17 0	8 6¼	65	10	6			Built 1782, Portsmouth.
	Bolton		53 2	38 0	14 6	7 6	42	12	6			Built 1709, Portsm. T. Podd.
	Princeſs Augusta		73 8	57 7½	22 6¼	9 6	155	40	8			Built 1710, Deptford, J. Allen.
	Queenborough		51 6	37 3	15 2½	6 7	46	7	6			Built 1718, Sheerness, J.Ward.
	Catherine		76 6	61 6	22 4¼	9 6	161	40	8			Re-built 1720, Dept. R. Stacey.
Brok[n] up.	Fubbs		76 9	61 0	22 0	9 8	157	40	8		Sir J. Allen	Ditto 1724.
	Mary		76 6	61 6	22 4	9 8	164	40	8			Built 1727, Deptford, R. Stacey.
	Chatham		59 6	47 0	17 8	7 6	74	9	6			Built 1741, Chath. J. Ward.
	Portsmouth		59 6	48 3	18 0	8 6	88	10	6			Built 1742, Portsm. P. Lock.
	Royal-Charlotte		90 0	72 2½	24 7	11 0	232	70	10			Built 1749, Deptf. J. Holland.
	Dorset		78 0	64 10½	21 11	10 10	164	50	8			Built 1753, Dept. Sir T. Slade.
	Plymouth		64 6	52 6	17 10	10 0	88	10	6			Built 1755, Plym. J. Bucknall.
	William & Mary		76 9	62 10¼	22 8	10 1	171	40	8			Re-built at Deptford, 1765.
	Plymouth		64 0	52 7¼	18 6	10 1	96	10				Built at Plymouth.
	Augusta		80 6	64 11⅜	23 1¼	10 11	184	40	8			Re-built 1770, at Deptford.
	Storeships.											
	South-Sea-Castle		126 1	102 3½	36 2	15 5½	712	130	24			Built 1745, Liverpool.
	Crown		133 7½	110 3	37 10¼	16 0	842	120	24			Built 1747, Thames, Taylor.
	Jane											Bought.
Brok[n] up.	Florida			72 0	27 11½		299					Ditto 1764.
Sold.	Experiment		96 0	80 5⅜	28 3½	13 5	342	30				Bought 1765.
Sold.	Endeavour		97 8	81 0	29 2	11 4	366					Bought 1768.
	Adventure		99 3	78 9½	28 4	13 0	336	35				Bought 1771.
	Elephant		103 3	85 0⅓	29 1	11 9	382	40				Bought 1776.
	Etrusco		137 8	116 6	38 6	13 6	919	125				Taken from Spaniards.
	Nabob		136 5	110 0	33 0	14 0	637	125				Ditto.
	York			112 2	33 4½	17 1½	664	66				Bought 1779.
	San Carlos		124 0	103 3	35 6	12 10	696	80	14			Ditto 1780, from the Spaniards.
	Porpoise						700	50	14			Bought 1780.
	Clinton		134 0	113 0	35 0	13 9	736	72	18			Taken 1780.
	Royal Charlotte			92 6	32 6	13 1	520	50	14			Bought 1780.
	Manilla			87 0⅛	29 7⅓	12 11½	406	40	10			Ditto.
	Sally			85 0⅜	29 8	12 11	398	40	10			Ditto 1781.
	Achilles			81 10¾	31 0½	12 7½	420	40	14			Ditto.
	Minerva			111 2⅝	34 1	13 2½	689	60	14			Ditto.
	Britannia			94 4⅞	32 8	12 0	585	40	26	8		Ditto.
	Harriot			86 8⅞	29 9	12 5	408	40	20	6		Ditto.
	Berwick		110 5	89 8¼	32 9	13 0	512	60	20	2		Ditto.
	Whitby		108 0	89 8	30 2	11 11	434	40	16			Ditto.
	Cornwallis			88 6⅛	30 8	12 9	443	40	14			Ditto.
	Whitby			89 8	30 2	11 11	434		14			Ditto.
	Supply		115 2	95 1⅝	31 2	12 6	491	50				Ditto 1782,
	Providence		109 8	93 1⅜	30 6½	12 1	462	50	16			Ditto.
	Tortoise		123 0	102 6⅜	33 9½	12 7	622	75	16			Ditto.
	Prosperity		132 0	109 7	34 4	12 5	687	689	14			Ditto.
	Bountiful		143 6	122 3	34 7	11 11	778	778	22	2		Ditto.
	Abondance		132 5	113 4⅛	29 5½	12 2	524	524	16			Taken 1782, from the French.
	Tortoise		123 0	102 6⅛	33 9	12 7	622		14			Bought 1782.

Rates.	Storeships Names.	Where ftationed.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	When and where built, and Builders Names.
	Camel . .										Was the Mediator of 44 guns.
	Dromedary .										Was the Janus ditto.
	Alliance . .		130 9	108 0	34 10	12 1	697	120			Taken fr. Dutch, 1795.
	Empress-Mary .		122 11	105 0	34 1	13 7	650	62			Bought 1797.
	Abundance . .		139 10	119 5	32 7	14 10	674	80			Bought 1799.
	Hospital Ships.										
Brok^{n} up.	Blenheim .		162 2¾	131 4½	47 2½	18 10¾	1557				Built 1709, Woolwich.
	Jersey . .		144 0	116 4	41 5	16 11	1065	140			Built 1736, Plymouth.
	Phenix . .		112 6¼	98 0	32 3	11 0	514	8			Built 1743, Thames.
	Nightingale .		113 3	94 5¼	32 2¼	11 1	592				Ditto 1746.
	Thetis . .		123 6	103 6	36 2	15 11½	720	100	22		Built 1747, Plym. J. Skell.
	Orford . .		160 2	131 4	45 0	19 4	1414				Ditto 1749, Woolw.
	Security, P. S.								22	14	Bought 1778.
	L'Engageante .		139 7½	116 6½	38 9	12 3	931				Taken from the French 1795.
	Hulks.										
	Chatham . .	Chatham	153 0	131 0	32 0	13 0	714	9	50		Built 1764, Chat. Robert Lee.
	Jersey . . .	Plymouth	132 1	109 0	34 2	13 8	677	13			Built 1698, Cowes.
Sold.	Yarmouth .	Portsmouth	150 0	123 4	41 1¼	17 3	1110	27			Built 1708, Dept. J. Wicker.
	Devonshire . .	Woolwich	156 2	127 8½	43 10	17 8½	1304	32			Built 1710, Woolwich.
Sold.	Panther . . .	Deptford	131 1½	108 3½	35 3	14 4	716	47	50		Built 1716, Woolw. Haywood.
	Barfleur . .	Plymouth	163 0	131 9	47 3	18 6	1565		90		Ditto. 1716, Deptf. R. Stacey.
	Winchester .	Chatham	131 4	108 7	35 1	14 0	711	10	50		Built 1717, Plym. N. Phillips.
Brok^{n} up.	Captain . .	Portsmouth	151 0	124 2	41 6	17 5½	1131	3			Ditto 1722, Portsmouth.
	Sterling-Castle .	Sheerness	151 0	123 3	41 8	17 4	1138	88	70		Re-b. 1722, Wool. J. Haywood.
	Berwick . .	Plymouth	151 0	123 2	41 10	17 4	1147	19	70		Re-b. 1723, Dept. R. Stacey.
	Ipswich . .	Gibraltar	151 0	123 2	41 9	17 9	1142	40	70		Re-built 1730, Ports. J. Allen.
	Prince of Orange	Sheerness	151 0	123 2	41 6½	17 4	1128				Re-built 1736, Deptf.
	Bedford . .	Deptford	150 10	121 6	43 7	17 10	1280		70		Re-built 1740, Ports. J. Allen.
	Princessa .	Portsmouth	165 1	130 3	49 8	22 3	1709		70		Taken 1740.
Sold.	Guernsey . .	Woolwich	134 0	108 6	38 8	15 9	863				Built 1740, Chat.
	Kinsale . .	Antigua	124 8		36 0¼	14 4½	700	30			Built 1741, Thames.
	Tavistock . .	Woolwich	144 0	117 8½	41 2	17 0⅛	1061		50		Built 1747, Hull, H. Blaydes.
	Tiger . . .	East Indies	150 9		43 1¼	18 6	1218				Bt. 1747, Thames.
	Pembroke .	Halifax	156 0	128 7	42 3	18 0	1222	44	60		Built 1757, Plymouth.
	Boulogne . .	Halifax	133 8	111 10⅝	33 3	13 4	657	44	32		Taken 1762.
	Prince-William	Portsmouth	153 2¾	130 3⅝	44 1	19 9½	1347				Taken 1780.
	Chichester .	Plymouth									
	Princessa . .	Ditto	170 2¾	138 3	51 2¾	22 1¾	1927				Taken from Spaniards, 1780.
	Neptune . .	Portsmouth							90		Cut down 1784, White.
	Preston . .	Woolwich							50		Ditto 1785, G. W. Peake.
	Rotterdam .	Chatham							50		Cut down 1788, N. Phillips.
	Worcester . .	Deptford							64		Ditto 1788.
	Earl of Denbigh	Antigua	73 0	59 0	24 0		181				Bought 1788.
	Conception .	Jamaica						44			
	Hoys and Transports.										
	Goodwill . .	Sheerness	51 6	39 0	18 10	6 6	74	6			Built 1706, Sheer. J. Ackworth.
	Old Truelove .	Portsmouth	66 2¾	48 0	17 6	9 0	56	7			Built 1707, Portsm. T. Podd.
	Unity . .	Ditto	66 9	53 3½	21 5	9 11	130	7	4	4	Ditto, ditto, Ditto, J. Podd.
	Truelove . .	Ditto	54 0	41 1½	16 2	7 4	58				Re-built 1720, Ports. J. Nash.
	Unity lighter .	Plymouth	60 0	44 3	18 6	9 6	80				Built 1720, Plym. J. Pownall.
No. 1.	Sheerness long b^{t}	Sheerness	41 10	32 6½	12 6	6 0	27	2			B. 1724, Sheerness, J. Ward.
No. 2.	Sheerness ditto	Sheerness	40 0	29 7½	13 11½	6 4	30	8			
	Mary smack .	Plymouth	49 2	38 1½	16 0	7 10	52				Re-b. 1728, Ply. P. Lock.
	Woolwich light^{r}	Woolwich	60 4	47 8	18 7	8 0	87				Re-b. 1730, Wool. Haywood.
No. 1.	Chatham ditto	Chatham	51 6		19 0	8 10	73				Built 1734, Chat. J. Ward.
	Chatham long b	Chatham	40 6		12 2	5 10	28				Ditto 1739, Chat. J. Ward.

Rates.	Hoys and Transports Names.	Where stationed.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns C.	N° of Guns S.	When and where built, and Builders Names.
No. 2.	Mooring lighter	Sheerness	50 10	38 10¼	19 5	7 0	78				Built 1742, Sheern.
	Plymouth trans.	Plymouth	77 0	63 4	22 3	11 0	66	14	4	6	Built 1742, Sheern. E. Blackes.
	Dennis . . .	Ditto	58 6	43 0	20 0	7 7½	91				Built 1743, Plym.
Brok^{n} up.	Royal-Escape	Deptford	68 2	49 9¼	21 1½	8 4½	107	7			Bu. 1743, Thames, R. Carter.
	Culloden smack	Scotland	43 8	34 0	14 0	5 6	35	8	2		Built 1746 Plym. B. Slade.
	Close lighter	Deptford	39 0	26 4⅝	18 3¾	6 11	47				Bought 1747.
No. 2.	Sailing lighter	Chatham	64 0¼	50 5	20 3	8 8¼	110				B. 1748, Chiches. Chitty & Co.
	Forester Hoy .	Portsmouth	62 11¼	51 9	20 2	8 8	112	7	4	4	Built 1748, Bursledon, P. Ewer.
No. 1.	Sailing lighter	Ditto	63 2½	52 3	20 1½	8 8	112	12			Ditto, ditto.
	Navy transport	Deptford	64 9	48 3½	19 5½	10 10	97	12			Bought 1752.
	Lion ditto .	Portsmouth	72 0	58 6	22 6	10 7	151	14	4		Built 1753, Beaulieu, H. Adams.
	Saltash . .	Plymouth	54 9	48 6	19 5	7 10	85				Bought 1756.
No. 2.	Sailing lighter	Portsmouth	60 6¼	43 2½	30 7¾	7 4	111				Built 1757, Bursledon, P. Ewer.
No. 3.	Sailing ditto	Ditto	42 2	33 9	17 7¾	4 1½	56				Built 1757, South. J. Adams.
No. 1.	Sailing long boat	Ditto	48 0	34 2½	13 0	6 9	30				Bu. 1757, Bursledon, P. Ewer.
No. 2.	Ditto . . .	Ditto	47 0	38 6	12 2	6 6	30				Ditto.
No. 3.	Ditto . . .	Ditto	43 0	34 2½	13 0	6 9	30				Built 1757, South. J. Adams.
No. 4.	Ditto . . .	Ditto	47 0	38 6	12 2	6 6	30				Ditto.
	Mooring lighter	Woolwich	53 0	41 4	19 6	6 3	83				Bu. 1758, Fevers. J. Banners.
	Water boat .	Sheerness	55 0	41 7⅜	19 8	9 9	86	5			Ditto, ditto, R Bennet.
	Supply transport	Deptford	79 4	64 11½	22 6	11 6½	175	14	4	6	Built 1759, Thames, H. Bird.
	Heyling Hoy .	Portsmouth	66 8½	52 11¼	21 7½	10 2½	132	12	4		Bu. 1760, Beaulieu, H. Adams.
	Sloop Bird .		58 6	45 5	17 7¾	8 1	75				Bought 1764.
	Deptford lighter	Deptford							8		
No. 1.	Mooring lighter	Sheerness	56 6	44 7½	20 4½	70 2½	97				Bu. 1765, Sheern.
	Camel . .		64 4	48 3	20 7	10 2	109				Bought 1768.
	Sheern. water-b.	Sheerness									Bu. 1770, Sheerness, E. Hunt.
No. 1.	Sailing lighter	Chatham	66 3¾	52 8⅛	21 7¾	9 5	130				Built 1771, Chatham.
	Assistance .		59 5½	50 6⅝	18 8	7 11	94				Bu. 1771, Plymouth.
No. 2.	Mooring lighter	Portsmouth	60 9½	48 2⅞	20 9	7 5	116				Built 1772, Portsmouth.
	Dispatch transp	Woolwich	76 1½	59 1½	23 7	11 6	177	16	6	8	Bought 1774.
	Discovery .	Ditto		59 1½	27 5	11 5	299	16	8		Ditto 1776.
No. 3.	Mooring lighter	Portsmouth	64 4	52 0	20 9¼	7 4½	120				Built 1778, Northam.
	Light. Plympton	Plymouth	51 7	41 11⅜	16 10¾	8 4	64				Bu. 1778, Plym.
	Ditto Plymouth	Ditto	59 2½	47 6⅛	20 2	7 0	103				Built 1779, Plym.
	New Dispatch	Woolwich									Fitted 1780, at Deptf.
	Tortoise lighter	Plymouth	60 4½	49 8¼	20 4	9 5	109	11	2		Built 1780, Thames.
	Cornwallis trans.										
	Serapis . .		140 2	115 5	38 0	16 4	886				Built 1782, Bristol.
No. 38.	Mooring lighter	Chatham	56 4½	45 0	20 0	6 8	96				Built 1782, Gillingham.
	Medway transp.	Ditto							12		
	Transport	Deptford	80 7	65 3	23 10½	13 4½	197		4		Built 1784, River, Limehouse.
	Storehouse l. bo.	Ditto									
No. 9.	Mooring lighter	Chatham	64 11	51 10⅞	20 10½	7 2	120				Built 1785, Chatham.
No. 10.	Ditto . .	Ditto	64 11	51 10½	20 10½	7 2	120				Ditto.
No. 4.	Ditto . . .	Portsmouth					120				Built 1785, Portsmouth.
	Security . .	Plymouth	66 0	53 1¼	22 4¾	7 9	142				Built 1785, Plymouth.
	Lighter Unity	Ditto	66 0	52 6	22 7	8 0¼	142				Built 1788, Torpoint.
No. 1.	Mooring lighter	Chatham	56 4	44 5	19 10	6 8	93				Built 1789, Feversham.
No. 2.	Ditto.		49 7½	38 2¾	19 7½	5 4	78				Broken up.
No. 3.	Ditto.		52 4¾	40 5½	18 4½	4 7½	72				
No. 4.	Ditto.		49 6	37 3¾	19 8½	5 6⅝	77				
No. 5.	Ditto.		54 7	43 11⅛	18 6¾	6 9⅝	81				
No. 6.	Ditto.		53 4¾	41 10¼	19 5½	4 9½	84				
No. 7.	Ditto.		56 2	46 2⅝	18 1¼	5 9⅞	81				
No. 1.	Ditto.	Portsmouth	64 3½	52 0¼	20 9	7 4	119				Built 1789, Bucklershard.
	Tortoise lighter	Plymouth	68 8	56 0⅛	21 10½	9 5	144				Ditto Plymouth.
	Assistant transp.	Ditto		51 4¼	20 1¼	9 10	110				Bought 1791.
	Goodwill lighter	Sheerness	68 5	51 11	20 5	9 5	115				Built at Chath. 1791.
	Royal Escape	Ditto	60 8½	50 11⅜	20 1⅞	8 4	110				Built 1792, Northam.

	Hoys and Transports Names.	Where stationed.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C.	N° of Guns. S.	When and where built, and Builders Names.
No. 3.	Mooring lighter	Sheerness	57 9	43 7¾	20 0½	8 3	93				Built 1792, River Thames.
No. 7.	Lighter . .	Portsmouth	51 8	40 8½	21 3½	6 6	98				Built 1794, Shoreham.
No. 8.	Lighter . .		52 7½	39 11⅛	21 2	5 10½	95				
	Firebrand . .		60 1	46 5	19 0	12 7	89				Bought 1794.
Lighter.	Sails Tamar lig^{t}	Plymouth	64 10	51 6	21 0	9 1	121				Ditto 1795.
	Variation lighter	Woolwich		27 9	18 2	6 9	47				Ditto.
No. 11.	Lighter . .	Portsmouth	51 7	39 11	21 1	7 7	95				Ditto 1795, Bursledon.
No. 12.	Lighter . .	Portsmouth	52 0	39 2	21 1	7 5	93				Ditto Bucklershard.
	Medway sailingl.^{r}	Sheerness	63 0	51 7	20 7	9 3	116				Ditto 1796, Chatham.
No. 1.	Long boat .	Sheerness	41 9	31 0½	15 9	7 6	41				Ditto, Rochester.
No. 2.	Long boat .		42 0	32 3	15 0	7 11	42				Bought 1797.
	Lively lighter .	Portsmouth	63 11	51 8	20 1	9 8	111				Bought 1797, Bursledon.
No. 6.	Lighter . .	Portsmouth	43 7	34 9	14 9	6 0	40				Ditto, Plymouth.
	Tavy . . .	Plymouth	71 3	56 1	23 11	8 5	171				Ditto 1797.
	Yarmouth light.	Deptford	60 4	48 5	20 3	9 5	106				Ditto 1798, Yarmouth.
	Supply transp.	Woolwich	86 2	70 8	24 4	13 4	223				Built 1798, Northfleet.
No. 2.	Mooring lighter	Chatham	56 6	44 5	20 0	6 8	95				Bought 1798.
	Sailing lighter	Chatham	61 6	49 5	20 2	9 4	108				Bought 1798, Lynn.
	Chatham long b.		45 0	34 8	15 9	7 9	46				Bought 1798, Rochester.
	Plymouth light.	Plymouth	69 10	56 3	23 7	8 5	166				Built 1799, Plym.
	Sailing lighter	Plymouth	69 7	55 4	23 2	9 6	158				Bu. 1800.
	Armed Transports.										
	Supply . .	Deptford	72 0	56 5	20 2	10 0	122	12	4	4	Built 1725, Chatham.
Sold.	Woolwich .	Woolwich	54 2	42 2	17 1	8 0	65	8	2	4	Re-built 1726, Woolw.
Sold.	Portsmouth .	Plymouth	63 7	47 9¾	21 2¾	11 3⅞	114	11	4	4	Bought 1747.
	Hind . . .		112 10	91 10¾	32 3¾	11 0	510				Ditto 1749, Chichester.
Sold.	Diligence . .	Ditto		29 7	14 6	7 8	83				Ditto 1759.
	Cyrus . .		110 8	93 6	30 5½	13 1½	461	50	10		Ditto 1771.
	Camel . . .		113 0	96 11½	31 7¾	13 3½	516	52	14		Ditto 1776.
	Pondicherry .			109 10½	34 6	11 10	697	65	18	10	Ditto 1780.
	Raikes . .			81 8	29 9	13 0	384	40	10	18	Ditto.
	Manilla . .			87 0⅛	29 7½	12 11	406	40			Ditto.
	Resolution .			97 9⅛	34 8	12 7	625	62	16		Ditto 1782.
	Tenders.										
	Deptford . .			60 11¾	21 6½	10 1	158				Built 1788, River Thames.
	Woolwich .			59 6⅜	23 1	10 8	169				Bought 1788.
	Chatham .			53 1¾	21 6¾	10 1	131				Built 1788, Dover.
	Sheerness . .			58 4⅛	21 10⅜	10 0	148				Built 1788, Sandgate.
	Gun boats.										
	Aimwell . .		75 2½	62 6⅝	21 1	7 0	148	50	4	10	Ditto 1794, River Thames.
	Attack . . .		75 0½	62 2½	21 1½	7 0¼	147	50	4	10	Built 1794, Frinsbury.
	Badger . . .		61 0	54 1	14 4	6 2	59	30	1	3	Bought 1794.
	Bull-dog . .		64 4½	56 4	13 11	6 0	58		1	3	Ditto.
	Benjamin & Ann		59 3¼	47 11⅜	16 9	5 4¼	72	25	2	1	Ditto.
	Bellona . .		61 9	49 3	18 2	5 5½	86		2	1	Ditto.
	Bravo . . .		96 0	79 8⅛	31 0	7 4	307	100	16		Built 1794, Woolw.
	Borer . . .		75 2½	62 7	21 1	7 0	148	50	4	10	Thames.
	Conquest . .			62 5¼	21 1	7 1¼	147		4	10	Faintber.
	Caroline . .		64 0	50 8⅛	19 4	5 9	101	25	2	1	Bought 1794.
	Crown . .		57 11	47 6⅝	17 0	5 5½	73		2	1	Ditto.
	Defiance . .		67 0	58 0⅛	15 2½	7 0	71	30	1	3	Ditto.
	Eagle . . .		67 9	60 2¾	14 10	7 3	71		1	3	Ditto.
	Fury . . .		57 10	50 2½	14 6	5 4	56		1	3	Ditto.
	Ferret . . .		64 1	57 5⅛	14 6¾	6 5	56		1	3	Ditto.
	Forester . .		69 9	57 7⅝	23 8	8 0	172		2	3	Ditto.
	Four-Brothers		60 0	46 7½	19 6	6 0	94	25	2	1	Ditto.

Rates.	Gun Boats Names.	Where stationed.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N° of Men.	N° of Guns. C. / S.	When and where built, and Builders Names.
	Firm		96 0	77 8½	31 0	7 4	397	100	16	Built 1794, Deptford.
	Force		74 11	62 3½	21 1½	7 0	148	50	4 10	Northfleet.
	Fearless		75 1	62 4½	21 2	7 0	149		4 10	Gravesend.
	Grace		57 1½	46 7¾	16 9¾	4 11	69	25	2 1	Bought 1794.
	George		55 0	43 8½	16 3	4 11½	61	30	2 1	Ditto.
	Hawke		66 10	57 9½	14 10¼	7 3½	68		1 3	Ditto.
	Hornet		63 6	55 11½	14 3	5 11	60	25	1 3	Ditto.
	Hope		57 7	47 3¼	16 6	5 3	68		2 1	Ditto.
	Leopard		66 4	57 11½	14 6	6 3	65	30	1 3	Ditto.
	Lion		67 0	60 9	15 1¾	6 7	74		1 3	Ditto.
	Louisa		66 0	54 3	18 1½	4 10	95	25	2 1	Ditto.
	Mayflower		64 4½	52 7⅛	18 10½	5 4¾	90		2 1	Ditto.
	Mary		54 7⅛	44 2¼	16 1½	4 7	61		2 1	Ditto.
	Musquito		80 1	56 2¼	32 2	7 0½	309	50	2 1	Ditto.
	New Betsy		59 0	46 7⅛	18 0	5 4½	80	25	2 1	Ditto.
	Nottingham		57 0	46 4½	16 7¼	5 5½	67		2 1	Ditto.
	Plumper		75 2	62 6	21 2	7 0	149	50	4 10	Built 1794, Thames.
	Piercer		75 0	62 3	21 0½	7 0	147		4 10	Built at Dover 1794.
	Pelter		75 2	62 5½	21 2	7 0	149		4 10	Ditto 1794, Thame.
	Repulse		63 0	55 2	13 7½	6 1	54	30	1 3	Bought 1794.
	Robert		65 1	52 10½	18 6⅛	4 4½	87	25	2 1	Ditto.
	Scorpion		66 5	58 9⅝	14 11	6 8½	70	30	1 3	Ditto.
	Scourge		66 2	58 7⅛	14 8	6 7	67		1 3	Ditto.
	Shark		64 8	57 4½	14 3¾	6 4	63		1 3	Ditto.
	Serpent		64 10	55 1	13 11½	6 6½	57		1 3	Ditto.
	Seven Sisters		58 1	47 2½	16 8½	5 6	71	25	2 1	Ditto.
	Swinger		75 3	62 7½	21 0½	7 0½	147	50	4 10	Built 1794, Thames.
	Sandfly		80 2	56 2¼	32 1¾	7 1½	309		2	Ditto.
	Terror		66 6	58 1	14 11	6 8	69	30	1 3	Bought 1794.
	Tiger		67 8	59 0⅛	16 0¼	6 8	80		1 3	Ditto.
	Tickler		75 2	62 4¾	21 1¾	7 0½	148	50	4 10	Built 1794, Thames.
	Teaser		75 2	62 6¼	21 0	7 0	148		4 10	Ditto.
	Viper		65 5	57 9	15 0	6 6	69	30	1 3	Bought 1794.
	Union		59 3	46 10⅛	18 0¼	5 6	81	25	2 1	Ditto.
	Wasp		64 3	55 10½	14 6	6 5	63	30	1 3	Ditto.
	Wolf		61 4	53 0	15 6½	6 2½	68		1 3	Ditto.
	William		59 0	47 7½	17 9⅛	4 9	80	25	2 1	Ditto.
	Wilson		56 10	45 2	16 10½	5 3	68		2 1	Ditto.
	Jas and William		56 4	45 0	16 8	5 1½	68		2 1	Ditto.
	Francis		55 5	44 5	15 10	4 9	59	5		Ditto.
	Crache feu		79 7	68 4	19 10	6 3	144	50		Taken 1795, from the French.
	L'Eclair		59 3	45 11	20 4	6 11	101	40		Ditto.
	Vesuve		73 7	60 6	22 4	7 8	160	70		Ditto.
	Ostend		48 6		13 6	4 0				
	Hecate		76 0	62 3	22 6	8 3	168	50	4 10	Built 1797, Frinsbury.
	Growler		76 0	62 3	22 6	8 3	168	50	4 10	Built 1797, Thames.
	Flamer		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Furnace		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Steady		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Harty		76 0	62 3	22 6	8 3	168	50	4 10	Finsbury.
	Hardy		76 0	62 3	22 6	8 3	168	50	4 10	Gravesend.
	Haughty		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Courser		76 0	62 3	22 6	8 3	168	50	4 10	Thames.
	Defender		76 0	62 3	22 6	8 3	168	50	4 10	
	Furious		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Eclipse		76 0	62 3	22 6	8 3	168	50	4 10	
	Grapler		76 0	62 3	22 6	8 3	168	50	4 10	Northfleet.
	Gallant		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Griper		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.
	Tigress		76 0	62 3	22 6	8 3	168	50	4 10	Ditto.

Rates.	Gun Boats Names.	Where stationed.	Length of Gun Deck.	Length of Keel.	Breadth.	Depth.	Tons.	N of Men.	N of Guns. C.	N of Guns. S.	When and where built, and Builders Names.
	Cracker . .		75 0	61 8	22 0	7 11	159	50			Built 1797, Thames.
	Blazer . . .		75 0	61 8	22 0	7 11	159	50			Lynn.
	Spiteful . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Content . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Adder . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Clinker . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Asp		75 0	61 8	22 0	7 11	159	50			Ditto.
	Assault . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Crash . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Biter . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Bruizer . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Bouncer . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Sparkler . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Acute . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Boxer . . .		75 0	61 8	22 0	7 11	159	50			Ditto.
	Eling . . .										
	Venom . .		65 1	47 0	22 8	9 0	128	45			Taken 1796, from the French.
	Milbrook . .										
	Meteor . .		74 6	61 7	21 8	9 0	154	50			Bought 1797.
	Redbridge . .										
	Mastiff . . .		71 7	57 10	23 0	10 1	163				Bought 1797.
	Minx . . .		64 4	51 0	20 10	7 10	118				
	Netley . . .							60			
	Safeguard . .		78 9	66 9	22 0	8 10	172	50			Bought 1797.
	Manly . . .		78 0	65 3	21 3	8 11	157				
	Ready . . .		70 2	56 5	22 6	9 6	152				
	Pouncer . .		76 10	63 8	22 1	8 9	165				Ditto 1797.
	Wrangler . .		72 6	60 0	29 9	8 4	138				
	Ratler . . .		72 7	59 0	22 4	9 5	158				
	Pincher . .		73 8	58 10	22 7	9 11	160				
	Hell-hound .										Bought 1799.
	Insolent . .										Ditto 1798.
	Busses.										
	Canterbury .		64 0	54 9	16 6	8 9	79	45	6	10	Bought 1756.
	London . .		64 0	54 8	16 7	8 6	80				Ditto.
	Medway . .		64 10	55 5	16 9	9 0	83				Ditto.
	Portsmouth .		63 6	54 2⅝	16 9	8 5	79				Ditto.
	Lugger.										
	La Gloire . .		70 3	60 7½	18 10	7 10	114				Taken 1781, from the French.

A number of ships, which continued in service till the middle of the eighteenth century, had been built during the preceding. Many of these were latterly reduced in their rate, in order to ease them of the weight of metal, which as they became old, was thought too great for them. The Namur and Prince-George, originally constructed to carry 90 guns, were reduced to 80; the Chichester of 80 was reduced to 70, with many others, which experienced degradation according to the same scale: nor was this diminution of their force owing only to their age, but inferiority of dimensions, when compared with those of the later built ships.

In so extensive a List as the preceding, it is impossible but that some errors must unavoidably have taken place; the utmost possible care has, however, been taken to abridge them as far as was possible; and many charges, which might otherwise have been supposed instances of neglect, will, in all probability, be found parried, by a reference to the subsequent table.

THE following is a List of Ships, of which, owing to their early Origin, the Author has not been able to procure such Particulars as are contained in the preceding Tables. It has been therefore considered adviseable, in order to preserve Uniformity as much as possible, to place them together.

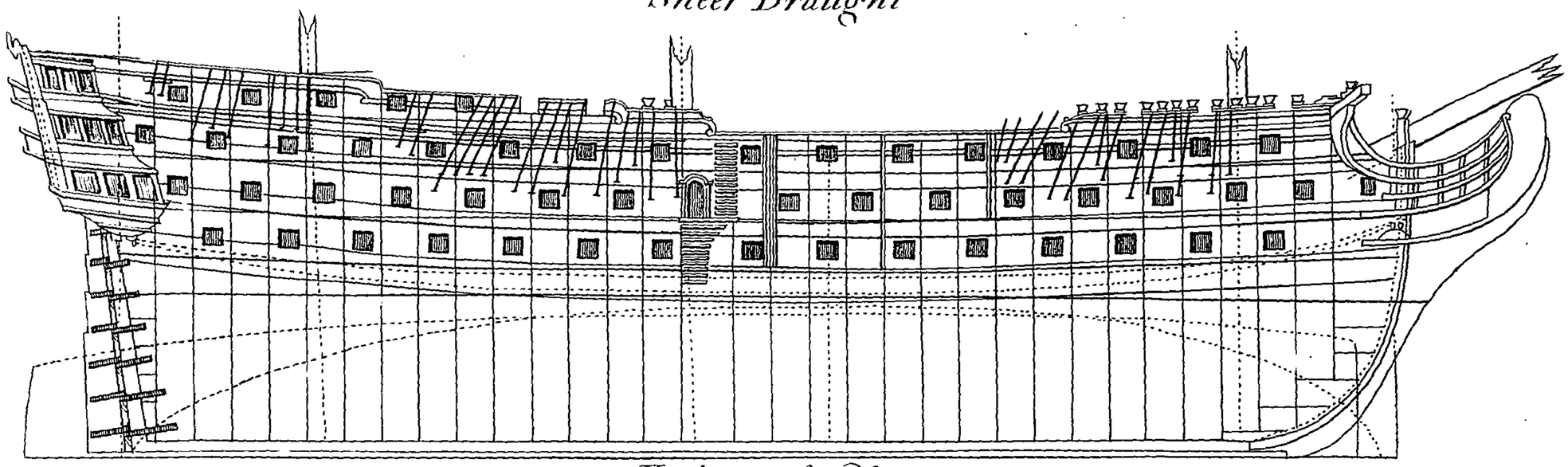
Rates.	Guns.	Ships Names.	Observations.			
			Uncertain when built, nothing known of them till their first appearance at the several ports, according to the dates given.			
1st.	100	Royal-George .	Woolwich	1709	Taken to pieces 1709	Re-built 1715.
		Royal-Ann .	Chatham	1710	Ditto 1727	
		Britannia . .	Ditto	1707	Ditto 1715	Ditto 1719.
		London . .	Ditto	1707		
		Royal-Sovereign	Ditto	1710		
		Victory . .	Portsmouth	1703*	Ditto 1721	
		Royal-William	Ditto	1702*		Ditto 1719.
2nd.	98	Barfleur . .	Ditto	1706		Ditto 1716.
	or	Blenheim . .	Ditto	1713		
	90	Prince-George	Chatham	1709	Ditto 1719	Ditto 1723.
		Saint-George .	Portsmouth	1709	Ditto 1726	
		Marlborough	Chatham	1711	Ditto 1724	Ditto 1732.
		Namur . .	Portsmouth	1706	Ditto 1720	Ditto 1729.
		Neptune . .	Ditto	1711	Ditto 1724	Ditto 1730.
		Prince . . .	Chatham	1711		
		Princess-Royal	Ditto	1711		
		Ramillies . .	Portsmouth	1707		
		Sandwich . .	Chatham	1697		
		Vanguard . afterwards Duke . .	Portsmouth	1711		
		Union . .	Chatham	1711		Ditto 1725.
3d.	80	Boyne . . .	Portsmouth	1712		
		Cambridge .	Woolwich	1712		Ditto 1715.
		Chichester . .	Chatham	1711		
		Cornwall . .	Portsmouth	1713	Ditto 1722	Ditto 1726.
		Cumberland .	Chatham	1711	Ditto 1731	
		Devonshire . .	Ditto	1711		
		Dorsetshire .	Portsmouth	1706		Ditto 1712.
		Humber . afterwards Prin.-Amelia	Ditto	1711	Ditto 1723	Ditto 1726.
		Lancaster . .	Ditto	1710	Ditto 1719	Ditto 1722.
		Newark . .	Chatham	1710	Ditto	Ditto 1717.
		Norfolk . .	Portsmouth	1711	Ditto 1717	Ditto 1728.
		Ranelagh . afterwards Pri.-Carolina	Ditto	1711	Ditto 1723	Ditto 1730.
		Russel . . .	Chatham	1711	Ditto 1726	
		Shrewsbury .	Deptford	1711		Ditto 1713.
		Somerset . .	Portsmouth	1712	Ditto 1722	Ditto 1731.
		Torbay . .	Chatham	1711	Ditto 1716	Ditto 1719.
	70	Bedford . .	Portsmouth	1710		
		Berwick . .	Plymouth	1712	Made a hulk 1715	Newship, same name, built Deptford 1723.
		Bredah . . .	Ditto	1712	Taken to pieces 1730	
		Buckingham .	Chatham	1710		
		Burford . .	Portsmouth	1711	Lost 1718	Ditto 1722.
		Captain . .	Ditto	1713		
		Edinburgh .	Chatham	1712	Taken to pieces 1717	Re-built 1721.
		Elizabeth . .	Ditto	1712	Ditto 1731	
		Essex . . .	Ditto	1711		

* It is considered probable that the ships whose dates are marked with an asterisk were then newly launched.

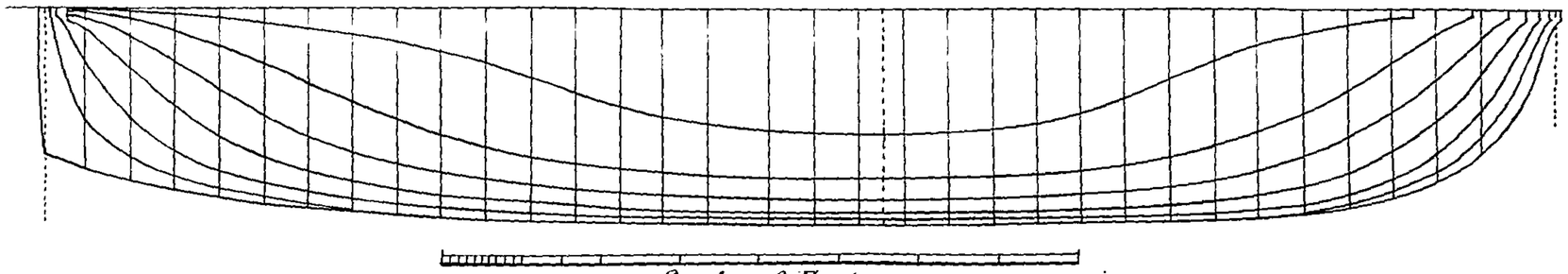
Rates.	Guns.	Ships Names.	Observations.			
			Uncertain when built, nothing known of them till their first appearance at the several ports, according to the dates given.			
3d.	70	Prince-Frederick	Portsmouth	1708		Re-built 1714.
		Grafton . .	Ditto	1712		
		Hampton-Court	Chatham	1712		
		Ipswich . .	Woolwich	1711	Taken to pieces 1727	Ditto 1730.
		Kent . . .	Plymouth	1712	Ditto 1721	Ditto 1724.
		Lenox . . .	Chatham	1742.	Ditto 1721	Ditto 1728.
		Nassau . . .	Ditto	1711		
		Northumberland	Portsmouth	1713	Ditto 1718	Ditto 1721.
		Royal-Oak .	Woolwich	1709		Ditto 1713.
		Orford . . .	Deptford	1709		Ditto 1712.
		Revenge . .	Chatham	1711		
		Sterling-Castle	Portsmouth	1713		
		Suffolk . . .	Chatham	1711		
		Yarmouth .	Portsmouth	1712		
4th.	60	Canterbury .	Chatham	1712		Ditto 1722.
		Defiance . .	Kinsale	1712		
		Dreadnought .	Portsmouth	1712		
		Dunkirk . .	Ditto	1712	Ditto 1729	
		Exeter . . .	Chatham	1711		
		Kingston . .	Portsmouth	1712		Ditto 1719.
		Lion . . .	Chatham	1713		
		Mary . . afterwards Prince-Mary	Portsmouth	1713		
		Montague .	Plymouth	1712		Ditto 1716.
		Monk . . .	Ditto	1711		
		Medway . .	Ditto	1712	Ditto 1716	Ditto 1718.
		Nottingham .	Ditto	1713	Ditto 1716	Ditto 1719.
		Plymouth .	Ditto	1712	Ditto 1720	Ditto 1722.
		Rupert . . .	Chatham	1711		
		Rippon . .	Deptford, built	1712	Ditto 1729	
		Superb . . .	Portsmouth	1713		
		Sunderland .	Chatham	1712	Made a hulk	New ship, same name, built Chatham 1724.
		Windsor . .	Plymouth	1712	Taken to pieces 1725	Re-built 1729.
		York . . .	Ditto	1712		
	50	Advice . . .	Deptford, built	1712		
		Argyle . . .	Sheerness	1712		Ditto 1722.
		Assistance . .	Deptford	1709	Ditto 1719	Ditto 1709. Ditto 1725.
		Saint-Alban's	Plymouth	1712		Ditto 1718.
		Antelope . .	Ditto	1712		
		Burlington .	Chatham	1712	Ditto 1753	
		Bristol . . .	Portsmouth	1712		
		Crown . . .	Ditto	1712		
		Centurion . .	Plymouth	1713	Ditto 1728	Ditto 1732.
		Colchester .	Ditto	1713	Ditto 1718	Ditto 1721.
		Chester . .	Chatham	1712		
		Chatham . .	Woolwich	1712	Ditto 1718	Ditto 1721.
		Dartmouth .	Deptford	1713		Ditto 1716.
		Dragon . .	Sheerness	1713	Ditto 1732	
		Deptford . .	Portsmouth	1712		Ditto 1719.
		Falmouth . .	Ditto	1713	Ditto 1723	Ditto 1729.
		Falkland .	Chatham	1712	Ditto 1718	Ditto 1720.
		Guernsey . .	Ditto	1711		Ditto 1717.
		Gloster . .	Sheerness	1712	Ditto 1724	
		Greenwich .	Chatham	1710	Ditto 1724	Ditto 1730.
		Hampshire .	Woolwich	1712		
		Jersey . . .	Plymouth	1712		
		Litchfield . .	Ditto	1712	Ditto 1720	Ditto 1730.
		Leopard .	Ditto	1712	Ditto 1719	Ditto 1721.
		Norwich . .	Chatham	1712		
		Newcastle . .	Ditto	1711	Ditto 1728	Re-built 1732.
		Nonsuch . .	Portsmouth	1711		
		Oxford . . .	Ditto	1712	Ditto 1722	Ditto 1727.
		Preston . .	Chatham	1713		

Rates.	Guns.	Ships Names.	Observations.			
			Uncertain when built, nothing known of them till their first appearance at the several ports, according to the dates given.			
4th.	50	Pembroke . .	Plymouth	1712	Taken to pieces 1726	
		Panther . .	Chatham	1712		Ditto 1716.
		Portland . .	Portsmouth	1712	Ditto 1718	Ditto 1722.
		Rochester . .	Deptford	1712		Ditto 1715.
		Ruby . . .	Portsmouth	1711		
		Romney . .	Plymouth	1712	Ditto 1722	Ditto 1726.
		Sutherland .	Portsmouth	1712		
		Salisbury . .	Sheerness	1713		Ditto 1717.
		Swallow . .	Chatham	1713	Ditto 1723	Ditto 1732.
		Strafford . .	Plympton	1714*	Ditto 1726	
		Severn . .	Chatham	1712		
		Tyger . . .	Ditto	1713	Ditto 1717	Ditto 1722.
		Tilbury . . .	Ditto	1713	Ditto 1726	
		Woolwich .	Deptford	1713		
		Weymouth .	Plymouth	1713		Ditto 1718.
		Warwick .	Chatham	1712	Ditto 1726	
		Worcester .	Ditto	1711	Ditto 1733	
		Winchester .	Plymouth	1712		Ditto 1717.
5th.	40	Royal-Ann .	Chatham	1714	Lost 1721	
		Adventure .	Portsmouth	1712		
		Anglesea . .	Woolwich	1712		
		Charles . .	Portsmouth	1712		
		Diamond . .	Woolwich	1712	Taken to pieces 1720	Ditto 1722.
		Dover . . .	Chatham	1712	Ditto 1730	
		Enterprize .	Sheerness	1713		
		Feversham .	Plymouth	1713*		
		Folkstone . .	Portsmouth	1713	Ditto 1727	Ditto 1730.
		Fowey . . .	Ditto	1712		
		Gosport . .	Sheerness	1713		
		Hector . .	Plymouth	1713	Ditto 1717	Ditto 1720.
		Hastings . .	Portsmouth	1712		
		Princess-Louisa	Sheerness	1712		
		Lynn . . .	Ditto	1715*	Ditto 1732	Ditto 1723.
		Ludlow-Castle	Ditto	1712	Ditto 1721	Ditto 1728.
		Looe . . .	Portsmouth	1712		
		Lark . . .	Sheerness	1711	Ditto 1723	Ditto 1726.
		Mary . . .	Plymouth	1714		Ditto 1726.
		Portsmouth .	Sheerness	1712	Ditto 1728	
		Pearl . . .	Ditto	1712	Ditto 1722	Ditto 1726.
		Roebuck . .	Woolwich	1712	Ditto 1725.	
		South-Sea-Castle	Sheerness	1712		Ditto 1724.
		Sorlings . . .	Portsmouth	1711		
		Southampton .	Ditto	1711		
		Sapphire . .	Ditto	1712		
	30	Bridgewater .	Chatham	1711		
		Dolphin . .	Plymouth	1712	Ditto 1730	
		Experiment .	Portsmouth	1712		Ditto 1727
		Kinsale . .	Chatham	1713	Ditto 1722	Ditto 1724.
		Lowestoffe .	Sheerness	1712	Ditto 1722	Ditto 1723.
		Milford . .	Woolwich	1712		
		Mermaid . .	Portsmouth	1712	Ditto 1734	
		Poole . . .	Ditto	1712		
		Rye	Woolwich	1711		Ditto 1727.
		Shoreham . .	Sheerness	1713	Ditto 1719	Ditto 1720.
		Tartar . . .	Deptford	1712		
		Scarborough .	Portsmouth	1712	Ditto 1720	Ditto 1722.
6th.	24	Aldborough .	Sheerness	1712		Ditto 1727
		Deal-Castle .	Ditto	1712	Ditto 1732	Ditto 1727.
		Fox . . .	Ditto	1712	Ditto 1724	Ditto 1727.
		Flamborough .	Ditto	1712		Ditto 1727.
		Glasgow . .	Ditto	1712		
	20	Lyme . . .	Ditto	1713	Ditto 1719	Ditto 1720.
		Phenix . . .	Woolwich	1712	Ditto 1727	Ditto 1727.
		Queenborough	Deptford	1715		
		Squirrel . .	Plymouth	1712	Ditto 1727	Ditto 1727.

Sheer Draught

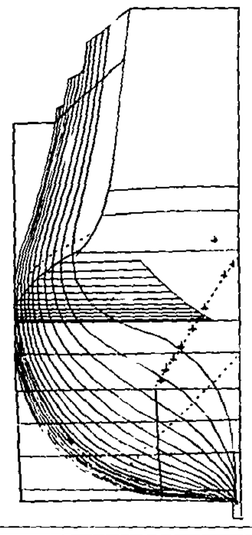


Horizontal Plan

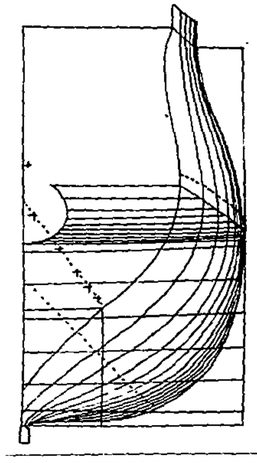


Scale of Feet

After Body



Fore Body



Draught of a British First Rate 1794.

London Published as the Act directs 1st April 1794 by John Sewell Cornhill.

Rates.	Guns.	Ships Names.	Observations.			
			Uncertain when built, nothing known of them till their first appearance at the several ports, according to the dates given.			
6th.	20	Seaford . .	Portsmouth	1712	Ditto 1722	Re-built 1724.
		Solebay . .	Ditto	1712		
		Sheerness . .	Sheerness	1712	Ditto 1729	Ditto 1731.
		Blandford . .	Woolwich	1719*		
		Biddeford . .	Ditto	1711*	Ditto 1725	Ditto 1727.
		Greyhound .	Ditto	1712		Ditto 1719.
		Gibraltar . .	Plymouth	1713	Ditto 1725	Ditto 1727.
		Hind . . .	Sheerness	1712		
		Lively . . .	Plymouth	1713*		
		Port-Mahon .	Portsmouth	1714		
		Rose . . .	Chatham	1712	Ditto 1722	Ditto 1724.
		Speedwell . .	Plymouth	1712		
		Success . .	Portsmouth	1711*		
		Seahorse . .	Ditto	1711*	Ditto 1725	Ditto 1727.
		Valeur . . .	Plymouth	1712	Ditto 1717	
		Winchelsea .	Sheerness	1713		
		Garland . .	Portsmouth	1712	Ditto 1721	Ditto 1724.
		Dursley . .	Deptford	1718*		
		Griffin . . .	Portsmouth	1712		
		Bedford . .	Sheerness	1712	Sunk	

The gradual encrease in the dimensions of ships composing the British navy cannot be placed in a stronger and more comprehensive point of view than they are by the form pursued in the foregoing list. The Royal-Anne, built in the year 1706, though mounting 100 guns, was of no more than 1809 tons burthen, from whence it appears, that even British ships of the same class have been enlarged nearly one-fourth in the course of the last century; and that the French, in the instance of the Commerce de Marseilles, have advanced their ideas of augmentation to one-third. Britain appears in her turn to have formed the resolution of being surpassed as trivially as possible, while in any degree consistent with propriety; so that although the Caledonia is stated, by the dimensions given in the preceding table, to be somewhat more than one hundred and forty tons inferior to the French ship, yet, it must be remembered the latter has, in the opinion of judges, esteemed the most competent, been considered as encreased beyond the natural bounds prescribed by reason and prudence; and the British ship exceeds, in a far greater degree, the St. Joseph, the largest of the two first rates, captured from Spain in 1797, than it is itself surpassed by the Commerce de Marseilles.

The augmentation progressively given by almost all maritime powers, to ships of the same class, whether first or sixth rates, for the space of more than a century, is a subject which has occasioned some controversy, though there can be little doubt of the propriety of the measure, when carried to only a moderate extent. It certainly would be an extravagant expenditure of the public treasure, even in the

the inferior rates, to carry the rage of enlargement beyond certain limits: as for instance, to build a ship, contrived to carry only 20 guns, and intended solely as a vessel of war, that should be of eight hundred or a thousand tons burthen. But although such an establishment, were the same proportion regularly preserved through the higher classes, would render the first and second rates unwieldly if not unmanageable, even if the construction of them should not prove impracticable; yet it cannot be maintained or thought, for a single moment, as improper that the dimensions of a 20 gun ship might not, with the utmost propriety, be encreased from four to five hundred tons; of a medium frigate from six hundred and fifty, to nine hundred; of one in the highest class of the same rate from seven hundred and fifty, which was nearly the tonnage of the Venus, built in 1758, to a thousand tons, which, with the addition of two guns only to the force, has been the general establishment for more than ten years past. Such an augmentation has been experimentally found of singular advantage, owing to the encrease of convenience in working the guns during the time of action, and to its rendering the vessels themselves better able to withstand the furious assaults of the winds and waves. The benefits arising from this enlargement have in no instance been more sensibly felt, than in the ships of 74 guns, which, particularly in all the recent wars, have uniformly constituted the strength of fleets. The addition of three hundred tons to vessels nominally of the same classs, without some examination of the propriety, and a retrospect view of the defects of one, compared with the excellencies of the other, might either be considered as erroneous, or, at best, as unnecessary. It is therefore to be remembered, that practice and experience have afforded repeated instances, where ships of the old and inferior establishment, such as the Ajax and Fame, with some others, have most sensibly and mortifyingly felt their inferiority, either when opposed to ships of the same rate belonging to the enemy, or when joined in the same operations with those in the service of Britain, built according to the encreased, and newly adopted regulation *.

* The British ships of 74 guns, built according to the old principles, in many instances, when a heavy sea has been running, or the wind blowing fresh, and the enemy to leeward, have been unable to fight any of their lower deck guns, while the French ships, owing to their enlarged breadth and encreased stiffness, have had it in their power not only to open their lower ports, but to remain perfectly upright, and fight their guns with nearly as much facility as their antagonists would have done had the wind and sea been perfectly calm.

In

In respect to the first rates, and ships having three tier of guns, though it may be extremely necessary that the men employed in fighting the guns should be as little incommoded as possible; yet, provided proper attention has been paid to that particular, it appears a matter of infinitely less moment, than in the classes just mentioned, that the enlargement which has, by many competent judges, been beheld with astonishment, and regarded with disapprobation, should be continued to that height, which, to use their own words, has been considered an act of wanton extravagance. "Were it possible," say they, "to add an additional tier of guns to a first rate, such augmentation of force, brought to one point, would most probably be found very little conducive to the interest of the combatants, or the success of the contest." Supposing even that mechanical improvements were capable of reducing the inconvenience arising from the extraordinary weight of the cordage, the sails, and the anchors, modern experience has proved, that the masts of the Santissima Trinidada *, the largest ship in existence, were no more capable of resisting the effects of cannon shot, than those of the most inferior ship, or vessel, either in the same fleet, or of that which was opposed to it. The accumulated inconvenience that must of necessity overwhelm a ship of the above description when dismasted, or by any inferior disaster rendered unmanageable, must be too obvious to render any argument or explanation necessary.

The excellence which the British ships, of recent construction, have been found, by their navigators, to possess, seems to point out that very little deviation from their principles can ever become necessary, unless some new, and hitherto unthought of, change should take place in naval tactics, or some wonderful discovery, of which the present race entertains not the most distant idea. Notwithstanding, therefore, national arrogance and prejudice may, on some occasions, ridiculously figure to itself encrease of consequence from the possession of a nominal strength, which can only intimidate cowards, the country that pays a proper attention to its own greatness of character will reject as ridiculous and disgraceful, every attempt towards imposing on the fears of an antagonist by a boast of power, which, should any necessity cause its employment, must inevitably shrink, under circumstances extremely likely to take place, from that duty which it has presumptuously professed to perform.

* The Guillaume Tell, captured from the French on the 30th of March, 1800, and now called the Malta, was attacked with such success by the Penelope frigate, that although of nearly equal dimensions with the largest British built first rate then in service, the fire of so very inferior an opponent deprived the mighty antagonist of its main and mizen topmasts.

The

The annexed table will serve to point out, by reference back to the Eighth Chapter, the difference in the quantity of materials used in constructing a ship of war, from the lower class of third rates, being those mounting 64 guns, downwards, between the establishment of 1745, and that of the present day.

Ships of	Timber.	Knees.	Total timber and knees.
64 guns - - - -	2920	150	3070
60 - - - -	2640	140	2780
50 - - - -	2270	130	2400
44 - - - -	1790	110	1900
38 - - - -	1640	90	1730
36 - - - -	1300	82	1382
32 - - - -	1100	74	1174
28 - - - -	1000	70	1070
24 - - - -	986	65	850
20 - - - -	543	50	590
Sloops of 340 tons - - -	414	45	459
Ditto 300 - - -	354	40	394
Ditto 250 - - -	310	37	347
Ditto 200 - - -	290	35	325
Brigs 150 - - -	224	32	256
Bombs 300 - - -	460	50	510
Cutters 200 - - -	200	18	218
Ditto 180 - - -	180	16	196
Ditto 150 - - -	150	16	163

CHAPTER

CHAPTER THE TWELFTH.

General State of the Marine belonging to the different African Powers, whether Republics or Kingdoms.—Description of the Vessels in Use among the Barbary States.—The Galley, the Xebec, the Saicque, the Felucca, and other Vessels of inferior Note.—State of the Asiatic Marine.—Burthen of the Chinese Vessels.—Remarks on the trivial Improvement made in the Construction of them for many Centuries—Description of their Form and the Denominations given to the inferior Vessels built for the Purposes of inland Navigation—The Materials of which they are constructed.—The Masts, the Sails, the Rigging, with an Account of their peculiar Excellence.—Particular Description of a Chinese Vessel, written by a Jesuit Missionary in 1687.—*Remarks on the Chinese Method of constructing Vessels, by a modern Navigator.—Of the Chinese Compass—The first Invention of it attributed to that People.—Their Ignorance of its Variation.—Their Skill in Navigation.—Account of the Japanese Vessels, and the Materials of which they are built.—The Particulars of their Form and Construction.—Their Sails.—The Contrivance for Rowing them in a Calm.—The Method practised by the Japanese in putting the different Parts of their Vessels together.—Their Ornaments, as well as various Contrivances intended both for Use and Convenience.—Their Voyages, with the Extent of them.—The Disposition with respect to Commerce, as well of the People of China as of Japan.—The Shipping of India.—The Improvement made by the Artificers of that Country since their Intercourse with the European Nations.—The Expertness and Excellence displayed by them in the mechanical Part of Ship-building.—Description of the Indian, or as it is usually stiled, the Flying Proa; the Peculiarity and Ingenuity of the Contrivance used for the Purpose of preventing the Vessel from either making Lee-way, or oversetting, explained, compared with the Lee-boards used by the Hollanders, and an Explanation of the different Manner in which it acts.—Account of the Canoes and Vessels used by the Inhabitants of the South-Sea Islands.—Comparison of the Similitude between them, the Gallies of the Ancients, and the Vessels constructed in more recent Times previous to the Invention or Use of Cannon.—*

non.—Remarks on the trivial Variation in the Vessels built in the different South-Sea Islands, though far distant from, and totally destitute of all Intercourse with each other.

THE account or history of the European navies being brought to a conclusion, it is necessary next to give a short description of those subordinate departments, if the term be allowable, into which the vessels of the Asiatic, and other regions, are capable of being divided. Respecting America, the shipping of which quarter of the world, perhaps, exceeds that of the other two, Africa and Asia, it is scarcely necessary to add a single word. The aboriginal vessels *, and those in modern use, which may be considered as natives of the country, have already been sufficiently, though briefly, described †, through a necessity which may serve to excuse, or, at least, palliate the anachronism. Those of more modern construction vary so little from the fashion or practice of the different countries in Europe, from whence the people who are the constructors of them, have proceeded, that the variations which immaterially affect every country, Britain excepted, are necessarily included under the general head of modern improvement and practice.

Africa, though not in the same predicament in respect to colonization, is equally so with respect to its shipping, and the more humble branches which are necessarily comprisable under the general subject of marine architecture. The savage nations, (with anxiety, and no small apprehension of censure, is the term used), inhabitants of the western coast, possess not a single vessel exceeding in consequence the canoe of the aboriginal Indian, and the peculiarities which distinguish those of the different countries, have been related in the same place with those of the former. Destitute of that species of ambition which excites the lust of foreign conquests, or of soliciting any commercial intercourse not directly sought with them on their own territories, the dusky natives of Caffraria have passed on, to the present time, in an uninterrupted scene of contiguous, or, as it might be fairly termed, domestic warfare, confined to inroads reciprocally made on the respective territories of each other, to which, as plunder, and the hope of making captives, seem the only incentive, so are they gratified completely without any existing necessity, whatever, of their entering into any nautical pursuits.

A different line of conduct renders it, however, inexpedient and improper to include, in the same class, the northern, and, if it be not a satire on the term,

* The Canoes. † See vol. I.,

the

the more civilized states which skirt the coast from Egypt to the Streights of Gibraltar, together with the extensive but inert empire of Morocco. The customs and manners of those who inhabit the latter territory appear as though nature had decreed, that on a certain spot she would establish an indolent race of mortals, and that there should be a regular progression from that indolence to the highest state of activity. Morocco, the intermediate district between the two opposites, contents herself with a moderate, and, indeed, very confined commerce. The marine attached to the state, is neither formidable, nor is it, to speak in general terms, actively employed. Pursuing the fashion of the country, or, rather, to speak nearer truth, of its more restless neighbours, the states of Algiers, of Tripoli, and Tunis, it implicitly adheres to the same system, though content with a less dangerous method, as well as less destructive to public peace and tranquillity, of employing its power, at least that part of it which comes under the description of naval. With respect to the navies of the piratical, or to use a less harsh expression, and to judge fairly from the events of the last fifty years, a more proper term, the Barbary states, although, from their circumscribed force, and peculiar habits, their several navies, taken collectively, would make but an indifferent figure in comparison with that of many single European countries; yet to such an height have political prejudices and the jealousy of one nation risen against the growing power of another, that the most insignificant of those states have, as it is well known, frequently laid the proudest kingdoms and countries in Europe under contribution.

Their navies consist of two different classes of vessels. First, the ships of war: these still continue to display, in some measure, the peculiarities which distinguish those of the states, which, almost to the present time, have continued to be called the Mediterranean powers, more particularly the Venetians and Genoese, from such as are built in any other country in the world; they are extremely lofty, particularly abaft, long and narrow, contrived with every attention to sailing, particularly in light winds and smooth water; in short, they are stamped with a sufficient similitude of feature to prove their certain descent from the parent stock, the Genoese carrack *. The lighter vessels, which are generally employed in more active service, are so perfectly similar to those of the Maltese and other Mediterranean powers, that it is totally useless to enter into any attempt towards making any distinction or difference between them. The uses or services being co-equal, the form became, as it were, naturally similar; calculated entirely for speed, and labouring under no neces-

* See vol. II. p. 7.

sity

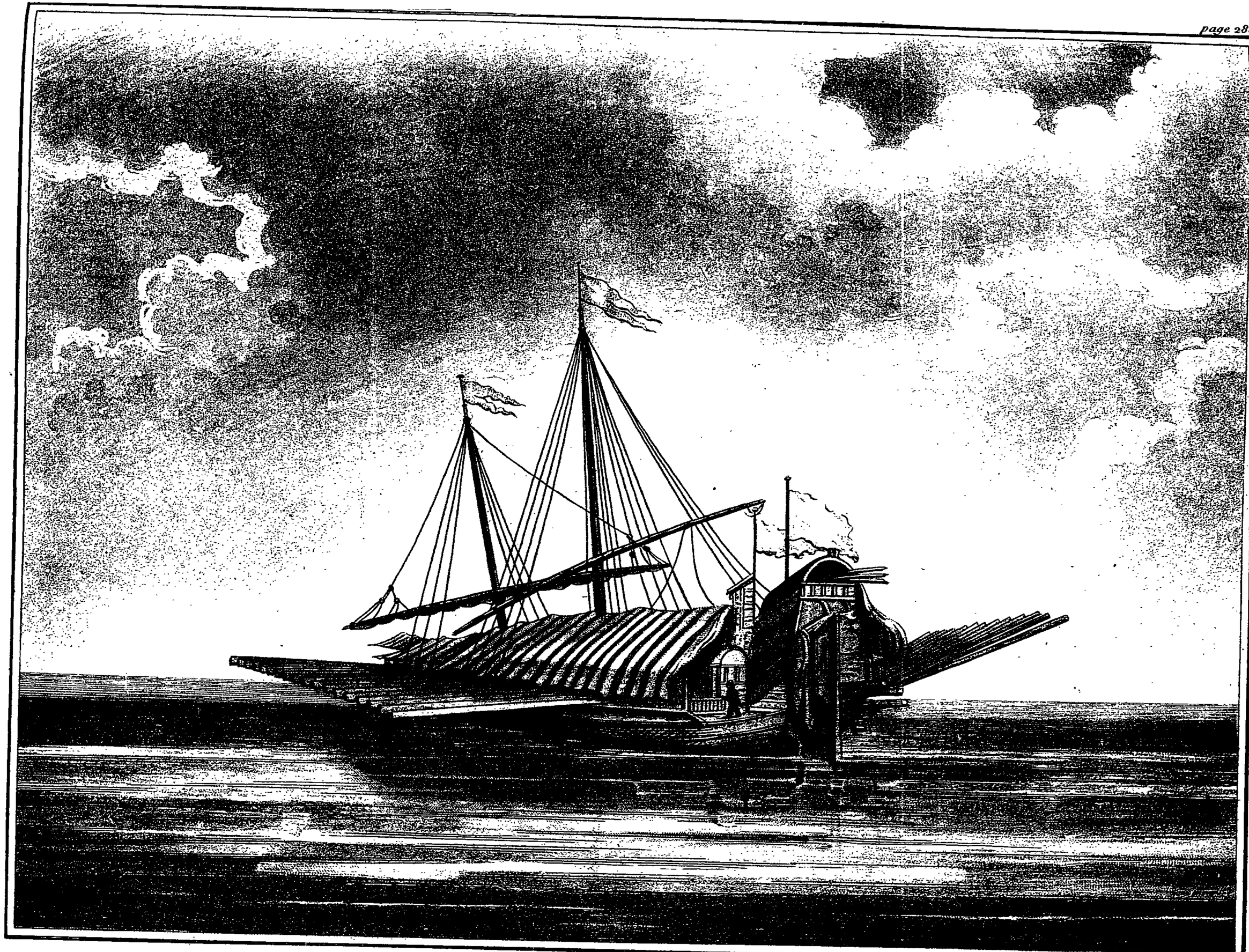
sity of attention towards any other principle; the inferior marine department, whether belonging to the Spaniards, the states of Barbary, or the Turks, varies so very immaterially, that the most critical observer could be scarcely competent to discover the difference. This consanguinity, if the term be applicable, forms a very strong and additional proof in corroboration of those already adduced, that the necessities of war, whether real or artificial, are in general supplied by the same chain of ideas.

In fact, the galley of Malta* may stand as the representative of the whole class; and the Xebec, its sister vessel of war, is manifestly derived from the same stock. It were scarcely possible, perhaps, for the most refined improvement to give, considering the peculiar occupations in which the latter is employed, any additional advantage to the structure as it now stands, and which has, in all probability, undergone less alteration during the two last centuries, which certainly carries it back to a mere infantine state, than any other class of vessels which either does now, or ever did exist. Formed on the principle of that galley, by which Rome, in its zenith of prosperity extended its conquests, little alteration, and that only as far as actual necessity required, was introduced into the present vessel bearing the same name, when the invention of cannon and the use of gun-powder caused, in other countries, so great a revolution with respect to the principles of marine architecture.

The Xebec may fairly be considered as an intermediate class between its parent, though its inferior, and the ship of war used in the Mediterranean; but though, from the peculiar advantages which attend its use in that sea, as well as the services in which it is particularly engaged, it has become more than commonly useful in that quarter; yet those local excellencies as they may be termed, have not proved sufficient to confine its construction to that quarter of the world only; a strong and very sufficient proof that the ingenuity of no country whatever merits contempt or neglect, because others are supposed to precede it in scientific knowledge. Narrowed, therefore, as the history of Africa becomes, not only in respect to science, but to maritime pursuits also, it were needless to enter into any more enlarged detail. The consideration of the same subject becomes, by a short, and, as it may be called, a natural removal of the scene, transferred to Asia. A very considerable part of this history becomes almost entirely included in the same account with that of the Barbary states, for the southern shores of the Mediterranean continuing, without exception, under the dominion of the followers of Mahomet, and

* See vol. II. p. 22.

these



View of a Modern Galley.

Barlow sculp.

London Published as the Act directs March 25th 1802 by W. Darton & J. Harvey, Gracechurch Street.

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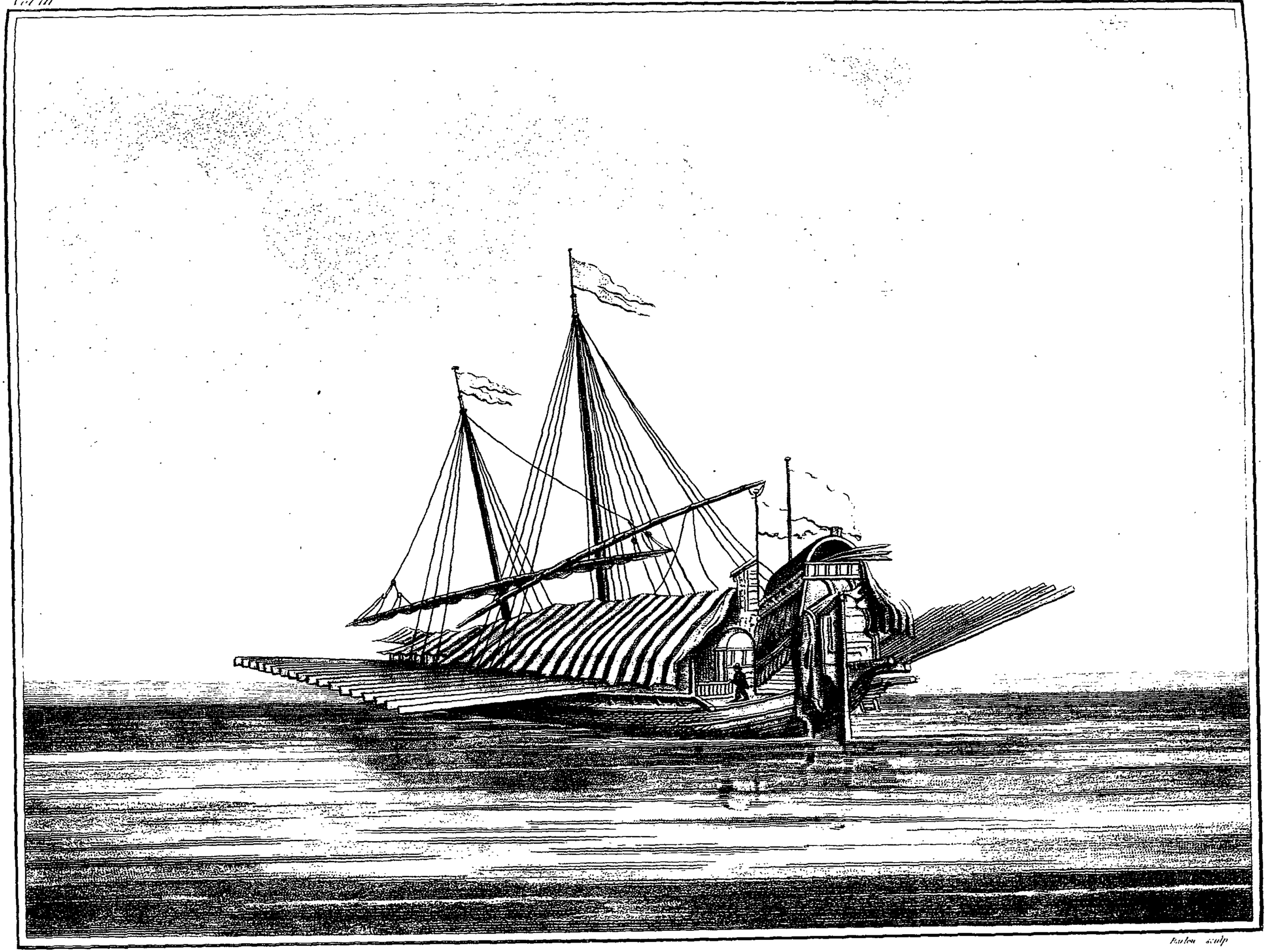
* See vol. II. p. 22.

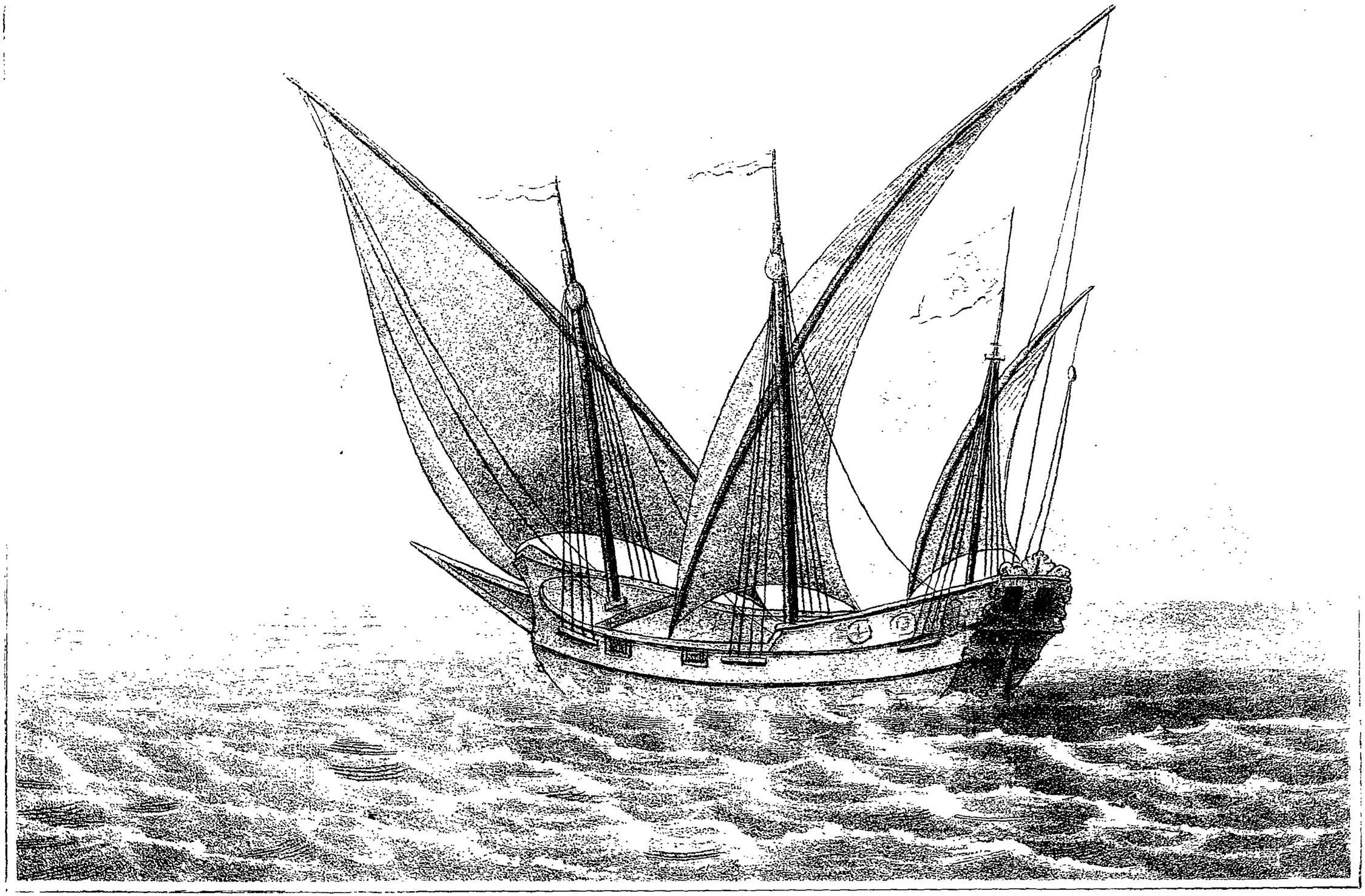
these



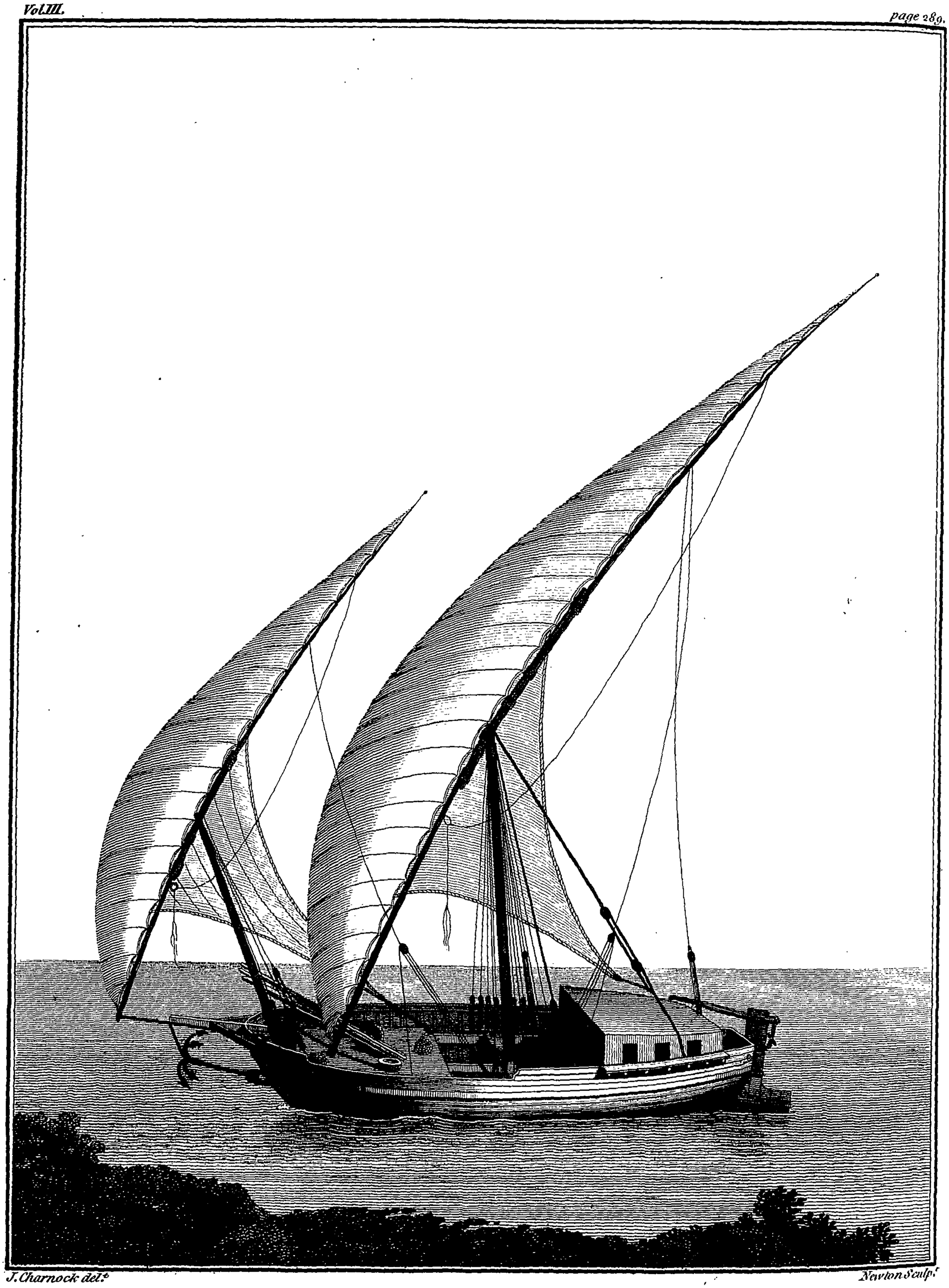
Paulon sculp

View of a Modern Galley.

London Published as the Act directs March 25th 1804, by W. Darton & J. Harvey Gracechurch Street



A Man of War going to Sea for the purpose of Cruizing on the Coast of Barbary.



J. Charnock del.t Newton Sculp.t

A Saicque, or small Vessel imployed on the Coast of Barbary.

London. Published as the Act directs. March 30th 1802. by Cadell & Davis, Strand.

these being united in religion, diverge not from each other in points of science or natural pursuits. The inferior vessels, intended for commercial purposes, are all constructed almost on the same principle with the galley; that is to say, the similitude is sufficiently striking to convince the most casual observer, totally destitute of any previous knowlege, of the fact, that the vessel already given as the parent, the saicque, the polacre, the barque, the tartar, the felucca, and many others, bearing different denominations, but almost immaterially varying from each other except in their name, are the artificial, or rather mechanical contrivances, if not of one country, at least, of one people, living under the same temperature, and most closely addicted to the same habits in life and in commerce.

Passing over that immense continent which separates the Indian from the Mediterranean sea, the practice and opinions on the same subject, incontrovertibly proved by the fact itself, appear as widely varying from the former, as though they were the invention of a different class or species of beings. Nor is this variation entirely confined to the grand distinction between the junk of China, and the saicque or felucca of Barbary; but is scarcely less wide between the junk just mentioned, and the grab of that sea which is properly called the Indian Ocean.

The marine architecture of this extensive country, considering the state in which it at present appears, deserves a greater degree of attention, than it would, perhaps, merit on account of its own excellence, inasmuch as it has proved, and at this instant displays, a true picture of the extent to which the human mind, in what may be considered its natural state, and totally deprived of all extraneous instruction, is capable of being carried.

The marine of a newly discovered, and what is consequently considered as a rude uncivilized nation or country, affords very little room for speculative animadversion or argument. The inhabitants having, in all probability, considered themselves as the emperors or sole masters of the universe, which they supposed totally confined to the narrow limits of their own discovery and knowlege, they became naturally indifferent to any extension, with respect to the science of navigation, in the very limited extent they had been enabled to practise it. But how widely different is the case when the scene becomes removed, not only to people known for centuries to Europeans, but who have been considered by them, perhaps with justice, more civilized and polished than themselves. While, on one hand, the improvements made by more alert nations, lead them arrogantly to despise the system and the customs of the Chinese, they will not dare withhold their admiration

tion from the manners of a people, who, possessed of sufficient science in the most destructive arts to enable them to triumph and tyrannize over a very considerable part of Asia, have been content to suffer that knowlege to sleep with respect to the power of hurting or injuring the rest of mankind, and have permitted themselves not only to be branded with every degree of obloquy which the more ambitious inhabitants of the world have unboundedly heaped upon them, but have patiently submitted to various insults and injuries which the superior expertness and tyrannical genius of other countries have enabled them to offer towards inoffensive manners, and a total disregard of that consequence which, among other countries, particularly those of Europe, is considered as the only true basis of political greatness.

Any serious attempt to trace the ancient history of Chinese navigation were, in this place, particularly improper, not only because the enquiry is somewhat irrelative to the present subject, but that it could scarcely be carried through with any degree of correctness or precision. Jealous only of the superior antiquity of other nations, the people of China have so studiously struck into the regions of fancy, that the documents from which such an account must be drawn, except the compiler himself thought proper to follow the example of the people whose history he attempted to write, would prove as insufficient for the purpose, as the works of Geoffrey of Monmouth would be, when supported by no stronger proofs than his own assertions, to furnish materials for that of Great Britain.

It is admitted, even by their own historians, and their testimony is supported by such collateral circumstances, as to engage the belief of the most shrewd and critical enquirers, not only that improvement has been much more stationary throughout that immense empire than it has been in any other civilized country in the universe; but that it has, in almost the strictest possible sense of the word, been completely quiescent for more than thirty centuries. But though on one hand the more experienced artificer of Europe may, in some measure, affect to hold in derision the clumsy structure called a junk; however unable he may justly consider one of the first rate to maintain a contest with any of the most inferior ships of war, constructed according to the principles practised by Europeans; however dangerous he may think it would be to attempt the circumnavigation of the world in a vessel so ill-calculated in many respects to meet the boisterous and united attacks of the waves and of the wind, yet he cannot but view with admiration bordering on astonishment, that boldness, and even that degree of skill, which,

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in those remote ages, when Europe itself had, comparatively speaking, scarcely began to emerge from the rudest state of barbarism, in almost every branch of science, enabled the self-taught Chinese to explore, as it is generally admitted he did, the face of the ocean, and construct vessels which, even at the present moment, were their burthen only to be considered, as the standard of perfection, would be deemed, by the most scientific nations, by no means inconsiderable, but fit for every purpose that could be required of them.

The Chinese are said, by modern travellers, to build vessels which trade as far as Manilla, Japan, and Batavia, the burthen of which frequently amounts to eight hundred, or even a thousand tons. All well informed writers agree, as already stated, that no alteration has been made in the naval architecture of this extraordinary people for several centuries past; and it has excited their wonder, in no small degree, that though Canton is visited by the ships of various nations, the superior construction of which, it might be apprehended, must be necessarily acknowleged, yet they have never thought proper to adopt any improvement whatever in the art. It is rational, however, to believe, that if no innovation has been made in the form and rigging of their vessels, the size and burden of them has been nevertheless permitted to increase, with the spirit of trade and foreign commerce which the example of Europeans cannot but have diffused. This supposition will reconcile the account just given of the tonnage of the modern Chinese vessels, with the seemingly contradictory authority of former visitors, from whom it has been understood that the capacity of the Chinese vessels, or junks, never exceeded three hundred tons.

To the eyes of Europeans, these vessels, whether armed or commercial, are, in form, little varying from flat-bottomed boats, or that particular species called, by Europeans, punts, with two or three masts. Those which are built and equipped for war, are, as might be expected, somewhat better formed for alertness and dispatch than such as are destined for trade alone; but, in other respects, the mode of decoration and general design are nearly similar; the latter being provided with ports, though seldom with ordnance. The most remarkable features in their hull are the abrupt and flat termination of the prow, together with the total absence of a bowsprit. In the vessel represented on the annexed plate, a strangely fashioned contrivance answering the purposes of a windlass, is affixed to the outside of the bow, by means of which the anchor is weighed; but this appendage is by no means universal. The prevailing idea among this, as, indeed, among almost every other people,

respecting

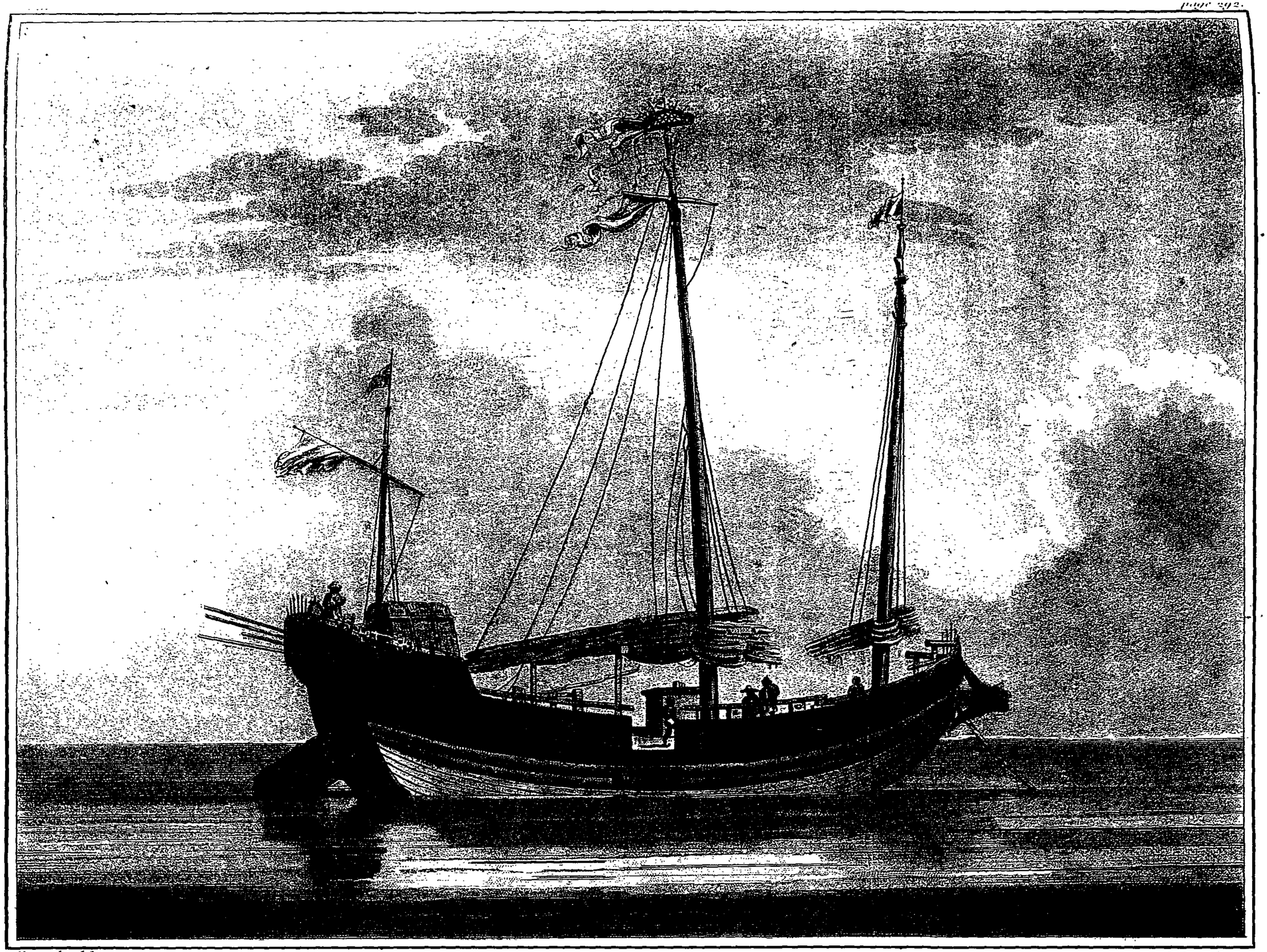
respecting the form and decoration of the prow, appears to be that of giving it a rude and general resemblance to the head of an animal; to this end, the bows on each of which is generally painted an eye *, with the pupil turned forward, are made to rise like the ears of an owl; while the flat timbers of the stem, forming a species of beak, contribute, in some degree, to increase the singular similarity.

The lower part of the stern is either entirely hollowed in an angular form, or, being flat in its primary construction, has, in its centre, a recess of that description. Within this, is a second hollow, or chamber, rising the whole height nearly from the keel to the bottom of the quarter-gallery, within which the rudder moves, and is protected from the violence of the sea. This rudder is five or six feet in length, and managed by ropes only, one of which fastens to the poop, which occasionally lifts it out of the water, with a view to its preservation.

The vessels here spoken of, differ very materially from the boats and barges employed in the inland navigation of the country †. They are called by the Portugueze, soma, a word that is, probably, a corruption of the native Chinese, not very remote in sound, and signifying a ship. Their rigging is the most simple that can be imagined; and yet, were the construction of their hull equally advantageous, they would be good sailers. It has been already said, that their prow is without a bowsprit. They have frequently two mizen masts, or at most, a very small one, far back on the poop, like that of a bark, and generally better entitled, from its employment, situation, and size, to the name of a flag-taff; for though they sometimes hoist a small top-mast, it is done to little purpose. The mainmast is placed very near the foremast, which latter stands remarkably forward. The proportion of one to the other, is as two to three; and that of the mainmast to the vessel, is nearly the same; its length being commonly equal

* In this respect the Chinese appear to follow the example of the ancients, who were accustomed to paint eyes on the bows of their vessels, particularly their war gallies, to denote vigilance or alertness.

† Of which defcription nearly the whole are, with the greatest propriety, called imperial, as they are employed in carrying the government taxes, which are taken in kind from all the provinces, to the city of Pekin. To these are to be added those kept by the emperor to convey the viceroys, and other officers, to their several stations; and next, those which are private property, belonging to the princes of the blood, the mandarins, the literati, the merchants, and tradesmen. These vessels are built and adorned according to the rank of the owners; but even the lowest in gradation are extremely beautiful, as well as convenient.



Alexander del. *Barlow sculp.*

View of a Chinese Vessel or Junk

London. Published as the Act directs. March 25th 1802. by G.& W. Nicol Pall Mall.

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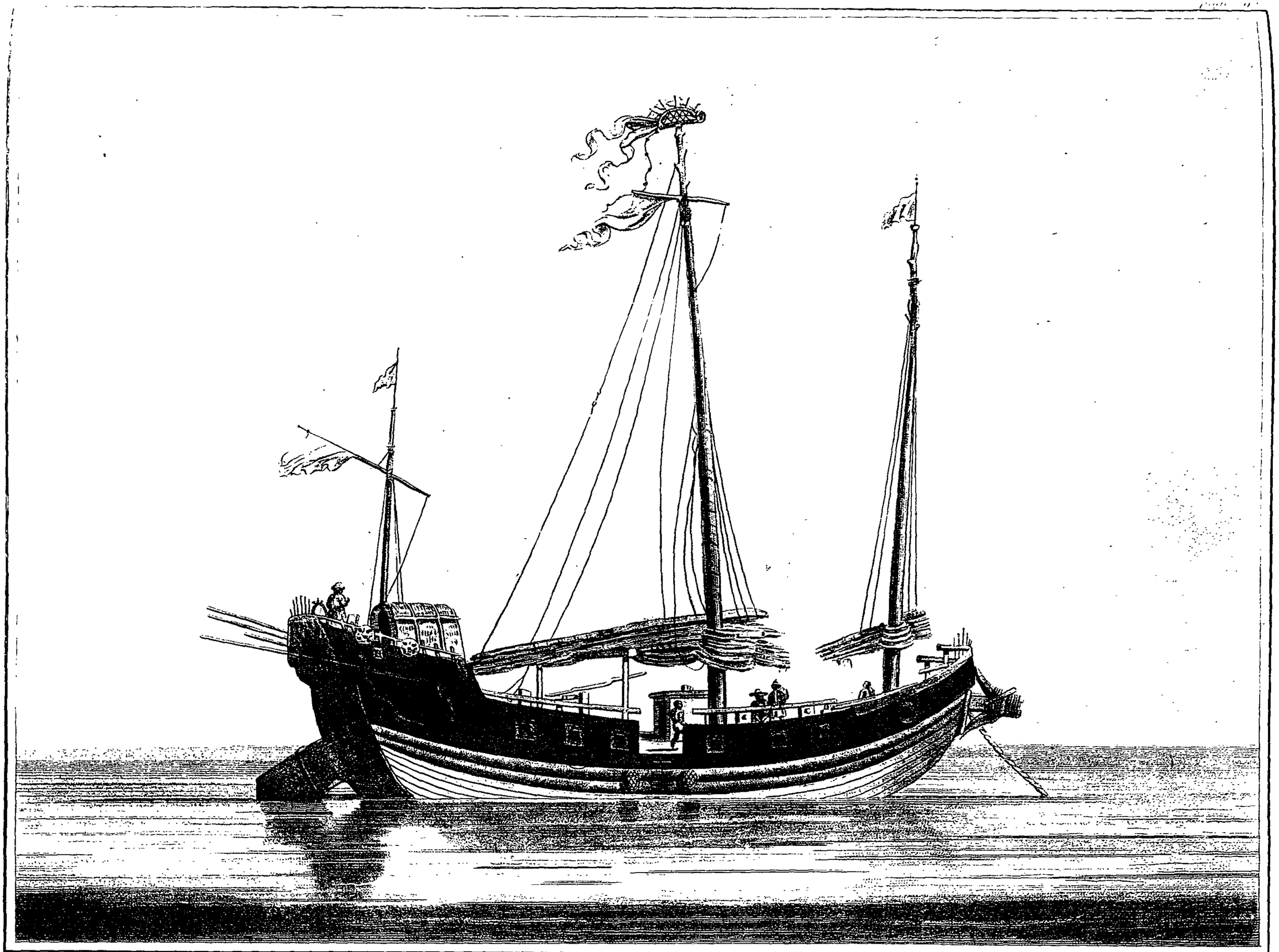

Alexander del *Basire sculp*

View of a Chinese Vessel or Junk

to two thirds of that of the junk. Their sails, which are formed of mats, made of bamboo, or of some cane plentiful in China, are so constructed as to divide into leaves, and shut up not unlike a fan; each section being governed by a rod of bamboo. These canes serve to augment the general strength of the sail, and the Chinese sailors run up them when they find it necessary to go aloft, as Europeans do up the shrowds; though the former generally carry on the manœuvres necessary to work the vessel, upon deck *. The upper part of the sail is attached to a yard, which is brought in contact with the mast, not at the centre, but near the end; on the deck is a bar or beam, more than a foot in breadth, and four or five inches thick, supported by a post at a sufficient height to admit a passage under it, for the men; on this the main sail rests, when lowered, and is kept steady by it, when drawn up. These sails, owing to their stiffness, hold a considerable proportion of wind; but, however well fitted and appropriated the rigging and sails may be, their excellence is greatly overbalanced by the defects in the hull; insomuch that, upon the whole, the vessel makes but little way, and appears extremely ill calculated for extensive, or even safe navigation. The natives, however, whom practice and long habit have taught to overcome the disadvantages their marine architects have subjected them to, perform the short voyages to which they are accustomed, with, in all probability, as much security as the more artificial and scientific forms of European vessels afford to the seamen who navigate them. They have neither pilot nor master on board, but are solely managed by the mariners, who steer them, and who are, in every respect, sufficiently skilful in their different occupations. But it is to be remembered, that their voyages are short, easy, and performed in calm weather; for they have little notion of pilotage in the open sea, where they lay the head of the ship upon the rhumb, or line, on which they propose to sail, and hold on their track without giving themselves any concern respecting the deviation of the vessel from its course, or what is more correctly called, its lee-way.

A soma, or vessel, of which a Jesuit missionary has given the particulars, written about the year 1687, was, in burden, nearly one hundred and twenty tons. The general mould, with the exception of the prow, had a pleasing appearance. Its main-mast stood considerably forwarder than it is placed by Europeans; and the two masts were very close to each other. The stays and shrowds were of simple

* Authentic Accounts of an Embassy from the King of Great Britain to the Emperor of China, by Sir George Staunton, Baronet; vol. I. p. 435.

cordage, and shiftable from larboard to starboard, so as to be always fixed to leeward. This vessel had a bowsprit and mizen-mast, which were placed on the larboard side. It was only the main, however, which deserved the name of a mast; but this latter, which, in effect, supplied the place of all the rest, was, in proportion to the vessel, extremely large; and, for its still greater strength, was fished from the kelson as high as the second deck *. Two flat pieces of wood, strongly bolted to the head of the main-mast, the extremities of which united at the height of seven or eight feet above it, supplied the place of a top-mast.

The sails, as stated in other instances, were formed of matting, square, and two in number; which, from their disposition, were fairly to be denominated main and fore-sails. The former was more than five-and-forty feet in height, and twenty or thirty in width; the latter was in the same proportion to the mast on which it was hoisted. On each side of the sails several rows of bamboos were stretched across their width, at the distance, on the outer side, of about one foot from each other; but much farther apart on that next the mast. The sails were attached to the mast by means of several fillets or hoops, as the European boom-sails are, at about one-fourth part of their width, on the side that had no sheet; thus dividing them into two very unequal portions, and leaving more than three-quarters of the sail on the sheet-side; but by means of this distribution, they could turn round the mast, as on a pivot. The yards served to confine the sails above, and a large boom of wood, of equal length with the yard, performed the same office below: this boom kept the sail in a state of extension; and, in order that it should not tear it, it was held up by two blocks, suspended by two ropes, which came down from the mast for that purpose. These sails had only one sheet each, but several small ropes were attached to the ends of the bamboo already mentioned, and were either fastened to a rope, answering to the European sheet, or made into a large knot.

These kind of sails are furled and unfurled somewhat like that particular contrivance, called a Venetian blind. When they wished to hoist the main-sail, the sailors employed two rollers, and three haulyards, which ran through three

* In the Account of the Embassy to China, mention is made of a considerable number of junks differing in construction from each other: some with four stout masts, tapering regularly to the head, and none of them supported by shrouds, but fixed by a strong massy step in the kelson below, and kept firm by large wedges driven in at the partners above. Some of their sails were of matting, others of cotton.

sheaves

sheaves fixed in the head of the mast: when it was neccessary to drop it, they pulled it with two iron hooks, and, after loosening the haulyards, doubled it together in its several folds; but this operation was inartificial, and required a great deal of time. The Chinese too, to save themselves trouble, suffered the sail to remain set during a calm; and it is easy to conceive, that the enormous weight of it, which acted on the mast as on a lever, must have plunged the whole of the prow into the sea, had they not, to counterbalance its force, taken care to stow the greater part of the lading abaft: from this circumstance it happened, that when the vessel was at anchor, her prow was almost entirely out of the water, while the poop was nearly sunk. Owing to the magnitude of the sail, and its forward situation, a great portion of wind was undoubtedly collected behind; but, on the other hand, with a scant wind, they could not keep the head up, but must inevitably fall to leeward; to say nothing of the danger of tacking, when suddenly forsaken by the breeze.

In fair weather, this vessel carried, together with a sprit-sail and top-sail, a large species of driver or studding sail, fastened to the side of the sail, which was without a sheet; these, with a square sail on the mizen, were all made of calico. The poop was hollowed in the middle, to make room for the rudder, which was in a sort of chamber, that sheltered it from the waves in foul weather. This chamber was formed by the two sides of the poop, which, leaving a large opening outward, approached each other gradually within, where they formed a receding angle, flattened, or cut off, at the point, in order to give full liberty to the play of the rudder. The rudder was suspended by two cables or ropes, the ends of which ran upon two rollers, and by means of them was lifted up, or let down at pleasure. Two other cables, which after passing under the vessel came up at the prow, where, when loose, they were wound up by means of a third roller, supplied the place of the European pintles attached to the stern-post. It had a bar seven or eight feet in length without either hook or pulley, to increase the power of the tiller. Four ropes, two of which were attached to each side of the vessel, and of which one on each side went several times round the bar, served to confine the tiller in its place.

"A rudder, however, of this description, is, after all," observes the missionary who gives the account, "exposed to several inconveniences. It could have but little influence on the vessel, not only because the cable which confined it yielded and lengthened too easily, but also on account of the continual irregular motion which was produced in consequence of its own incessant agitation. From

this circumstance arose another disadvantage, which consisted in the great difficulty of keeping the same course, considering the diminutiveness of the rudder, and the elasticity of the ropes to which it was fastened *.

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* Osbeck gives the following short account of the inferior Chinese vessels, which cannot fail to prove interesting, because it briefly explains the form and principles of their construction, and also the peculiar employments and dimensions of the different vessels :

Sampan is a Chinese boat, without a keel, looking almost like a trough; they are made of different dimensions, but are mostly covered. There are passenger sampans, to carry people backward and forward between the town and ships. These you may hire every day, and you may either take larger ones, tow eytin, or lesser ones, suutin. They are quicker than you would expect, provided you take advantage of the ebb or flood. These boats are as long as sloops, but broader, almost like a baking trough, and have, at the end, one or more decks made of bamboo-sticks; the cover, or roof, is also made of bamboo-sticks, arched over in the shape of a grater, and may be raised or lowered at pleasure; the sides are made of boards, with little holes, and shutters instead of windows; the boards are fastened on both sides to posts, which have notches like steps on the inside, that the roof may be let down, and rest on them; on both ends of the deck are commonly two little doors, at least there is one at the stern. A fine white smooth carpet, spread up as far as the boards, makes the floor, which in the middle consists of loose boards; but this carpet is only made use of to sleep on. As these boats differ from those of Europeans in shape, they are likewise rowed in a different manner, for two rowers, posting themselves at the back end of the sampan, work it forward very readily by the motion of two oars, and can almost turn the vessel just as they please; the oars, which are covered with a little hollow quadrangular iron, are laid on iron swivels, which are fastened in the side of the sampan. At the iron the oars are pieced, which makes them look a little bent. In common, a rower sits before with a short oar, but this he is forced to lay aside when he comes near the city, on account of the great throng of sampans; and this inconvenience has confirmed the Chinese in their old way of rowing. Instead of pitch they make use of a cement like putty, which Europeans call chinan, but the Chinese kiang. Some authors say, that this cement is made of lime, and a rezin exsuding from the tree tong yea, with bamboo ockam.

The sampan, on board which Mr. Osbeck embarked, had, besides a couple of chairs, the following furniture, two oblong tables or boards, on which some Chinese characters were drawn, a lanthorn for the night-time, and a pot to boil rice in. They have also a little cover for their household god, decorated with gilt paper and other ornaments; before him stood a pot, filled with ashes, into which the tapers were put before the idol. The candles were nothing else than bamboo-chips, to the upper end of which sawdust of sandal wood was stuck on with gum. These tapers are every where lighted before the idols in the pagodas, and before the doors in the streets, and in so large a city occasion a smoke very pernicious to the eyes. Before this idol stood some samso, or Chinese brandy, water, &c. Europeans ought to try whether the Chinese would not like to use juniper wood instead of sandal wood, which latter comes from Surat, and has almost the same smell with juniper. Fishermen's sampans are the smallest of all, narrow like some European fishing boats, and have either a very small deck of straw, or bamboo, or are even without that poor convenience. Bad as these boats are, yet parents, and their naked children, are seen to get their livelihood in them, both summer and winter, by fishing,

and

"The steersman made no use of the mariner's compass, but determined his course by means of a box, the exterior of which was divided into twenty-four equal

and by picking up what has been thrown overboard from other vessels. For this purpose they tie several hooks to a cord, and throw them out in different places, almost in the same manner as fishermen lay their eel hooks. They have better or worse fortune, as it happens. There is nothing so fil hy but what these people will use as food; and the hogs, which having died are thrown overboard, when they begin to putrify, float in a few days, often become the occasion of quarrels, which end in battles. The reason why the Europeans sink the hogs which die on board their ships, is, that the inhabitants of this place may not feed upon them; for it is said, that the Chinese, when they go on board any ships, will give pepper to the hogs, which they think is poison to them, that they may get them again if they should die. It is certain, that numbers of hogs die in the possession of the Europeans whilst they stay in China.

Duck-sampanes are boats in which they feed four or five hundred ducks. They have on both sides a bridge, which may be let down. In the day-time the ducks feed in the river upon herbs and fish: at night their master calls them into his boat; they immediately obey him, and come on board as soon as he lets down his bridge. Sampanes of burden are the largest boats, by which all porcelain, silk, and other commodities, are conveyed from Canton to the European ships. But these boats do not serve for the above-mentioned purposes only, but are used besides as houses for whole families, which are born, marry, and die in them. They commonly have, besides hogs, some chickens and dogs, and some flower pots, containing Guinea pepper, or some other plants, in these boats. All the above-mentioned sampanes are not embellished by painting. Mandarin sampanes are greater or less red painted boats, ornamented with dragons, and such like figures, or with little flags. The Chinese also use galleys, sao sjoan, with eighteen or twenty oars, and as many men. They lay near the city of Canton, and some of them near the European ships, probably for the security of the country.

Junks, called Yoan sian by the Chinese, or, according to Du Halde, Thouen: in the Portugueze language, soma or sommes, are the greater vessels, above two hundred feet long and twenty broad. With these ships the Chinese sail along the coasts of Batavia, Manilla, Ainam, Cochin china, Cambogia, Chinchiu. From the last-mentioned place comes the white sugar candy, which, at present, costs six tale three mace peckuls. Such a vessel holds one thousand chests of tea.—It is high and round on each side, the rudder is very slender, and can be taken out with very little difficulty, and hung at the other end of the ship; it has no upper sails, but only one great sail, the fore-sail, the sprit-sail, and the mizen-sail, all which are made of mats, tied together, quite across: with bamboo-sticks. They strike their sails with difficulty, as they can only effect it but by sending a sailor up the yard to tread the sails down. In these vessels there is a continual noise, because the person in command does not insist on silence. They are painted either black or white, and have always an eye painted on each side. Their compass is divided into twenty-four points. The timber of which these ships are built, is called Saaomock. The anchors are made of hard wood, which is called tat siew, or tie mou; but they are commonly plated with iron at the extremities, and are more handy than European anchors of iron, as well as of more service to small vessels.

The

equal parts, and marked with the rhumbs of the wind. This box was placed upon a bed of sand, not only to keep the needle steady, and preserve it from the motion of the vessel, but to hold certain mixtures, which, with a conjunction of veneration and superstition, were supposed to constitute, or, at least, strengthen the virtues of the needle. Nor were these the only regale that the prejudices of the Chinese presented to their compass, which they regarded, and, so far justly, as the faithful guides of their voyages: they even carried their devotion to the extent of offering it sacrificial meats *."

The chief care of the steersman was to decorate his binnacle with nails; a certain indication of the narrow extent to which the nation had carried its marine knowlege; and derogatory to its reputation in that pursuit, if, as has been said, it was the first inventor of the compass. The pilot laid the rhumb parallel to the keel, by means of a silken thread, which divided the card into two equal parts, from north to south. In steering, he adopted one of the two following methods: designing, for instance, to run to any given point, he put the rhumb parallel to the keel, and then turned the vessel till the needle was parallel to the string; or, which was productive of the same end, he put the string parallel to the keel, and made the needle point as necessary to his intended course. The needles in the largest of the compasses seen by the missionaries were somewhat less than three inches in length One end bore some resemblance to a *fleur-de-lis,* and the other terminated in a kind of trident.'

By these, and other writers of the sevententh century, the manufacture of these needles is variously attributed to the people of Nanga-Saki, in Japan, and to the Chinese themselves. The different reports are easily reconciled, by sup-

The following brief remarks on the Chinese method of constructing vessels are of still more modern date —

"Our head carpenter was a young man of much ingenuity and professional skill, who had served his time in London; but the Chinese artificers in this branch had not the least idea of our mode of naval architecture. The vessels of their nation, which navigate the China and adjacent seas, are of a construction peculiar to them. In vessels of a thousand tons burthen, not a particle of iron is used; their very anchors are formed of wood, and their enormous sails made of matting. Yet these floating bodies of timber are able to encounter any tempestuous weather, hold a remarkable good wind, sail well, and are worked with such facility and care, as to cause the astonishment of European sailors. It was therefore a matter of some difficulty to turn the professional skill of our Chinese carpenters to a mode of application so entirely different from their own habitual experience and practice."

Meares's Voyage to the North-West Coast of America.

* Du Halde, vol. I. p. 529, *et seq.*

posing

posing that they are made by both ; but a subject of much greater importance, and, till lately, of some perplexity, presents itself in a very peculiar excellence hitherto supposed to reside in the needles themselves.

The rude compass of the self-named first inventors of that instrument excites the smile of the European seaman ; the claim to that honour has been the subject of no small degree of sarcasm ; but it appears, that whether in reality the Chinese were the people to whom the compass was earliest known, or otherwise, they have long carried it to a pitch of excellence with which some nations are still unacquainted. The Chinese are not tormented with the variation of the needle ; but the cause from whence this essential advantage is derived, was never discovered by travellers till the period of the British embassy. It has been related, on the authority of some Chinese books, that these needles do not receive their virtue from the loadstone, though the Chinese possess that mineral in abundance, but from a curious mixture of orpiment, cinnabar, sandrak, and filings of steel, which being reduced into a fine powder, are made into a kind of paste by a sufficient quantity of blood drawn from the comb of a white cock. In this paste the needles were said to be put, being previously rolled in paper, and there kept seven days and seven nights, over a clear charcoal fire. After this operation, being taken out, and worn three days longer next to the skin of a man, they are found fit for use, pointing directly to the north, and unliable to the frequent variations which affect those that are touched by the loadstone.

Though a considerable part of this recipe is obviously superstitious, it does not seem justifiable to reject, as wholly impracticable, the idea that some composition may, or might be made, by which the virtues of the loadstone would be, at least, supplied. If the loadstone itself be not magical, its properties must depend upon its physical composition, and some latent powers, it must be allowed, may be brought into action among the stated ingredients. It by no means follows, however, that from any artificial mode of communicating the magnetic properties, the great object of superior fidelity to the pole should be attained ; a virtue which the needles have been always acknowledged to possess ; and by those too, who were even more willing to doubt the skill of the Chinese, than the efficacy of their nostrum.

A satisfactory explanation of this question has been, at length, obtained. The merit it appears, does not belong to the needle, but to the construction of the compass itself, and the following circumstantial description is extracted from Sir George Staunton's recent account of the embassy already mentioned.

' As

'As to the compass, it is, among the Chinese, in universal use. With them the magnetic needle is seldom made to exceed an inch in length, and is less than a line in thickness. It is poised with great nicety, and is remarkably sensible; by which is meant, that it appears to move at the least change of position, towards the east or west of the box in which it is suspended; though, in fact, the nature of the magnet, and the perfection of the machine containing it, consists in the needle's privation of all motion, or, its continuing to point always steadily toward the same portion of the heavens, however rapidly may be whirled the compass-box, or other object surrounding. This steadiness in the Chinese compass is accomplished by a particular contrivance, as observed by Mr. Barrow. "A piece of thin copper is strapped round the centre of the needle. The copper is riveted by its edges to the upper part of a small hemispherical cup, of the same metal, turned downwards. The cup, so inverted, serves as a socket to receive a steel pivot rising from a cavity made in a round piece of light wood or cork, which thus forms the compass-box. The surfaces of the socket and pivot intended to meet each other are perfectly polished, to avoid, as much as possible, all friction. The cup has a proportionably broad margin, which, independent of adding to its weight, tends, from its horizontal position, to keep the centre of gravity in all situations of the compass, nearly in coincidence with the centre of suspension. The cavity in which the needle is thus suspended, is, in form, circular, and is little more than sufficient to receive the needle, cup, and pivot. Over this cavity is placed a thin piece of transparent talc, which prevents the needle from being affected by any motion of the external air; but permits the apparent motion of the former to be easily observed. The small and short needle of the Chinese has a material advantage over those of the usual size in Europe, with regard to the inclination, or dip, towards the horizon; which, in the latter, requires that one extremity of the needle should be made so much heavier than the other, as will counteract the magnetic attraction. This being different in different parts of the world, can only be accurately true at the place for which it had been constructed; but, in short and light needles, suspended after the Chinese manner, the weight below the point of suspension is more than sufficient to overcome the magnetic power of the dip, or inclination, in all situations of the globe; and therefore such needles will never deviate from their horizontal position *."

* Authentic Account of an Embassy from the King of Great Britain to the Emperor of China; vol. I. p. 411.

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In the account just quoted, as given by Mr. Barrow, it is observable, that the reduced size of the needle, which is by him supposed to be the principal cause of perfection in the instrument, and upon which, as an indispensable requisite, the most particular stress is laid, is not even mentioned in the description before given of it, in almost the precise terms used by the missionaries who communicated the information. The farther observations and remarks of Sir George Staunton, who certainly writes under the advantage of actual inspection, cannot fail to prove most interestingly, and, perhaps, completely illustrative of the subject:

'Upon the upper surface of the box are drawn,' as appears in the engraving given in the account of the Embassy, 'several concentric lines, or circles, according to the various sizes of the compass-box. This is seldom less than four inches in diameter. The circles are distinguished by different Chinese characters. Eight are marked on the first or innermost circle; four of which denote the cardinal points. The same eight characters also signify eight equal divisions of the natural day, or space during which the earth revolves upon its own axis in pursuing its course round the sun; every such division being of three hours. The characters denoting those divisions, are such as to point out nearly the position of the sun at those different portions of the day, beginning at sun-rise, of which the character means also the eastern position of the heavens. With this first circle of eight divisions, agrees the first compass which is said to have appeared in Europe in the beginning of the fourteenth century; and which, by subsequent subdivisions, was improved into thirty-two points, as seamen became more expert and accurate in their observations.

'In another circle of the Chinese compass are twenty-four divisions, in each of which a character is inserted, which marks a twenty-fourth portion of the heavens, and, consequently, a twenty-fourth part of the natural day. According to this division, each point, or twenty-fourth portion of the compass, comprehends an integral number of fifteen degrees out of three hundred and sixty, into which all circles of the celestial sphere have been agreed to be divided, probably since that early period when the number of days in which the sun performed his apparent course was supposed to be three hundred and sixty.

'The remaining circles round the Chinese compass contain the characters of the cycle of sixty years, by which this nation expresses its chronology, and other characters expressive of their philosophical and mythological doctrines, to which they are so attached as to render this instrument as familiar to the people a-shore as it is at sea.

'The nature and cause of the qualities of the magnet have, at all times, been subjects of contemplation among the Chinese. Their theory, in this instance, as in many others, is the reverse of that of European philosophers. It is obvious, that while the magnetic needle, suspended by its centre, points at one extremity to the north, it necessarily looks, at the other, to the south; but each retains its own polarity; and if turned round by force, will resume, when left at liberty, its original station, opposite to its respective pole. Thus the power, which principally attracts the needle, may be supposed to reside toward either, or both portions of the earth. In Europe it has been thought that the needle has its chief *tendency* to the north pole; but, in China, the south alone is considered as containing the attractive power. The Chinese name of the compass is *ting-nan-ching*, or needle pointing to the south; and a distinguishing mark is fixed on the magnet's southern pole, as it is in European compasses upon that of the north.

'The Emperor, Caung-Shee, grandfather to the present, who was in the habit of committing to paper his observations upon a variety of subjects, and who, having encouraged learned missionaries at his court, had not been inattentive to their philosophical opinions, writes on this occasion, "I have heard Europeans say, that the needle obeys the north. In our oldest records it is said, it turns to the south; but as neither have explained the cause, I see but little to be gained in adopting one opinion in preference to the other. The ancients, however, are first in date; and the farther I proceed, the more I am convinced of their knowledge of the operations and mechanism of nature. Moreover, as all action grows languid, and nearly is suspended towards the north, it is less likely that the virtue which gives motion to the magnetic needle, should proceed from that quarter."

'An allusion is made likewise to this property of the magnet in the books of Chinese mythology, or fabulous portion of the history of the empire. It is there related, that in the reign of Chin-Nong, a rebel, of the name of TchooYoo, had found, in order the better to elude or confound his enemies, the means of creating, at his pleasure, thick fogs, and even utter darkness; to prevent the effect of which, the emperor invented a machine, consisting of a figure standing in a chariot, with one arm stretched out, and pointing always to the southward, which circumstance enabled the imperial troops to follow the proper track for discovering and overthrowing the rebel.

'The emperor, Caung-Shee, was well aware, however, that the needle does not always point directly either to the south or north; and that this declination is not the same in all countries, nor invariable in the same place; but the sphere of Chinese

Chinese navigation is too limited to have afforded experience or observation for forming any system of laws supposed to govern the variation of the needle. Their knowlege of the general polarity of the needle answers every purpose, in practice, to that navigation; and their researches upon most subjects seem to have been directed chiefly, and to be too often circumscribed, by the immediate prospect of utility resulting from the continuance of every particular pursuit *.'

With respect to the state of naval science in China, the narrative of the embassy seems to corroborate the testimony of former travellers; and it is unanimously agreed that the progress of time has produced but little addition to its extent. On one hand, however, it appears, that their knowlege is fully adequate to every want which their peculiar situation subjects them to; and, on the other, something must be allowed for the prejudices with which their attainments are unavoidably viewed by foreigners: by Europeans especially, whom necessity, or avidity, has led into the most arduous maritime enterprizes, and thus, as it were, forced upon them an intimate acquaintance with this interesting science. Sir George Staunton observes, in a passage already quoted †, that "it is not uncommon to have, on board Chinese vessels, maps or sketches of the intended route, with the neighbouring headlands, cut out or engraved upon the back of empty gourds." The fact admitted, that, in the delineation of these charts, a globular is preferred to an horizontal medium, it is scarcely possible to avoid imputing the observation by which it is followed, to perverseness of observation.

Some deference is doubtless due to a writer who speaks from information acquired upon the spot; but it is difficult to reconcile with probability the supposition that a people, accustomed on all other occasions to draw upon a *flat surface*, should chuse a convex, and absolutely sperical body, to receive the outlines of an object which they imagine to be plane. If, however, in this instance, Sir George has suffered himself to judge too meanly of the knowlege of this people, it is to be considered as only a slight and inadvertent derelection from the good sense, candour, and liberal sentiment, which seem to pervade every other part of the account.

Respecting the shipping of the Japanese, the short account that can be given of it will be usefully introduced by applying to them a remark suggested by the author already mentioned, that China gives the *ton*, as it were, to all the sur-

* Authentic Account of an Embassy, &c. vol. I. p. 443, *et seq.*

† See vol. I. p. 8, *et seq.*

rounding nations. The vessels, however, of these islands, are, in their construction and rigging, sufficiently distinct from those of the Chinese to deserve a separate description.

The Japanese build such are intended to go to sea of fir or cedar, both of which woods are produced in abundance in that country. The construction of those belonging to merchants is varied according to the purposes for which they are designed, and the length of the voyage they are intended to prosecute. The pleasure-boats, which form a totally distinct, but very numerous class, exhibit a still greater variety: for the shape and magnitude of the latter depend on the taste, the wealth, and the dignity of their owners. They are generally contrived for oars. The first cabin is low, but over this is erected another, which is lofty, and extremely handsome both in its dimensions, and its embellishments; it has open windows, and is capable of being divided into several chambers by means of screens. The upper, and, indeed, various other parts of the galley, are elegantly decorated with streamers and other ornaments, and, in its general description, resembles that noticed by Sir George Staunton, at Cochin China *.

The vesselss designed for commerce are generally one hundred and twenty feet in length, and twenty in breadth; contrived to move as well by means of their sails as their oars. They taper to a point from the midship bend to the prow, and the two ends of the keel rise considerably out of the water. The body of the vessel is not convex, as it is in all European ships; but the part which is below water-mark runs almost in a strait line toward the keel. The stern is broad and flat, having a large opening in its centre, which reaches nearly to the bottom of the hold, and discovers the whole interior of the vessel. The deck, which rises a little toward the stern, is widest along the sides, which are flat and undivided. It is formed of loose planks of deal, which are not fixed, or even fastened together; and, when the vessel is fully laden, is very little above the surface of the water. A species of cabin, of more than a man's height, covers almost the whole deck; only a small space at the stern being left open for the stowage of the anchors and tackle. This cabin projects nearly two feet beyond each side of the vessel, and is full of windows,

* "At Cochin-China the embassy was visited by a chief, who came in a large decked galley, of a light and sharp construction, formed for quick sailing. The rowers, who were very numerous, rowed in an erect posture, and pushed the oars from them, making short and frequent strokes. A state cabin was erected on the middle of the deck, painted in lively colours; each end of the galley was decorated with streamers of different colours and figures. The state cabin was, on the outside, surrounded with spears and various ensigns of authority." Chinese Embassy, vol. I. p. 330.

which

which are glazed, and can be opened at pleasure. In the hold are various small chambers for passengers, separated from each other by screens and doors, the wood-work of which is covered with neat mats. The most remote of the cabins is considered as the best, and for that reason is given to the most distinguished tenant. The upper, or most elevated deck, is somewhat flat, and formed of planks in a very finished state, being perfectly well joined. When the mast is lowered, it is laid upon this deck; and, at night, the sail being spread over the whole, provides a shelter for the sailors, who sometimes, that they may the better preserve themselves from rain, add another covering of straw, which is always kept on board for that purpose.

The only sail which the vessel carries is made of canvas, and very large in its dimensions. There is but one mast, which is generally fixed about five feet abaft the midship. The sailors raise this mast by means of blocks, and lower it in the same manner when they come to an anchor. The anchors are of iron, and the cables, which are made of twisted straw, are much stronger than can readily be imagined.

Whenever it is calm, thirty or forty oars are employed. The rowers are seated on banks, which are placed toward the stern; they row in cadence to the tune of a song, the tone of certain words, or to a repetition of sounds, which serves at once to regulate the motion, and animate the men. In rowing, they do not spread, or extend the oars, but let them fall almost perpendicularly into the water, and then draw them up: this method is described not only as having all the advantages of that practised by Europeans, but as being less labourious, and productive of more effect; particularly when, as in passing through straits, or along side another, the vessel has but little space to move in. It is to be observed also, that the seats of the rowers are elevated considerably above the water, and the oars made in a form peculiarly adapted to the action. They are not, as is customary in other parts of the world, strait, but somewhat curved, and divided in the middle by a moveable joint, which, yielding to the pressure of the water, permits them to be lifted out of it with greater ease *.

The

* The following extract from Sir George Staunton, containing a beautiful river-scene in China, is interesting in this place, in the way both of illustration and comparison:

"When there happens to be little or no stream or wind, it is not uncommon for the sailors to make use of two large sculls or oars, sometimes placed toward the fore part of the vessel, like the pectoral fins of a fish, and sometimes near the stern; and, in some vessels, one only at the stern; and

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The planks, and various pieces of carpentry, are fastened together at the joints and extremities by bolts and bands of copper. The prow is ornamented with a knot or tassel of long black strings, and when persons of quality are on board, their cabins are adorned with hangings, on whicht heir arms are embroidered. The latter circumstance, as is the custom on board the gallies of the Cochin-Chinese, is denoted by the splendor of the helm, on one side of which is fixed the pike, or a badge of authority; on the other, as in ordinary vessels, is a vane for the assistance of the pilot. In those of small dimensions, as soon as the anchor is let go, the rudder is taken out, and made use of as a bridge, over which the crew pass to the shore, through the large opening in the stern already mentioned *.

It would be unfair, however, to close this account of Japanese shipping without observing, that not only its improvement is crippled, but even the obvious inconvenience attending the large aperture in the stern, is actually forced upon it by an express and penal law of the state. Previous to the revolution which took place in 1517, the empire possessed large fleets of vessels fitted for war, of considerable bulk, built in the Chinese manner, and well adapted to the navigation even of those tempestuous seas. At this time, also, the Japanese had merchant vessels of great burthen, which traded as far as Tong-King, in China, Siam, Bengal, and other parts of India. But, under the new government, the ships of war have been laid up or destroyed; and those of the merchants are not only reduced in number and size, but built designedly in such a manner as to render them unfit for proceeding far to sea: so that, excepting those which are privately and unlawfully employed, there are none capable of making a longer voyage than to the opposite coast of China, to Korea, or to Jetzo. The only commerce which the government views with real complacency, is the domestic trade carried on between the several islands which compose the empire. Thus though

one at the bow. Each oar has a small socket that receives an iron pivot, fixed on a piece of wood projected for that purpose from the gun-wale. Several men are employed to move each of these large oars, which are never taken out of the water, but are made to perform beneath its surface a kind vibratory motion, displacing the water first with one edge, and afterwards with the other. This labour the men seem to undergo with pleasure, keeping time with their strokes to a spirited air, sung by the master, and accompanied in the chorus by all the men. The same air is sung on board every vessel in the river. On a still moon-light night, this cheerful air, re-echoed from a hundred different vessels, gliding in different directions through the water, conveyed a pleasing idea of the contented disposition of this labourious class, being entirely on that element, and forming no inconsiderable portion of the general population." Vol. II. p. 46.

* See Kempfer's History of Japan.

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the dangerous opening in the stern was at first a rude contrivance for the easy management of the rudder, invented, no doubt, before a spirit of commerce or naval enterprize had first induced a wish to stretch out to sea; it is now continued by the positive injunction of a government professing to be anxious for the recal of the primitive simplicity of the earliest ages; which, therefore, while it almost entirely denies access to foreigners, adopts this method of repressing a speculative or wandering disposition in its own subjects. It ought by no means to excite surprize that Europeans should look with contempt, or, at best, astonishment, upon nations which, like those of China and Japan, place their glory, or, to use a less suspicious term, their felicity, in skilful and assiduous agriculture, in frugality, in the absence of luxury, in a population undiminished by war or emigration, as well as without a beggar, and betray so much insensibility to the blessings of commerce, and the ambition of naval reputation. But something of difficult comprehension may be readily acknowleged to present itself in contemplating the feelings of those who, in their turn, though with amiable and venerable prejudice, and ignorant of the climates of Europe, as well as the principles which actuate her sons, despise, if not abhor, the men whom any common consideration can tempt to "*abandon the tombs of their fathers* *."

Quitting the shipping of China, the mind, in progressively tracing the naval history of the universe, naturally directs its attention to that of India: enquiry there encounters a people extremely different in temper from the former, certainly inferior to them in antiquity as members of an empire, but far surpassing them in their scientific improvements, with respect to those pursuits which they have thought proper to embrace. The particulars which have been preserved relative to the ancient shipping of this extensive country, are extremely few. It is known, that in the very early ages a considerable commerce was carried on between Egypt and the different India nations, by means of the Red Sea; but, in respect to the quality or form of the vessels employed, history, which, except on very extraordinary occasons, seldom descends to such minutiæ, has been totally silent. Imperfectly known to Europeans till nearly the close of the fifteenth century, they were left equally as much as their Chinese neighbours in the full enjoyment of all such national and hereditary prejudices as they might have formed. Owing to that length of time during which they were allowed to take root and flourish without opposition, it

* See the Account of the Chinese Embassy.

might

might have been expected they would have acquired such strength as would have rendered them invincible. The case, however, was far otherwise; adopting, in great measure, and in a much more enlarged extent, than it was reasonable to suppose they would do, the ideas of the strangers who had introduced themselves to their acquaintance, and associating, far as nature and circumstances would permit, the practice of the European with their own, they soon rendered themselves at least respectable as artists in the opinion of the new comers, and embraced with avidity every imported contrivance that appeared in any degree likely to tend towards the improvement and advantage of their former practice.

Perhaps, if it be safe or politic to make such an assertion, it would have proved materially advantageous to the science of marine architecture, if the inhabitants of India had, in the early ages of the world, embraced the spirit of enterprize, of conquest, and distant colonization with the same eagerness which the Greeks or the Romans manifested in every public measure they undertook. The greatest adepts in Europe have beheld with astonishment these novices in the art, not only embracing with readiness, principles but a short time before, totally unknown to them, but actually improving on those very principles, more especially in those points to which mechanical operations extend, in a manner peculiar to themselves, and in which, from the particular circumstances attending them, Europeans are unable to follow their example.

If the enquirer will pay but a slight attention to the nature of the science, the two branches, philosophical and mechanical, into which it is divided, and compare them with the opinions, that from self-evident facts may fairly be drawn, in respect to the habits, the genius, and the perseverance of this industrious people, he will admit that as it is by no means impossible for a person, totally unacquainted with the mechanical method of constructing a vessel, to prepare what is called a draught, containing full instructions as to its form, contrived on philosophical and the most abstruse principles of science, with direct attention to the individual purpose or employment to which it is built. The srructure so imagined, will, in all human probability, be found to answer the intention of the architect, if he be competent to his employment, perfectly well; on the other hand he will allow that, the ablest mechanic, the man who will be able to put the different parts of a vessel together with the utmost care, according to the form prescribed to him, may prove but a very indifferent judge whether that form be adequate to, or proper, for the intended purpose. On this particular point, the science of marine archi-

architecture, as practised in India, appears to turn; and as the inhabitants seem principally to excel in the practical or mechanical part, the following account of their adroitness, given by a modern foreign navigator, cannot fail to be interesting:

"The ships which are built here, cost, it is true, very dear, but they are able to navigate the sea for an hundred years together. There was a ship here in existance, which performed a voyage to Mocho and back, in the year 1770, being freighted on account of Mr. Sluiskens, the second of the Dutch factory at Surat, of which, the time when it was built, is not known; only, that in a letter, written by Mr. Zwaardekroon, the then director of Surat, to the government at Batavia, in the year 1702, it is called the Old Ship, although from that time till the year 1770, it performed an annual voyage to the Red Sea.

"This ship was also known by the appellation of the Holy Ship, because the pilgrims from India, going to, or returning from, Mecca, always took their passage on board of her; and on the same account, that ship had a peculiar privilege at Mocha and Jedda, of taking on board a certain number of chests and boxes, free of duty, which privilege was the more valuable to the owners, as the duties exacted at those places are excessively high.

"When I was at Surat, on my first voyage, this ship was a-ground about half a Dutch mile below the city, and so near falling to pieces, that I did not think the owners would be at the charge of repairing her again; in effect, when I was at Surat, in the year 1777, on my second voyage thither, she was, as I have before mentioned, entirely destroyed by the last violent afflux of the river.

"I computed it to be one hundred and thirty, or thirty-five feet from stem to stern. It was built like a frigate, with three masts, and cut away full as sharp at the bow as our ships. The stern, as tradition says, had been that of an English ship, which was lost in this river; it has, at least, much resemblance to the representation of the ships of the last century. It had two decks, likewise a quarter-deck and forecastle; the gun-room was very large; the height between the decks was scarcely five feet; the cabin was adorned within with a great deal of carving, and not the least piece of wood was left without some foliage or imagery; upon the quarter deck were, as in our ships, little huts or cabins, and before them a fixed awning, such as we call a wafelkraam; the catheads were excessively heavy pieces of timber, twice as large as those of a ship of one hundred and fifty feet in length; the cables run over the top, at the bow, in a deep notch, as our tow-lines do; the bowsprit was not fixed upon the stem, but at the right side of it.

"The ship belonged to a Turkish merchant, called Tjillebe, who had several ships. He is one of the principal merchants of the city, and greatly respected by the Nabob.

"They do not build their ships in the same manner the Europeans do, for most of the timbers are fitted in after the planks have been put together. There was one built while I was at Surat, in what is called the English yard; it appeared to me to have about one hundred feet length of keel; it stood in a kind of graving dock, if a large excavation, closed towards the river by a dam, without a stone facing, or any thing that resembled it, may deserve that appellation.

"They do not, therefore, launch their ships as we do, from slips, but when sufficiently finished for floating, they dig through, from the water to the docks just mentioned, which they call cradles, and the ships are, as it were, dropped into the stream that is brought up to them.

"They do not put the planks together, as we do, with flat edges, towards each other, but rabbit them; and they make the parts fit into each other with the greatest exactness, bestowing much time and attention upon this operation; for this purpose they smear the edges of the planks which are set up, with red lead, and those which are intended to be placed next are put upon them, and pressed down, in order to be able to discern the inequalities which are marked by the red lead. These are afterwards taken away, and they repeat this, till the whole fits exactly; they then rub both edges with a sort of glue, which becomes, by age, as hard as iron, and they cover it with a thin layer of capoc, after which they unite the planks so firmly, and closely with pegs, that the seam is scarcely visible, and the whole seems to form one entire piece of timber.

"They fit the timbers and beams in the same way to the planks, so that a piece of wood is sometimes put in, and taken out, more than ten times before it is fixed for good and all.

"The knees, or crooked timbers, are generally of the natural growth into that form, without being forced or warped by fire, especially where particular care is taken of the construction, and no expence spared.

"Instead of bolts, they make use of pieces of iron, forged like spikes, the point of which is driven through, clenched on the inside, and again driven into the wood. They make the iron, which they imploy for this purpose, very rough and flexible.

"They have also a peculiar way of preserving their ships bottoms, by occasionally rubbing into them an oil, which they call wood-oil, and the planks imbibing

imbibing it, serves greatly to nourish and keep them from decay. The masting generally used in the country ships are pohoon masts, chief from the Malabar coasts; but for the cordage, what is worth any thing must come from Europe. Their coir ropes, for either running or standing rigging, are more harsh and untractable than what is produced from hemp. Coir cables, however, are very serviceable, and have their peculiar excellencies in opposition to the European cable; they last much the longest in salt water, fresh being apt to rot them. Their anchors are mostly European, the iron being much better worked. With sails they are very well supplied by the country manufacture of cotton into a sail called dungaree, which though not so strong, or lasting as canvas, Holland's duck, or vitry, is, whilst in use, more pliant, and less apt to split than they are. For pitch they have the gum of a tree called dammer, which is not at all inferior to the other.

"The tediousness of their method together with the dearness of the timber they employ, which much be brought hither from distant places, make shipbuilding very dear, but at the same time their vessels are very lasting, and can go to sea for many years before any repairs of the hull are at all wanted. Calking of the seams, as may easily be conceived, does not come in question here, for if they once give way, the whole bottom is of very little value.

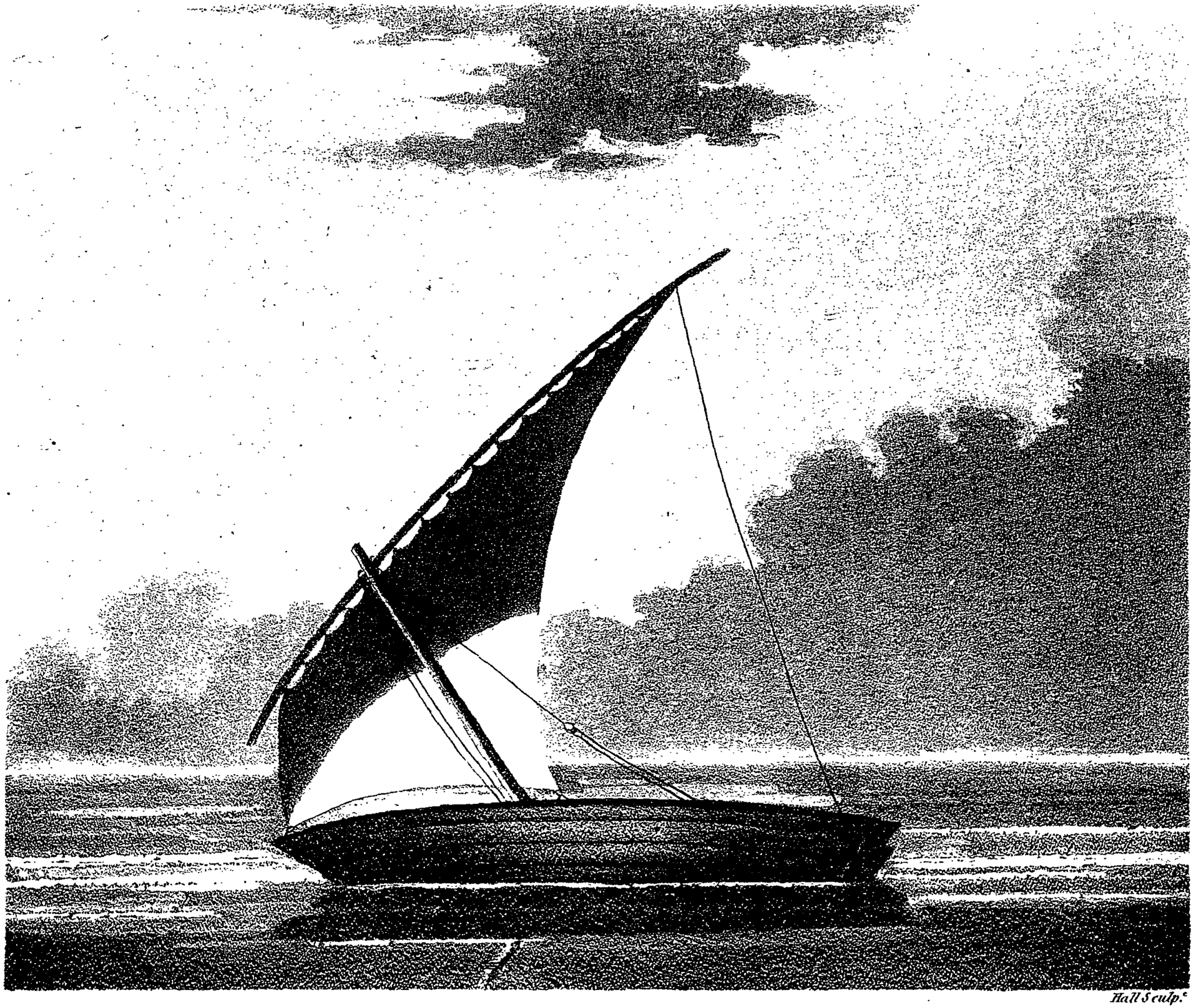
"A ship was lately contracted for at the price of seventy-five thousand rupees, or f. 112 500, Dutch; and was intended to load one thousand nine hundred canassers of sugar, or one hundred and nine lasts."

To the foregoing very scientific account of the method practised by the marine architects of India in the construction of vessels, it is totally unnecessary to make any other addition, than to state the extent to which the practice just described, is carried at the present day. Scarcely was it introduced to their knowlege, ere it immediately became, partially, adopted by Europeans; but although they hesitate not to give their most unqualified approbation of its superiority and excellence, yet, particular circumstances and objections have caused it to be necessarily pursued with less avidity than it certainly would have been, had excellence and perfection been the only desiderata in the art. This circumstance forms a certain and incontrovertible proof that the comprehensive or intelligent mind, improved by long practice and experience, is less liable, on account of its multiplied necessities, to improve those principles of perfection which, it may be observed, sometimes militate against the supply of those necessities, than the less lively and more contracted imagination which is content with confining itself, to objects less diffused.

The Indian method of constructing vessels, far as the mere mechanical art of putting them together extends, has been occasionally practised by Europeans, particularly at Bombay, the principal naval depôt, or dock-yard, belonging to the British East India Company, but has, which rather throws a slur on the benefits derived from commerce, sunk considerably in its practice, owing to the great length of time necessarily required in the formation of vessels so elaborately built. There, as well as in other parts of India, the planks forming the bottom are so nicely jointed, or to use the proper scientific term, fayed together, as to render caulking almost totally unnecessary. The advantages derived from this practice are not solely confined to the removal of the operation just stated, which is, perhaps, among the greatest inconveniences which attend maritime pursuits, but it materially contributes to the preservation of the bottom, by the exclusion of the water, and the almost total prevention of its insinuation between the joints, than which nothing can be more conducive to duration of the bottom in a sound state. The peculiar quality of the wood produced in the country is particularly contributive to the longevity of vessels, and nothing but its scarcity, added to the immense length of time required to construct a ship entirely in the Indian method, may, perhaps, prevent that quarter of the world from becoming the grand emporium or pattern for the rest of the world in marine architecture *. "At Bombay," say modern authors, "the ships built with teak wood, are so closely and carefully put together, that they very seldom require caulking. They have also a practice in that part of the world of rabbiting the planks into each other, which when done, the interstices being filled with cotton, and the whole exterior payed with a resinous substance, or pitch, common in that country, and called *da'ma*, the bottom presents, as it were, one impenetrable surface, as impervious to the water as it is possible for any substance, in the slightest degree porous, should be. The mechanical labour and attention paid to the formation of the part just described, caused, as it were, naturally, and many years before it was introduced into what may be called European practice, the most rigid care to be

* The Sir Edward Hughes, a ship belonging to the British East India Company, was built at Bombay some years since by the Indian shipwrights. The care taken in the construction, and the materials used (the teak wood above-mentioned) have caused this vessel to render much more service than any European-built ship has done. It is a custom with the Indian shipwrights, which must not be omitted to be mentioned, to make tanks, or cisterns, in the vessels they build; these supply the place of water-butts, for the necessary supply of the crew, and are found, in some respects, such as the saving of manual labour, as well as stowage, together with their continuing always perfectly water-tight, to answer the proposed purpose extremely well.

paid



Hall Sculp.ᵗ

A Dingay or Bombay Bark.

Published by J. Faulder, Bond Street.

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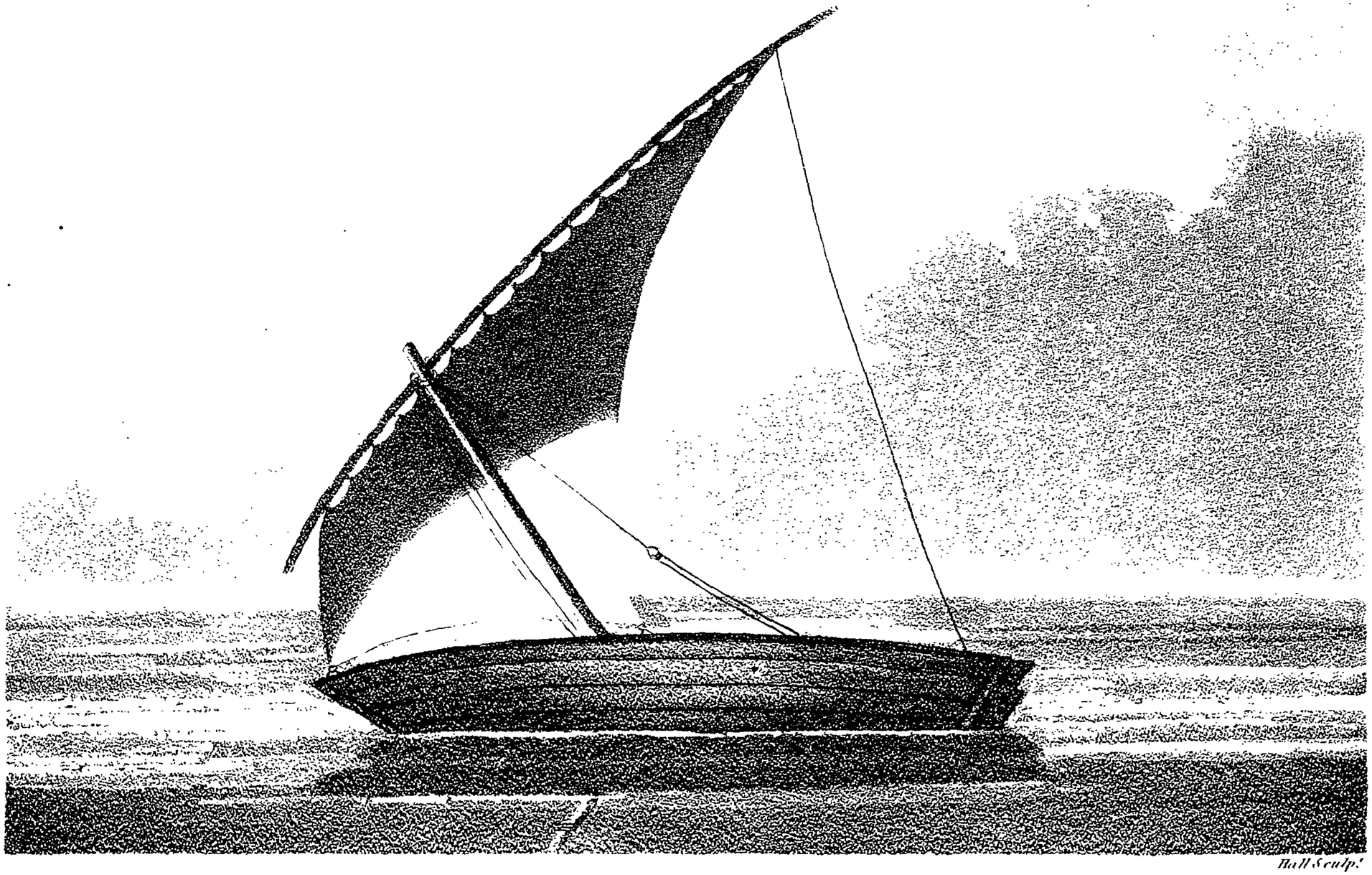

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paid that it should continue serviceable if possible; and, if the term be allowable, on account of its quaintness, beyond the period of its natural life. To accomplish this purpose, it has been, and still continues customary with the natives and their employers, to double, or case over, the bottom of a ship when it manifests any symptoms of decay, with a second, formed of somewhat slighter materials than the original one; and somewhat resembling the European practice of sheathing. This contrivance has been found, on some accounts, to answer the intention of the practice extremely well, more particularly as swiftness in sailing is a property to which the marine architecture of India have paid, as being but little necessary to their purpose, very immaterial attention.

The genius of other inhabitants occupying this quarter of the world, appears particularly brilliant in their contrivances invented for the purpose of aiding their nautical pursuits, and the ingenuity with which they have been brought into use. Nor has this penetration and expertness been confined to the continent of India alone, where the intercourse with the natives of other quarters of the world might afford some ground for the disputant, (who, jealous for the honour of European science, might affect to doubt whether the practice, whatever it might be, was not entirely produced by that connexion,) but has extended throughout the whole of those almost innumerable islands scattered over the face of the Indian or Asiatic ocean, properly so called: dispersed through climates, or placed under latitudes diverging and varying from each other as widely almost as any, of which the whole face of the universe can present an example. The Asiatic navigators of the torrid, the temperate, and the nearly frigid zone, of that part of the ocean subject to those hurricanes and tempests which so frequently prove destructive to the most scientific seamen, and the best constructed ships, as well as those who have been happily placed by Providence under the more genial influence of the steady constant breezes, better known by the name of the trade winds, have all displayed an attention to their situation, an ingenuity in providing against disasters, and a skill in rendering their means fully equal to their wants, which cannot fail to excite the admiration and the most sincere applause of those whose practice has been matured, and perfected by long observation, as well as continued experience.

The most celebrated, and, perhaps, the most singular of the vessels, natives, as they may be called, of this ocean, is the Indian or flying proa. The contrivers and possessors of this very extraordinary boat, or canoe, and the practice of constructing it, in which they were most probably well versed, for the space of many centuries, ere they

they became known to Europeans, are described as a bold, active, and intrepid people; their limbs elegantly formed, and, from the general contour, as well as size of their bodies, apparently fitted by nature to encounter the greatest difficulties or hardships with as little inconvenience as the human frame is capable of. Nor does it appear that the bounteous hand of Providence has been parsimonious in her gift, but after having rendered the body an object of admiration, has been equally attentive that her donation, in the respect just mentioned, should not be disgraced by an imbecillity of mind. The proa is, as has been very candidly remarked by navigators who have beheld its operations and principles with an admiration bordering almost on enthusiasm, an *invention that would* do the highest honour to any country whatever, let its nautical aptitude, skill, and dexterity be what it might. The peculiar propriety with which a vessel so contrived is adapted to the circumstances which naturally attend its destined employment and navigation, is certainly a point of still superior wonder, to the ingenuity of the contrivance which fits it for its intended purpose. The islands, of which it may, without any impropriety be termed the native, lie all of them nearly under the same meridian; a meridian where the trade winds constantly prevail. This circumstance would of necessity render any voyage extremely tedious, if attempted by a vessel contructed according to the common, or European form; for the wind, during the whole of the voyage, being constantly on the beam, it would inevitably drive the vessel so far to leeward, as to render it impossible for it to reach its point of destination, except by making long and tedious traverses. There are improvements in the art of navigation, which the Indian argonaut was, in all probability, till very lately, totally unacquainted with, and which, had he understood, he certainly would have used every means in his power to obviate the necessity of adopting, on account of their labouring tediousness.

"If we examine," observe persons who have seen them with nautical eyes, "the uncommon simplicity and ingenuity of its fabric, its contrivance, and the extraordinary velocity with which it passes through the water, it will be found equally worthy of admiration in all those points, and meriting the highest place among the mechanical productions of the most civilized nations, where arts and sciences have most eminently flourished." It is somewhat extraordinary, and not a little, perhaps, to the discredit of the more early among the European navigators, that they have only made a cursory mention of these vessels, without enlarging, as in justice and candour they ought to have done, on those peculiar excellences with which they abound. Those of more recent date, have, however, made some

some amends for the delinquency of their predecessors, and enabled the distant enquirer to comprehend, without difficulty, the character, nature, and peculiar properties of the canoe in question.

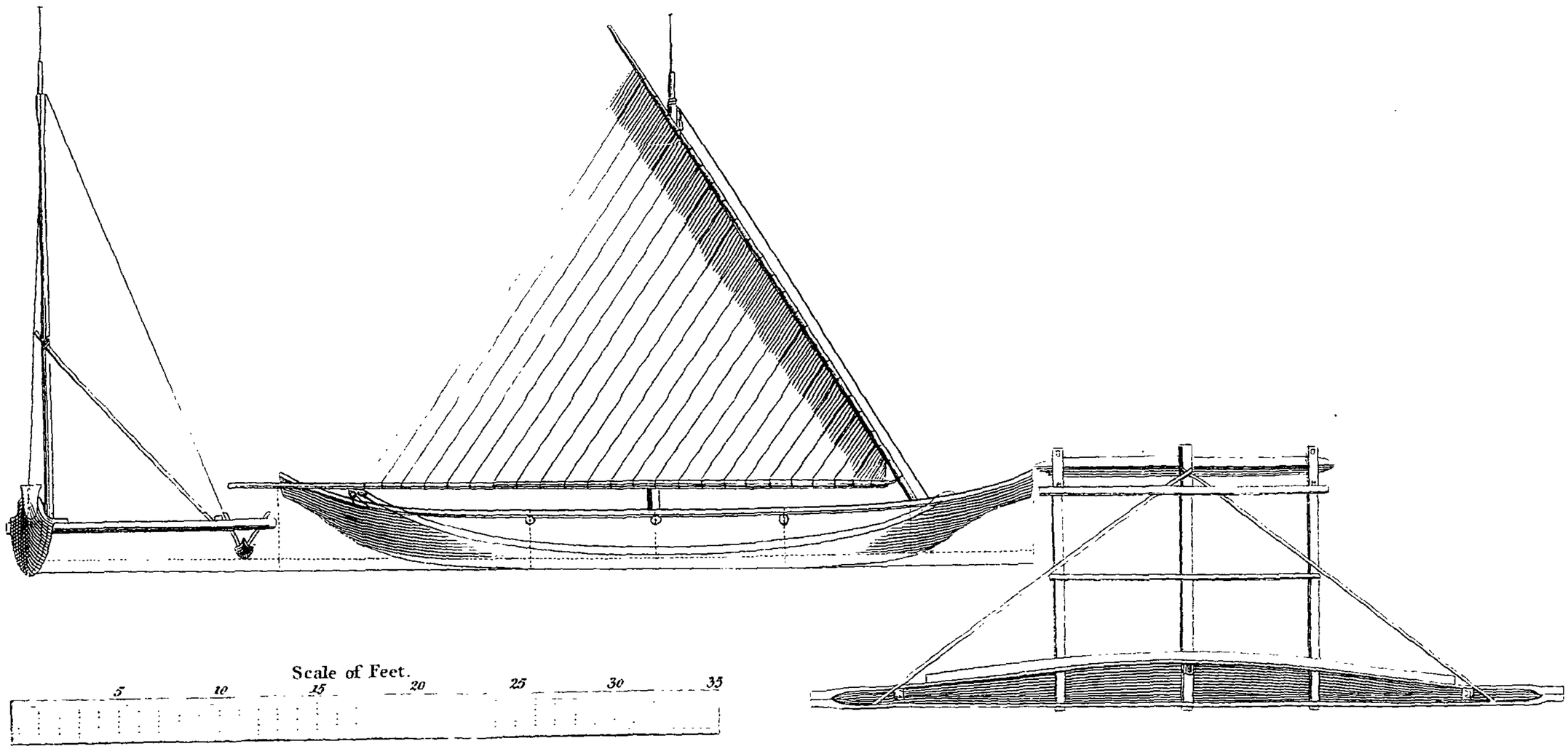
The name of flying proa has been particularly given to it on account of the extraordinary, and, in some measure, incredible velocity with which it is said, by various observers, on the positive evidence of their own sight, to pass through the water. "The Spaniards," states the ingenious author of Mr. Anson's Voyage, "assert such things as must appear altogether incredible to one who has never seen these vessels move, nor are they the only people who recount such extraordinary tales of their celerity, for those who shall have the curiosity to enquire at Portsmouth dock about an experiment tried there several years since with a very imperfect proa, built at that place, will meet with accounts no less wonderful than those which have been reported by the Spaniards. Nevertheless," continues the author, "by some rude estimations made by us, of the velocity with which they crossed the horison at a distance, while we lay at Tinian, I cannot help believing, that with a brisk trade wind, they will run nearly twenty miles in the hour, which, though greatly short of what the Spaniards report, is certainly a degree of velocity which, without the most positive evidence, might be considered incredible."

The construction of a proa is directly and diametrically opposite, to every principle of marine architecture, which, in other quarters of the globe, had been before embraced by the most polished and scientific nations. It is well known to be a prevalent custom, that the head and stern of a vessel should bear no resemblance to each other, but that the two sides should be exactly alike. In the proa, however, no difference is discernible between the head and stern; but the formation of the sides is as dissimilar as it is possible to conceive they could be. The cause of this very extraordinary formation, is easily to be discovered. The proa never puts about, but is intended, and actually sails with either end foremost, according to the will and pleasure of the navigators; one and the same side being constantly exposed to the wind. This is according to the custom of other countries built rounding, and not very materially varying from the form given by Europeans themselves. The lee-side, however, is totally flat, and owing to the extreme length of the vessel, with its want of breadth, would immediately overset, but for a contrivance and addition as extraordinary and curious, as it is salutary and useful, which prevent an accident of this disastrous and fatal kind. A frame, or outrigger, is fixed on the rounding, or weather-side, extending some distance into the water; and at its

extremity

extremity is fastened a log of wood, fashioned, in some degree, into the form of a boat. The weight of the frame balances the proa, prevents its falling over to leeward under a pressure of sail, and preserves it from all risk of oversetting, which, without such addition, would inevitably happen, on account of its very contracted breadth.

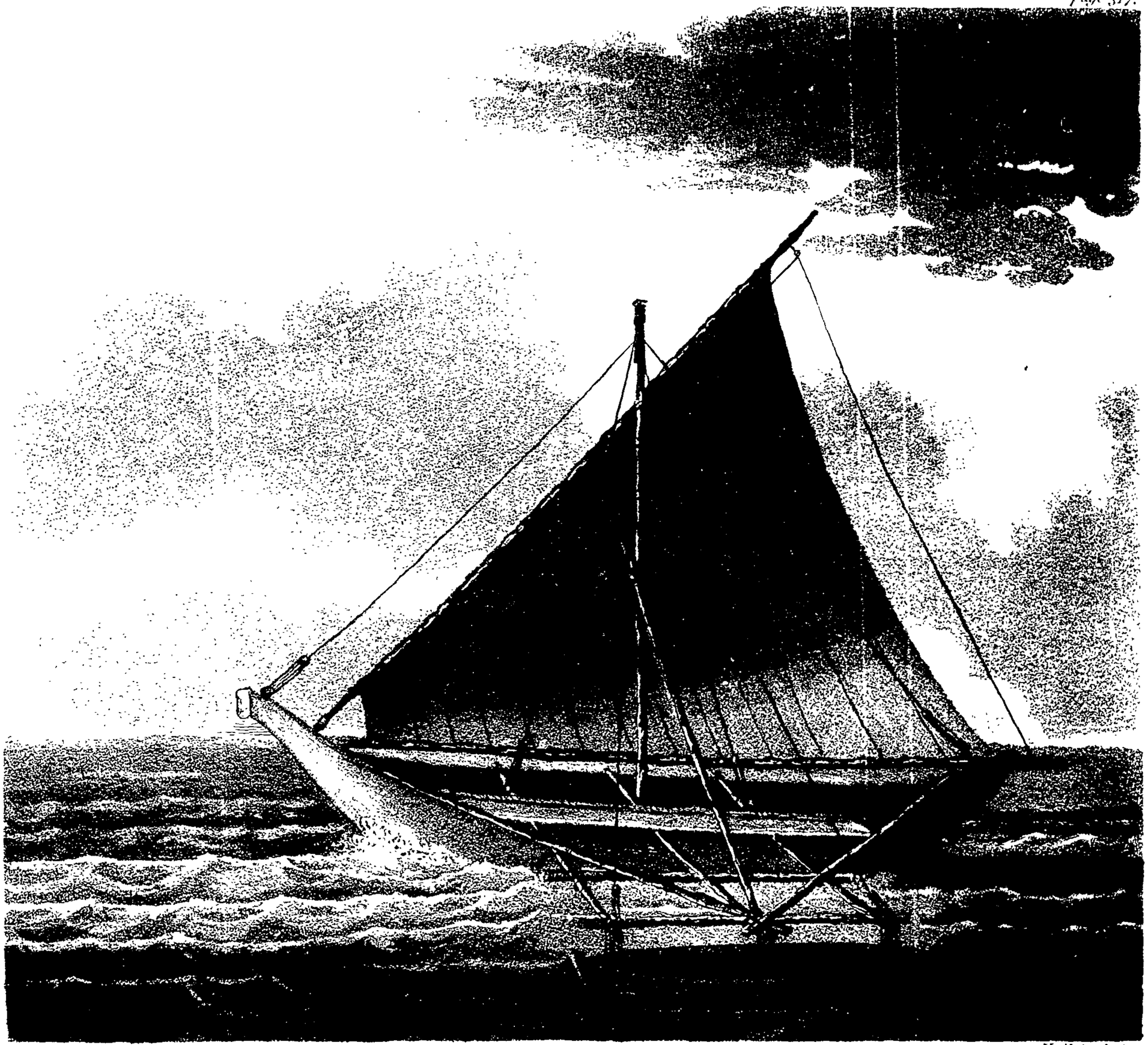
The hull of the proa itself, properly so called, is formed of two pieces of wood, joined edgeways, and sewed together, according to the custom of the country; no iron whatever being used in the construction. The bottom, that is to say, the part of it next the keel, to use the term adopted in European vessels, is about two inches in thickness, and gradually diminishes as it approaches the gunwale, where it becomes reduced one-half, or is, perhaps, even less than an inch thickness. The singularity and extraordinary properties of this vessel, cannot fail to render its representation more than commonly interesting; and the dimensions, as well as form, of each part, will be far more accurately understood by inspection, than by the most laboured description, the former of which becomes additionally curious, as being taken from an actual measurement of the different parts. Figure the first shews a sheer draught of the proa, with her sail set, as seen from the leeward; figure 2, shews the projection or form of the hull, viewed from the head, with the outrigger to windward; fig. 3, is the horizontal plan of the vessel; A B representing the lee side; C D the windward, or weather side; E F G H the outrigger, or balancing frame; I K the boat, or block of wood attached to it; L M two braces, springing from the head and stern, in order to steady and strengthen the outrigger; N O is a thin plank, fixed to windward, in order to prevent the proa from shipping water; it serves also as a seat for the person who is constantly employed in bailing the vessel, in order to keep it clear from the water which it is in the habit of constantly shipping. This contrivance serves likewise, occasionally, to carry such species, and small quantity of merchandize, or commodities as the insignificance of the vessel will permit. P is the centre part of the frame, or outrigger, in which the mast is fixed. The latter is sustained and strengthened, as seen in fig. 2, by the shore C D and the shroud, as well as by the shroud E F, together with two stays, one of which is visible, fig. 1, marked C D; the other is hid by the intervention of the sail. The sail, whose form is accurately seen, fig 1, is made of matting. The mast, yard, boom, and outrigger, all of bamboo. The heel of the yard is always laid on one of the sockets marked Z and R, Fig. 3, according to the tack on which the proa stands, and when the navigators wish to alter it, it is effected in the following simple and artless manner. They bear



Greig Sculpt.

Flying Proa of the Ladrone Isles.

Published by Darton & Harvey, Gracechurch Street, London.



Hall Sculp.

View of the Flying-proa, belonging to the Ladrone Islands.

wish to alter it, it is effected in the following simple and artless manner: they bear away a little to bring the stern up to the wind, when, by trivially easing the haulyard, raising the yard, and carrying the heel of it along the lee-side of the proa, they fix it in the opposite socket. The boom at the same time, by letting fly the sheet M, and hauling that marked N, represented fig. 1, is shifted into the contrary situation to that in which it before stood; so that what had appeared as the stern of the proa, immediately becomes the head, and the proa is trimmed on the contrary tack. When it is considered necessary either to reef or furl the sail, it is effected by rolling it round the boom.

These vessels, or proas, in general, carry six or seven Indians, two of whom are stationed in the head or stern, and steer it alternately with a paddle, according to the tack on which it is, the person in the stern being, as might be naturally supposed, the steersman. The remainder of the crew are employed, either in occasionally bailing out the water which is casually shipped, or trimming the sail. It must be sufficiently obvious, from the description of this vessel, how peculiarly it is adapted to the navigation of that cluster of islands, known by the name of the Ladrones *. These bearing N. and S. from each other and being all within the limits of the trade-wind, the proas, whose peculiar excellence consists in their sailing nearer to the wind than any vessels in the known world, are enabled to perform their contracted voyages, and pass from one island to another, as well as back again, by only shifting the sail, as either end will answer for the bow. The advantages they derive from the flatness of their lee-side, and their very narrow breadth in proportion to the length, materially co-operate in preventing them from making lee-way; and such is their swiftness that some persons have imagined they actually pass through the fluid with greater velocity, than the wind itself does over it. This experiment, however, owing to the want of a proper apparatus, has never perhaps been sufficiently tried, to warrant a determination as to its truth: notwithstanding the ingenious author of Commodore Anson's Voyage has had recourse to all the subtlety of argument, in the hope of establishing the fact. "However paradoxical it may appear,"

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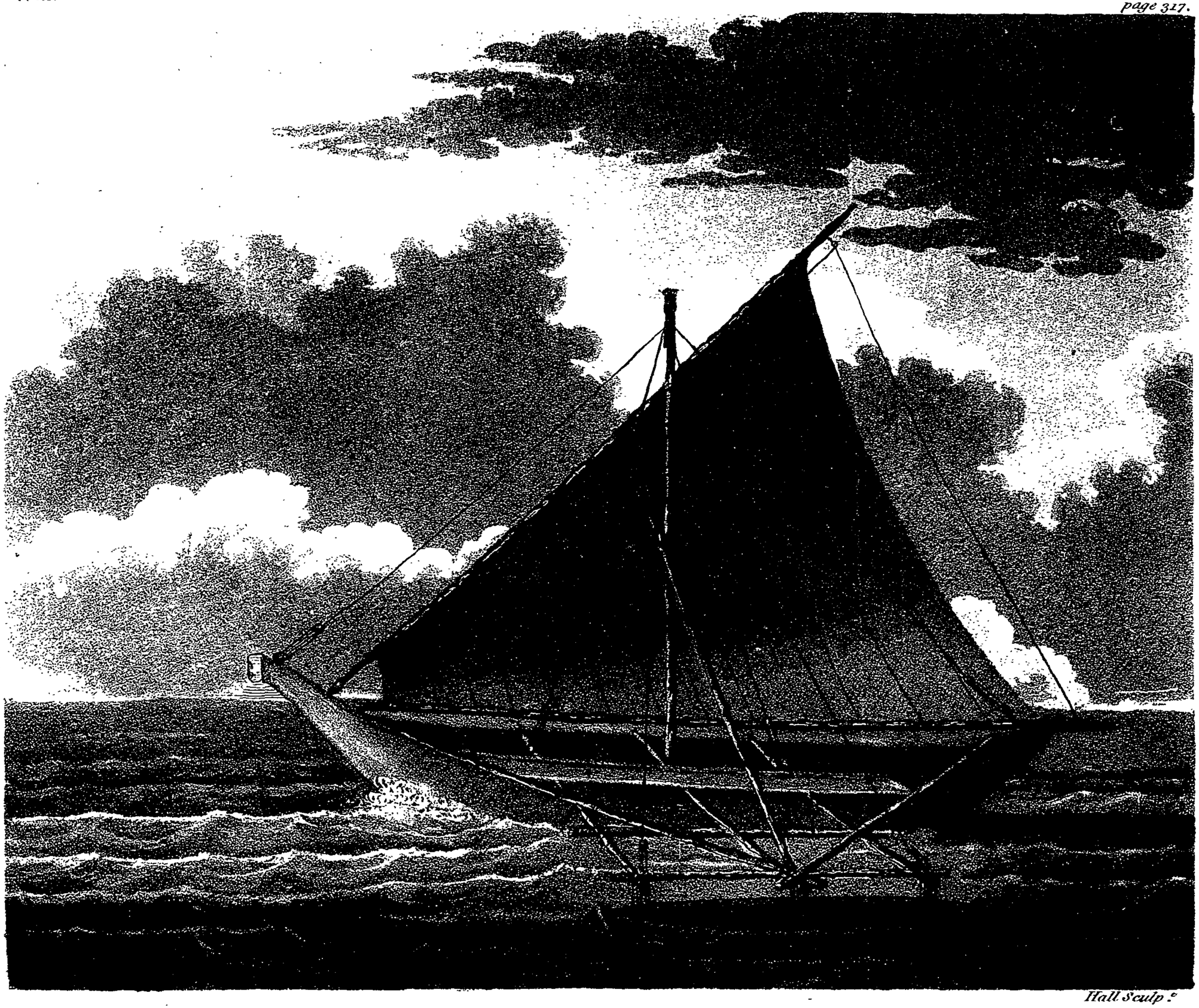

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London Published as the Act directs 1 March 1803 by John Stockdale Piccadilly

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says he, " the truth is evident enough from similar instances on shore, since it is well known that the sails of a windmill often move faster than the wind itself; and one great superiority which common mills maintain over those of any other description, particularly those contrived to move in an horizontal position, is strictly analogous to the case of a vessel sailing upon a wind (provided it can be prevented from falling to leeward), and one running before it; for the faster the sails of an horizontal windmill move, the more they detract or take away from the impulse of the wind upon them; while those of common windmills, in consequence of their moving perpendicular to the torrent of air, are acted on nearly as forcibly by the wind when they are in motion, as when they are at rest.

" Thus much," continues the author, " may suffice as to the description and nature of these singular vessels; but it must be added, that vessels bearing some obscure resemblance to them, are to be met with in various parts of the East Indies; but none of them appear comparable with those of the Ladrones, either in respect to construction or celerity: a circumstance which may, in some measure, induce mankind to believe, that the proa is the real native and original invention of the inhabitants of these islands, and was afterwards imperfectly copied by the inhabitants of neighbouring countries. For though the Ladrones have no immediate intercourse with any other people, yet a considerable number of islands lie to the S. and S. W. which are imagined to extend nearly to the coast of New Guinea."

In the very singular piece of nautical mechanism just described, may, in great measure, be discovered the principle of the lee-board, though produced by a contrivance not only dissimilar, but almost totally opposite. The effects, however singular it may at first sight be thought, are almost completely the same. The weight of the outrigger, or second boat, proves so sufficient a stay or balance to the principal, as to prevent it from ever oversetting; while the encreased lateral resistance which the clear run of the lee-side makes to the water, prevents the canoe from making that lee-way, the inconvenience of which it would otherwise have to encounter, in consequence of the wind being constantly on the beam. Thus are the principal obstacles and dangers attendant on so peculiar and limited a navigation, curiously removed by an invention, contrived by the untutored inhabitants of that quarter of the world, who, however unversed they may be in the principles of what is called science, appear to possess sufficient penetration and ingenuity, to render their arts of mechanism completely adequate to their wants and necessities.

It seems not a little singular, however, that the inhabitants of the South Sea Islands should have adopted, in the contrivance just described, a conduct diametrically opposite to that which, under the same existing circumstances, would, in all human probability, have suggested itself to an European. The latter might, at first sight, conceive the position of the outrigger to windward, one of the most violent outrages that could be committed against reason and common sense. It, nevertheless, appears to have perfectly answered the intention and wishes of the inventors; but it would certainly be an experiment well worth making, what difference would be occasioned by fixing the outrigger to leeward, adopting such alteration in its mechanism as should permit the sail to continue in its present position, which, without the removal of the shore C D, fig. 2, would be inconvenient, if not impossible. The Hollanders, whose vessels, more particularly those intended for commercial purposes, are so constructed as to be singularly buoyant or floatsome, would consequently be rendered extremely subject to fall to leeward; to say nothing of other inconveniences under which they would labour when the wind were not considerably abaft the beam, had they not adopted in remedy of the inconvenience, a well-known contrivance, known by the name of a lee-board. This being drawn up or let down into the water at pleasure, according to the tack on which the vessel may happen to be (one being fitted to each side), will, from its hold on the water occasioned by its reaching when brought into use, considerably lower than the bottom of the vessel itself, make that resistance to the impulse of a lateral or side wind, which not only serves to keep the vessel upright, but also enables it to make head-way with infinitely less deflection, from its intended course, than would inevitably take place, were such addition wanting. This board being closely attached to the vessel, and serving as a species of keel, might, according to common comprehension, certainly be used on either side at pleasure; and in direct contradiction to the common practice, or confined totally to one only, with infinitely less alteration of effect, than would be discoverable in the removal of position in the Indian outrigger. The latter acts first by its weight, as before remarked, which cannot fail of having considerable effect in swaying over the principal vessel to windward; and, secondly, by the resistance which the flatness of the lee-side, kept by the weight of the outrigger nearly at a right angle with the horizon, makes to the fluid through which it passes. It must be obvious, therefore, that, were the smaller boat closely attached to the larger, or the length of the outrigger shortened, the effect would be materially diminished, if not annihilated; and that, on the other hand, were the lee-board of the Hollander, which acts solely on the

principle of encreasing the draught of water, removed by any mechanical contrivance, and placed in action at a distance from the vessel itself, the effects would diminish in an equal ratio. Thus are these inventions, so opposite in their principles, and so totally dissimilar in every point of action and mechanism from each other, productive of the same specific advantage; though any endeavour towards causing them to approach each other closer, would be certainly destructive to both.

The inhabitants of the South Sea Islands, however the contentment of their minds may have caused them to rest satisfied with the slender knowledge they possess of the art of navigation; however the arrogant European may contemn their contracted skill in the science of marine architecture, seem to be by no means novices in the practice of it, or the art of making such voyages as are congenial to their dispositions. Mr. Walter, from whom considerable assistance has been derived in the description of the Indian proa, adds, almost immediately after having given an account of that extraordinary vessel, that * Schouten, who traversed the south part of the Pacific Ocean, as far back as the year 1615, met with a large double canoe, full of people, above a thousand leagues from the Ladrones, towards the S. E. "If that double canoe," adds he, "was any distant imitation of the flying proa, which is no very improbable conjecture, it must then be supposed that a range of islands, near enough to each other to be capable of an accidental communication, is continued thither from the Ladrones. This seems to be farther evinced by the circumstance, that all those who have crossed from America to the East Indies, in a southern latitude, have never failed to discover several small islands scattered over that immense ocean." This observation has been considerably strengthened by the events of subsequent voyages, particularly those of Byron, Cook, and other less successful navigators; whose attempts have consequently been made less known to the world. The same chain of opinions, propensities, and wants, appears to pervade the inhabitants of all those islands, so profusely scattered, by the liberal hand of nature, over this immense ocean; so that a description of the vessels of one, might, without any material impropriety, be considered as con-

* Anno Dom. 1615. William Cornelius Schouten, of Horn, *and* Jacob le Maire, *of* Amsterdam, *undertook the sixth circumnavigation of the globe, by a new passage southwards, from the Streights of* Magellan *in* Terra del Fuogo, *which they happily discovered and passed, finding out* Sebald's Isles, Staten Land, Maurice Land, Barnevelt Isles, *and so* by Cape Horn. *In the 57th deg. of* S. lat. *they found out a new passage into the South Sea, called ever since* Le Maire's Streight. *In this voyage they gave names to several islands and countries, returning to Holland* by the East Indies; *having been out two years and* eighteen days.

veying

veying no imperfect idea of those built in every other part of the same quarter of the world.

The marine of the Southern Ocean may be divided into two classes, the single and the double canoes. Many of the islands or countries, it is to be observed, rather in partial contradiction of the remark just made, seem to have confined themselves principally, if not totally, to the use of the former; which are sometimes constructed so large as to excite admiration, bordering on disbelief, of the accounts given of them, were they not established by testimony too honourable to be doubted for a single moment. The highest rank of genius and mechanical ability, appears to be possessed by the inhabitants of two extensive islands, to which, in modern times, the name of New Zealand has been attached; and the description given of their marine in the voyage made by captain Cook, in the year 1769, is most interesting and animated: though concise, it is sufficiently particular to convey a perfect idea, not only of the vessels themselves, but of the methods adopted in putting them together.

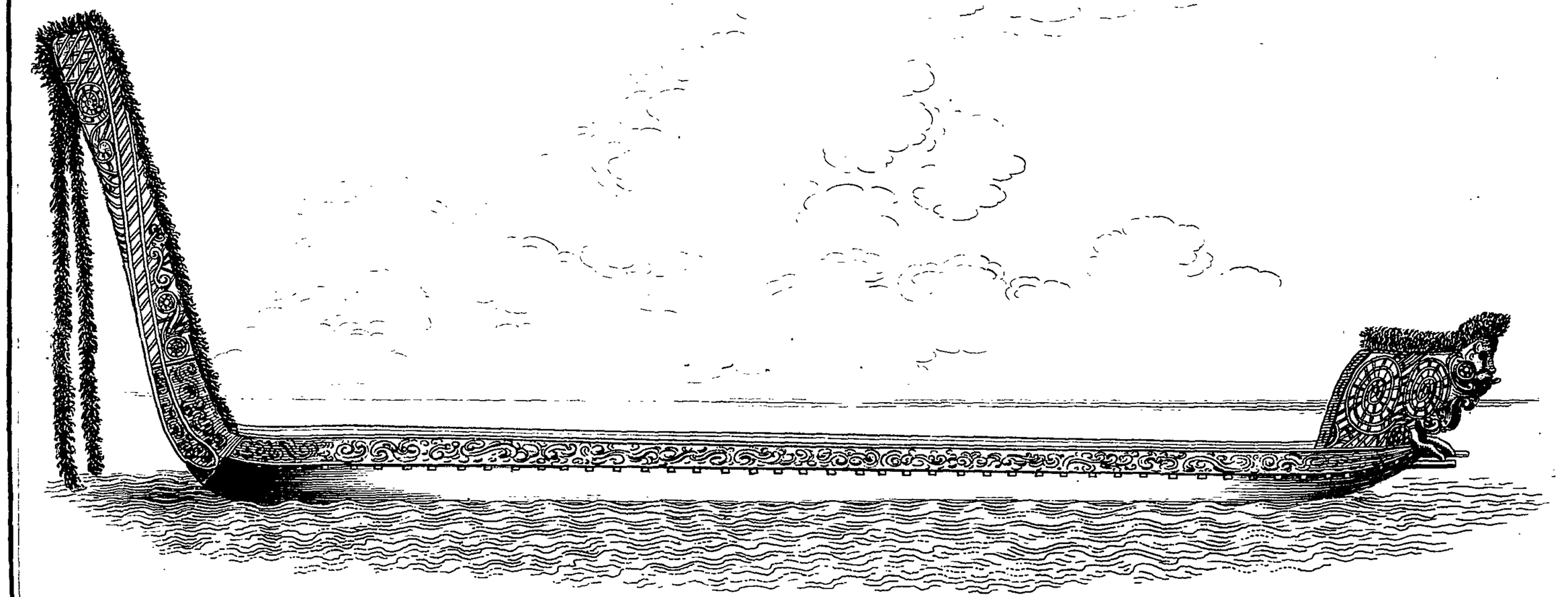
"The ingenuity of these people," says the celebrated navigator, "appears in nothing more than in their canoes; they are long and narrow, and in shape very much resemble a New England whale-boat; the larger sort seem to be built chiefly for war, and will carry from forty to eighty, or an hundred armed men. We measured one which lay ashore at Tolaga; she was sixty-eight feet and an half long, five feet broad, and three feet and an half deep; the bottom was sharp, with strait sides like a wedge, and consisted of three lengths, hollowed out to about two inches, or an inch and half thick, and well fastened together with strong plaiting; each side consisted of one entire plank sixty-three feet long, ten or twelve inches broad, and about an inch and quarter thick, and these were fitted and lashed to the bottom part, with great dexterity and strength. A considerable number of the thwarts were laid from gunwale to gunwale, to which they were securely lashed, on each side, as a strengthening to the boat. The ornament at the head projected five or six feet beyond the body, and was about four feet and an half high; the ornament at the stern was fixed upon that end as the stern-post of a ship is upon her keel, and was about fourteen feet high, two feet broad, and an inch and half thick; they both consisted of boards of carved work, of which the design was much better than the execution. All their canoes, except a few at Opoorage or Mercury Bay, which were of one piece, and hollowed by fire, are built after this plan, and few are less than twenty feet long; some of the smaller sort have outriggers, and sometimes

times two of them are joined together, but this is not common. The carving upon the stern and head, ornaments of the inferior boats, which seem to be intended wholly for fishing, consists of the figure of a man, with a face as ugly as can be conceived, and a monstrous tongue thrust out of the mouth, with the white shells of sea ears stuck in for eyes; but the canoes of the superior kind, which seem to be their men of war, are magnificently adorned with open work, and covered with loose fringes of black feathers, which had a most elegant appearance; the gunwale boards were also frequently carved in a grotesque taste, and adorned with tufts of white feathers placed upon a black ground.

"The paddles are small, light, and neatly made; the blade is of an oval shape, or rather of a shape resembling a large leaf pointed at the bottom, broadest in the middle, and gradually losing itself in the shaft; the whole length being about six feet, of which the shaft or loom, including the handle, is four, and the blade two; by the help of these oars they push on their boats with amazing velocity.

"In sailing they are not expert, having no art of going otherwise than before the wind; the sail is of netting, or mat, which is set up between two poles that are fixed upright upon each gunwale, and serve both for masts and yards, two ropes answering the purpose of sheets, and were consequently fastened above to the top of each pole; but clumsy and inconvenient as this apparatus is, they make good way before the wind, and are steered by two men, who sit in the stern, with each a paddle in his hand for that purpose."

These warlike people, inhabiting a quarter of the globe as distant almost as possible from that quarter which, in the earlier ages of the world, was the emporium of all science, appear, in many respects, to have caught the same chain of ideas: a strong and additionally convincing proof that the human mind is, in many points, particularly those which relate to mechanics, swayed and directed by the same chain of thought. Admitting this fact, it certainly, however, is not a little curious, that the inhabitants of a country situated in the Southern Atlantic, and with whom there is not, by the most imperfect tradition, the smallest trace of any European intercourse having ever existed, or even with the continent of India itself, should have adopted so many points, as well relating to ornament as to use, which, were the case otherwise, might be considered as actual imitations managed with no contemptible share of ingenuity, not only of the most ancient principles of marine architecture, but of those which are of much more modern, and indeed of recent



Greig Sculpt.

War Canoe of New Zealand.

Published by Darton & Harvey, Gracechurch Street London

recent date. The description of the form which is given to the hull, bears no mean resemblance, making the proper allowance for the difference of circumstances, to the galley of the ancients; and the dimensions assigned might, in respect to its proportions, answer almost equally well for the Carthagenian as the New Zealand galley *. The similitude between the ornamental parts, making the same allowance that has been already claimed, is no less obvious; the towering height of the stern, adopted in the Southern Atlantic, in the eighteenth century, might, without any very extravagant stretch of the fancy, be deduced from the *corymbus* of the ancients; while the head is perhaps a more striking representation of the head or ornament † attached to the bows of the Roman galley, and from thence transmitted through the Venetians, and other more modern maritime powers, to the ship at this moment in general use. In short, the same bent of genius appears, as it were, hereditarily continued through the successive generations of more than thirty centuries, till the invention of cannon rendered a more material alteration unavoidably necessary; though even in that, it was apparent that certain ideas had taken such forcible hold of the human imagination, as not to be cast off but by so complete a convulsion of the mind and nature, as should not only totally obliterate all traces of its former pursuits, but cause an inevitable engagement in such as were of very contrary nature.

Partially dormant as most of the ideas on which the marine architecture of Rome was founded necessarily became in the fourteenth century, owing to the introduction of cannon into naval contests by the Venetians, who first used them against the Genoese in the year 1377, they are found, with no small degree of wonder, singularly revived in a most remote and obscure corner of the world, in all the venerable splendor of uncivilized antiquity. Little, therefore, ought it to excite the surprise of the modern navigator, that the inhabitants of Otaheite, Owhyhee, of New Zealand, and even the north-west continent of America, should have preserved such a general similitude between their vessels, though totally destitute of all intercourse with each other, as might almost persuade the critical observer, that they were all the constructions of one and the same country, and only varying, in such points as were discoverable, on account of the different uses and purposes to which they were applied.

* See Vol. I. p. 78. † Vol. I. p. 114. Vol. I. Plate 7. p. 120.

The

The contrivance and addition of the outrigger, which has been already fully described in the account of the Indian proa, and which forms so singular and prominent a feature in the South Sea marine, appears in almoſt general use, although more extensively, perhaps, adopted by the inhabitants of one country, than by those of another; a plain and demonstrative proof, that the advantages of the practice are uniformly understood and acknowledged, although peculiar circumstances occasion its more prevalent use in some particular islands. The expert and warlike Zealanders, who are accustomed to give a greater proportion of breadth to their canoes, more especially those constructed for the purposes of contest, than their neighbours; having been consequently less sensible of the want of such ingenious addition, are naturally, as it were, less addicted to the use of it. The same cause, *vice versâ*, renders it to the Otaheitians esteemed, as, perhaps, one of the most valuable principles of the art. The manual operation of preparing the timber, among these untutored mechanics, is, perhaps, little less curious and worthy of remark, than that of putting it together; and the immensity of labour which, owing to the imperfection of their tools, at least previous to their intercourse with the Europeans, might divide admiration between the patient perseverance, and the natural ingenuity of those people. The act of felling a single tree is an operation which requires many days. When this primary measure is completed, they are accustomed to split it, following the grain with great accuracy, into planks of three or four inches in thickness, which, as many of the trees are more than eight feet in girth, amount frequently to five or six in number, even from a single stick. The plank thus divided, is smoothed by a species of adze, which they are accustomed to use both expeditiously and ingeniously; for they frequently take off a piece, or shaving from a whole plank, without missing a single stroke. This art is particularly useful; for being ignorant of the art of warping a plank, every part of the canoe, whether hollow or flat, is formed by hand. The ingenuity of this secluded people is not confined merely to themselves, but appears to extend in a no less animated a degree over the face of the whole Southern or Indian Ocean. The following annexed description of working the planks, and the principles adopted in the construction of canoes belonging to the Society Islands, will ſufficiently evince this fact; and the method cannot be better described than in the precise words of an actual spectator.

" The

" The canoes, or boats, which are used by the inhabitants of this and the neighbouring islands, may be divided into two general classes, one of which they call ivahahs, and the other pahies.

" The ivahah is used for short excursions to sea ; it is wall-sided and flat-bottomed : the pahie is intended for longer voyages ; it is bow-sided and sharp-bottomed. The ivahahs are all of the same figure, but of different sizes, and used for different purposes ; their length is from ten to seventy-two feet, but the breadth is by no means in proportion ; for those of ten feet are about a foot wide, and those of more than seventy are scarcely two. They have the fighting ivahah, the fishing ivahah, and the travelling ivahah, for some of these go from one island to another. The fishing ivahah is by far the longest, and the head and stern are considerably raised above the body, in a semicircular form, particularly the stern, which is sometimes seventeen or eighteen feet high, though the boat itself is scarcely three. These never go to sea singly, but are fastened together side by side at the distance of about three feet, by strong poles of wood, which are laid across them, and lashed to the gunwales. Upon these, in the fore part, a stage or platform is raised about ten or twelve feet high, and somewhat wider than the boats, which is supported by pillars about six feet long : upon this stage stand the fighting men, whose missile weapons are slings and spears, for, among other singularities in the manners of these people, their bows and arrows are used only for diversion, as we throw quoits : below these stages sit the rowers, who receive from them those that are wounded, and furnish fresh men to ascend in their room. Some of these have a platform of bamboos, or other light wood, through their whole length, and considerably broader, by means of which they will carry a great number of men ; but we saw only one filled in this manner.

" The fishing ivahahs vary in length from about forty feet to the smallest size, which is about ten ; all that are of the length of twenty-five feet and upwards, of whatever sort, occasionally carry sail. The travelling ivahah is always double, and furnished with a small neat house, about five or six feet broad, and six or seven feet long, which is fastened upon the fore part, for the convenience of the principal people, who sit in them by day, and sleep in them at night. The fishing ivahahs are sometimes joined together, and have a house on board, but this is not common.

" Those which are shorter than five-and-twenty feet, seldom or never carry sail; and though the stern rises about four or five feet, they have a flat head, and a board that projects forward about four feet.

"The pahie is also of different sizes, from thirty to sixty feet long; but, like the ivahah, is very narrow. One that was measured was fifty-one feet long, and only one foot and an half wide at the top; in the widest part it was about three feet, and this is the general proportion. It does not, however, widen by a gradual swell; but the sides being straight and parallel for a little way below the gunwale, it swells abruptly, and draws to a ridge at the bottom; so that a transverse section of it has somewhat the appearance of the mark upon cards, called a spade, the whole being much wider in proportion to its length. These, like the largest ivahahs, are used for fighting, but principally for long voyages. The fighting pahie, which is the largest, is fitted with the stage or platform, which is proportionably larger than those of the ivahah, as their form enables them to sustain a much greater weight. Those that are used for sailing are double, and the middle size are said to be the best sea-boats. They are sometimes out a month together, going from island to island; and sometimes, as is credibly reported, they are not unfrequently a fortnight or twenty days at sea, and could keep it longer, if they had more stowage for provisions, and conveniences to hold fresh water.

" When any of these boats carry sail single, they make use of a log of wood, which is fastened to the end of two poles that lie across the vessel, and project from six to ten feet, according to the size of the vessel, beyond its side; somewhat like what is used by the flying proa of the Ladrone Islands, and called, in the account of Lord Anson's Voyage, an outrigger; to this outrigger the shrouds are fastened, and it is essentially necessary in trimming the boat and conveniences to when it blows fresh.

" Some of them have one mast, and others two; they are made of a single stick; and when the length of the canoe is thirty feet, that of the mast is somewhat less than five-and-twenty; it is fixed to a frame that is above the canoe, and receives a sail of matting about one-third longer than itself; the sail is pointed at the top, square at the bottom, and curved at the side, somewhat resembling what is called a shoulder-of-mutton sail, and used for boats belonging to men of war; it is placed in a frame of wood which surrounds it on every side, and has no contrivance either for reefing or furling, so that if either should become necessary, it must be cut away, which, however, in these equal climates, can seldom

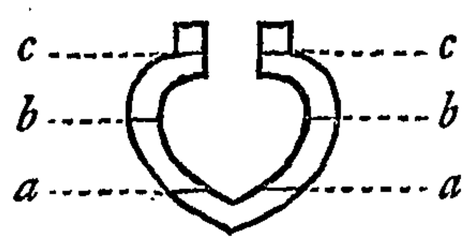
seldom happen. To the top of the mast are fastened ornaments of feathers, which are placed inclining obliquely forwards, the shape and position of which will be conceived at once from the figure in the plate.

" The oars or paddles that are used with these boats, have a long handle and a flat blade not unlike a baker's peel. Of these, every person in the boat has one, except those that sit under the awning, and they push her forward with them at a good rate. These boats, however, admit so much water at the seams, that one person at least is continually employed in throwing it out. The only thing in which they excel, is landing and putting off from the shore in a surf; by their great length, and high sterns, they could land every day, when the English boats could scarcely land at all: they have also the same advantages in putting off by the height of the head.

"The ivahahs are the only boats that are used by the inhabitants of Otaheite; but pahies are frequently used in other islands. The exact dimensions of one of these, given from a careful admeasurement, will so very materially contribute to the elucidation of the description subsequently given, as to the manner and particular form in which this class of canoes is built, that they might perhaps enable an European draughtsman, to consruct one so nearly resembling them as to create some difficulty, in pointing out the true from that which was fictitious:

	Feet.	Inches.
Extreme length from stem to stern, not reckoning the bending up of either	51	0
Breadth in the clear of the top forward	1	2
Breadth in the mid-ships	1	6
Breadth aft	1	2
In the bilge forward	2	8
In the mid-ships	2	11
Aft	2	9
Depth in the mid-ships	3	4
Height from the ground on which she stood	3	6
Height of the head from the ground without including that of the figure	4	4
Height of the figure	0	11
Height of the stern from the ground	8	9
Height of the figure	2	0

To illustrate the description of the manner in which these vessels are built, it will be necessary to refer to the annexed figure.

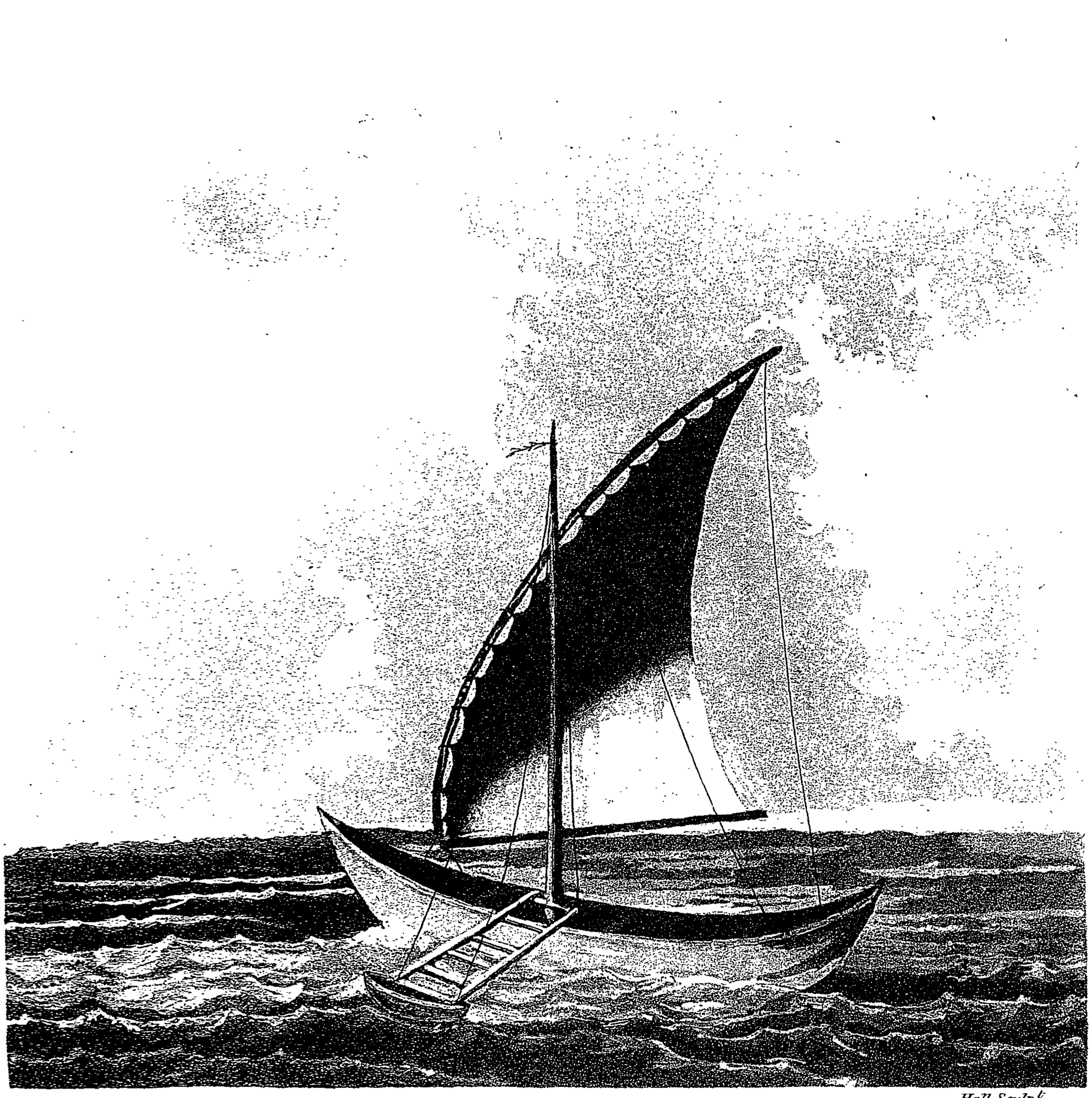


The first stage or keel under *a a*, is formed of a tree hollowed out like a trough, for which the longest trees are chosen that can be procured, so that these are never more than three in the whole length; the next stage under *b b*, is formed of straight planks about four feet long, fifteen inches broad, and two inches thick; the third stage under *c c*, is like the bottom, made of trunks hollowed into its bilging form; the last is also cut out of trunks, so that the moulding is of one piece with the upright. To form these parts separately without saw, plane, chissel, or any other iron tool, may well be thought no easy task; but the great difficulty is to join them together.

When all the parts are prepared, the keel is laid upon blocks, and the planks being supported by stanchions, are sewed or clamped together with strong thongs of plaiting. These are passed several times through holes that are bored with a guage or auger of bone, which performs its office with tolerable exactness; and the nicety with which this is done, may be inferred from their being sufficiently water-tight for use without caulking. As the platting soon rots in the water, it is renewed at least once a year, in order to which the vessel is taken entirely to pieces; the head and stern are rude with respect to the design, but very neatly finished, and polished to the highest degree.

These pahies are kept with great care in a kind of house, built on purpose for their reception; the houses are formed of poles set upright in the ground, the tops of which are drawn towards each other, and fastened together with their strongest cord, so as to form a kind of Gothic arch, which is completely thatched quite to the ground, being open only at the ends; they are sometimes fifty or sixty paces long.

The inhabitants of the South Sea Islands form what may almost be considered a naval world of their own. Living as it were entirely secluded from the rest of the universe, though diffused over the surface of an immense ocean, the climate, rather the peculiar situation, appears to impart a consanguinity of ideas, which characteristically marks and divides them from every other people in the universe; nor are the ingenious singularities just mentioned, totally confined to the South Sea Iflands only;



Hall Sculp.t

Proa of the Mulgrave Islands with its out rigger.

Published by Darton & Harvey, Gracechurch Street, London

only; for they extend even to such parts of the continent of America, as, till within a very few years, continued equally unknown and unexplored by distant navigators. Naturally endued with the same propensities as the Europeans themselves, so far as their means would permit the indulgence of them, they, at the present moment, engage in war, and they conclude peace, if the fugitive observations of Schouten, and other early voyagers, will justify the supposition, in vessels almost precisely the same as to structure with those in which they braved the dangers of the ocean, and of hostility, two centuries since. The distinctions of single and double canoes, and the more general use of one, in preference to the other, seems the only point in which the smallest difference of opinion prevails. In the construction of the latter, whether it be the native of New Zealand or of Otaheite, the ideas are strictly the same; and the analization of the vessel proves it very immaterially differing in the principles of construction, with regard to the hull, from the India or flying proa, two of which being joined together by the platform, contrived for the accommodation of the combatants, might pass without detection, even if submitted to a curious observer, for the native of either of those countries. The knowledge acquired by these unlettered people is founded on the most substantial and incontrovertible ground, experience; and that experience has unceasingly conducted them, however separated by Providence, to the acquisition of the same points. The addition of the second canoe perfectly answers the same purpose with the outrigger of the Ladrone Islands; and the very contracted breadth of both produces an equal advantage of giving a swift or easy passage through the water in each instance alike. The only points of distinction appear to be solely caused by the varied habits of the voyagers, and different purposes to which the vessels are applied. The navigator of the Ladrones, held in subjection, and confessing allegiance to the Spaniard, who has enslaved him, needs not that superior and enlarged species of embarkation, which is indispensably necessary to the purposes of war. Contented with the humble occupation of fishing, or the very trivial advantages of a most contracted commerce, he attends only to the safety of himself and his cargo; together with that expedition the utmost stretch of his invention or contrivance will enable him to effect in conveyance of himself, with his humble articles of trade, wherever he may wish to direct his voyage. He has, unknowingly, however, followed the conduct of the inhabitants of every neighbouring country; has displayed the same genius, when acting under the same ideas, and directing his mind solely to the accomplishment of points totally different from the purposes of war. His sail, as well in size as in form, the exact similitude

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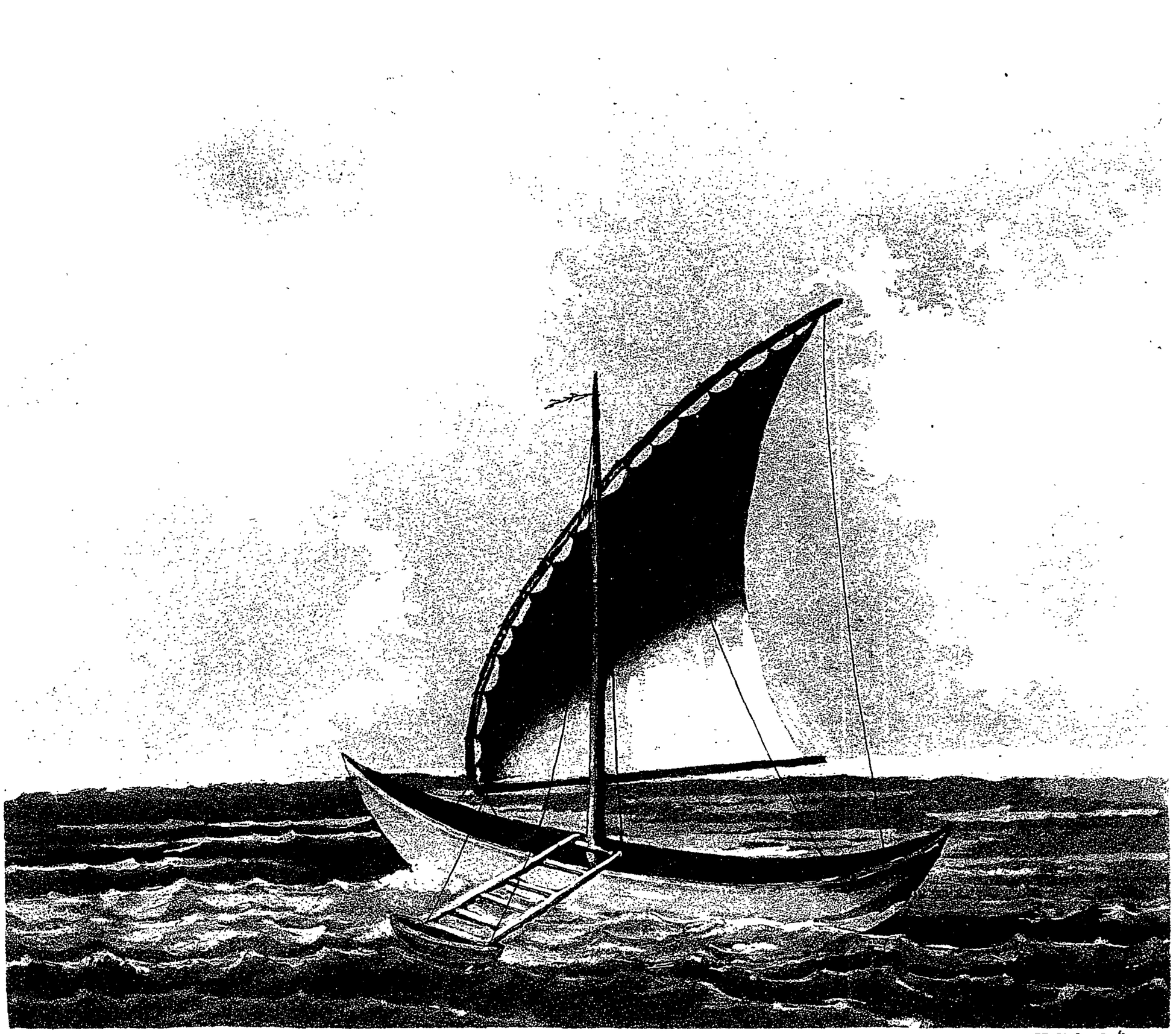

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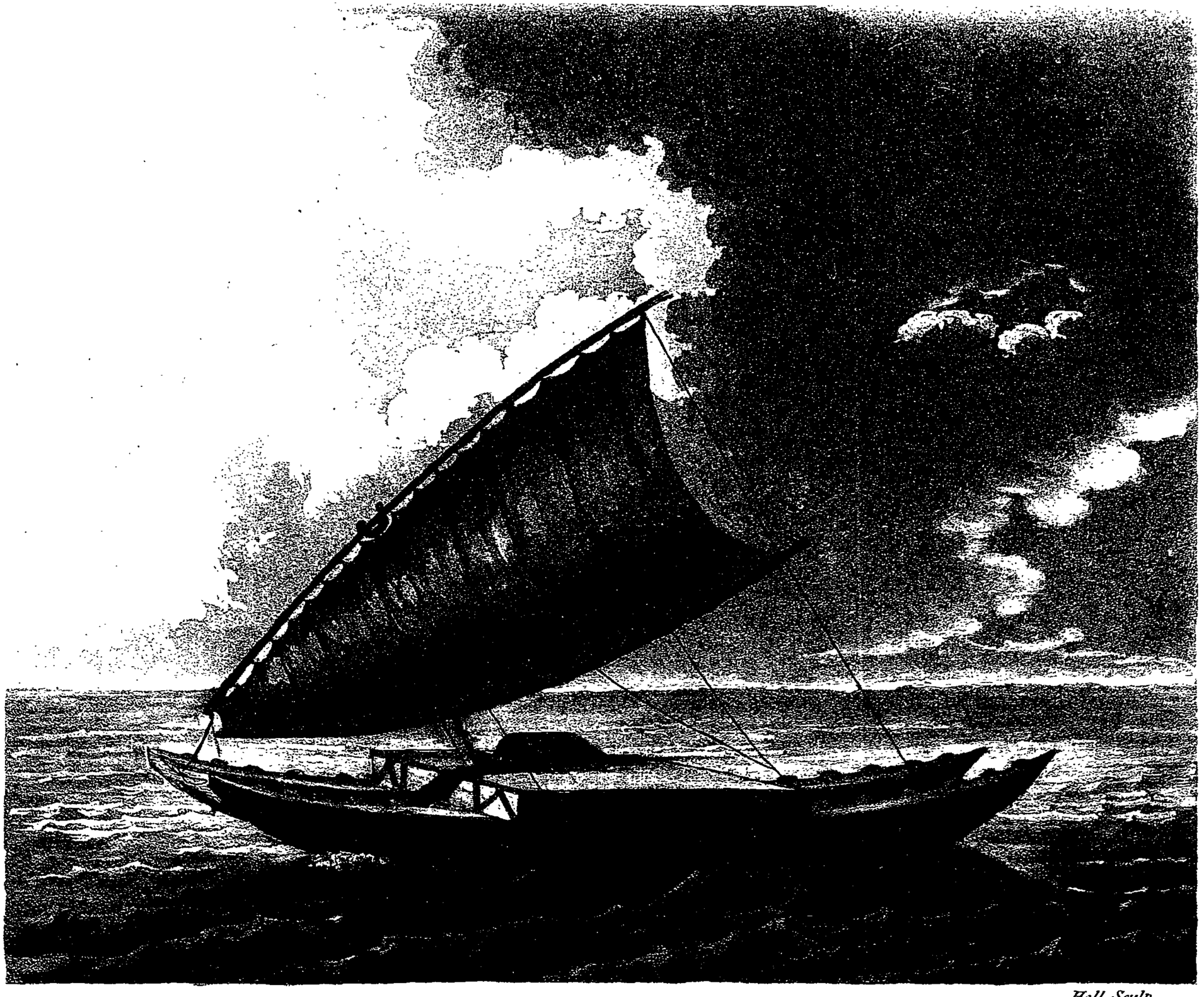
between the head and stern of his vessel, together with the singular difference in that of the sides, are all calculated for the attainment of one purpose; and certainly have experimentally been as extensively productive of his wishes, as he could in any way expect. If the scientific European will condescend to contemplate the rude contrivances of this untutored islander, as he will in all probability term them, he will, in ſpite of his own arrogance, perhaps, be compelled to confess, that the most elaborately given form, regulated by long study and the strictest philosophical attention, could not have proved more productive of success. While the breadth of the sail below enables it to hold a larger portion of wind than it would be safe to encounter, did it bear any other form than that which it precisely does, or were the canoe even destitute of the outrigger, the contraction of it aloft proves no small preventative from accident; while the simplicity promises the most possible expeditious mode of reducing it, and totally obviating any of those misfortunes to which vessels rigged in a more complex manner are not unfrequently liable. In short, artless ingenuity pervades the whole, and the natural force of the human mind rises, in this instance, splendidly triumphant above science and philosophy.

Custom originating in that love of ostentation, which appears indelibly implanted in the human race, has caused, from time immemorial, throughout the whole world, a display of what is called pomp, in all measures connected in the remotest degree with war. The dress of the most rude and barbarous soldier, has always been contrived with attention to this point; and he has ever been decorated with such coarse embellishments, as his country, and his own peculiar mode of thinking, deemed contributive to grandeur. The same principle has, without exception, prevailed in regard to vessels built for the purposes of war. The carving of the Zealander and of the Briton, are suggested by the same ideas or prejudices. The terrific appearance given to the head by both nations, if it be lawful to make the comparison without offence, may be traced back as early as the foundation of the Athenian navy, and indeed to a much more remote period. Europe displays its ensigns, and New Zealand its feathers; the sterns equally decorated with the prows, according to the different fashions and customs of the different countries, prove the wonderful alliance and association of human ideas that exists over the face of the whole globe.

The grand similitude which the vessels belonging to the different islands spread over the face of the South Seas bear to each other, is not more striking than that which appears to exist between them and the gallies of the ancients. Far as imperfect relation can warrant modern conception in making out the portraits, the



Hall Sculp.

Double Canoe of the Friendly Islands.

Published by Darton & Harvey, Gracechurch Street, London

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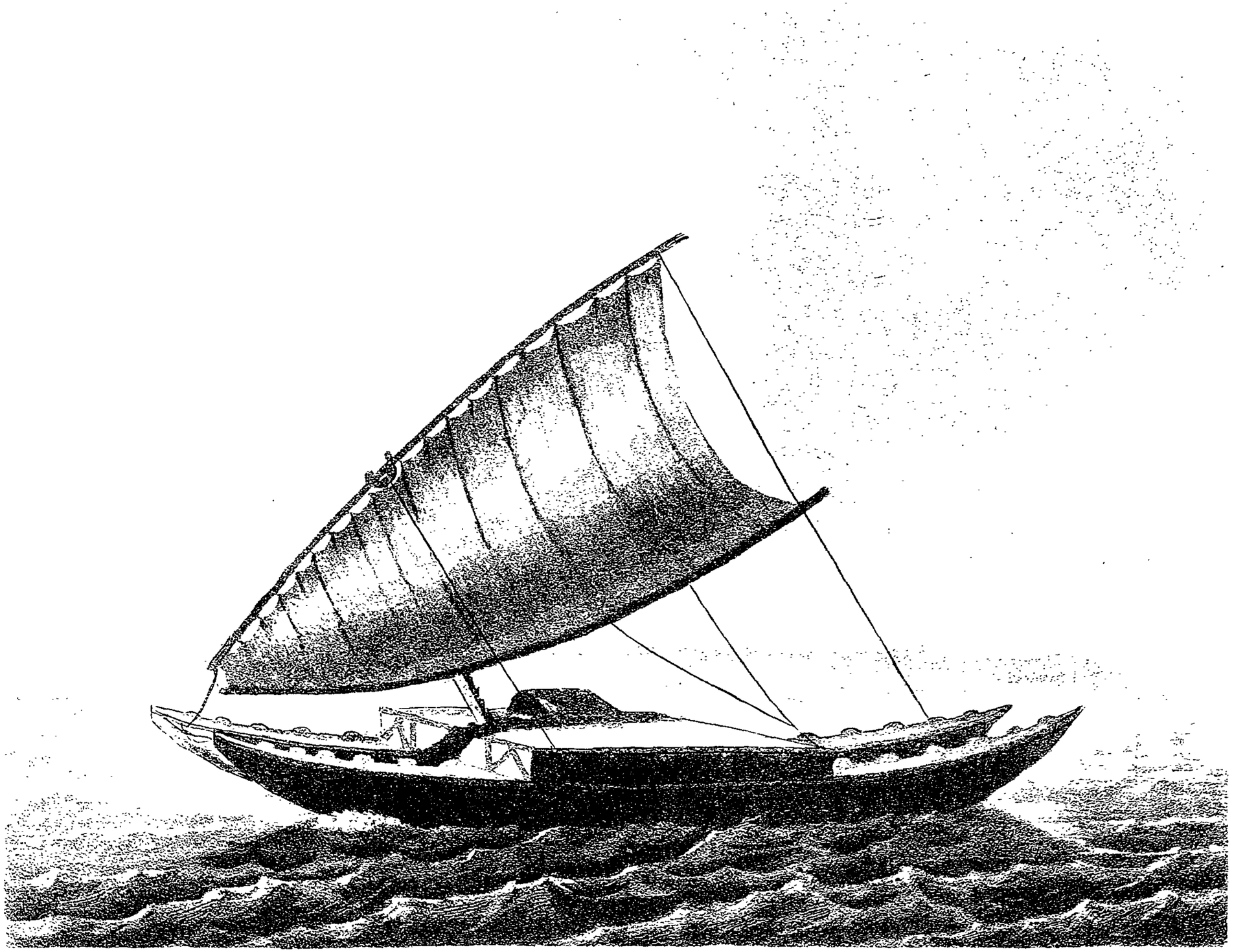
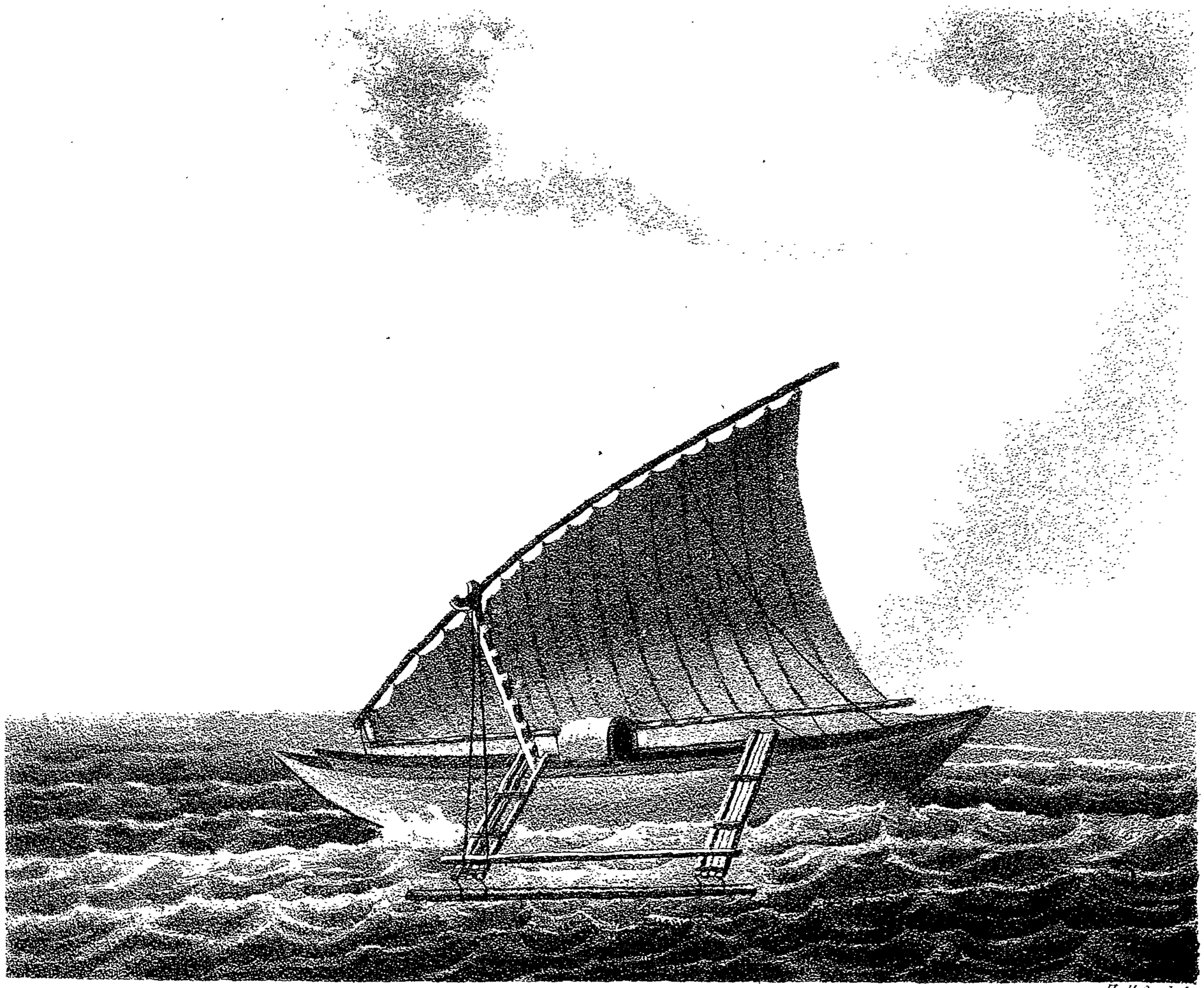


Hall Sculp

Double Canoe of the Friendly Islands.



Hall Sculp.

The Single Canoe, or Flying-proa of the Friendly Islands, with its out-rigger.

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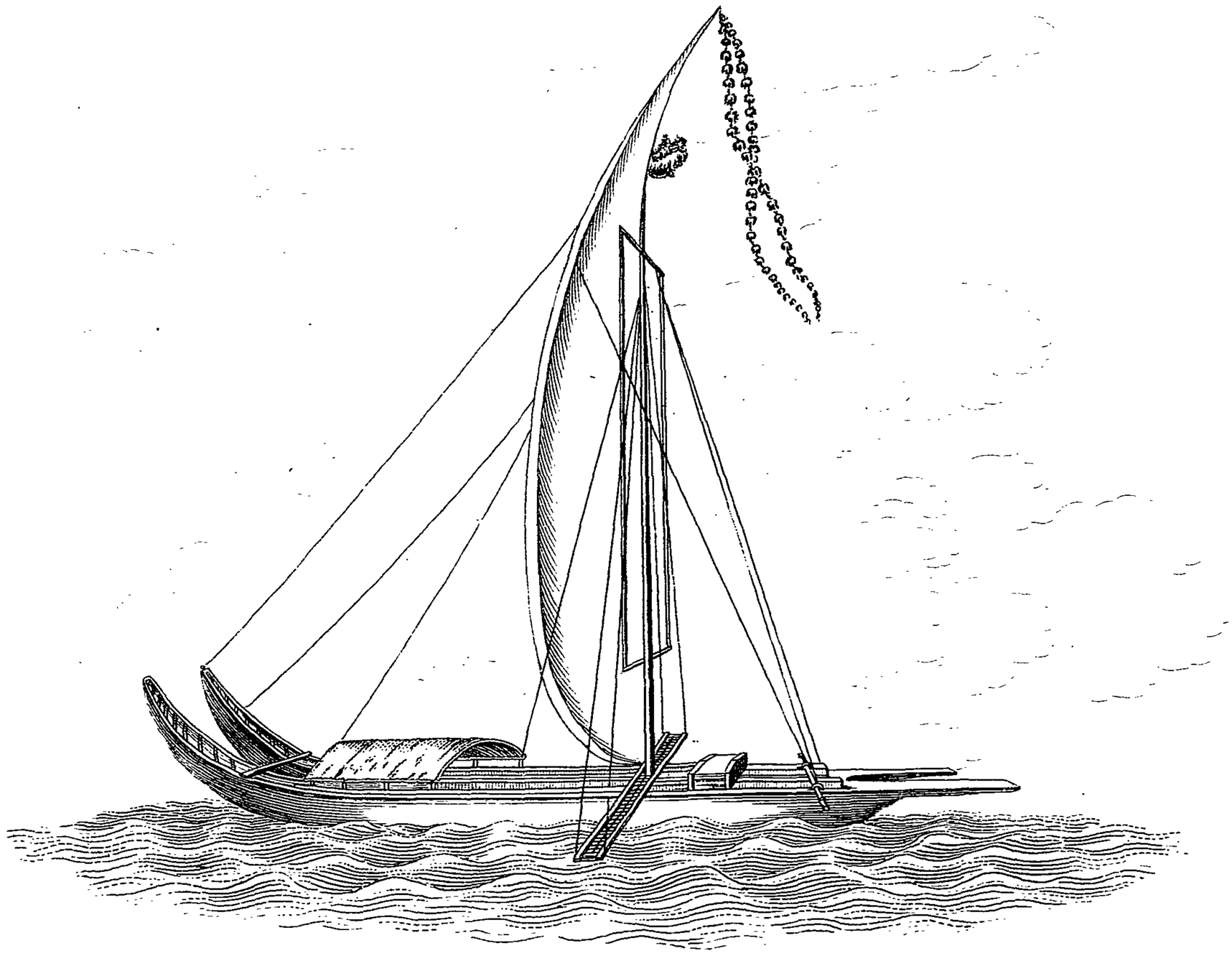


Greig Sculp.t

Canoe of the Society Islands.

Published by Arch, Gracechurch Street.

the principles of war, and the code of tactics being nearly similar, the only circumstance that could fairly be expected to create any difference, is the superior weight and excellence of the Roman or Grecian arms, which rendered the introduction of weighty engines on board their gallies of war occasionally necessary; since stability, which could only be produced an enlargement of dimensions, became an indispensable requisite. Still, however, the features of the descendant, though impaired and degenerated in grandeur, bear no trivial traces of what, according to a modern and scientific term, is called the character of the ancestor. A variety of causes, and in particular the ignorance of South Sea islanders in respect to the existence of those immense continents, not only known to the ancients, but on a part which they actually dwelt: the difficulty and extreme folly of carrying war into distant countries, which even when subdued, could neither feed their avarice and ambition, have at all times tended to confine the restless mind of the Zealander or Otaheitean within the narrow limits of what may almost be called domestic warfare; and have consequently rendered their *gallies* as insignificant, when compared with the trireme, as those of the Athenians, or of Rome, would have been, in all probability, had their views extended no farther than those of the modern imitators. In addition to the canoe of the South Sea Islands, is the following description of that built by the inhabitants of Nootka Sound, on the north-west coast of America.

"Their large war canoes (says Mr. Meares), were generally finished on the spot where the trees grew, of which they are made, and then dragged to the water-side. Some of them have been seen which were fifty-three feet in length, and eight feet in breadth. The middle part of these boats is the broadest, and gradually narrows to a point at each end; but their head or prow is generally much higher than the stern.

"As their bottoms are rounded, and their sides flam out, they have consequently sufficient bearings and swim firmly in the water. They have no seats, but several pieces of wood, about three inches in diameter, are fixed across them, to keep their sides firm and preserve them from being warped. The rowers generally sit on their hams, but sometimes they make use of a kind of small stool, which is a great relief to them. In the act of embarking they are extremely cautious, each man regularly taking the station to which he has been accustomed. Some of these canoes are polished and painted, or curiously studded with human teeth, particularly on the stern and the prow. The sides were sometimes adorned with the figure of a dragon with a long tail, of much the same form as is seen on the

the porcelain of China, and in the fanciful paintings of other countries. This circumstance appeared striking, and some pains were taken to get at the history of it; but it was among many other enquiries to which no satisfactory answer could be obtained.

"After we had been some time in King George's Sound, the natives began to make use of sails made of mats, in imitation of ours. We had, indeed, rigged one of Hannah's large canoes for him with a pendant, &c. &c. of which he was proud beyond measure; and he never approached the ship but he hoisted his pendant, to the very great diversion of our seamen.

"The paddles are nicely shaped and well polished with fish-skin; they are about five feet six inches in length, and the blade, which is about two feet long, is pointed like a leaf: the point itself is lengthened several inches, and is about one inch broad: at the end of the handle there is a transverse piece of wood, like the top of a crutch. These paddles, the natives use in a most dexterous manner, and urge on the canoes with inconceivable swiftness."

The similitude these vessels also bear to those of antiquity, is no less strong than in the instances already pointed out. The proportionate dimensions accord most strikingly; and from the description given by Mr. Meares, of the canoe there used, for he has not furnished any draught, there appears little reason to suspect any material variation between its contour or shape, and that of the ancient vessel or galley, whose model was found in the Villa Mathei, during the sixteenth century*. The ideas of ornament and grandeur appear to keep an equal pace with those of use, as is sufficiently evident from the anecdotes of the sail and pendant; which latter, without doubt, experienced as many admirers as the first. It may be urged in argument, perhaps, that the proximity of the Spanish Settlements, so nearly situated as they are to Nootka Sound, the distance not being more than twelve hundred miles, might have had some, and indeed no inconsiderable degree of influence, on the practical part of the science of marine architecture, as well as the art of navigation; and that this influence might be created, even without the inhabitants of the district just mentioned, ever discovering that such people as the Spaniards were in existence. But notwithstanding, it may be admitted, that the chain of intercourse, which may be supposed to be carried on between the different tribes inhabiting the coast, might be so extensive, that the practice, by its frequent change of hands, and as frequent alteration from the original construction, became so

* See Vol. I. p. 114.

altered

altered as to give it very strong marks of being a native of the spot: yet it must be remembered that, remote as the alliance or source from whence the information has been derived may be, still there will remain some indelible proofs of its origin, which cannot be totally obscured by want of experience, or obliterated by an obstinate prejudice. The canoe of the north-west part of America bears, however, every internal evidence of being completely aboriginal; and this is a very singular proof of the small extent to which Spanish curiosity has carried its discoveries, though the invaders of Mexico have now been in possession of the more southern districts, for the space of nearly three centuries. Satisfied, as it were, with the treasures of the south, they have sought not to explore the less hospitable regions of the north, which seemed to promise no reward to their avarice similar to what the south had afforded. In the Spanish settlements, indeed, where the Indian inhabitants most abound, marine architecture has long been advanced from its aboriginal state; as appears by the following account given of them by that celebrated man, Sir John Narborough, who passed into the South Seas about the year 1670.

"I believe also," says this great navigator, "that these rivers are not navigable for shipping; or the persons employed in navigating a bark which was there, would certainly have gone up the river to the city of *Baldivia* and delivered her goods there, and not, as was the fact, troubled themselves to carry the goods up in boats and small flat-bottomed barges, which they had there for the purpose. The barges are built much like our west-country barges, and smaller by much. These boats or barges will carry about ten or twelve tons; they steer with a rudder, and have one mast, and sail as English barges have. The sail is made of cotton-cloth, and the ropes are made of the rind of mangrove-trees; but instead of anchors they have wooden crab-claws, or kellocks. Anchors of iron and grapnels are scarce in these countries; ropes and cables of hemp are also scarce here, and good firmasts much wanted in all these countries for their ships. The masts for their ships are made of white cedar, and such-like wood; they are very heavy and short-grained, and will break short; there are not any fir-trees growing in all the land: good workmen for the building of ships are also much wanted here, and seamen.

"The smaller boats which they have here, are canoes, being cut out of the body of a large tree, and shaped somewhat like a shallop at the ends; some are thirty feet long, and built one strake of board upon them to raise them higher on their sides; they will carry near twenty men each: some are rowed with oars, and some are less, and rowed with paddles. Many of them have a great beam

lashed fast along each side without board, which keeps them from oversetting. These boats are very ill built; for I saw not any one of them fit to row in any seagate, or for any service, or to carry any person of quality in."

The canoe of the most northern regions will conclude this curious class of vessels, the ingenuity of their contrivance, and their peculiar aptitude to answer every purpose that the wants or wishes of the possessor lead him to satisfy, are strongly indicative of that strength with which Providence has blessed the human mind; and its wonderful faculty of ministring, even when in the most uncultivated and rude state, to the necessities of the body, by contrivances and inventions which would reflect no inconsiderable share of honour on the genius and art of the most scientific nations. The flying proa of the Ladrones is a specimen of Indian sagacity, adapted to the milder latitudes, while, in the more inclement, that of the Esquimaux is certainly no less worthy of admiration. The materials of which these boats are formed, are as curious as the shape and method of working them; nor will it be found, on the most attentive consideration, that were this poor forlorn boat-builder able to select from all the materials furnished by every quarter of the globe, he could possibly make choice of any more peculiarly well adapted to his purpose, than those which he first pitched upon, as it were, by instinct. In the first instance, it is indispensably requisite not merely that the vessel in question should be always removeable to a place of safety from that boisterous sea, which, while under the guidance of the owner, it is destined to brave the dangers of, but it is also necessary that in his constant and sole employment of fishing and hunting, it should be his almost inseparable companion, in order to enable him to pass over rivers or inlets of the sea, which would otherwise considerably retard and impede his progress, if not totally prevent it. In any other selection of materials, it would be, perhaps, impossible to construct a boat capable of resisting the water; and, at the same time so light, as to be transportable with facility from one place to another. This difficulty removed, and the boat transferred to what may be considered its proper element, its buoyancy on one hand, enables it to rise with the utmost promptitude on the top of every wave, and bid defiance to the raging element which surrounds it; while, on the other, the same happy peculiarities enable the navigator, should any of those unfortunate accidents befal him, which will sometimes overtake the most expert, to right his vessel without the smallest risk or injury, either to it or to himself. In respect to its form, the bottom may be considered flat; the fore part of the body runs in a line nearly straight from the midship to the bow, which is extremely thin, and rises a little

little towards the extremity, as with apparent intention of breaking of the waves. —"But in nothing," say navigators, "do the Esquimaux shew so much art, as in their boats or canoes. They are made of that material called whalebone, about an inch thick and broad; these are not set like ribs, but are from stem to stern fast sewed to each other with strong sinews, and being covered over with seals skins. They are from ten to twenty feet long, and about two feet broad; they are formed like a weaver's shuttle, sharp at both ends, so that they can be rowed either way; and in making this pointedness, the consructors are of all things most curious; for therein consists the strength of the vessel. In the middle of it are the ribs, both to keep the sides asunder, and to form the hole in the covering wherein the rower sits. They have a species of deck, formed of the same materials; it is closely fastened to the sides, and in the middle of it is a round hole as large as the body of a man; so that when he goes to sea he fixes himself in that hole, and stretching out his feet forward into the hollow of the boat, stops up the hole so close with his frock, or loose upper garment, that no water can enter, though it were in the bottom of the sea. His frock is straight tied at his hand, his wrists, and his neck; his capouch is sewed also close to it, so that if the boat be overturned or overwhelmed in the sea, he rises up again without any wet either upon his skin, or in his boat. He is furnished with only one oar, which is about six feet long, with a paddle six inches broad, at either end; this serves him both to balance his boat and move it, which he does with that incredible celerity, that an English boat with ten oars, is not able to keep company with them. A Danish relation affirms that the Esquimaux row so swift, that they even dazzle the eyes of spectators; and though they cross frequently, yet never interfere or run foul of one another."

Nor are these singular boats confined merely to the frozen region of the Atlantic, but extend under the same degree of latitude, into the South Seas: a still corroborating proof, except some intercourse is insisted upon to have existed between the Esquimaux and the inhabitants of the Fox Islands, of that general intellectual spirit which directs mankind (making the proper allowances), to employ nearly the same method, in supplying their wants or their desires. The following account of them is given by Captain Meares, who visited the Fox and Schumagen Islands, in 1786.

"It appears that the Russians, wherever they are settled, from some supposed political reason, prohibit the natives from keeping canoes, of a size capable of carrying more than one person. These canoes are generally about twelve feet in length,

sharp at each end, and about twenty inches broad, tapering to a point; their depth in the center, where the man sits, is about twenty inches. The canoes of this make, extend from the streights of the two continents along the coast as far as Cape Edgecumbe. Some of them are made to carry three persons; but in general not more than one or two. The frame is composed of very thin slips of the pine-wood, fastened together with whale sinews, and is then covered with the skin of the seal or sea-cow, which is previously stripped of its hair. The bottom of the skin frock which the natives wear, ties over the hole of the canoe, where the man sits, and prevents the smallest drop of water from getting in. These vessels are paddled at a prodigious rate, and go out in any weather."

What advantages might not be expected from the ingenuity of this uncultivated artist, capable of displaying such contrivances as the foregoing, were he not unhappily placed by Providence in a situation, and under a climate, which most imperiously forbids all improvement, or extension of his natural genius?

CHAPTER

CHAPTER THE THIRTEENTH.

Enquiry into the General Principles of Marine Architecture—The Properties and Requisites of Vessels—Reason why Ships so constructed as to draw but little Water sail best before the Wind—Invention of Sliding Keels—Description and peculiar Benefits resulting from the Use of them—Statement of the particular Advantages which Vessels of small Draught of Water possess over those of a contrary Description—Causes of the Uncertainty with which the Tonnage of Vessels is at present calculated—Statement of the Ability which flat-floored Vessels frequently possess of carrying Cargoes exceeding their nominal Tonnage, while, on the other Hand, those which are sharper built are incapable of containing so much as their calculated Burthen allots to them—Progressive Statement of all the superior Benefits which may naturally be expected to result from the Use of flat-floored Vessels, particularly when fitted with Sliding Keels—Their Ease at Anchor—Superior Facility with which they take the Ground, and greater Chance there is of preserving not only the Lives of the People, but the Vessels themselves, in case of their being actually stranded—Proposal for rendering Ships less liable to founder at Sea, by caulking between the Timbers which compose the Frame, as well as the Inside Lining—Proposal for dividing the Hold into different Compartments—The Benefits to be expected from the Adoption of such a Plan—The little Cause for Apprehension in case a Vessel, so fitted, should spring a Leak—The Advantages to be expected from it in case of Fire—The Aid which the Use of Sliding Keels affords to the Stowage of a Vessel, as well as in the Prevention of its broaching to, and the fatal Consequences that generally result from such an Accident—Reasons why Vessels so constructed will tack quicker, and in less room—Why they will also Wear with more Facility—Why they are better calculated to answer as Bomb Vessels, Fire Ships, Floating Batteries, Gun Boats, Gun Batteaux, or Flat Boats, designed for the Disembarkation of Troops—When applied to Commercial Purposes, the Advantages they possess as Coasters, or as Vessels adapted to Inland Navigation—The superior Ease with which they would lay to in a Gale of Wind—The Convenience with which they would carry mixed Cargoes—Expectations of their longer Durability than that of Vessels constructed in the ordinary way—Proof of the Advantages resulting from the Adoption of the Use of Sliding Keels, established by the Certificate and Examination of the Officers belonging to the Trial Cutter, built for the Purpose of Experiment—

General

General Remarks on the proposed System—Superiority which a sharp-built Vessel possesses, in particular Cases, over one having a flat Floor, if unprovided with any additional Aids—Remarks on the Use of the Rudder, and Effects naturally produced by different Forms given to the After-Body—Explanation of this Theory—Causes which must perpetually prevent the general Adoption of the same Principles of Marine Architecture in all Countries—Advantages attending the Use of the circular as well as sharp Bow, according to the different Circumstances of its Adoption.

THE principles of perfection in ſhip-building, and the excellence of Marine Architecture, depend on a variety of circumstances which operate against each other so forcibly, that in all probability, it will be found impossible, to the latest time, all those qualities should ever be united in one vessel, which may be considered most beneficial to navigation. The principal point to be attended to, in forming a ship, whether intended for war or for commerce, are, that it should, in the first instance, be what is called a good sea-boat, or, in other words, that it should be able to endure, with the least possible injury to itself and crew, the shock of winds, and of waves, frequently contending against each other, apparently in dreadful rivalship, which should offer the most forcible opposition to the aspiring mind of man, imperiously attempting to render the elements themselves subservient to his controul, and attempting to pass, at his pleasure, over tracts and seas, whither Nature seems to have forbidden his progress.

The safety of the enterprising adventurers being first provided for, as effectually as prudence can dictate, the next care of the shipwright naturally directs itself to enable them to effect the purpose of their voyage, as expeditiously as possible. Here again arises a fresh obstacle to perfection. A vessel of a large draught of water being best calculated to make her way against contrary winds, while a second, of flatter construction, being consequently more buoyant, would, under the fortune of a fair breeze, effect its passage in much less time, than any vessel built on the former principle. If, for example, it were possible to build a vessel so flat, that it should not draw more than one foot water, it would evidently outsail, while going large, as it is called, or before the wind, another having the same contour with respect to its bottom, and drawing two feet. The reason must be too obvious, even to a person totally unacquainted with the principles of navigation, to need explanation. The ingenious invention of the sliding keel explains, by its effect, this point in the clearest and most unan-

unanswerable manner. Practice and experience, combined with theory, render the investigation of a science as complete as human ability is capable of carrying it; and the happy combination of the three points silence at once the breath, not only of scepticism, but even of cavil. It is manifestly the inventor's opinion, that the quick passage of a ship through the water does not so materially depend upon the form and contour, that is to say, whether it is sharp or full bowed, as it does on the depth which the vessel is immersed in water. Frequent experiments have so established the fact, that not the smallest doubt can be entertained, but that the lower the immersion is made in the water, the stronger and more difficult is it to divide. In order to ascertain this, instead of experiments made with different figures of the same weight, it has been strongly recommended that they should be made on figures of different forms sunk to different depths; the result of many, already tried, have been so clear, that they have not admitted of a doubt, and these trials gave birth to the ingenious invention alluded to. Captain Schanck states very properly, that in the case of a frigate drawing seventeen feet water, and another frigate of the same burthen drawing only eleven feet, the last will have a body of six feet less fluid to divide, opposing only one, two, or three keels, as may be found necessary, to make her hold a good wind, while the first has six feet perpendicular depth of her hull depressed, being about one third of her real size. It follows, therefore, she has a body of water to displace, and force herself through, equal to the difference between eleven and seventeen; when it is considered, in addition to this, that the resistance of the fluid rapidly encreases in proportion to the depth it is acted against, the disparity is almost incredibly encreased. North-country built vessels, or those in the coal-trade, are a strong proof of this observation. These in general, draw one-third less water, than any other of British construction; yet, when employed as transports, they are generally found to sail as fast as any others; and, when going before the wind in ballast, or half loaded, frequently beat the ships belonging the Royal Navy. When however they are close hauled on a wind, they will drop to leeward; but, were they furnished with sliding keels, there is no doubt but that they would have the advantage over all other English vessels. The Dutch, who bestow little pains in making their trading vessels sail, are nevertheless not totally unfortunate in this respect; for when they are light, they sail fast before the wind, owing to their small draught of water. They have also other vessels built almost totally flat, such as pilot boats, yagers for carrying the first herrings to market from Shetland, and pleasure yachts All these have lee-boards, by the assistance of which they sail as fast as the generality of those which navigate the Northern Seas;

Seas; circumstances which are manifestly in favour of flat-floored vessels and sliding keels.

It is a point too well known to every person conversant in naval architecture to need explanation, how far the different constructions of vessels will occasion a variance in the quantity those actually of the same measurement will carry. Ships built sharp forward and aft, lose a considerable portion of stowage; while some vessels have the floor so straight throughout the whole of their length, that by looking down in the holds of one, and of the other, the difference is easily discernible by the eye, For this reason it is impossible a true measurement ever can be made; and the assertion may be regarded, perhaps, that notwithstanding all which the respectable and learned men of different nations have written on the subject, no certain method will ever be discovered of ascertaining the true capacity of vessels, until they shall be built with greater resemblance to each other, even in the upper works, as well as in the lower part of the hull. It has frequently been observed by officers and others, who have had occasion to inform themselves practically on the subject, that many ships of the same measurement will not take in nearly the quantity they are estimated to carry; while others, exclusive of the quantity of goods or stores, which their constructors allotted to them, can receive a still additional cargo, and carry it with ease. It has been observed too, that if sharp-built vessels are at any time capable of containing the amount of their calculated tonnage, they are never able to carry it with the same ease that vessels of flatter construction are, inasmuch as their form forward and aft will inevitably occasion their pitching and shipping water. This inconvenience has been observed to proceed invariably from the cause just assigned; for a sharp-built ship sinks under its cargo so fast, that, by the time it comes to its bearings, it is frequently not nearly loaded. Those having flat and long floors, on the other hand, sink slowly; and, after having taken in the quantity they measure, will have, frequently, plenty of room, and remain high out of the water: so that it has happened, not only that an additional cargo has been taken in, but that, when two vessels of the same measurement, though of contrary constructions, have been laden at the same time, the flat-floored vessel has been enabled to carry, in all respects fitter for sea, what was necessarily rejected by her companion; and, after taking on board the whole of her additional cargo, still continued in the best state of trim. It appears, therefore, to be the opinion of many ingenious naval architects, and of Captain Schanck in particular, that one of the first desiderata in the improvement of the art of ship-

building

building would be to try experiments on the general use and introduction of long flat floors, which are supposed, by many, to promise, under certain regulations, the most extensive advantages.

The only objection that can be advanced in opposition to this system, is, the inaptness of a flat-floored vessel to hold a good wind, a difficulty which may be instantaneously removed by the adoption of sliding-keels; provided they are found, on more critical enquiry, to answer the intended purpose, without occasioning injury to the vessel, or material inconvenience to the mariners.

To return then to the examination of those arguments which are adduced in favour of this new contrivance, it is, in the first instance, agreed as a preliminary; and the fact is certainly too obvious to admit of the smallest cavil, that vessels, so built, must inevitably draw less water than those of any other form. This being admitted, it will be necessary to state the various advantages that have been experimentally found to result from the encouragement of this system, and those which, in theory, may, in addition, be expected to be derived from it. The same principle which causes flat-floored vessels to sail faster before the wind, to carry a superior cargo, and draw less water, will operate with equal force in rendering them easy at anchor. Experience, and the occurrences of many years, prove that the North Country-built ships, all of which have flat floors, and the Dutch fishing-boats, will ride at anchor, when the violence of the wind and sea would render it extremely dangerous, and, perhaps, impossible, for those of any other construction to persevere in the same measure. Their form, with the fullness of their body fore and aft, enables them to rise and fall, according to the lift of the sea, with the greatest ease to themselves; while, on the contrary, sharp, and, as they are commonly called, clean built ships, pitch with the utmost violence, frequently with such force as to endanger the instantaneous loss of all the masts; to say nothing of the strain which the suddenness of the tremendous jerks must give the hull, and the injury the anchors and cables are in momentary danger of experiencing from the same cause. Captain Cook, whose practical knowledge in navigation, and the properties of a vessel, stood, perhaps, inferior to that of no person in the world, gives a decided preference in favour of the flat-floored vessel, as being best calculated for a distant and perilous voyage, in consequence of her peculiarly possessing those valuable properties just enumerated.

Flat-floored vessels are certainly better enabled to take the ground with safety to themselves, than those of a different description; they rest on the sand or mud, so

that every part of their bottom, from the entrance forward, to the run abaft, always has an equal bearing, and will not heel, unless the bank on which it rests is nearly as steep and perpendicular as the side of the vessel itself. On the other hand, all persons who have seen sharp-built vessels (in which class may be included the ships of war of almost all nations whatever, the Dutch excepted) take the ground, must have observed, that, the instant the water begins to desert them, they heel, and continue gradually falling down, supposing the most fortunate case that can occur, till they are completely on their broadside, and bilge perhaps with the weight. It frequently happens that, owing to the desertion of that support which the water afforded to the *side*, the *fall over* becomes instantaneous, and inevitable destruction immediately takes place. Even in the favourable case of its falling gradually with the tide, it must have occurred to all persons who have paid any attention to the subject, that, when the water shall have ebbed from it, the gunwale will be little more than man's height from the ground; it will then consequently heel so much, that no person can walk the deck; and, in that situation, must naturally be strained to such a degree by the weight of the masts, guns, and rigging, that it will in all probability be rendered totally unfit for all further service, were the crew and their assistants even so fortunate in their great exertions as to raise and float it from the bank on which it had grounded. If, however, the wind should chance to rise with the flowing tide, it will prevent the necessary assistance from being given; and the water will flow so high as to run down the hatchways, without having in itself, when unaided, a sufficient power to raise the vessel.

Captain Schank has, in a short minute, containing some observations and remarks on this system, proposed the following very apposite case. "I shall suppose," says he, "a flat and a sharp vessel in company together, both of which run aground; the flat vessel runs on, or sticks fast; in either case she remains upright; but the instant the sharp vessel touches the hard ground, she heels, and that heel exposes her to the breach of the sea, which consequently fills her, and perhaps washes all the crew off the deck; while, on the other hand, her companion experiences none of those disasters; so that, unless the bottom is actually beaten out, there is, in the instance of the flat-floored vessel, every probable chance of saving ship, cargo, and crew. The advantages," proceeds the ingenious contriver, "possessed by flat-floored vessels over those of sharper construction, is generally known to seamen; and, in proof, it is necessary only to shew the practice, both of the Dutch and English, whose vessels are of that description.

description. Whenever they come into harbour, where the ground is even, without giving themselves the trouble to enquire whether it is hard or soft, they will unhesitatingly run on shore, even in a gale of wind, rather than come to an anchor in the customary way; for they have experimentally found, that, by this procedure, though apparently rash, they avoid the risk as well of parting their cables and losing their anchors, as of running on board other vessels. I once," adds the same gentleman, " saw this measure carried into practice, by a fleet of transports coming into Cork harbour for troops, in the midst of as violent a gale of wind as I ever witnessed; when one sharp-built vessel only, by mistake following the example of her companions, was nearly lost."

In addition to the theoretical form, and the advantages expected to result from it, as already described, Captain Schank wishes also to introduce a material addition and alteration in the mechanical and practical part of constructing ships. " Although," says he, " the instance I have just given may, in great measure, serve to explain the advantages ships so built would possess in case of actual stranding or wreck, yet I think I may also add, that, if those built on the plan I have recommended were rendered as nearly as possible solid; or, to make myself more clearly understood, if the frame was formed so close as to admit of being caulked in like manner with the plank of the outside, and, if the lining or cieling on the inside were rendered equally water-tight, the ship would be rendered incredibly stronger, and be the better enabled to resist the shocks of the sea, as well as those strokes against the rocks, to which the violent agitation of the hull might, in case of its being driven on shore, expose it. Suppose, for instance, the outer plank should yield to the assaults of the waves, or the self-impelled strokes on the rocks, the entrance of the water will still be stopped, in the first instance, by the frame, and in the second, by the lining. Should however the injury be continuous, and the water force its way through every obstacle opposed to it, even in that case the misfortune is rendered somewhat less alarming, in consequence of the leak being equally capable of being stopped within board, as well as it is now, in the ordinary way, without. If however the hold of the vessel were divided into such rooms or compartments as the nature of her occupation shall point out the propriety of, by bulk heads rendered properly water-tight, though the leak were ever so violent, its effects could only extend through that separate space where it shall have taken place; and as it is well known that the water within board cannot rise higher than the sea does without, no danger or injury could befal the crew, the vessel, or even the cargo, beyond

the limits of that individual and particular division in the hold, so that the water which would be admitted, even were it suffered to remain, would not sensibly affect the working of the vessel in any way whatever. The peculiar form of the hull," adds its ingenious inventor, "prevents it from oversetting at sea in a gale of wind; a misfortune which, though happily not very common, yet sometimes occasions the loss of a sharp-built ship. To the advantages just mentioned, may be added that almost inestimable one which a vessel requiring little water possesses over one of superior draught, in being enabled to pass in safety over those very rocks and shoals which would prove fatal to the other; and to draw, without fear, so near to the shore in shallow water, that the lessened violence and weight of the sea can effect little or no injury against it."

The reasons already given in support of the opinion why flat-floored vessels, fitted with bulk heads as before described, would be infinitely less liable to total loss, in case of their being stranded or wrecked, than those of a sharper form or mould, may be applied with equal success to the case of springing a leak at sea, notwithstanding the situations are so materially different. In the first-stated species of misfortune, a ship is supposed to be forced on the shore by the sea, the wind, or the tide. In the latter, it is considered to be proceeding on its voyage, in the center perhaps of the ocean, and at a very considerable distance from the land: in such a situation no disaster can be more terrifying and alarming, than a leak in any degree violent. Frequent instances h ve occurred where the crews of ships, overtaken by a sudden despondency, in consequence of the intervention of so fatal an accident, have refused to make any further efforts for the preservation of the ship, or even of their own lives. "If, however," says Captain Schank, "a vessel be fitted with bulk heads rendered water-tight, the division in which the leak has taken place may easily be discovered; and when, on trial, the pumps shall be found incapable of clearing it without such continued labour as the crew is incapable of sustaining, means must be taken to remove such part of the cargo as will enable the carpenter and his people to get at the leak; when, by keeping the ship dry for a very short time only, as may be done in almost every accident of this sort that takes place, the leak may, in general, be at least very considerably reduced, if not completely stopped."

On the other hand, in vessels built according to the common mode of construction, the situation of the leak may remain for a long time undiscovered; and even when found out, is rarely to be stopped, either within board or at sea. "Supposing,

posing, however," adds the inventor, "the worst case that can possibly happen in a vessel of the new construction, and that it is neither possible to stop or reduce the leak, it only remains to take out of the division, where the leak has commenced, all such parts of the cargo, or stores, as are most subject to injury from being wet, and to replace them with such as are not so liable to damage. This measure will, from the natural capacity of the different articles with which the division is filled, so far lessen the quantity of water, which it is capable of containing, that the ship will sustain no inconvenience whatever from the fluctuation and weight of the water admitted through the leak; but the vessel will be enabled to pursue its voyage in the same safety she would have done, had no accident whatever taken place." Vessels divided according to the foregoing plan, and furnished with four, five, or six divisions in the hold, according to its length, are also supposed to be considerably less liable to total destruction, in case of any accident from fire, than vessels constructed in the ordinary way. Should the fire, as is frequently the case, take place in the hold, that particular division in which the accident has happened may be immediately filled with water, and the danger speedily averted; the magazine also, as well as any other division of it, containing combustible materials, may in like manner be rendered incapable of occasioning the speedy and certain destruction of the ship and her crew. This recollection is, of all others, the most animating to people in so distressed a situation, and encourages them to persevere in their efforts with vigour, when they would otherwise, perhaps, in despair take to the boats, or commit themselves to the waves on any floating substances their haste might provide them with, resigning the vessel to its fate. The knowledge of such means, and such precautions being taken, would also encourage the crews of any vessels that might chance to be in company, to approach that in distress as near as possible; while, on the other hand, all persons stand aghast and keep aloof from a vessel on fire, particularly if it is a ship of war, in dread of that destruction, which the explosion of the powder will not fail to cause to every object, that is sufficiently within the vortex or influence, the moment the fire reaches it. This actually proved the case, in the instance of the Prince George, a second rate, of ninety guns, bearing the flag of Admiral Broderick, which was burnt on its passage to Gibraltar, in 1758. Although surrounded by vessels, their mariners were deterred, by the constant apprehension of the blast, from approaching sufficiently near to save the crew, many hundreds of whom perished most miserably in the flames.

Captain Schank next proceeds to point out the peculiar advantages which attend

attend the use of sliding keels, first in the article of steering, as will easily be discovered by every motion and action of the ship. He observes that vessels, furnished with this invention, are enabled to hold a more direct course than those which are built in the ordinary way; and it is a well-known fact, that, as the deviation which is made from the intended course is less by so much, the strain on the hull, sternpost, and rudder, as well as the masts, rigging, and sails, is diminished. Instead of its being necessary, as is the case in other ships, to station three or four men at the helm, it is supposed the largest vessel that could be built might be steered with ease by a single person. The extent of this advantage must be obvious to every nautical man; since it is a well-known fact, that some ships, on account of their form, steer so ill, that even in fresh breezes, or light winds, they are not able, when the wind is on their quarter, to carry all their sail set; an impediment which, perhaps, delays their progress one, or even two knots in an hour. In consequence of this defect, the loss in distance quickly accumulates to the most alarming height, exclusive of the errors which may, at the same time, be made both in longitude and latitude, owing to the incorrectness of the course. The difficulties and dangers to which a ship, labouring under the inconvenience just stated, is exposed, are of the most dreadful nature; the errors in longitude being difficult to correct, even by the most scientific observation. What then must be the disadvantages under which a ship must lay, especially on making the land where no observation has been had, and the steerage has been what is called wild?

There appears, however, according to the opinion of those who are best informed on the subject, to be a danger of still more frightful tendency, which, it is supposed, may be completely avoided by the adoption of this invention. The fatal consequences which frequently result from the accident of a ship broaching to, are well known; and though this may sometimes happen, in consequence of irregular or careless steerage, yet there is reason to apprehend it is very often occasioned by the situation that ships are unavoidably placed in during heavy gales of wind and high seas. Let a vessel be supposed, for instance, scudding before the wind, or quartering, with very little sail set, and that extremely low, the foresail, close reefed, being frequently made use of on such an occasion, when the vessel falls between two seas it becomes almost becalmed, and consequently loses its headway. The next or following sea raises the stern; the bow naturally inclines downwards. The cutwater having a direction different to the intended course, the stern becomes lifted up so much by the rise or swell of the sea,

sea, that the rudder has very little remaining power, being raised almost entirely out of the water. When the ship, in this situation, pressed on the lee-bow by the sea, and by the wind on the weather-quarter, rises to the top of the wave, it will fly, perhaps, to with such violence as to bring the head round; and being laid, by this sudden attack, almost on its broadside, becomes immediately plunged, with the greatest velocity, into a tremendous sea, which breaking in with irresistible force, will often sweep away whatever is upon the deck; the injury very commonly extending to the loss of the masts themselves, and the greater part of the people on deck, who are instantaneously precipitated into the deep by the tremendous shock. It is, moreover, by no means improbable, but that the greater part of those ships whose fate now remains totally unknown, have fallen victims to this species of disaster.

The use of sliding keels is known by actual experience to counteract all mischances and disasters of this kind. In fresh breezes, or in light winds, it is totally immaterial how much sail is set, or how it is disposed; since the act of raising or lowering the keels will immediately counteract the inconvenience that might otherwise arise from carrying too much sail, either forward or aft. The most trifling practice will render the navigator perfectly acquainted with their use, and the easy steerage of his ship will convince him of their advantage. In a gale of wind, it is necessary that the main and fore keels should be hauled close up, and the stern keel let down to such depth as shall be found necessary to make the vessel steer perfectly easy. The inventor expresses himself as absolutely certain, that in case the very plain and simple instructions last given are carefully followed, no misfortune, similar to that of broaching to, can ever befal a vessel furnished with sliding keels. "How pleasing," he observes in the latter part of this description, "must be the reflection in the minds of all persons on board, that they are strongly and unassailably guarded from the intervention of such an accident; but more especially how tranquil, under such a recollection, must be the mind of him to whom the safety of the ship, and the lives of the people on board, is committed; whose memory may suffer from an accident, which neither his prudence nor his courage could foresee or prevent, and to which he himself falls the unfortunate unerring victim."

To pursue the detail still further: vessels furnished with two or three sliding keels will tack with far greater readiness than those which are destitute of them; inasmuch as the fore and sternmost keels have each of them an effect on the vessel, very little inferior to that of the rudder itself. In working therefore to windward,

or

or in a narrow channel where there is little room, a vessel may venture to stand much nearer to the shore than she otherwise would do, being certain of not missing stays. The measures recommended to be taken in putting about, are, to haul up the sternmost, and immediately to let the fore keel completely down, putting the helm a-lee at the same instant, the ship will come round almost incredibly fast; so that instead of that sloth, if the term be allowable, with which the yards of a vessel going about, may frequently appear to be worked in the eyes of those who are unacquainted with the art of navigation, it requires no inconsiderable share of alertness in the people to trim the sails sufficiently quick, particularly in a fresh of wind. The fore keel being hauled up as soon as the ship's head is brought to the wind, it is ready to prevent, as is generally the case with square-rigged vessels, any falling off, which occasions the loss of an infinite deal of time: the instant therefore that the sails are full, the fore keel being lowered down, will not only prevent any inconvenience of the kind just mentioned, but will cause the vessel, soon as it gets any headway, to fly to, with as much alacrity as if going about; insomuch that some care must be taken to prevent the vessel from coming round, by trivially raising the fore keel, as soon as the head is brought in a position to lay the proper course.

The use of the sliding keel is equally advantageous in wearing as in tacking. The measures recommended to be taken are, reversing those of the former operation, to haul up the fore keel, and lower down the sternmost; or, if it is required that the vessel should wear round quick, it will be necessary to haul up the main keel also, and the ship will turn almost as though it were on a pivot, the rudder being at the same time made use of in the customary way. The reason of the effect produced by the operation just described, will become immediately obvious, on the slightest consideration of the acting principle. The fore as well as main keels being hauled up, and the stern keel down, the latter acts in some degree as the rudder itself, and has a tendency to prevent the vessel from fore-reaching. The effect of the after keel, during this operation, is similar to that which would be produced by a rope made fast to the stern in the tideway: the moment the hawser or cable, which had previously kept the head of the vessel to the current, is cast off, the stern would naturally swing round, and take the same position. Or, to proceed with stating parallel cases, if a vessel drawing more water abaft than forward, should chance to take the ground, and her bows, or fore-body, be afloat, the head will immediately swing round, as it were, to oppose the current or tide.

The

The situation of particular harbours, owing to points of land, to the setting of tides, to rocks, shoals, or sands, which vary in their position, their forms, and other circumstances as much as the harbours themselves, frequently prevent ships and vessels from approaching so sufficiently near to towns and fortresses as to afford any well-founded assurance of success, in case of attack. The principal impediments have generally proceeded from the great depth of water which the vessels have required, owing to the sharp construction of the hull, and the consequent prevention of their approaching sufficiently near to the proper point. On some occasions, where the obstacles have been even less formidable, it has been necessary to wait for the time of high water, or a spring tide; a delay which has afforded sufficient time for the enemy to recover from the dismay into which the sudden approach of an hostile armament had thrown them, and enabled them to provide means of opposition sufficient to render the attack ineffectual. Exclusive of the first inconvenience which attends the employment of vessels drawing much water, as bomb ketches, there is a second equally serious. Should a sharp-built vessel even succeed in getting properly to her intended station, and commence the attack with success, if there is not a sufficient depth of water to float her during the whole of the ebb tide, its natural heeling on the failure of support from the surrounding fluid, will inevitably cause not only a cessation from attack, but leave the unfortunate object deprived of all means of defence, and exposed to the most violent efforts of the enemy's fury: it is most probable, that it would be either destroyed, or compelled to surrender, ere the return of the flood would hold forth a prospect of relief; and should neither of the misfortunes just mentioned take place, it is extremely likely that the water would flow into the vessel sharply built, as described, instead of floating, and restoring it to its upright position. Vessels, on the contrary, constructed with flat floors, would not be subject to any of the inconveniences already mentioned; their trivial draught of water would, in most instances, enable them to pass to, or from the object of attack, at any time; and, should they even be unlucky enough to take the ground, their upright situation would enable them to continue the attack, if within the proper distance, with perhaps as much effect as they could have done, had they remained afloat.

All the same reasons and advantages, pointed out in the preceding instance, are not only equally applicable in the case of fireships; but there are also others, in addition, which may be reasonably expected to be derived from the use of vessels intended to be applied to the destructive purpose just mentioned, if fitted with sliding

keels. "It is extremely easy," says the inventor, "for the keels to be so managed, that, in conjunction with the proper trim of the sails, the course of the vessel might be accurately directed to a given point, and become completely effectual when applied to the demolition of shipping in a harbour, or even of a town situated near the water."

The greater part of the inconveniences which may be expected to attend the use of sharply constructed vessels, in either of the cases last mentioned, and, on the contrary, the many advantages which would result from the employment of others having flat floors, strictly apply to all those which may be intended either for gun-boats, floating batteries, gun batteaux, or boats intended for the purpose of disembarking troops. Reason hath, in the latter instance indeed, caused the construction of vessels, specially built for the purpose; and no doubt but the extension of the system, in a certain degree, would be found as equally beneficial as the partial adoption of it has already proved. Trite as the remark may perhaps be considered, it is necessary to observe, that all vessels should be formed with particular attention to the service which it is intended they should be employed in. For instance, those intended for the general purposes of warfare, and destined to act on the ocean itself, or to work up rivers, should approach infinitely nearer to the common method of construction, than those from which it may be required to make very limited voyages only; and even then going large with a fair wind, or towed to their place of destination by boats. In both instances, however, the adoption of separate bulk heads will be found equally beneficial; and the shorter the distance is made between each, the greater will be the advantage to all such vessels as are intended to act either as floating batteries, or gun-boats. The reason is obvious; for if a large shot, during the attack of a fortress, or any other species of service in which it might chance to be engaged, should strike a vessel so occupied, and pass through it, being unprovided with the protection just pointed out, the accident would inevitably cause it to sink almost instantaneously, provided the injury took place below the water-line. On the other hand, if furnished with the means of security pointed out, no injury could accrue from a single shot, or even two, taking place, provided they did not pass longitudinally through the vessel, from stem to stern, and consequently through all the bulk heads; a misfortune very unlikely to happen in comparison with the former.

The necessity which ships of war are under of maintaining their allotted station, particularly in a line of battle, and the misfortunes which have arisen from a disability

a disability to perform this duty, are too frequently blazoned in the page of naval history to require any argument or description in proof. Owing to the present generally adopted method of building ships, it is a matter of utter impossibility that they should all be equally weatherly, unless they were not only all precisely of the same form and dimensions, but kept also in one uniform and exact trim. Hence arises that, in consequence of the varied draughts of water, and other causes, it is seldom or never in the power of the ships composing a fleet, to preserve a regular line. The French, who have been most particularly attentive to this branch of naval tactics, generally keep a point or two from the wind; but still, notwithstanding their great application, they are unable to effect their own wishes perfectly, although their line, owing to the great similarity between ship and ship, is less liable to natural derangement than that of any other country. Captain Schank, however, entertains the best founded hopes, that all the inconveniences just pointed out would be completely done away by the system and use of sliding keels. He furthermore imagines, that, in the case of a fleet proceeding on any expedition, a considerable part of the delay, which now scarcely ever fails to take place during such voyage, would be considerably lessened, if not completely done away. "It often happens," says he, "that the commander-in-chief of a fleet, having a number of vessels with troops and stores on board, under his protection, is under the necessity of bringing to on the approach of night, for the purpose of keeping all the ships together. This measure is unavoidably adopted merely from the circumstance of some being more apt to fall to leeward than others. It frequently happens that, notwithstanding this precaution, in the morning, many of the fleet have very materially altered their allotted situation, not only with respect to the Admiral, but to each other; an alteration generally productive of the most material and serious inconvenience. These difficulties, however," continues the ingenious inventor, "I conceive might be very successfully remedied by the use of sliding keels; since, if the commander-in-chief, observing the approach of a gale of wind, will bring to, and order the sails to be reduced, as far as he shall think expedient, the keels to be regulated as circumstances appear to require, and the signal made for the whole fleet to take up his drift, sufficient experience has been had to prove, that, though an hundred ships were in company, the extent of the whole, after laying to during a long winter's night, need not be more than three miles, unless the commanders were grossly negligent, or some unforeseen change of the wind should take place. On the other hand," proceeds Captain

Schank, "it rarely happens, under the present system of constructing ships, but that fleets, or even small squadrons, entirely composed of vessels built purposely for war, are separated, or, at best, very inconveniently and injuriously dispersed, in consequence of laying to till the return of daylight. A short observation, attentively made, of the difference in drift between a frigate and a ship of the line, will confirm this fact so fully as to shew, that the misfortunes which have frequently arisen from the separation of fleets, have not been owing, in the smallest degree, to the inattention of the officers who commanded them."

Although it must be admitted, that, in the case of a convoy under the protection of ships of war, the merchant vessels, or transports, may not in general be able to sail so fast as the former, yet they may be, by the use of sliding keels, totally prevented from falling to leeward; an inconvenience of infinitely greater consequence and moment, than that of being left astern. In the latter case, the delay of a few hours at most, till the vessels can get up, is the worst that can take place; in the former, their absolute separation, or, perhaps, a tenfold delay, may happen in defiance of every exertion, made by all persons concerned, to prevent, or palliate it. Experiments made on board the Trial Cutter, built by order of the British Government, prove, that a ship or cutter, having all her sliding keels up, will drive directly to leeward, leaving its wake over the weather beam; but that, in proportion as the keels are lowered, the drift will be lessened, and she will gradually forereach, so that, when they shall be all completely down, and the vessel put under steerage, she will run a-head from one to five knots an hour, according to circumstances *.

Hitherto

* The properties of this system, and the promised advantages resulting from the adoption of it, cannot be placed in a clearer point of view than by the following official documents, which speak too clearly for themselves to render any comment or observation necessary.

Certificate of the Officers of the Trial Cutter respecting her Qualities.

We, the officers of his Majesty's Cutter the Trial, do hereby certify, that the said cutter with three sliding keels, does, from the effect of the keels, tack, wear, steer upon a wind, sail fast, work to windward, and hold a good wind; that the keels work with ease, and are not attended with any inconvenience in working of the vessel: and we also certify, that we see no difference in heaving up or down the keels in blowing weather, or in a sea; but that they work equally well in all sorts of weather, that these keels are in our opinion a great improvement, and are still capable of greater improvements. We further certify, that when the vessel rolls deep in a high sea, we do not observe that the keels

strain

Hitherto descriptive argument has but very trivially extended beyond those properties which peculiarly relate to ships or vessels adapted to the purposes of war; but they will be found no less productive of advantage when applied to such as

strain the vessel, the wells, decks, beams, or sides, or are in the least attended with any bad consequence; but on the contrary, when down, make the vessel much easier and prevent her rolling so quick: and we do further certify, that we never were in any vessel of her size and draft of water that sailed faster or carried a greater press of sail, or made better weather: and we also certify, that such of the seamen who have sailed in cutters, say, that they never were in one so dry, or that made such good weather: we further certify, *it is our opinion, that if the four bulkheads in the hold* were taken away, and her mast and sails were in proportion to her tonnage, and that she was coppered, notwithstanding her uncommon strength, she would sail much faster than she now does: and we also certify, that from the third instant to the date hereof, we have never been in company with any vessel (the Alarm Custom-house lugger excepted), that we can with justice say has beaten the Trial: we further certify, that we came into Teignmouth in order to satisfy ourselves with respect to the condition of the wells, and keels, before we reported the vessel to their Lordships; and having cleared the hold near them, do not find that they are in the least degree affected or do leak, or are even damp: and lastly we certify, that we have attended strictly to the instructions given us by Captain Schank, and have found them, with his observations, to prove the utility of the keels, and their effects on the vessels working and sailing, all which we hope will meet with their Lordships approbation.

(Signed) Micajah Malbon, Lieutenant and Commander.
William Milne, Master.
William Mallet, Midshipman.
John Wright, Midshipman.

Trial, Teignmouth,
21st Feb. 1791.

Questions put by Captain Schank to Mr. William Milne, Master of his Majesty's Cutter Trial, with his Answers thereto, 15th April, 1791.

Q. How long have you been at sea in the Trial?

A. Two months and a half.

Q. Did you understand the nature or effect of the keels before I explained them to you?

A. I had very little idea of them.

Q. What opinion had you of them before you sailed and made trial of them?

A. My opinion was, after having heard you explain the nature of them, that they would have the desired effect.

Q. Does the Trial steer, as well as any other vessel you have been in, with her keels down?

A. She steers preferable to any vessel I ever sailed in when her keels are down.

Q. Does she steer equally well with them all up?

A. She does.

Q. What do you observe to be the effect of the fore keel?

A. It makes her very quick in stays.

Q. What do you observe to be the effect of the after keel?

A. With

as are intended solely for those of commerce. It is, in the first instance, a fact too well known to admit of the slightest dispute, that the great draught of water attached even to the smallest coasting vessels by the present system of construction,

A. With the after keel she will wear with very little help from the rudder, and when going upon a wind may be steered almost without the rudder.

Q. What do you observe to be the effect of the main keel?

A. With the assistance of the other two it will make her go to windward with any vessel I have seen.

Q. Do you think from what you have seen that the keels are attended with any danger whatever to the vessel?

A. None whatever.

Q. Do you foresee any danger that is likely to happen from them?

A. Not the leaſt.

Q. Do you think she will sail as fast upon a wind, and go as well to windward, if she had not these keels?

A. By no means.

Q. Is she a good roader, and do you think vessels so constructed will be better roaders than others?

A. She certainly is a good roader, and am of opinion that vessels of her construction would ride preferable to any other.

Q. Does she tack quick?

A. Yes.

Q. Does she wear quick?

A. She does.

Q. Are the keels of service in wearing and tacking?

A. Of very great service in both.

Q. Is the after keel of service in going before the wind, or scudding in a high sea and a strong gale of wind?

A. It is of very great service.

Q. Did you ever see a vessel of her size with so flat a floor go so fast?

A. No.

Q. What do you think of her in pitching?

A. She is remarkable easy.

Q. What do you think of her in rolling?

A. She is an easy roller.

Q. What do you think of her in point of stiffness?

A. She is very stiff.

Q. Do you see any difficulty in heaving up or down the keels in different situations, such as upon a wind and a press of sail, &c.?

A. None whatever.

Q. What strength does it take to heave up or down the keels?

A. One man can heave up or down the fore or after keel, and two the main keel.

Q. Supposing

tion, not only very frequently materially lengthens their voyage, but occasions their destruction. With a contrary wind sloops of no more than forty or fifty tons burthen, are often under the necessity of running to leeward to find a proper

Q. Supposing a rope to break in heaving up or down the keels, do you see any danger attending it?
A. None.
Q. Could it soon be repaired?
A. Very soon.

Q. Do you think that the vessels so constructed are in all respects as good as the present plans for merchant ships, with respect to stowage, safety against fire, or damps?

A. I do think they are.

Q. Do you think the plan can be improved upon?

A. Yes.

Q. Do you think vessels so constructed will be better in all respects than any others?

A. I think in time they will.

Q. Do you think that vessels, with the improvement of separate bulk heads, would be saved in case of springing a leak that you was not able to pump out?

A. They would.

Q. Do you see any fault likely to attend vessels so constructed, either as ships of war or merchant ships, or do you know of any trade that such vessels would not answer?

A. I know of none.

Q. Supposing such a vessel was cast away either on rocks or sands, do you think there would be a better chance of saving the lives of the crew and the cargo than in any other vessel?

A. There certainly would.

Q. Would you prefer such a vessel to go round the world in preference to any other?
A. Yes

In consequence of a request from Captain Schank to the Lords of the Admiralty, that the Trial Cutter might be ordered into one of His Majesty's Ports and there inspected, and the Officers examined touching her qualities, their Lordships were pleased to issue the following order:

Gentlemen, Admiralty-Office, 12th of April, 1792.

Whereas Captain Schank hath by his letter of the 7th ult. requested that his Majesty's armed vessel, built with sliding keels of his invention, may be ordered into one of his Majesty's ports, and taken into a dock in order to examine whether the keels are rubbed or worn, and whether the vessel or the wells are strained; and that the officers may be examined touching the qualities of the vessel in the trials that have been made of her. And, whereas we have thought fit to order Lieutenant Malbon to proceed with the said vessel to Woolwich, for the purpose above mentioned, we send you herewith Captain Schank's said letter; and do hereby desire and direct you to cause the said vessel, on her arrival at Woolwich, to be taken into a dock and fixed on blocks in such manner as Captain Schank shall advise, and to direct the master shipwrights of Deptford and Woolwich yards, with their assistants, and also the masters attendant of those yards, carefully to inspect and report to you the state in which you find her to be, as also

per harbour or road where they may meet with shelter; while those in which the new system is adopted, will scarcely pass a single creek or inlet where they may experience the sought-for protection and refuge. Nor does the inconvenience of the

also the different qualities of the vessel, according to the best accounts they may be able to collect from her officers in the various trials they have made of her; and you will also direct them to consider, and report to you whether the repairing of vessels so constructed will be attended with great difficulty, and whether they will be more or less expensive than vessels of the old construction; and when you have received and maturely considered the said reports, and received such explanations from Captain Schank as you may think necessary, you are to transmit to us copies thereof, with your opinion of the advantages that may be derived to his Majesty's service from the invention above mentioned. We are,

Your affectionate friends,

(Signed) Chatham,
Hood,
J. M. Townshend.

According to this order, the Trial Cutter was taken into Woolwich dock-yard, and there inspected; and the officers belonging to her were distinctly and separately examined also. After which, the following report was made to the Navy Board, by the persons empowered to inspect the vessel and examine the officers.

Honourable Sirs, Woolwich Yard, 25th April, 1792.

In obedience to your order of the 16th inst. we have taken his Majesty's armed vessel into a dock on blocks five feet high, and have very carefully inspected the vessel, wells, and sliding keels, and cannot discover the least defect in either.

We are of opinion vessels so constructed will be a little more expensive than others; but may be repaired without any difficulty.

Inclosed you will receive the questions with their answers. And remain,

Honourable Sirs,

Your most obedient servants,

(Signed) J. Gilbert,
J. Dann,
Richard Prowse,
M. Ware,
J. Frankland,
William Rule,
Henry Peake.

Honourable Navy Board.

Questions put separately to Lieutenant Malbon, and Mr. William Milne, of the Trial Cutter, with their answers, being the inclosure alluded to by the foregoing letter.

Question 1. How long have you belonged to the Trial Cutter?

Lieutenant. Sixteen months.

Master. Sixteen months.

2. What

the common construction end even here. When the vessel shall have arrived at its intended port in safety, it is, perhaps, prevented from reaching the proper station for unlading till the next spring tide, or after having reached it, it may be unable,

2. What kind of a sea boat do you find her to be?
Lieutenant. A very good sea boat.
Master. A very lively vessel in a sea.
3. Is she stiff in carrying sails?
Lieutenant. Very stiff.
Master. Yes, very stiff.
4. What effect do you observe the keels to have on her?
Lieutenant. When they are all up, she does not hold so good a wind.
Master. Keeping her to windward.
5. Does she steer well with the keels all down?
Lieutenant. Very well.
Master. Very well.
6. Does she steer equally well with the keels all up?
Lieutenant. Not so well as with them down.
Master. She does not.
7. What effect has the fore keel on her?
Lieutenant. It brings her about with heaving the after keel up.
Master. Same answer.
8. What do you observe to be the effect of the after keel?
Lieutenant. It makes her wear quick by heaving the fore keel up.
Master. Same answer.
9. What effect has the main keel?
Lieutenant. It keeps her to windward.
Master. Same answer.
10. You have frequently been in company with his Majesty's ships and cutters?
Lieutenant. Yes.
Master. Yes.
11. How do you think she sailed with the said ships and cutters?
Lieutenant. I never was with any king's cutter that beat her.
Master. None of the king's cutters ever beat her.
12. What ships and cutters do you remember to have tried with?
Lieutenant. The Nimble, Sprightly, Spider, Ranger, and Resolution, cutters; the Salisbury, Nautilus, and Hyæna, ships.
Master. The Nimble, Sprightly, Spider, Ranger, and Resolution, cutters; the Salisbury, Nautilus, Hyæna, ships; and King's-fisher brig.
13. Did you try with them upon a wind?
Lieutenant. Yes; and was beaten by none of them.

unable, though the cargo shall be discharged in three or four days, to move from thence till the same kind of assistance be afforded to it by nature. According to Captain Schank's proposal, vessels capable of carrying from one hundred and twenty

Master. Yes, and was beaten by none of them, except the Ranger, which was not a fair trial.

14. What vessels did you beat?

Lieutenant. The Resolution, Sprightly, and Nimble, cutters; and all the above mentioned ships.

Master. All the above square rigged vessels, and the Resolution, Sprightly, and Nimble, cutters.

15. Do you find any difficulty in heaving up and down the keels in different situations; such as a press of sail on a wind?

Lieutenant. Not any.

Master. Not any.

16. What strength does it require to heave up or down the keels?

Lieutenant. One man the fore and after keel, and two the main.

Master. Two men the main keel, and one the fore or after.

17. Supposing a rope to break in heaving the keels up or down, in what time can you replace it?

Lieutenant. In about three minutes the fore or after keels, and the main nine or ten minutes.

Master. The fore or after keel in five minutes, the main in ten or fifteen.

18. Does she tack quick?

Lieutenant. Very quick.

Master. Very quick.

19. Does she wear quick?

Lieutenant. Very quick.

Master. Very quick.

20. Are the keels of service in wearing and tacking?

Lieutenant. Yes.

Master. Yes.

21. What rate is your fastest sailing upon a wind?

Lieutenant. Nine and nine and a half knots.

Master. Nine knots.

22. What rate is your fastest sailing before the wind?

Lieutenant. Ten knots.

Master. Ten knots.

23. Suppose the vessel was to lose her keels on a lee shore, do you think you could work her off if she could carry the sails?

Lieutenant. Yes.

Master. If she carries all her sails, she will, but under a double reeft mainsail and middle jib she will only hold her own.

24. What quantity of iron or shingle ballast have you on board?

Master,

twenty to one hundred and forty tons, would not require more than five feet and an half water when fully laden. The very material difference, and the manifold advantages that would result from it, are so obvious as to render the enumeration of

Master. Eighteen tons of iron, but no shingle.

(Signed)

J. Gilbert,
John Frankland,
William Rule,
M. Ware,
J. Dann,
Richard Prowse,
Henry Peake.

After the Trial Cutter had been thus inspected by the officers of Woolwich dock-yard, and her officers interrogated as to her qualities, she left that place and proceeded to her station at Plymouth. James Templer, Esq. of Stove, in the county of Devon, a gentleman who had given much of his attention to mechanics, and the improvement of naval architecture, having inspected the cutter in Woolwich yard, wished to see the operation and effect of the keels in the working of the ship, he accordingly went on board the Trial, and sailed in her to the coast of Devon. Upon his landing he wrote a letter to Captain Schank, expressive of his great satisfaction at the surprizing effect of the keels; from which letter the following is an extract. "We were weather bound a day or two, and made a good harbour of Dungeness; the wind was foul all the way afterwards, and at times little or none; we had a fine breeze the morning we arrived. I was happy in the opportunity of seeing all the effects and operations of the sliding keels, and am now more than ever convinced of their great utility; the vessel steers and puts about with great certainty, never losing her way, but shoots round to her course, and continues it while filling the sails, an advantage that removes the chance of accident when a vessel entirely (as is often the case) loses her way, and is in danger of going upon her beam ends before she gets under way again, especially in a large sea. I observe the stowage of the vessel is as complete as in the old way, and I think more so, as the cargo, particularly of corn or any thing that is liable to shift, is so fixed that although the ship may not be half full, it is rendered stationary and safe; added to which, various sorts of grain may be put in the same vessel, without the chance of their mixing. Another very great advantage is also that of the ship being able to get into shallow harbours, or run over rocks, sands, &c. as was the case with us coming down. We came over the flats at less than half an hour's flood; and to try the effect, we suffered the aftermost keel to be down, and running into shallow water upon the tail of the Spaniard, it rose and fell without the aid of the winch; a clear proof that nothing is to be apprehended from the fixing of the keel, at the time she may strike the ground. These considerations, when once known, I think must render the invention acceptable to the public; but people are so unfortunately persuaded in favour of old fashions, that it is difficult to turn them; for my own part, I am so well convinced that the system adopted in the Trial is correct, whenever my work is done, I will immediately adopt it in the coasters from this harbour; as they will not only be able to get up quite to Newton, or even up to the canal, with a cargo, but can get in and out of the harbour, at any time, in spite of the bar which at present impedes all other craft of any burthen, or drawing even a moderate depth of water. I am persuaded, if you could have an opportunity of building another, and not be controuled in the plan, you would exhibit

of them almost unnecessary; but it may not, however, be considered extravagant to point out that the internal commerce of the kingdom might in a great measure by this contrivance, be connected with that carried on by sea, and consequently a saving would be made, of all that time, as well as expence, which is unavoidably occasioned, at present, by the removal of cargoes from the vessels which have brought them into port, on board the lighters which are to convey them inland. A depth of four or five feet water only, being, as already shewn, sufficient to float a sloop or vessel, of no mean burthen, built according to this proposed system, which is in every respect fitted to encounter the dangers of the sea, there are many canals through Great Britain, into which, if furnished with a falling mast, they might pass with as much facility as the barges or lighters now used.

Two other advantages, almost equally valuable with those already pointed out, are also to be obtained from the use of separate bulkheads and sliding keels; the first is the great ease with which a cargo, consisting of mixed and most opposite commodities, may be carried in the same vessel; nor does there appear to be a single species of lading to which it may not be considered fitted, except that of masts, a very insignificant exception from the immense commercial catalogue. The second benefit is that of durability; there is nothing that seems so highly injurious and detrimental to the timbers or frame as the circumstances of being alternately wet and dry, or exposed to, and again totally excluded from the external air. It is well known that the bottom of a ship or vessel will frequently last fifty or sixty years, but the upper works always decay in much shorter space of time; the reason has been already assigned. But when the timbers composing

a specimen of nautical improvement, equal, if not exceeding, any other. The public, I fear, do not yet know how much is due to you, for the pains you have taken to accommodate them; for one, I beg to return you my thanks for the information you have furnished me with, and which, I am sure, will in season prove very advantageous to me; especially if I carry stone from Barbicomb Bay up the canal, and Bovey Coal, in war time, to the rock in that bay. I wish you may find a general good opinion prevail, and that the countenance of the public may not be wanting to make you the greatest return you are undoubtedly entitled to.

(Signed) James Templer.

P. S.—I forgot to observe that we sailed several leagues without using the rudder, steering the vessel with particular accuracy by the keels only, a circumstance almost incredible to those who do not see it; but the reason is so substantial, that it accords with true mechanical principles, and the effect is certain."

the

the frame shall be set so close together, that on being caulked they shall become water-tight, when the same measure shall also be pursued with the internal lining, the quick succession of heat and cold, wet and dry, become completely obviated, and the cause of destruction being removed, the effect of preservation naturally follows. For this reason, Captain Schank delivers it as his serious opinion, that vessels, constructed with his different improvements, would continue well fit for service, one-third, at least, if not double the time, longer than they do at present.

It is worthy of remark, that the late Dr. Benjamin Franklin, whose great philosophical ingenuity and skill are too well known to render any comment necessary, in a letter to Alphonsus Le Roy, published in the second volume of the American Transactions, makes a proposal for dividing vessels into compartments rendered water-tight, almost exactly similar to that suggested by Captain Schank. "While on this topic of sinking," says the Doctor, "we cannot help recollecting the well-known practice of the Chinese to divide the hold of a great ship into a number of separate chambers, by partitions tight caulked, of which you gave a model in your boat upon the Seine; so that if a leak should spring in one of them, the others are not affected by it; and though the chamber should fill to a level with the sea, it would not be sufficient to sink the vessel. We have not imitated this practice; some little disadvantage it might occasion in the stowage is perhaps one reason, though that I think might be more than compensated by an abatement in the insurance that would be reasonable, and by a higher price taken of passengers, who would rather prefer going in such a vessel. But our sea-faring people are brave, despise danger, and reject such precautions of safety, being cowards only in one sense,—that of fearing to be afraid."—When any new contrivance whatever becomes suggested at the same time, in different parts of the world, by two men totally unknown to, and not having the smallest communication with each other, there arises, in the most doubtful cases, a strong presumption as to the propriety of the proposal. In the present instance, however, no such doubt can possibly have arisen, and the circumstance of the two coinciding opinions is mentioned, rather for the purpose of shewing how wonderfully human ingenuity does, on a variety of occasions, tend precisely to the same point, than from any idea of the smallest corroborating proof being necessary, as to the benefits to be expected from the recommended measure, which certainly carries with it what is called such internal evidence of its salutary use, as must render all argument in its favour tedious, and impertinent.

The singular service that might be derived, in time of war, from vessels so constructed as to be able to pass through a very shallow water, is established by the events, as well fortunate as otherwise,* of a variety of expeditions, with the accounts of which the page of history abounds. In none that ever existed would vessels constructed according to the principle invented by Captain Schank, have been more useful than in the project set on foot in the reign of king James the Second, to destroy the fleet of the United Provinces, in its own port of rendezvous. The scheme, as it is well known, was never attempted to be carried into execution, perhaps because vessels could not be found sufficiently adapted to the purpose. The curious State Paper annexed, which has, in all probability, never till now found its way to the public eye, will so well explain the requisites of vessels employed on any expeditions of the same nature, as may serve to excuse and apologize for what may be called the Episodical Anachronism, and Introduction of it. A variety of remarks and observations occur in the course of the proposal, which most wonderfully accord with the ideas of Captain Schank, and point precisely to the same object.

Proposalls humbly offered to his Sacred Majestie by Captain Robert Holland, at present a Captain in the King of Denmark's Sea Service, to destroy all the North Holland and Amsterdam Squadron of Capitall Shipps, in Case of a Warr between England and the Dutch.

There are two sands or flatts in the Zuyder Sea, between Amsterdam and the Texell; one called the Pampus, three leagues below the Palus of Amsterdam, on which is not more than twelve foote water; the other is called Wieringen Flatts, about twelve leagues below the Pampus, on which there is not more than fifteen foote water.

All the North Holland and Amsterdam squadrons of capitall shipps are brought downe light, without gunns or provisions, untill below Wieringen Flatts, where those shipps usually ride to mann, victuall, and gunn.

A squadron of tenn men of warr, and six fire-shipps, provided out of the easterne built, to draw not above twelve foot water each, when manned, victualled, and gunned, may bee made to carry between twenty and forty gunns each,

* According to the precautions taken in provision of vessels adapted to the purpose, or the careless neglect of so wise and indispensably necessary a measure.

each, and being well manned, may enter in at the Fly, or Texell, as the winde serves, (which seldome failes of being westerly in the month of Aprill) at which time these shipps are fitting forth.

The proposer humbly offers his service to command or pilott the squadron of shipps into the Zuyder Sea, in order to the burning, sinking, or takeing, all the Dutch capitall shipps, and all others they shall finde below Wieringen Flatts, or the Pampus, which designe being well timed, may bee easily effected, without hazard to shipps or men.

After which this squadron will command all the Zuyder Sea between West Friezland and Holland, which is wide and deepe, where fresh resolutions may be taken (as occasion serves) to burn those shipps at the Palus of Amsterdam, nothing hindering but a small fort, which in Anno 1675 had but twelve gunns mounted, and that at some distance from the water side.

Hense likewise may all the trade out of the Rhine by Campen to Amsterdam bee stopped, and particularly the fresh water dayly brought in senytes for brewing.

Heere this squadron will continue, at their owne pleasure, without being in any dainger from the Rotterdam or Zeland squadrons, while between Wieringen Flatts and the Pampus; their shipps great draught of water will hinder their following our shipps over Wieringen Flatts, &c. untill they can provide a like, or greater force in bottoms of as little draught of water, which cannot readily bee got together, so as to prevent our having a particular account of this designe.

After this is effected, the Texell or Wieringen Island, with 5000 soldiers, may easily be taken and kept; then there will bee a short retreate for this squadron to water and cleare.

To facilitate the whole of this designe, two or more low engines may bee provided to carry each four or six small gunns, which may be put up in pieces into two eastern timber vessells, with large hatches, intended to lighten any of the squadron that may happen to runn aground, and alsoe to careen any of the squadron when opportunity serves. These low engines being sett up in the Zuyder Sea, at Vrke, &c. (the water being for the most part smooth as in the Thames) will bee of great use to tow up any man of warr into a road over the Pampus, or in a calm.

By this means the Dutch (with a small charge to us) may have the best halfe of theire sea strength destroyed, or at least kept from joining the Rotterdam and

Zeland

Zeland squadrons, if the designe bee put in execution timely, when the Dutch capitall shipps are newly gott below Wieringen Flatts, which by good intelligence may be certainely known, and which usually happens (in case of warr with us) about the middle of Aprill.

The like opportunity may bee gott about August, after their men are paid off, which (for the most part) is before theire capitall shipps are discharged of their gunns, &c. and put in safety.

Thus all the great shipps of Enchusen, Medemblick, Edam, Horne, &c. are liable to the like fate of being destroyed, if found loading or unloading, being at those times, for want of water, forced to ride out of command of those townes.

If a warr with the Dutch should happen when (as at this day) the Dane is heartily our friend, so as readily to joine with us in the warr, it would greatly add to the designe to be sett on foote there, by buying or building vessells in Denmarke for this service, which may bee done more expeditiously, &c. with less charge, and sooner manned, than in England.

As for the lack of seamen, possibly reconned the most difficult, they may bee had to what number you please from Bremen, Hambro', Lubeck, Rostock, &c. for those shipps early in the spring, by which the Dutch will not onely bee deprived of an opportunity of manning their fleete, as haveing always on like occasions had the much greater part of their seamen out of these places, but also bee forced to give a greater rate for seamen than heretofore; and have those seamen that in former warrs have been against us, now imployed against the Dutch, and for lucre of plunder, they may be found as forward as the English.

His Majestie of Denmarke, at this day, has the shipps following fitt for this service, viz.

	GUNS.		GUNS.
Homer - -	26	Postillion -	14
Swordfish -	44	White Faulcon	26
Tumbler, alias Porpus	44		44
Dragoner - -	30		
Swerver - -	16	a good sayler, and rows well.	

Each of these shipps' gunns are weighty, and yet the biggest, when victualled and manned, draws not more water than twelve foote.

This designe may bee carryed on in Denmarke, as if fitted for some part of the West Indies, &c. and thence bee brought into Boston Diepe under pretence of

Fig.1.

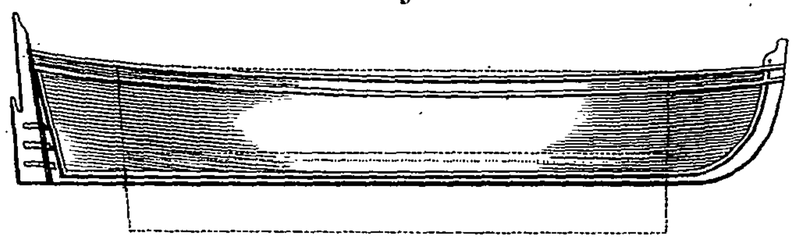


Fig.2.

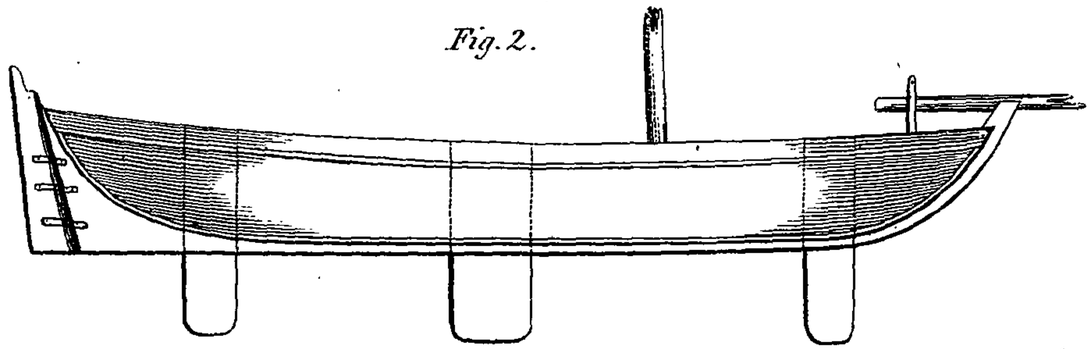


Fig.3.

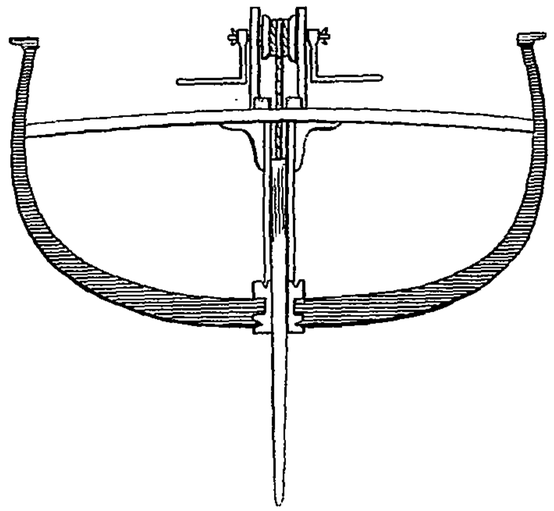


Fig.4.

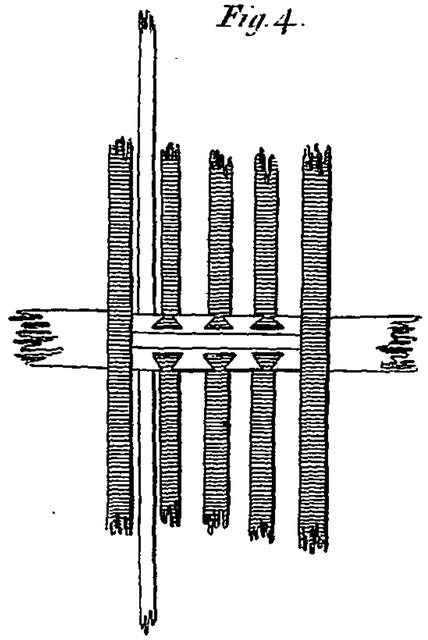


Fig.5.

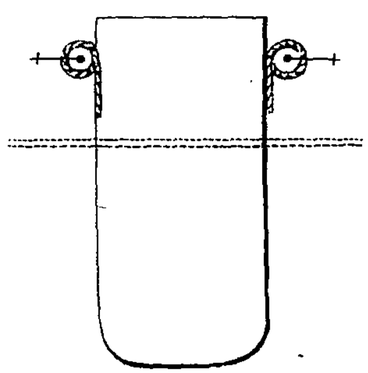
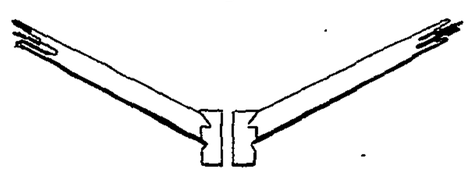


Fig.6.

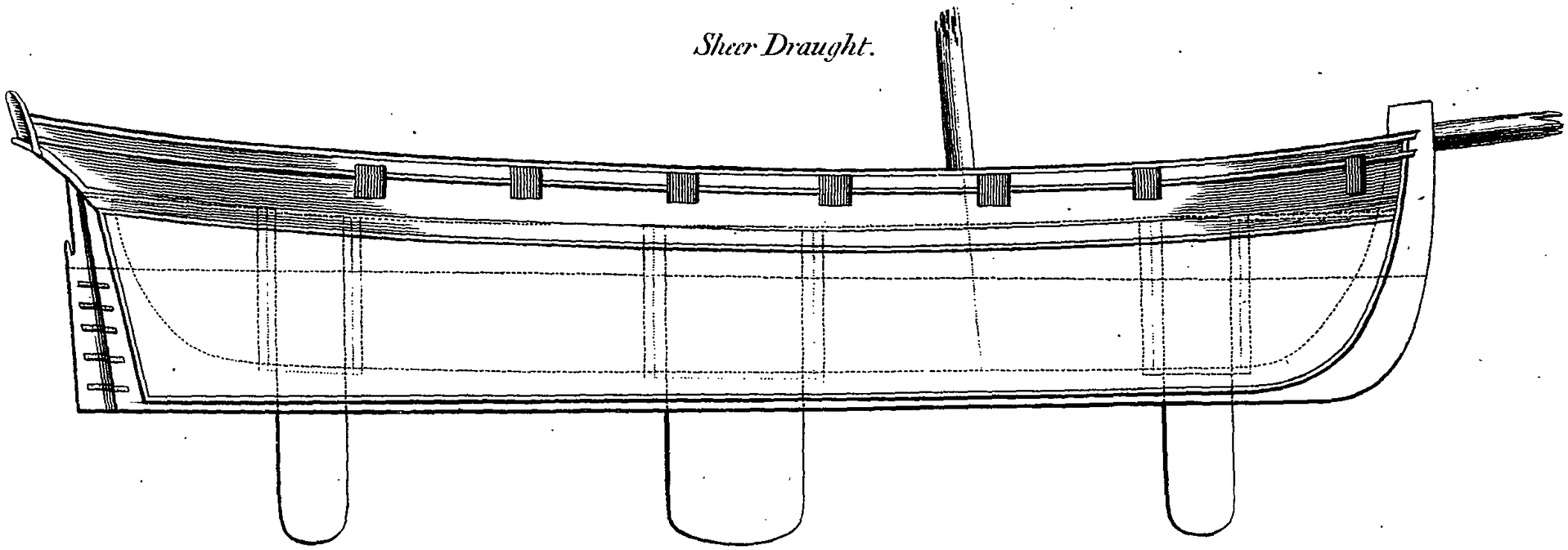


Greig, Sculp.t

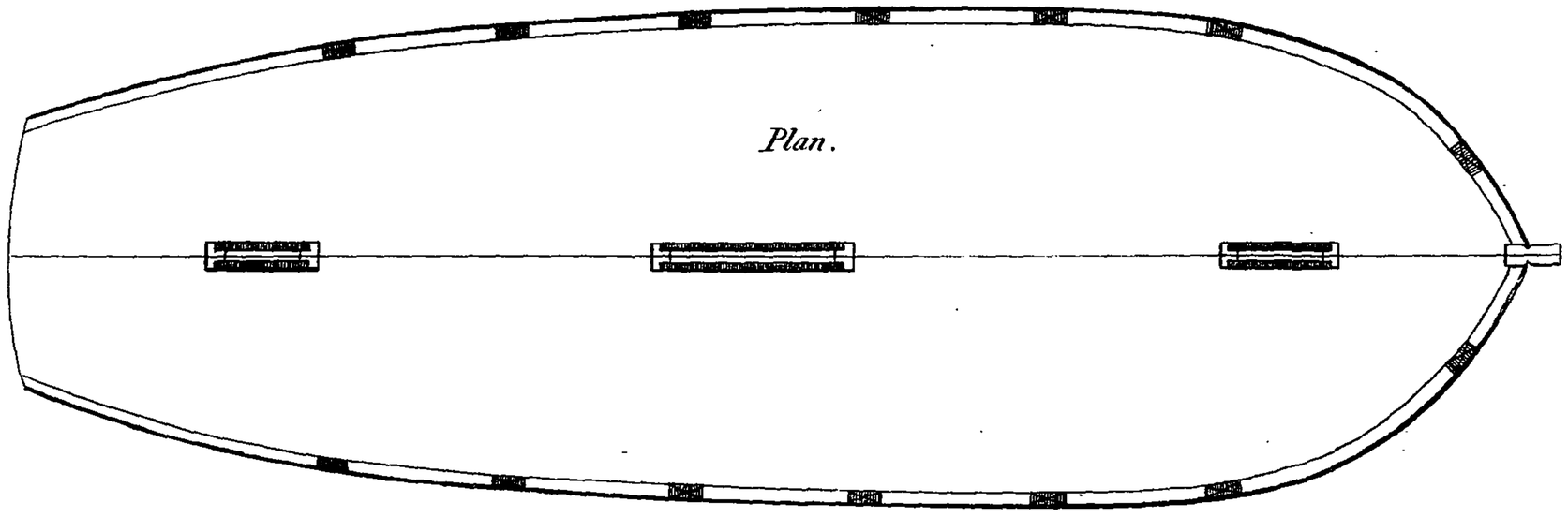
SLIDING KEELS & TRIAL CUTTER. Plate. 1st

Published by R Faulder, Bond Street, London.

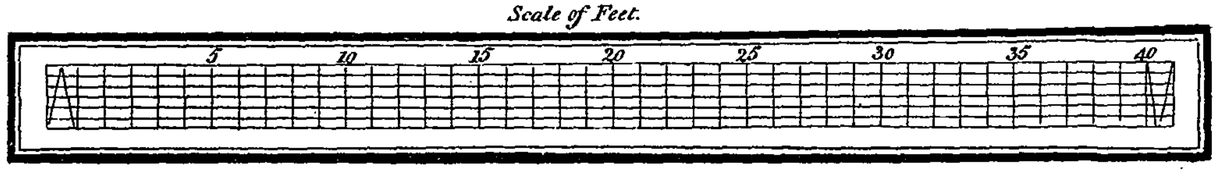
Sheer Draught.



Plan.



Scale of Feet.



Greig Sculpt.

TRIAL CUTTER. Plate. 2.

Published by R. Faulder Bond Street, London

Fig.1.

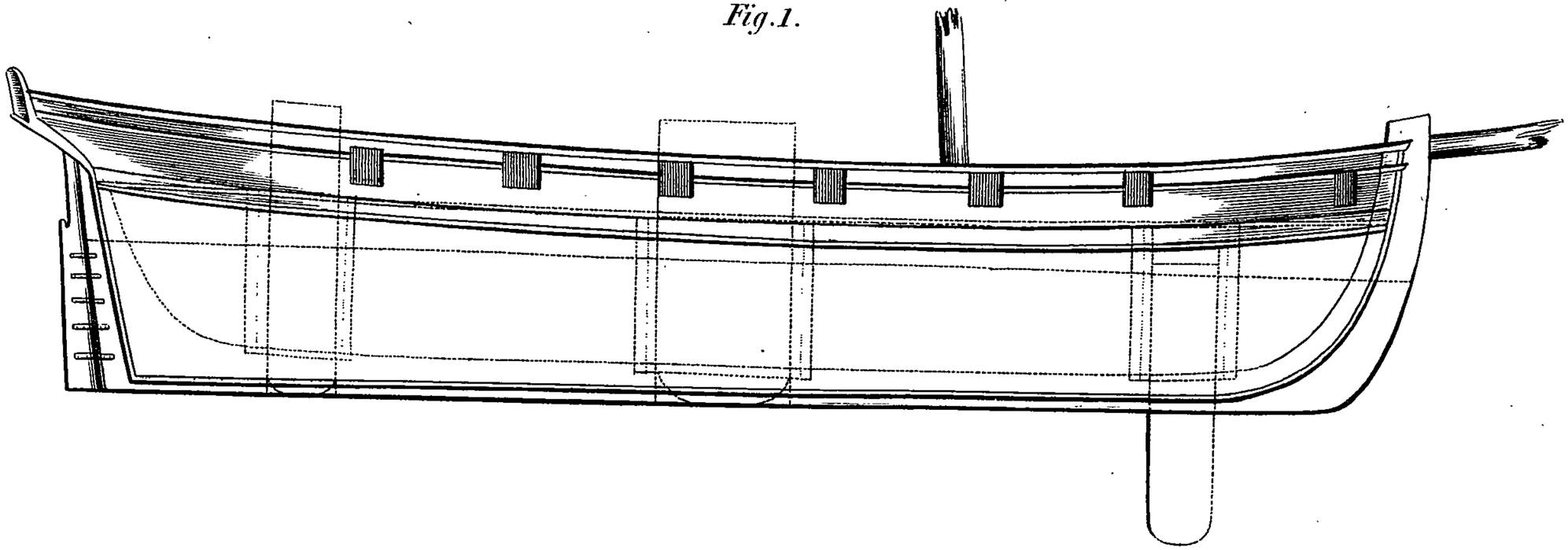
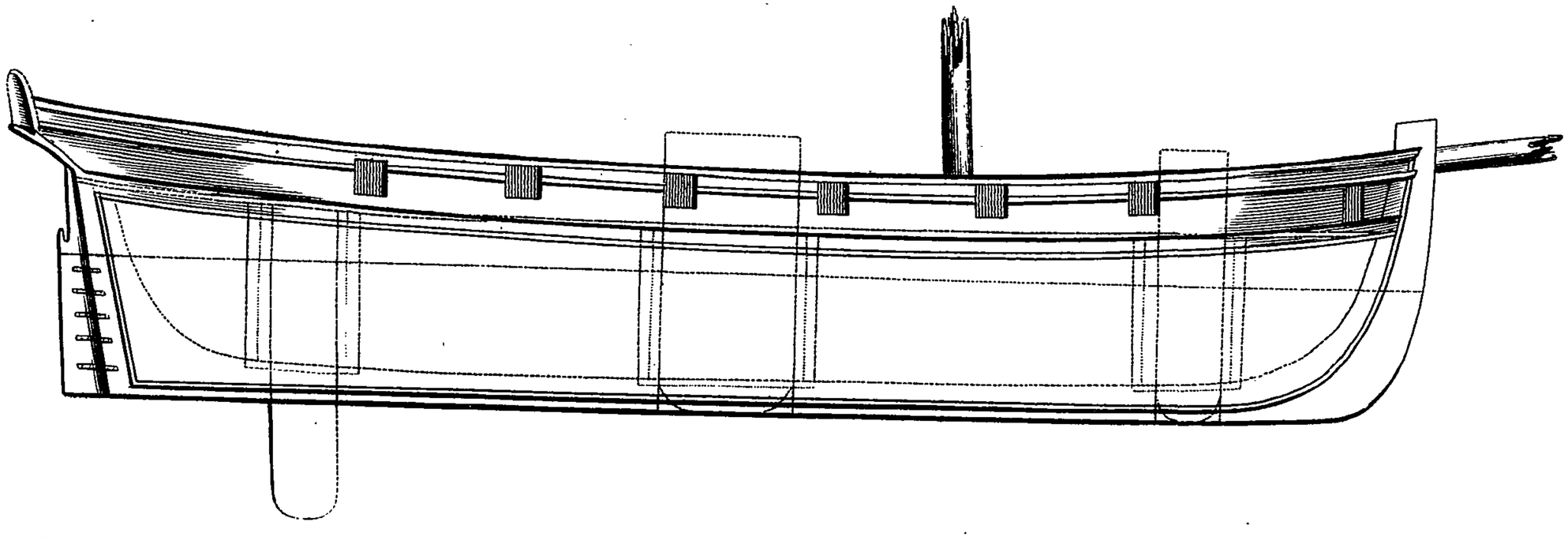


Fig.2.



Grig. Sculpt.

TRIAL CUTTER. Plate 3.

Published by R. Faulder, Bond Street, London

Fig. 1.

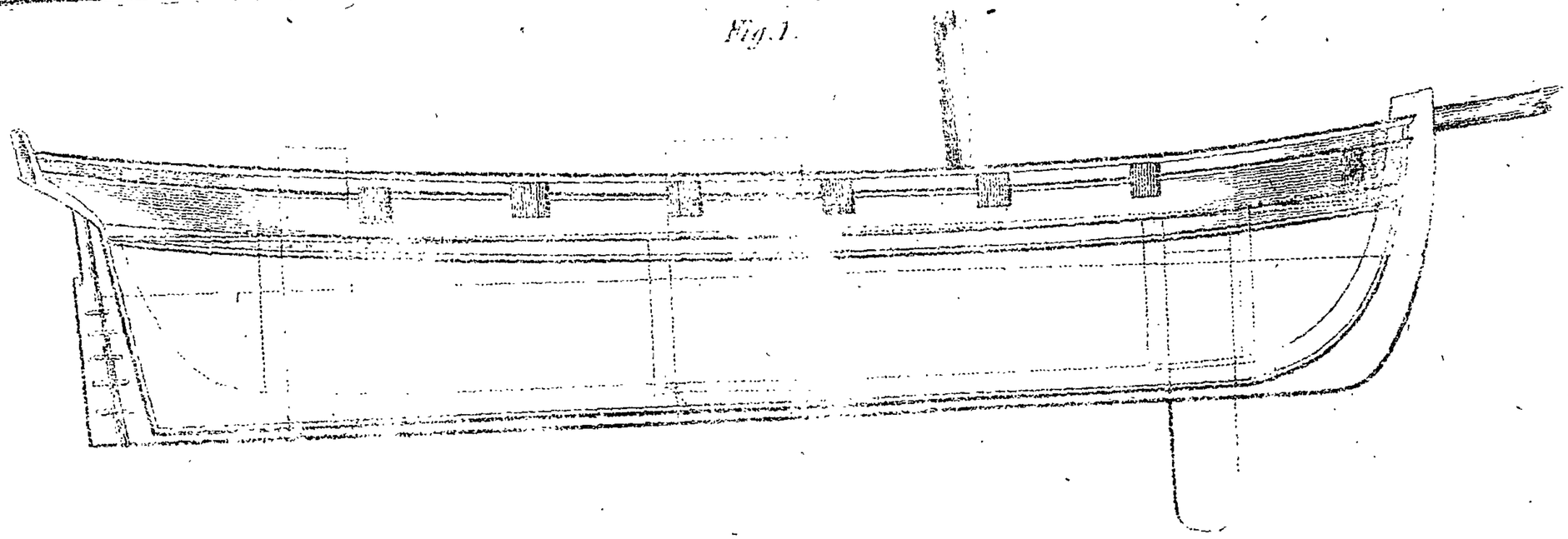


Fig. 2.

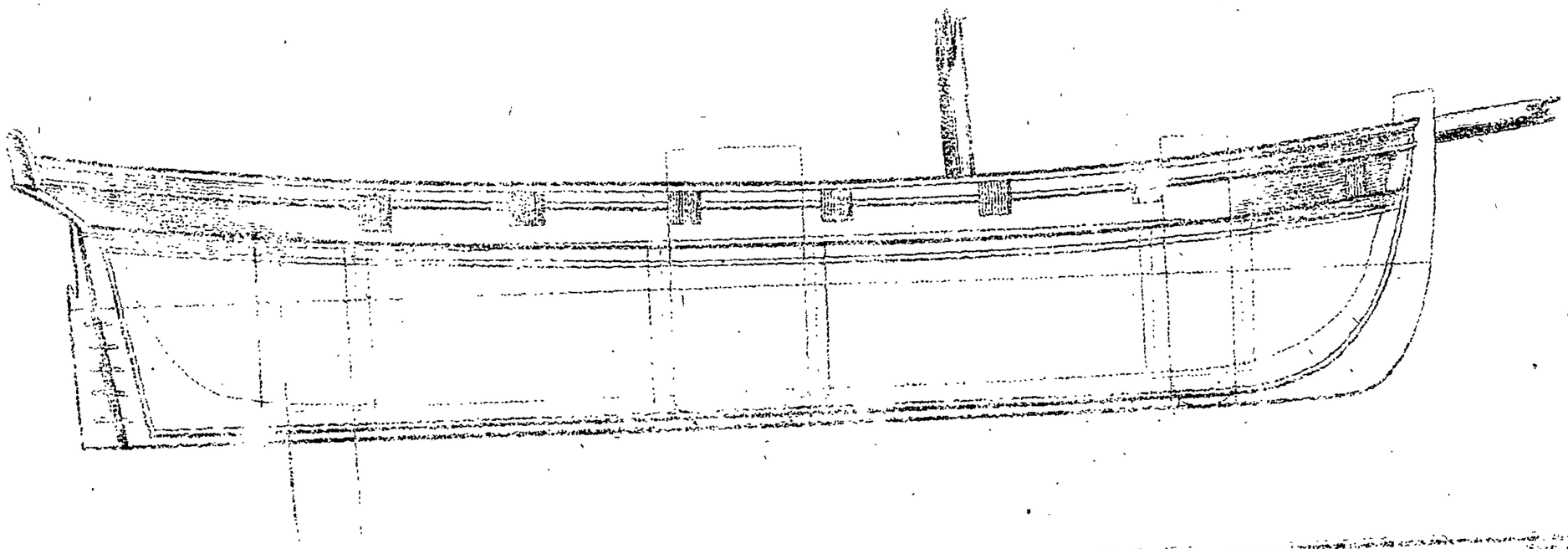


Fig. 1.

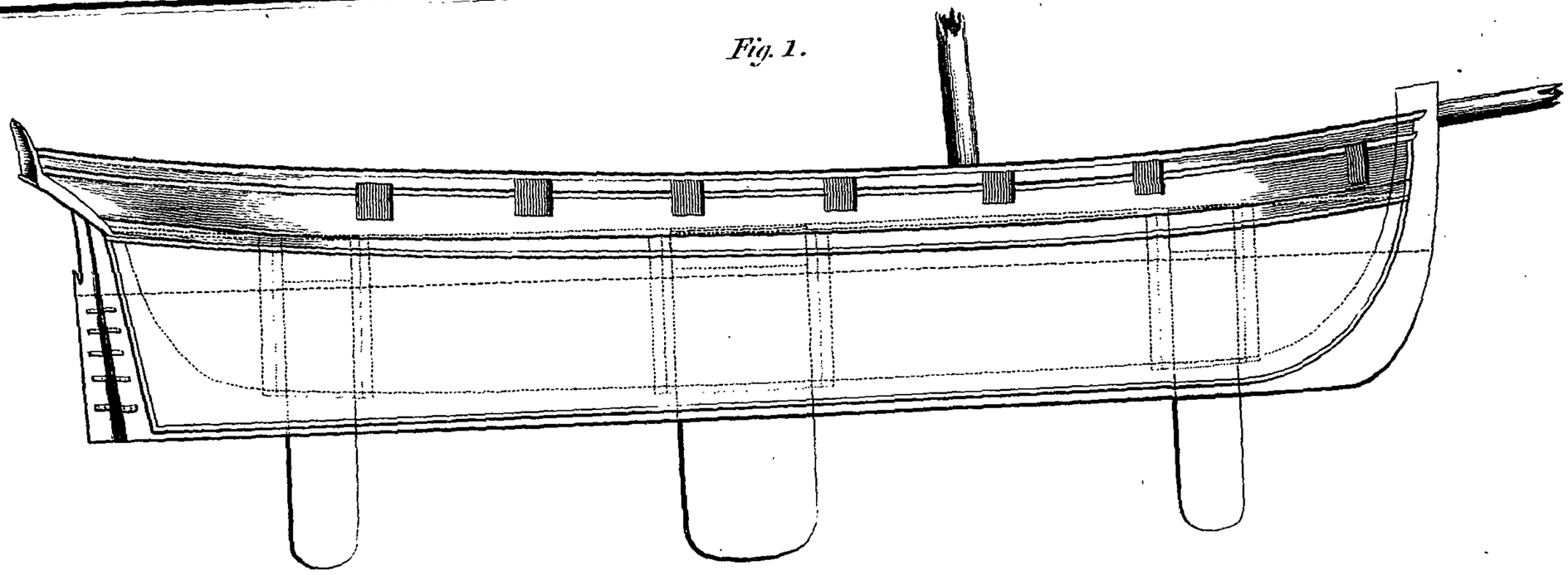
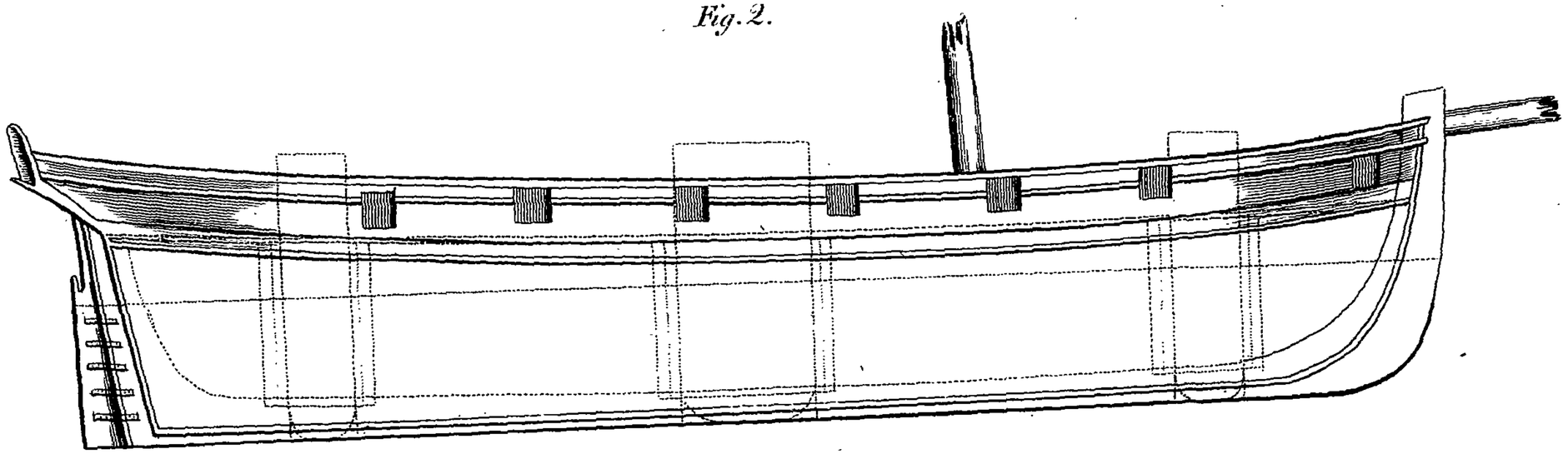


Fig. 2.



Greig Sculpt.

TRIAL CUTTER, Plate 4.

Published by R. Faulder, Bond Street London

of contrary winds, or to victuall, or by a shipp springing a leake, &c. may ride undiscovered by being out of the road of trade, untill the winde and intelligence makes the designe ripe for execution.

If this method proposed, in conjunction with the Danes, appeares difficult, or cannot bee obtained, then a squadron of shipps proper for this designe may bee built as if for the coal trade, and soe employed untill opportunity offers.

There is a vessell of North Yarmouth already built for the coal and Bourdeaux trade, proper for this use, which upon tryall has been found more profitable to the owners than vessells of other built. More of this sort may bee built in good time.

To return, however, to the invention of the sliding keels, the theory of the system, together with the previous contrivances which took place, ere it became so thoroughly digested in the mind of the inventor as to warrant his giving it to the world so sufficiently perfected, that its general adoption might be expected, will, together with the methods to be pursued in working vessels so fitted, be best described by the annexed plates. Plate the first, fig. 1, represents a boat, built at Boston in New England, in the year 1771, for Earl Percy, now Duke of Northumberland. It was furnished with a continuous and uninterrupted sliding keel, by means of which it could be worked without a rudder. Fig. 2, represents a boat, fitted at Deptford, with three sliding keels, in the year 1789. Fig. 3, is a transverse section of the Trial Cutter, with her sliding keel lowered down. Fig. 4, is a plan, showing the method of dovetailing the timbers into the dead wood at the midships. Fig. 5, is a representation of the main sliding keel, with the rack and winch, by which it is raised or lowered. Fig. 6, is a section, showing the heeling of the timbers in the wake of the foremost and aftermost keels. Plate 2, fig. 1, is a sheer draught of the Trial Cutter. Fig. 2, is a plan of the same vessel. Plate 3, fig. 1, is a sheer draught of the vessel, with all her sliding keels lowered down as when sailing in a wind. Fig. 2, is the Trial Cutter, with her keels hauled up, as when going before the wind, or passing over a shoal. Plate 4, fig. 1, shows the same vessel, with her fore-keel lowered down, as when in the act of tacking or lying to. Fig. 2, is the same vessel, with the aftermost-keel lowered down, as when veering or scudding before the wind *. To this description, which is given

* Captain Schank adds some additional remarks, why vessels constructed according to his system, will

given without the smallest comment or remark, it will not, perhaps, be thought improper to subjoin a few observations on the general principles of Marine Architecture.

The

will have a superior advantage, as ships of war over those constructed according to the ordinary method, on account of their magazines, and their increased security by the use of the wells, together with their easier preservation from leakage, and the superior facility with which such a disaster may be remedied.

"Although I have," says the inventor, "in some measure already explained the advantage of the wells in filling the magazine with water, yet I think it may not be improper, in corroboration of what I have advanced on this subject, to mention, that a convenience of this kind has long been a *favourite idea* entertained by some of the first officers in the British Navy; but the hesitation naturally occasioned by all new schemes, has in part prevented them from being carried into execution. Plans, somewhat similar to the present, were suggested by the late ingenious Captain Bentinck, not only for the magazine, but for every store-room in the ship. The great difficulty with him, was that of placing the cocks; but had sliding keels and wells been at that time invented, the speedy and easy conveyance of the water would soon have been seen, and, I make no doubt, would have been applied as I have proposed. As almost every class of vessels of which I have ever heard, have the magazines either forward or aft, I would always recommend the foremost or aftermost wells to be constructed in the magazine, by means of which, in time of action, every thing could be kept damp.

"Such admirals, captains, and lieutenants," continues the inventor, "as have filled the office of master's mate, know the trouble of the hold duty; few others are sufficiently acquainted with it. In long cruizes and tedious passages, it is a most desirable object that the ship should be kept in her best sailing trim; this measure greatly depends on filling the empty casks with salt water; which, from the great trouble attending it, is generally put off as long as possible; sometimes, indeed, so long, that the ship is by far too light to carry sail, and should a gale come on when a ship is in this situation, it may occasion disagreeable consequences. Though every exertion may be made to fill the empty casks, yet as there is but one cock, and that only fitted to fill the lower or middle tier, it takes up much time, since both pumping and drawing water are found, in bad weather, almost impossible. But in ships built with sliding keels, then, without the least danger, there may be two or three cocks to each well, so that all the water necessary could be filled in one hour. Water may also, by these means, be let into the cistern, where the hand-pump stands, and from thence be conveyed to any part of the ship, either to fill the casks or wash the decks; and by this assistance, all the decks in the ship could be washed at the same time. Another great convenience might be derived from the wells to men of war victualling for long voyages. In fresh-water rivers, all the casks in the ship could be filled from them, and I make no doubt, with the greatest ease. Turtle, lobsters, oysters, and all sorts of fish, kept at any time in well vessels, might, in men of war, be kept alive, from the assistance of the wells, without the least inconvenience to the ship.

"As ships, on my proposed construction, are certainly more solid, in case of a shake in a plank or timber, or a but-end starting, the chance is, that the water can only find its way a few inches; for every part of the plank inside and out being closely joined together and caulked, it is impossible the water should get in, unless the leak or hole is completely through. The same observation may be made on a shot or shots striking the ship between wind and water, or even below the water-mark; whereas, in the present construction of vessels, if a shot only splits or shatters the outside plank, or goes through into

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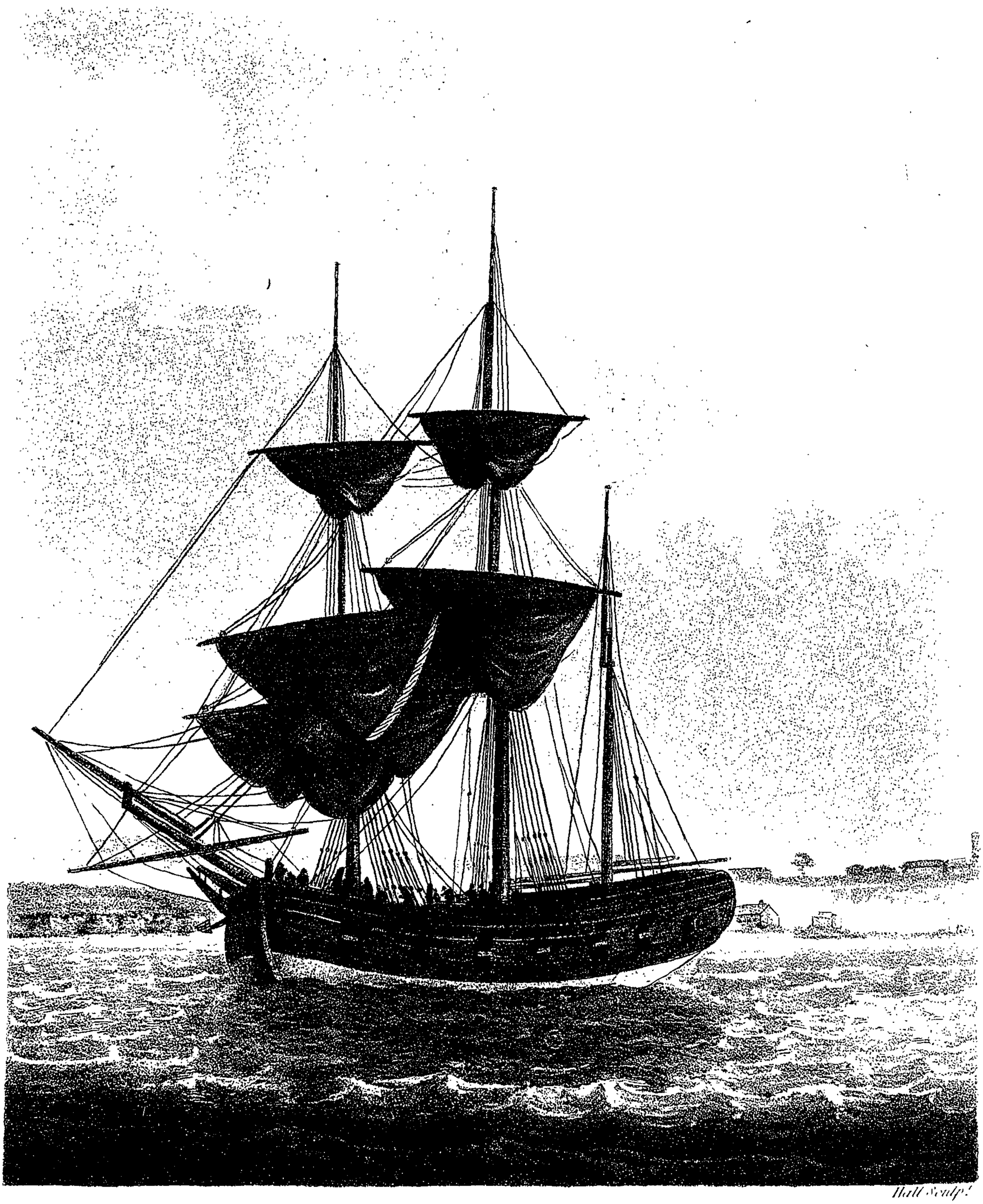
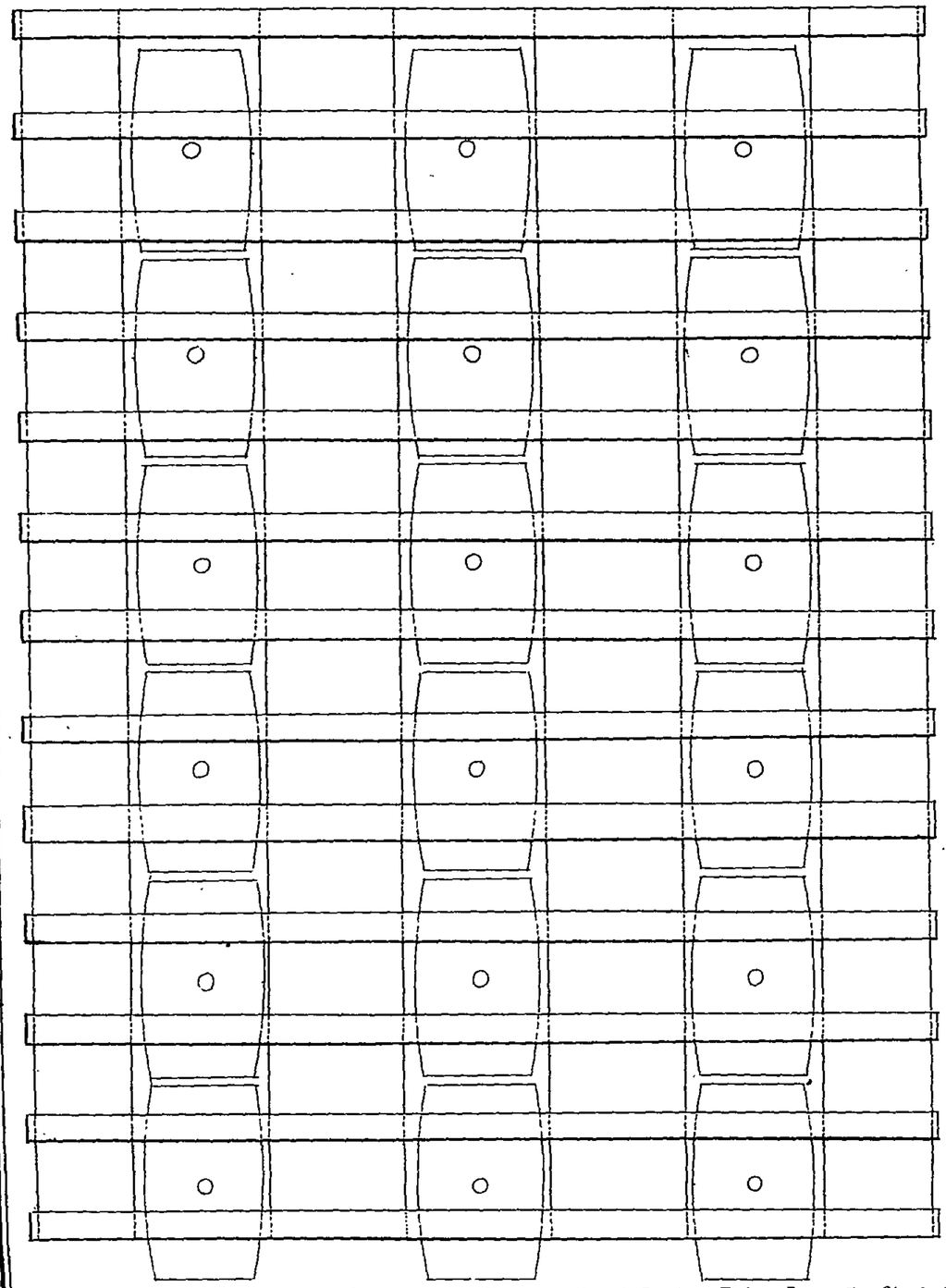


Hall Sculp.

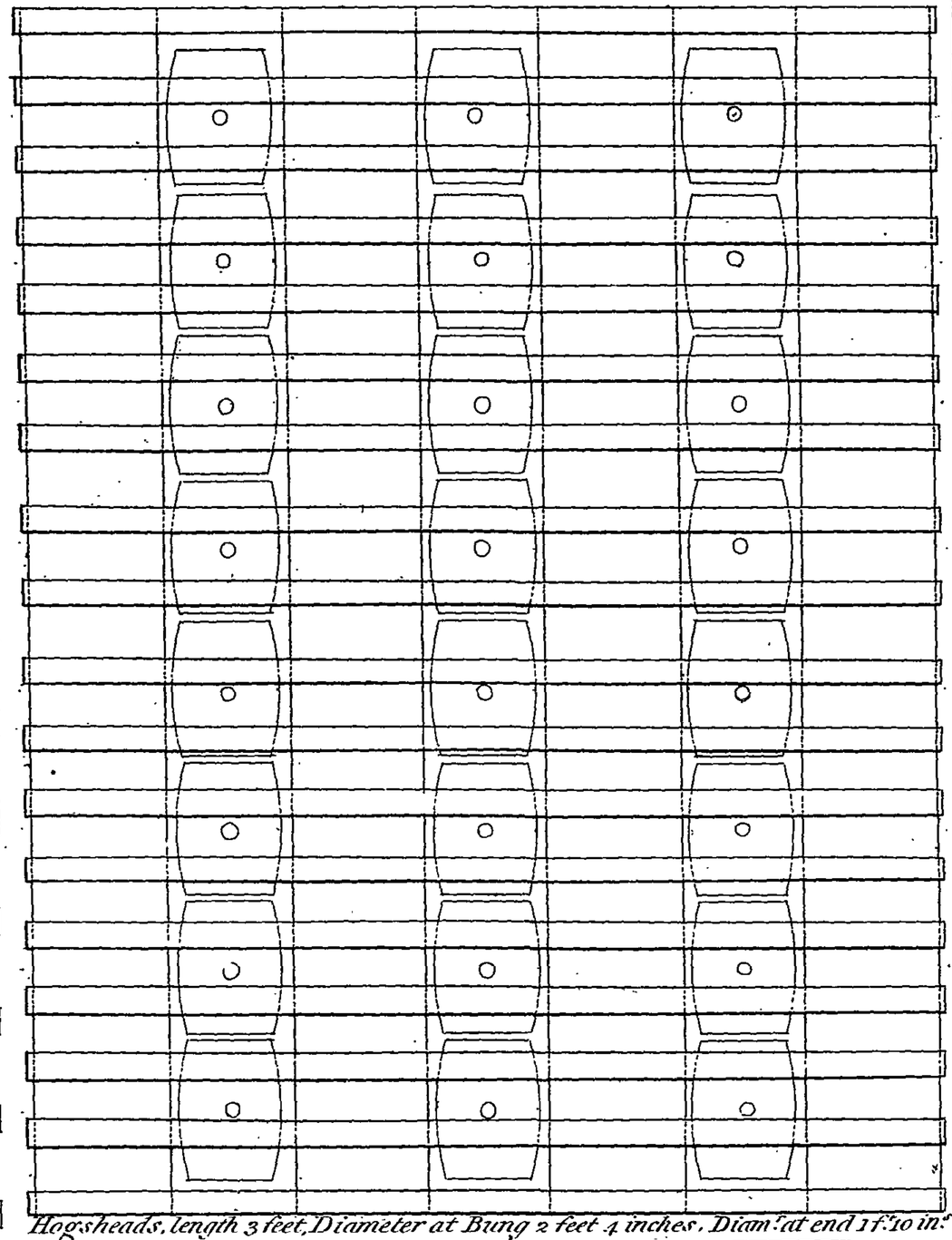
View of the Wilderness, armed according to a new method proposed by Capt. Schank.

Length of the whole 37 Feet.



Butts, length 4 feet 4 inches. Diameter at Bung 2 feet 8 Inches, Diam.r at end 2 f.t 2 in.s

Length 26 Feet 8 Inches.



Hog:sheads, length 3 feet, Diameter at Bung 2 feet 4 inches. Diam.r at end 1 f.t 10 in.s

Scale of

Plan of Gun Rafts, invented by Capt.n Schank.

London Published as the Act directs March 25.th 1805 by John Wallis Ludgate Hill

The resistance of the water, even when in a state of rest, requires no inconsiderable impulse from the wind on the machine requiring to be put in motion, ere that purpose can be properly effected. But if the elements were subject to the controul of man, so that each navigator should say, " Be the wind favourable," there would be little or no distinction in the contour or form of vessels, and, certainly, no difficulty in the art of constructing them. Nature, however, refusing to yield so submissively beneath the chain of mortal frailty, the inventive faculty of the human mind has been most studiously and diligently directed to counteract her opposition, by endeavouring to render it, if not ineffectual, as little inconvenient as may be, when rising in opposition to human wishes.

The buoyant vessel, though passing with great swiftness over the deep, while favoured by the wind, becomes extremely distressed, if unprovided with some contrivance similar in its effects to that just described, whenever it is unfortunate enough to meet with a breeze or gale blowing contrary to its course. Driven out of the track it wished to keep, it is compelled, by various tacks and manœuvres, to attempt ultimately reaching the same point by an indirect and traversing course, which a vessel having greater hold of the water, would have less, or, perhaps, no necessity at all of making.

Independent of the foregoing considerations, it is necessary to have particular

the timber or cieling, it occasions a leak of a more dangerous nature, than if it went entirely through the ship's side or bottom; because, in one case, the water running in can easily be discovered, and may be stopt from the inside; but, in the other, it may come in at the midships, and running forward or aft amongst the timbers, it may make its appearance quite in a different place, as has been before mentioned. In vessels built on this solid construction, the shot sticking in the ship would make a plug for its own hole; and the same observation will apply to accidents occasioned by rocks, sands, or other violence, which ships meet with; and wherever a leak may happen to be, the new-invented method to stop it, can, with more certainty, be applied with success than any other."

This same gentleman has moreover been the contriver of a very ingenious, as well as easy, method, of equipping a flotilla for the defence of harbours; so that, in most cases, a force sufficient to oppose even a powerful enemy, may be equipped for service in a very few hours, and at the most trivial expence. For the protection of ports superior in consequence, he has invented floating-batteries of the simplest construction; which may also be put together with every probable hope of their rendering effectual service in less time, perhaps, than a foe would require to make his dispositions for attack. A representation of this invention is subjoined, as is that of the Wolverene sloop of war; a vessel armed under his direction, and nearly equalling in force, from the extraordinary calibre of the guns, together with the peculiar method of mounting them, a vessel, which, a few years since, would have been considered a frigate. Notwithstanding this invention may at first sight be considered, as not to be, strictly speaking, classable with marine architecture, yet it certainly bears it sufficient relation to warrant this notice.

regard to the formation of the vessel, so that it shall become as subservient as possible to the will and the guidance of those who navigate it. It is highly incumbent that the bottom should be so formed, that it should, as a first principle, answer with the greatest promptitude to the helm and to the will of the pilot. Possessing this property in a consummate degree of perfection, it will stay, wear, incline to the larboard, or to the starboard, just as he shall think convenient and proper. The action of the rudder, which is certainly one of the most material discoveries in aid of navigation, depends in great measure on the clearness of the vessel's run, that is to say, on the after body being so tapered, that the fluid through which it is forced, either by the impulse of the wind, or by artificial means, shall have such a clear and unimpeded passage, that the inclination of it may act upon it with the greatest force, and produce the effect required in the government, or steerage of the vessel. Those nations which, from a peculiarity of construction, founded either on a local partiality for certain principles, or, in general, from necessity itself, have thought proper to deviate from this rule, have found it necessary to construct the rudders of their vessels much broader than would become necessary among a people less bigoted to absurdity, or less dictated to by powers they are unable to resist. For instance: let A B C represent the horizontal lines of the after body or stern part of a vessel, built according to those principles which are thought most perfect. It will evidently appear to, and be admitted by, the sturdiest sceptic, that the water having a free passage to the rudder marked D, the latter need not extend more than the proportion given in fig. 1. The case becomes materially different, supposing E F G H to represent the water-line of a vessel: it will then become necessary to elongate the rudder of such a ship from I to K, ere it can have any effect at all on the fluid; or at least, if any, it will be extremely immaterial. It follows, therefore, that the rudder must be elongated from I to L, ere it can possess the same power of action with the rudder D, which is only one-sixth part of its length. The inconveniences unavoidably arising from an adherence to the latter fashion, have caused it to be materially exploded in most countries, and particularly among the southern nations; whose vessels are under less necessity of navigating those tempestuous seas, in which such peculiarity of form has been thought to contribute to the safety of the vessel.

Exclusive of those general principles in marine architecture, which tend to the safety, the speed, or the good management of a vessel, there are certain local considerations which must set all established principles, for the general construc-

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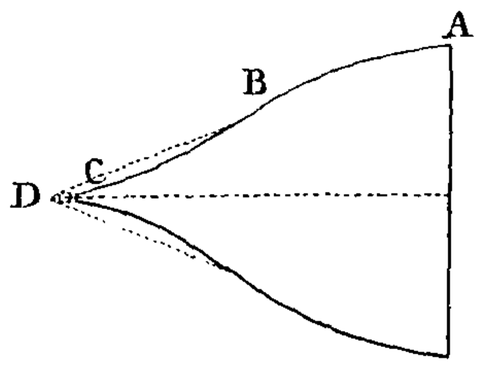
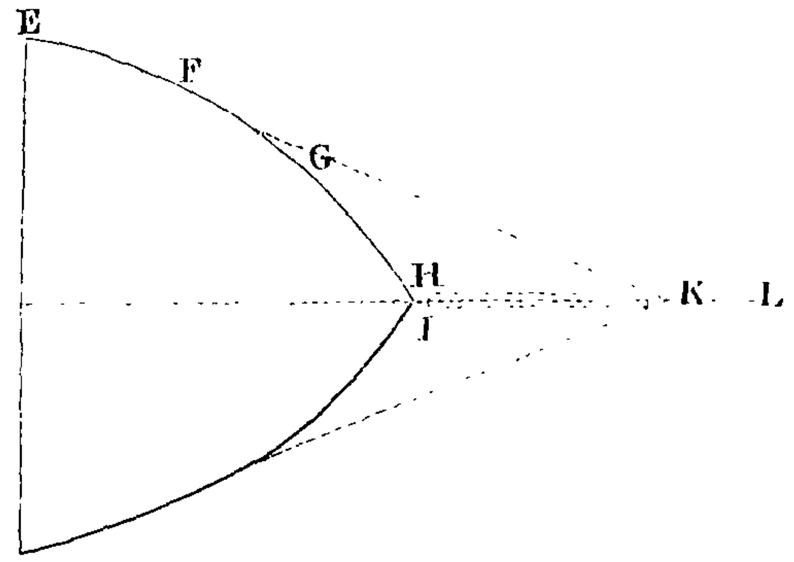


Fig. 1.



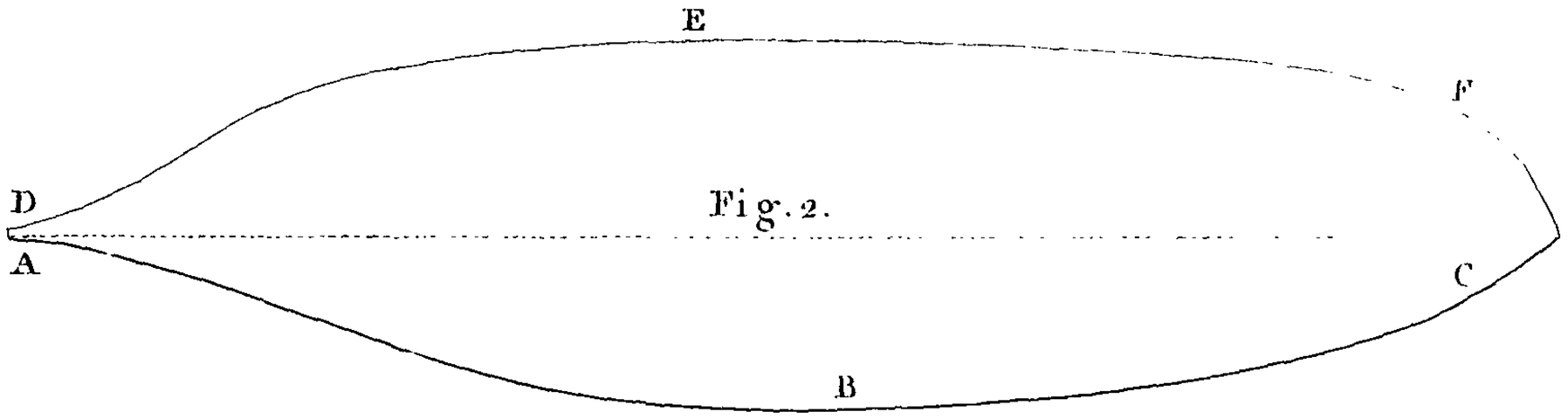


Fig. 2.

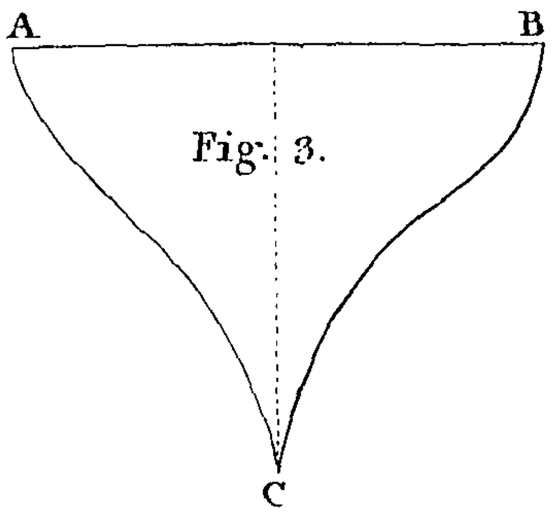


Fig. 3.

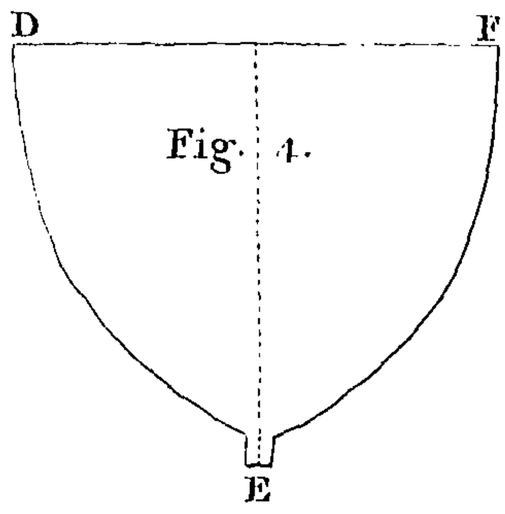


Fig. 4.

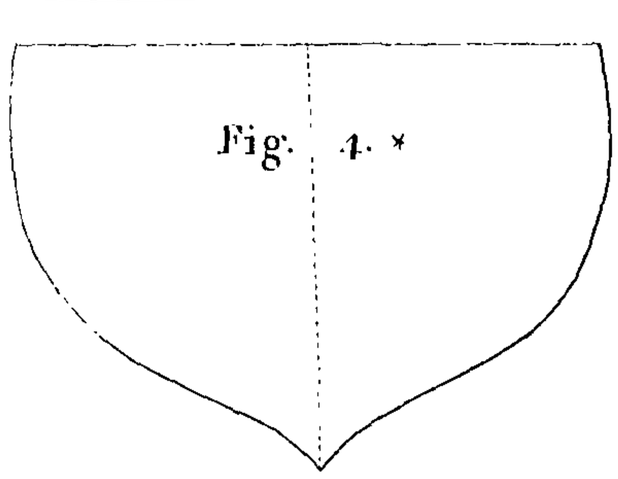


Fig. 4. *

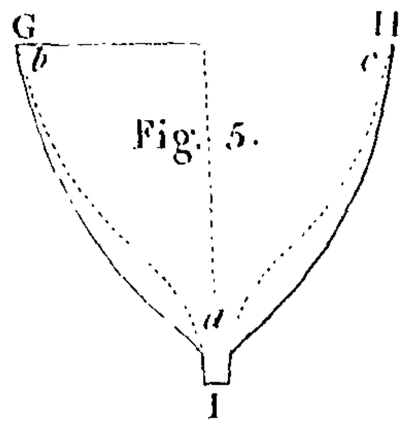


Fig. 5.

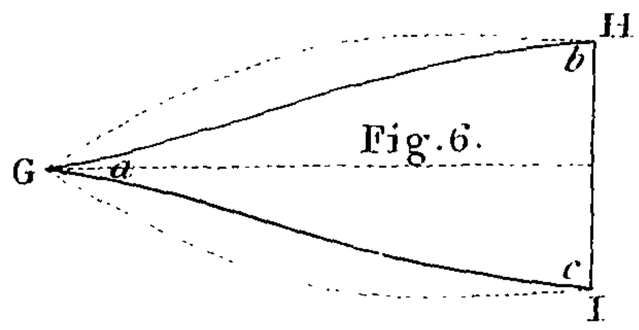
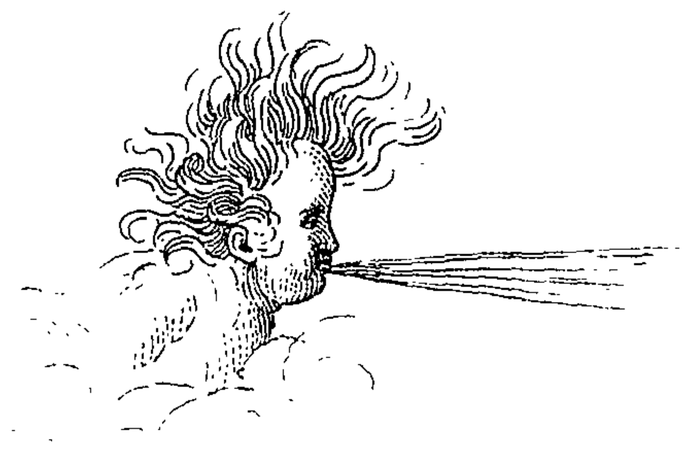


Fig. 6.



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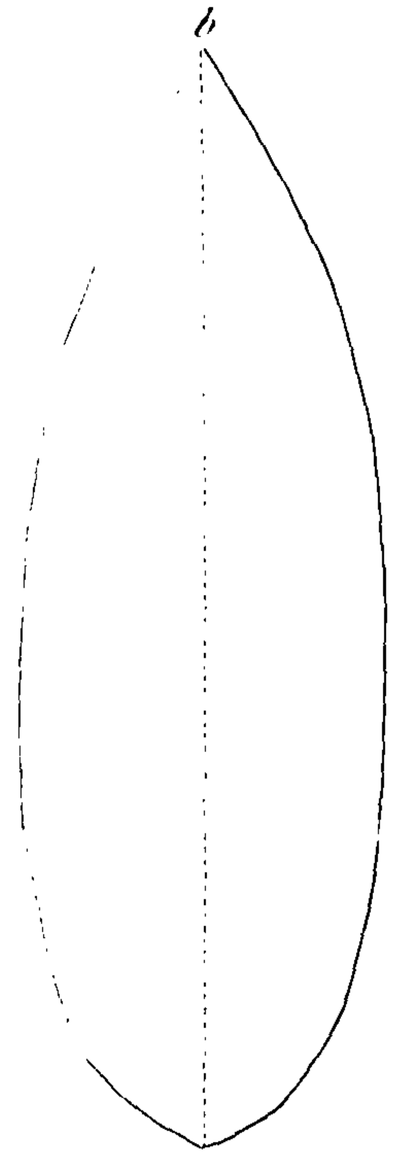

Flotation and Stability.

London. Published as the Act directs. March 31st 1802 by Cadel & Davis, Strand.

tion of ships, at defiance; because countries, firmly bound by these considerations, are under the necessity of rendering their shipping conformable to their situation; as the latter peremptorily refuses to bend, while the former yields, though not perhaps without some difficulty. To this cause may be attributed the flat-floored vessel of the Hollanders, of the Swedes, and of other Northern Powers: to the same cause may also be ascribed the round arch-like stern frequently and indeed generally adopted by all those nations; the first because the shallowed depth of water on their coasts, would prevent or impede the ready entrance of vessels, otherwise constructed, into the ports; and the second, because that circular form given to the stern as just mentioned, is supposed to render vessels more capable of resisting the assaults of the waves, occasion them to be more floatsome, and prevent their being buried in the hollow of a cross sea, or pooped, as might not improbably be the case with a vessel having a square stern, with a fine taper run. Experience, the first and most able of all tutors, has taught the rude and uncultivated natives of every country to remedy the inconveniences peculiar to the climate under which they live, and adapt their contrivances and constructions, in every branch of science, to those partial causes which affect them; dividing, by these means, the principles of a single pursuit, particularly if it is a mechanical one, general science into a variety of classes or branches.

The flying prca of the southern hemisphere, peculiarly adapted to a wind steadily adhering to one point, and that far from favourable to the wished-for course of the navigators, stands as a singular instance how far rude ingenuity, as already and frequently remarked, is capable of surmounting those difficulties, which, had not those countries been discovered, the arrogant temper of what is haughtily called cultivated man, would have boasted were insuperable, except by the most laborious study, and the previous acquisition of very profound mathematical knowlege. It becomes, therefore, ridiculous in the extreme, to condemn, on one hand, the opinions entertained by the artists of one country, or to praise those so extravagantly, as has been sometimes the custom, who have lived in others: each have their reasons for their different, and, perhaps, nearly opposite conduct, reasons which ingenuity of argument can certainly never prove strong enough, perhaps, to cause they should depart from; because benefits have been experimentally found attached to them, sufficient to cause an adherence to a supposed obstinacy and apparent infatuation.

The most which any theoretic reasoner, on the science of marine architecture, can expect or hope for, is, that, after having laboured with the greatest assiduity

for

for a series of years, in pursuit of what he has considered as perfection, but which at last proves a phantom; he may be able to establish a few general data, which may be adoptable in countries and situations, where natural impediments do not oppose their entertainment.

In the following Chapters some account will be given of the various experiments which have been made, particularly in Britain, in the hope of discovering those general principles which should influence the mind and conduct of marine architects. Though considerable time, labour, and expence has been bestowed, there appears still considerable room for farther enquiry, and investigation; but human assiduity steadily directed to the attainment of one point has very rarely proved ultimately unsuccessful, and it would argue an unwarrantable distrust in the power of mental energy, to consider it incapable of overcoming the greater part, at least, of those obstacles which have been considered, as opposing perfection in the science.

CHAPTER

CHAPTER THE FOURTEENTH.

Observations on the different Formation of the Forebody, or Bow—Definition of the Imaginary Lines, by which the Hull of a Ship is divided—On Stability, and the Measures likely to produce it—On the imperfect Effect of the Rudder, provided a Vessel be of too great a Length—On the Means taken to remedy the Inconvenience—On the necessary Proportion the Bow, or Forebody, should bear to the Stern—On the Form of the Midship Body—The Properties of a flat Floor—Definition of the Difference between the Terms, Stability and Stiffness, in a Vessel—Account of Experiments made by Mr. Gore, to ascertain the latter—Statement of the various Inconveniences which have arisen to Vessels from the improper Stowage of their Cargo—Every Method of avoiding them pointed out—Means by which the Stiffness of a Vessel may be established or destroyed by the specific Gravities of the Commodities, with which it is laden, or the Method of disposing them—Experiments proposed, in order to discover the true Causes of Stability, with the peculiar Forms which are most likely to possess it—Apology for the Use of the Term Stability, instead of weatherly; Reasons assigned for the Alteration, and Adoption of the former, in the Sense of the latter.

A Principle similar, in some degree, to that which the marine architects, particularly those of the southern nations in Europe, have adopted, in respect to the sterns of vessels, has likewise been introduced, and on grounds equally good, with regard to their bows, or fore-part. The sharp stem, which the French artists have in general been fond of, was found productive of considerable advantage, far as related to the swiftness of the ship's passage through the water; and the practice, therefore, might have been followed by every maritime power in the universe, had not reasons existed sufficiently weighty to oppose the general adoption of it. The more bluff and prominent bow, used by the northern countries, and, in some degree, by Britain itself, was found better adapted to the tempestuous character of the German Ocean, of the Baltic, and even of the British Channel.

Let A B C, Fig. 2, for instance, represent the water-line of a vessel intended for the milder latitudes, and the navigation of seas, where the least danger is to be apprehended from stormy weather. In such case, it certainly may meet with far less resistance in its passage through the fluid, than the line D E F, but

but the latter will be found much better adapted to encounter an heavy swell, than the former.

The imaginary lines into which the hull of a ship, in order either to give one architect a sufficient idea of the intention of another, or to enable the manual operation to be carried on, in perfect obedience to the will of the contriver, are divided into two parts or classes, perpendicular and horizontal. The first may be said to describe the swell or form, intended to be given to the vessel, for the purpose of resisting the impulsive effects of the wind, constantly attempting to drive it to leeward, or out of its intended course, when going otherwise than directly before it. The second, mark the perfections of that form which is destined to pass ahead through the fluid, or sea, with the greatest velocity, as experiencing the smallest opposition.

In some instances, these considerations act in opposition to each other; and to this cause has been owing, not merely the difficulty of ascertaining what are the true points of perfection in each, but how far one principle can be made, or ought to conform to, the other; that they may meet precisely at one point without any material counteraction. It will be necessary, on this occasion, to state certain incontrovertible points, which may serve, not only as the basis of the present theoretical investigation, but, it is also humbly hoped, may save some labour to future students, by clearing before them, and pointing out the path, or paths, which they may, perhaps, find their advantage in pursuing, instead of wandering, almost without knowing the point of destination; or being able precisely to describe, whither they themselves wish to go. The primary points for the consideration of every marine architect, are two, and only two in number, stability and flotation. The first means the power of resisting the wind, when adverse to the intended course; the latter, that peculiar species of form, which enables the wind itself, or any artificial means used, in impelling a vessel to force it through the water at the greatest rate. From what has been already said on the subject of sliding keels, it must be evident these desiderata counteract each other. A vessel, having a small draught of water, certainly passes, with the greatest ease and expedition, before the wind; while, in the other case, a progressive immersion of the body, or hull, will be productive of advantage, in proportion to the extent of the principle.

Stability and flotation, by which latter term is meant swiftness, being the first and principal points which strike the consideration of the naval architect, other temporary or local considerations follow at an humble distance, praying their wants to be attended in turn, as soon as the demands of their superiors are

are satisfied. Stability evidently claims precedence, even before flotation or speed, because the safety of the human race depends on the former; and only the political or pecuniary advantage of it on the latter. Supposing a vessel drawing six feet water, and having a length of keel amounting to forty feet, it is too evident to need explanation, that such a vessel must make infinitely more lee-way, than if it drew twelve feet, or was eighty feet in length; the lateral resistance being encreased according to the squares of the side or surface presented to the water. From this cause is derived the reason, why vessels of great length are less apt to make leeway than those which are shorter. The hope of encreased advantage may, however, be productive of evil, in some respects, provided the system is not properly confined within reasonable bounds. The inconvenience to be dreaded is material, and may be attended with the worst consequences. The reason is easily demonstrable in plain and very few terms. The action of the rudder, and its influence on the motion or course of the vessel, is exactly that of the lever; and if the hull becomes extended to an immoderate length, the force of such lever gradually weakened, and less capable of effecting its office till, in the end, it totally abandons the attempt; so that, except its own power is encreased by an extraordinary addition, which would be inconvenient, or if very far augmented, impracticable, on account of the power required to govern and regulate it; the ship will become the sport of the winds and waves, refusing to obey the wishes and will of its pilot.

To remedy this inconvenience, vessels were introduced, having an exceeding narrow breadth of floor, and built, in every respect, what is termed sharp; so that by their sinking considerably lower beneath the surface of the water than those of flatter construction, they may, though so much shorter, continue to present the same face in square inches, or feet, to the fluid, as a lateral resistance, and consequently be rendered equally as little liable to fall to leeward. This system of construction is, however, pregnant with quite as many inconveniences as the former. It experiences infinitely more resistance, in the first instance, in its passage through the water, its very contracted capacity, in proportion to its measurement and expence of construction, renders it inconvenient and unadvisable, even as a vessel of war, and totally incompatible with the ideas as well as interests of commerce. Added to these considerations is, that scarcely less consequential objection, arising from its great draught of water, its incapability of sailing, where vessels of a flatter construction would be capable of passing, and

the extreme danger to which it would be exposed, in case of touching the ground; even in that slight degree which would be unattended even with apprehension, in the instance of a flat-floored vessel.

The points or requisites subordinate to stability, and properly allied to it, in the same degree capacity, with the effects which it produces, seem to be to flotation; are, that vessels should be easy at sea, should neither pitch nor roll, and with the utmost promptitude, answer, in the most adverse seas and situations, to the helm. The possession of the first quality depends on the formation of the bow, or forebody; the second, on the midship-frame; the last, on the form given to the stern, or after-body. There is little occasion for argument, to prove that the bow of a ship, formed according to the line ABC, Fig. 3, must inevitably pitch deeper, than if it had the shape DEF, Fig. 4; the former has no floating capacity, or breadth, to sustain and prevent its plunging deeply in the trough, or hollow, of the sea, even though the momentum, or impelling power, created by the fall of the vessel, should not be very violent. This species of inconvenience, which had long been complained of by seamen, caused, a few years since, the introduction of a bow, or forebody, having bearings so placed as to catch the vessel in its descent. It was considered unsightly; and, like most other inventions and improvements, to which the eye is not accustomed, was, at first, both ridiculed and condemned. Experience, nevertheless, proved that the censure had too hastily taken place; and experience, the best possible establishment of a theorist's opinion, proved the efficacy and advantage of the contrivance.

It is necessary, however, that the remaining part of the hull should be so proportioned, that its effects may not counteract the advantages arising naturally from the improvement just described. For instance, if the run or stern of a ship, formed consonant to the lines GHI, should be given to a vessel, whose bow is represented by the line DEF; such a form, having no bearings to sustain the after-part, will inevitably dip the stern in the hollow of the sea, much lower down, and consequently run the greater hazard of being pooped, than if the bow were formed according to the line ABC. Such a vessel being close hauled upon a wind, and possessing length or other requisites conducing to make her weatherly, will drive through the water with considerable velocity; as that particular specimen of marine architecture, called the Virginia pilot-boat will do, without dipping or sinking, at every wave it meets with; the inconvenience, notwithstanding this, and not unfrequently that danger which arises to

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the people and to the vessel itself, renders this species of forcible opposition and defiance of nature at least imprudent, provided it can be avoided. Of the two forms, however, supposing the after-body or stem the same, DEF is certainly the best; for to say nothing of the quantity of water that must inevitably be shipped in carrying sail on a vessel, formed as ABC, it will become a very bad sea-boat when laid to, while the bow DEF, given to the stern GHI, will constitute a body, which, though liable to ship a sea abaft, for re asns before given, may be laid to with the greatest safety.

On the form of the stern, as already observed in the instance of Fig. 1, depends the prompt steerage and obedience of the vessel to the helm: a proper medium must nevertheless be observed. If too fine and taper, the inconvenience, just complained of, will arise; on the contrary, if too full, the vessel cannot be under proper command; for the vacuum created by the passage of the hull through the fluid, extends farther than the width of the rudder, and, consequently, deprives it of its best force. But though it is extremely requisite all fullness should be carefully avoided below the water-line, yet, immediately above it, it is highly expedient the quarter should spread out, in order that the vessel may be properly supported abaft, when rising forward to a sea, and be enabled to scud, without danger of having her stern driven in, by the force of the waves that may follow or strike her. The rolling or steadiness of a vessel is with difficulty to be separated from its stability, or power of resisting the lateral impulse of the wind; there is, nevertheless, a distinction evidently to be made; the different qualities being opposed to different elements, and though a ship extremely subject to roll, may be capable of holding a very good wind, yet the contrary quality will, in most cases, entirely obviate the former inconvenience. The nearer the midship-body approaches to a cylindrical form, the more it will be subject to roll, and the reason why this must be the case, is too obvious to render explanation necessary. On the other hand, if the midship frame is too sharp, the inconveniences of encreased draught of water and small stowage, immediately arise. If the body be too flat, such a vessel will certainly be, in little degree, subject to a rolling motion; but not being sufficiently lively, on account of its form, to yield to the undulation, or waves of the sea, they will naturally break constantly over her, with nearly as much violence as they would over a rock. That it is possible to construct even a hulk, capable of braving the most furious assaults of a tempestuous sea, is very evident, from the security with which a floating light, built a few years ago, and moored in the British

Channel, on a station particularly subject to agitation, has maintained her post in the most furious tempests, without sustaining any injury itself, or affecting the safety of persons constantly living on board. Such a vessel is, nevertheless, neither adapted to the purposes of war, nor commerce; though some useful precepts may, perhaps, be drawn from its partial excellence; and the adoption of them, when properly modified, and fitted to the purpose, may probably be of no mean service.

The propensity to rolling, derived from the form of the mid-ship body, may in some degree be obviated or palliated, particularly in a vessel of large capacity, by the length or peculiar quality of the after, and fore-body, but the remedy would, in all probability be productive of an infinity of inconveniences far more oppressive than the defect itself, which is complained of. The most eligible and perfect points of construction, in respect not only to the mid-ship frame, but all other vertical, as well as perpendicular lines in the hull, are considered by the soundest judges to be, that in the mid-ship frame, the floor should be flat, the futtock strait, and the extreme breadth elevated above the water-line. It were, perhaps, a difficult point to decide, which of the three requisites is the most consequential; the first produces capacity as well as stability, and acts as the most material preventive to injury, in case the vessel should be unfortunate enough to take the ground; the second conduces to stability, and also to velocity; the third to stiffness, which may not only be reckoned a twin property with stability, but considered by many as meaning one and the same thing. The vertical lines of the fore and after-body have been already explained.

The property of stability may certainly be considered as the first quality to be attended to, in the formation and construction of a ship, inasmuch as if that is wanting to a certain degree, it is incapable of putting to sea with any degree of safety to its mariners, who may on the other hand, without danger, undertake a voyage in one, which owing to the clumsy contour of its water-lines, shall not be capable of being impelled, by the utmost force of the wind, at a greater rate than two or three miles in an hour. The experiments required to establish the stability of vessels, are far more simple in their nature, than those which are necessary to ascertain its velocity; they are of two classes, the first for the purpose of investigating the natural stiffness of a ship's body, which is unavoidably comprehended under the term stability; the second is to point out the particular form which will best enable it to hold what is called a good wind, and make as little deflection as possible, with the wind directly abreast the beam, in her passage to a point so placed, that a line drawn from it to the centre of the vessel's

Fig. 1.

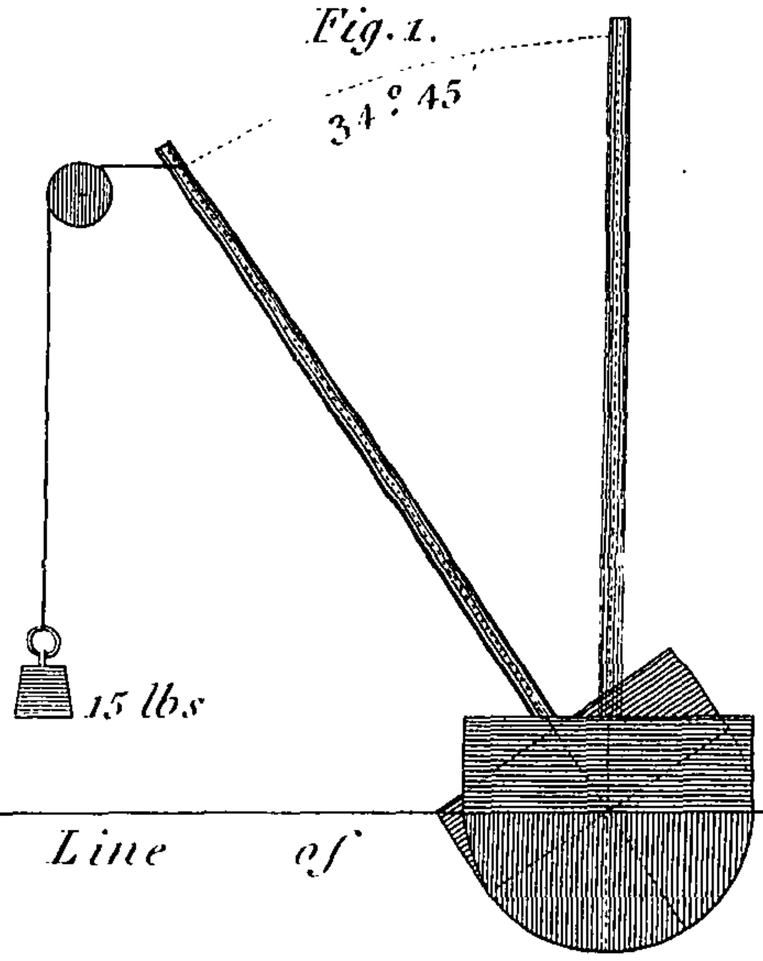


Fig. 2.

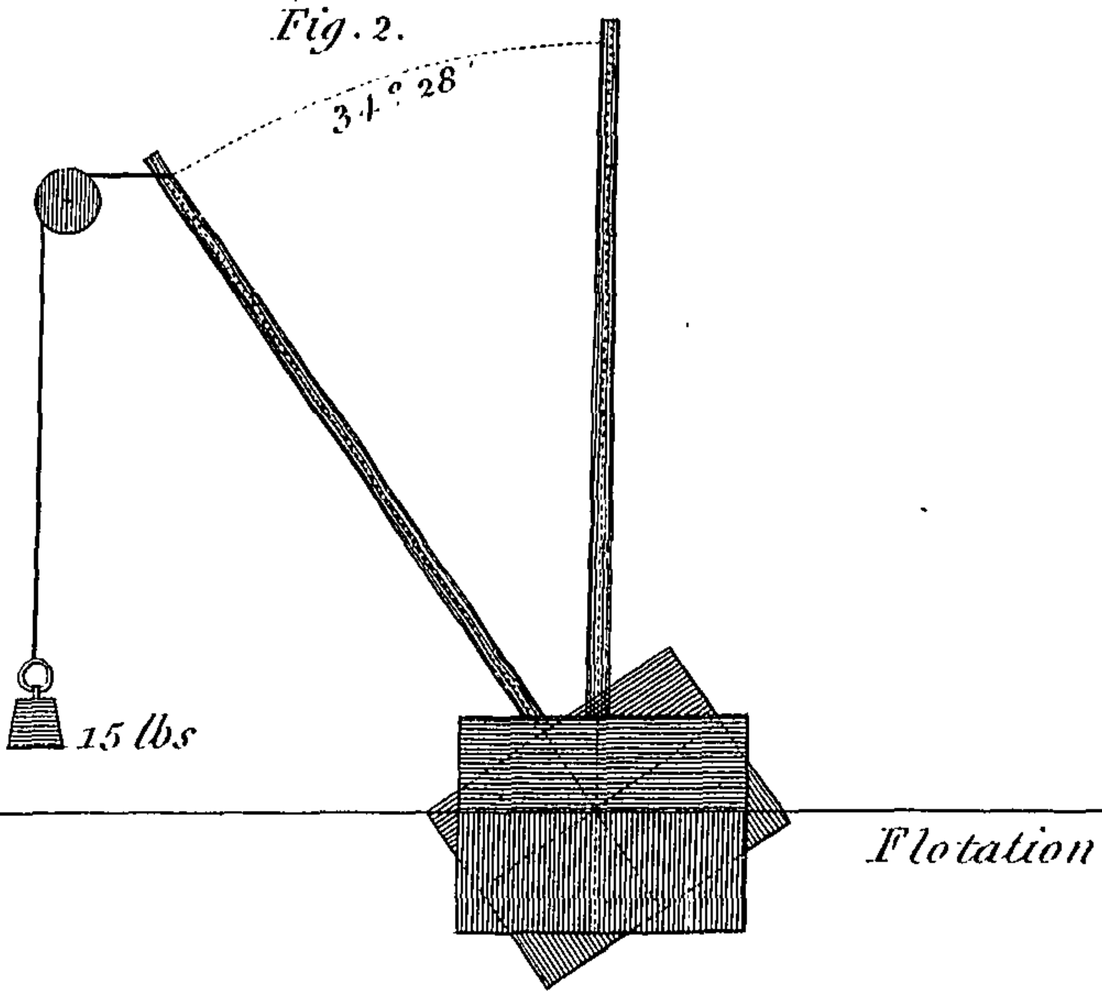


Fig. 3.

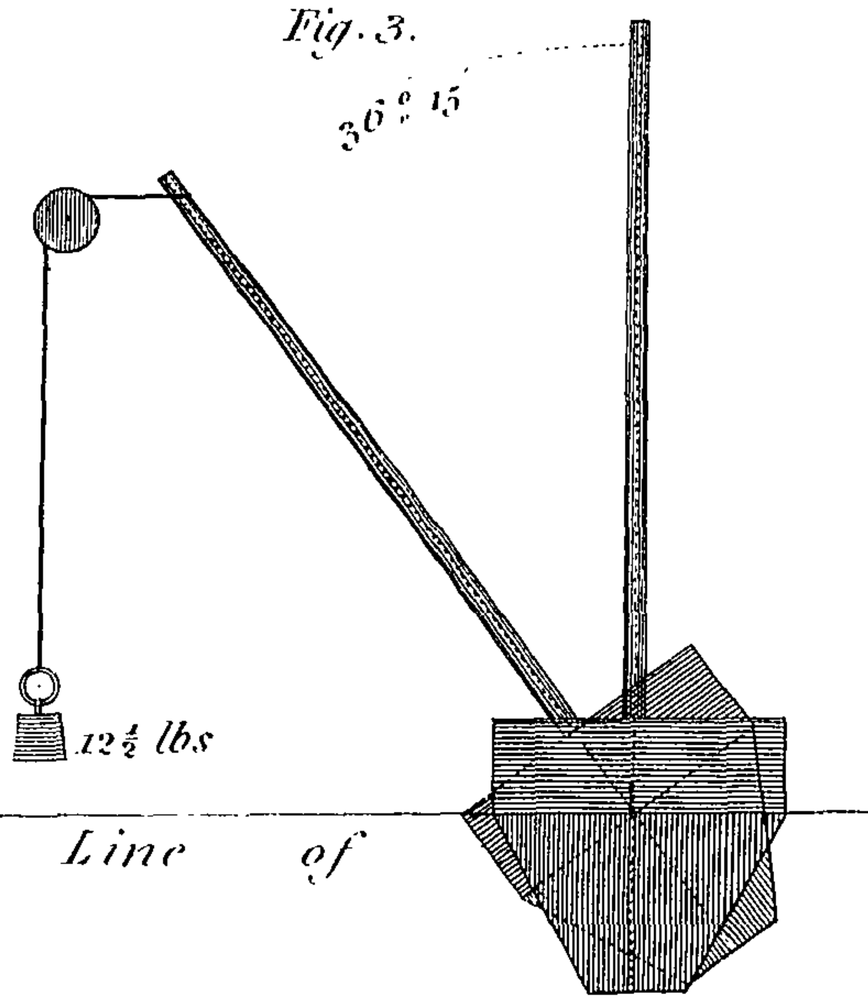
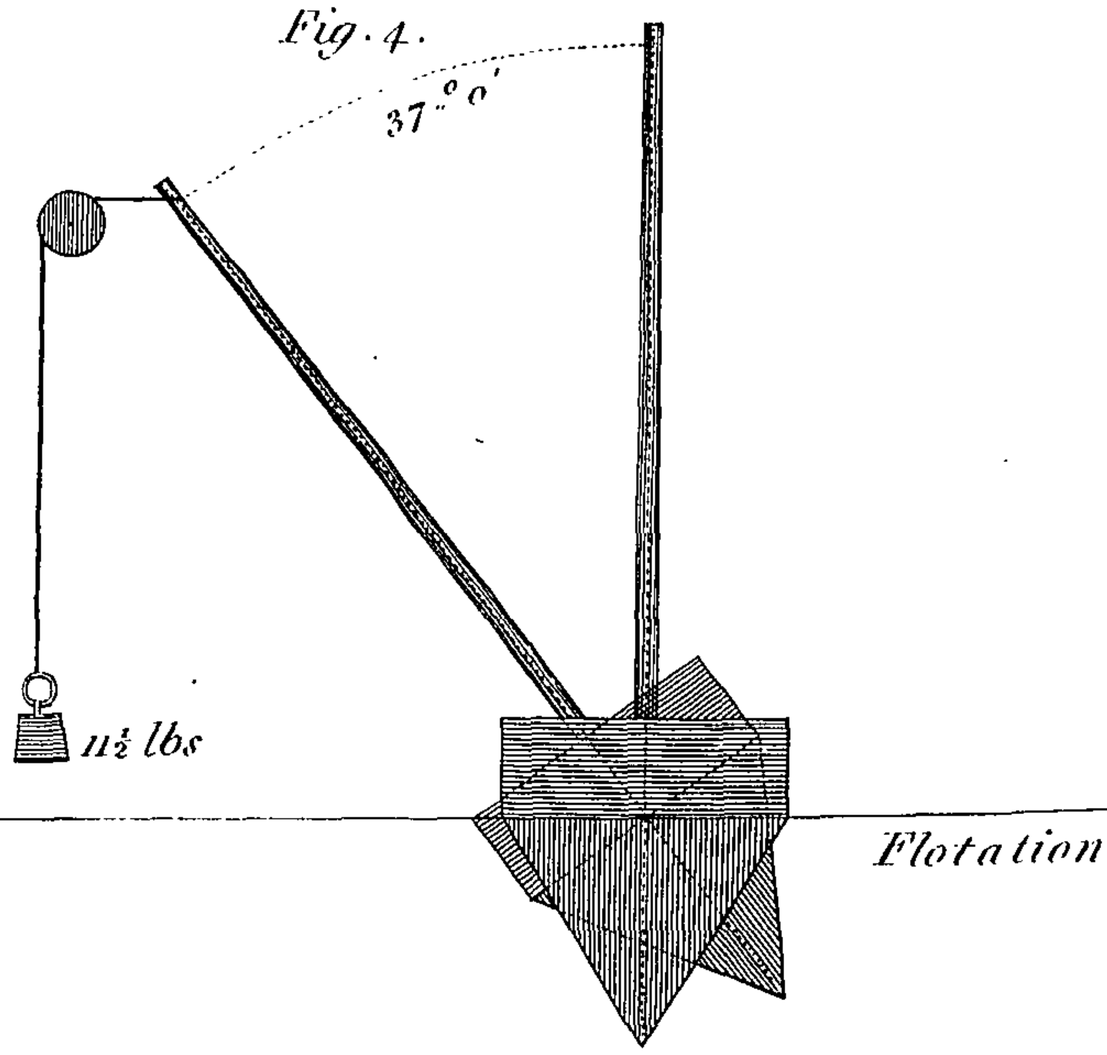


Fig. 4.



Newton Sculp.t

Experiments on Stability.

London Published as the Act directs March 25 1802 by John Sewell Cornhill.

vessel's stern, shall also divide the bow in the centre ; let *a* for the sake of clearness, represent the current of the wind, *b* the vessel's stern, and *c* the point to be reached.

In the enquiry and investigation of those principles which constitute a vessel's stiffness, a series of experiments were made a few years since, under the direction of a gentleman named Gore, the results of which he has given in a very plain brief account, and it would not only be an injustice to his ingenuity, but detrimental perhaps to the explanation of the points examined, were any other mode of description used, than his own words. " For the purpose of ascertaining the respective degrees of stability or power, in vessels of a given form, to resist the pressure of the wind in carrying sail, four figures were constructed whose specific capacity and height were precisely equal, though their form differed in the extreme, as will be seen in the plate annexed. Their materials were similar in quality, and were ballanced in such a manner as to be turned upon their respective centres of gravity, by application of the smallest power : in short they were perfectsy homogenous. A small pivot was driven into either end of the figures, at the point where the perpendicular middle line intersects the line of flotation, the figures were then floated in a large back, having two small hooks driven into one side of it, at the edge of the water, the distance between the two hooks being equal to the length of the figures. Two small lines were strained from the pivots, on the end of the figures, to the corresponding hooks on the side of the back, to counteract the inclination which the weight on the opposite side of the back had to draw the figures over to that side, this weight was attached to a line made fast at the top of a staff, erected by way of mast to the centre of the figures, and passed over a pulley elevated on a similar staff attached to the side of the back, opposite to that on which the before described hooks, &c. were placed ; this pulley being suspended in a groove to admit of depression, as the figures became heeled or inclined, was consequently on a level with the top of the mast when in that position. Thus the power being always horizontally applied was similar in effect to the force of the wind. The result of this series was, it appeared that with the lesser weights, the respective figures exceeded each other in stability, uniformly as they stand numbered.

" Fig. 1 exceeded fig. 2 in stability, till the applied weights amounted to $13\frac{1}{2}$ lbs. after which the excess was with fig. 2, fig. 3 was with every weight inferior in stability, to fig. 1 and 2, and fig. 4 was with every weight inferior to all the others. From hence it appears, that the form of a midship body best adapted for stability only, is a flat with perpendicular sides, and that the

next

next best adapted is a semicircle. But as there exists much difficulty in constructing the former with sufficient strength, besides its being ill adapted to heavy seas, since by the sudden descent in pitching, the bottom will strike the water nearly at right angles, and sustain thereby a tremendous shock, and as the latter seems to be too inclinable to transverse oscillation or rolling, and also to be deficient in capacity for many services." Mr. Gore is of opinion, that a mid-ship body of a compounded form, is most applicable to general purposes. An experiment was also made on the same figures, to ascertain the respective degrees of counter-oscillation by cutting the line where the figures were at their utmost inclination, *viz.* when the top of the line to leeward, was even with the surface of the water. The result of this experiment was nearly in an inverse ratio to the stability: the counter inclination produced by the sudden cessation of the power of the weight, being in No. 1 33° 0′ No. 2 29° 0′ No. 3 27° 0′ No. 4 23° 30′ *.

Stability and stiffness, however closely allied, and considered by some as a distinction without a difference, are nevertheless, as before remarked, easy to be separated, and distinguished from each other. The meaning of the first term, to give it a new definition, shall be considered the property of making considerable headway, when the vessel is steered within eight points of the wind, and will most immaterially deviate from the true and intended line of course; so that to

* The result of the experiments, which is given in the subjoined table, proves the ultimate superiority the flat floor possesses in gales of wind, over every other form, and consequently that the sharp vessel, though drawing far more water, and confessedly burthened with a variety of collateral inconveniencies, too obvious to need recital, has far less stability or stiffness, supposing the impulse of the wind to be eleven and a half, than even the cylindrical body No. 1 would have, supposing it 15.

Fig. 1.			Fig. 2.			Fig. 3.			Fig. 4.		
	WEIGHT.	DEGREES.		WEIGHT.	DEGREES.		WEIGHT.	DEGREES.		WEIGHT.	DEGREES.
	lb.	°. ′.		*lb.*	°. ′.		*lb.*	°. ′.		*lb.*	°. ′.
	1	2 . 48		1	3 . 15		1	3 . 20		1	3 . 58
	3	8 . 30		3	9 . 35		3	10 . 03		3	11 . 36
	6	16 . 42		6	18 . 03		6	19 . 33		6	22 . 36
	9	23 . 45		9	24 . 58		9	27 . 57		9	31 . 55
	12	29 . 40		12	30 . 10		12	35 . 12		11	36 . 15
	15	34 . 15		12½	34 . 28		12½	36 . 15		11½	37 . 0

speak

speak in plain nautical terms, a vessel may be said to have more or less stability in proportion to her making more or less lee way. Stiffness implies only that abstract part of stability which signifies such resistance made by the hull, in consequence of the surrounding fluid pressing upon it, to the action of the wind on the sails, as shall serve to keep the vessel, as far as may be, in an upright position, the first mentioned property is to be derived from the form of the ship's hull, the second on the position of the central gravity, or to use a plainer term, the mode of stowing, and loading the ship. To render this point as intelligible as possible, let a vessel, considered from her form, and the actual experience of her excellence in that respect, as possessed of great stability, have the whole of her bottom filled with commodities of the lightest nature as high as her extreme breadth, let her then receive as much lead on board as will bring her down to her load water mark. If the vessel were sent to sea in this condition, 'twould be a miracle when compelled to sail close upon a wind, if she did not overset, but, if the cargo were transposed, the very same vessel might stand unrivalled, in that very point where her deficiency had been, just before, so much complained of.* The theory of this proof will be very clearly explained by the mid-ship sections A and B, where in A the central gravity being placed at *a*, enables the resistance of the water against the section of the hull *b c*, to preserve a situation almost completely upright. In B the central gravity being raised to *d*, it acts in conjunction with the wind, and contributes with all its might to raise the section of the side *e f* out of its proper position, by which means the vessel becomes crank and unsafe. In this arrangement, however, as well as in every other, there is a proper medium to be preserved; for though if the central gravity is placed too high, the vessel, as already

* So extremely unacquainted with this point, or so inconsiderate relating to it, were even experienced seamen, a few years since, that a French vessel, captured in 1779, and considered one of the finest forms ever seen at that time, and against which no objection, either from theory or experience, was adduced, except that of being rather too short, was purchased by some merchants, taken immediately into dock, and lengthened. The vessel was then laden, under the inspection and direction of the master, for a West India voyage; the cargo was precisely of the description above given, and as injudiciously arranged. The consequence was, that the ship, having proceeded to sea on a very fine calm day, without any apprehension being entertained of the consequences, was overtaken by a gale of wind within a very few hours, and very narrowly escaped oversetting. Having made for the first port, the master, under the first paroxysms of fear, was on the point of protesting against the vessel as unfit for sea, and probably would have done it, had not a person professing greater sagacity been informed of the circumstance, and advised the transposition of the cargo. The effect was considered almost magical, and the master put to sea in perfect confidence, though somewhat ashamed of his former absurdity.

shewn, is disabled from carrying sail: if it be too low, or divided and placed too near the extremities of the head and stern, it will acquire too sudden a motion, which will cause it to roll, as well as create other difficulties and inconveniencies that are not of less magnitude. By giving, in the latter instance, too great a momentum or weight to the head and stern, the vessel will be rendered extremely liable to pitch, which causes one of the greatest impediments that can exist, in opposition to the velocity of a ship's passage through the water.

Stability, which has been already defined as the power derived by a vessel, of laying her course with the least possible deflection, notwithstanding the opposition of the wind, is effected primarily, in the shipping of most countries by the form of the hull itself, and secondly, as in the case of some peculiar classes of vessels, belong ng to the United Provinces, and other nations who have followed their example, by the application of a lee board which remedies the inability of the former to perform its own required service. No series of experiments appears to have been made for the investigation of this point, or if made, they have not been publicly divulged to the world. The questions are simple, the expence trivial, and the labour of a few hours would probably suffice to render the most virulent attempt of scepticism silent. Let six or more boards, having all exactly the same surface and thickness, but of different forms, be drawn through the water with a given weight; let the first experiment, for instance, be made on a board two feet square, and let the same be progressively continued, till the last is made with a board eight feet in length, and six inches in depth. Then will the board that is drawn through the water with the least velocity, point out the proportionate surface, in respect to length and depth, which that part of the hull of a vessel, exposed to the fluid, that is to say, under the surface of the water, ought to have. This is the first principle only, and like all others of the same description, points out only the principium of the service, without descending to those minutiæ which it is necessary should be ultimately digested, and enquired into, critically. It is not only possible, but certain, that two vessels, exposing exactly the same surface to the water, and in the same manner, shall vary considerably in the property of being weatherly. A full bodied vessel is infinitely less capable of holding a direct course than one of lanker description. The reason is obvious. The opposition to the water is in the former instance oblique; in the latter it at least approaches more nearly to a direct line. If it were possible to saw a vessel longitudinally down the center, and having carefully planked up, and caulked the aperture so that it should be water tight, to add such a counter-ballance by means of

an

an outrigger constructed according to the Indian system, sufficient to ballance, or become equivalent to the support taken away; such a vessel would undoubtedly possess velocity and stability, in a far superior degree to what it did when in its perfect state. The reason is almost too obvious to render any explanation necessary: nearly one moiety of the head resistance, or to speak more intelligibly, the opposition made by the water to the passage of an heterogeneous body through it, is consequently lessened, and therefore the velocity, provided the same quantum of impulse is used, becomes increased in a ratio equal to the diminution of the opposition. In addition to this, the fluid acting horizontally, and on that account preventing the passage of a flat, or even surface through it, much more forcibly than it would, if compelled to act obliquely by the convexity of the surface presented to it, it follows that such a vessel, if it were capable to extend the theory far beyond that scale which seems to have found nearly its utmost limits in the Indian Ocean, would suffer far less deflection from its intended course, than one built according to the European method. This case and theoretical proposition seems to combine all the principles on which stability is founded, and all further argument consequently becomes useless.

It is incumbent, however, to offer some explanation, and indeed apology, in this place, for the use and introduction of the term stability in a new sense. As already remarked, it has been hitherto applied in common, or at least very frequently confounded, and indiscriminately used with stiffness; but however closely they are, as there is a manifest difference in the qualities, so should there be a distinction in the terms also. Let not therefore the substitution of the word stability, in expression of the same meaning with weatherly, the term generally used by seamen, be considered as an unwarrantable affectation; for the nautical word is by no means so expressive and intelligible to the mathematician, or marine architect, who, in all probability, may never have been at sea, as that which is adopted in its room. The different senses and applications of the two terms, which in the course of a few preceding pages have been in such frequent use, have been already pointed out so fully, as to render it needless to say more, than that a vessel, drawing very little water, and having consequently a great breadth of floor, may be exceedingly stiff; so that the hull in itself would very trivially yield to the lateral impulse of the wind, but drive very considerably to leeward; while on the other hand, a ship may be, in some measure, what is considered crank, and yet deflect in no great degree from her appointed course.

Experience has produced sufficient perfection to point out to mankind the mode of obviating both of the ill qualities just pointed out. Reason, however, requires, and experiment has satisfactorily proved that proper and moderate bounds should be set to all principles whatever. A supposed and indeed actually existing excellence will degenerate into absurdity and inconvenience, if carried in the smallest degree beyond its due and natural limits; but having now disposed of one moiety of the investigation, the edicts of nature and propriety, in respect to the velocity of floating bodies, far as human application has hitherto been able to investigate, will be, in some measure, explained by the examination of a regular course of experiments made for that purpose, an account of which will be found in the ensuing chapter.

CHAPTER

CHAPTER THE FIFTEENTH.

Remarks on the Obscurity of the Terms in which the Generality of Treatises on the Subject of Marine Architecture have been written—Effects produced by this Custom on the General Study of the Science—Animadversions on the Practice of France, in the same Line—Description of the Distinct Classes, into which the Marine Architects of that Country are divided—The Difference of the Arrangements made in Great Britain, various Methods of making Experiments in Marine Architecture divided, classed, and explained—Observations on the Stile of French Authors, compared with that of the Account given of the different Series of Experiments made in Britain, for the Purpose of obtaining satisfactory Information as to the best Principles of Velocity in Floating Bodies; which, according to varied Circumstances, may appear necessary to be adopted.

THE necessity, or to speak, perhaps, nearer the truth, the custom of using abstruse terms, in all scientific discourses and instructions, has proved, to a certainty, one of the greatest impediments that has ever arisen to oppose improvement, in the science of Marine Architecture. The language of the master ought ever to be adapted to the plain and perhaps unlettered understanding of the pupil: instead of that, the mathematician, proud of his own superiority, and the possession of that knowlege which, in his own opinion, raises him far above the level of the ordinary rank of men, feels himself as it were compelled by his own fancied dignity, to envelope that information which he professes to promulge, in terms, which his pupil is, very often, incapable of decyphering. Without intending a ridiculous pun, students frequently become so confounded between A and B, and D and F, with the musical changes rung in the course of the most simple mathematical problem, on the first twelve letters in the alphabet, that before the industrious novice can get half through it, he becomes so confounded as to be unable to distinguish D from W. Many persons who never heard of Algebra, or even the asses bridge, have constructed vessels extremely well adapted to their wants; and the generality of mankind certainly possess such a sufficient share of perspicuity, as would in all probability cause a further and more rapid improvement, not only in Marine Architecture, but in every other branch of mechanical or scientific knowlege;

knowlege; provided their minds were enlarged, by such unadorned explanation or advice on particular points, as may be within the pale of their comprehension.

Is there any reason to suppose the study of Euclid, or the complete knowlege of Sanderson could have rendered the proa better adapted to the purpose for which it is designed? Not that it can be imagined, understanding both, will not further in the highest degree the study of the science, but it is necessary that the students should be well versed in the peculiar language their instructions are conveyed in; a time and study that may easily be saved to them, if the learned theorist would but descend from the throne of knowlege, and converse with the most illiterate among his pupils, in a language they would without difficulty understand. A plus B minus C producing X is an apparent gibberish, which rather alienates than soothes the mind of the artist, whose existence perhaps depends on his manual labour; and who turns with disgust from a study that does not, in some degree, contribute on the first entrance into it, towards his maintenance. On the other hand, if the thorny path were in some degree cleared, he might possess sufficient ardour to contemn the trivial difficulties which present themselves, and by enlarging the host of enquirers, there certainly would appear the greater chance of attaining that degree of scientific knowlege, which it is admitted, on all hands, is necessary to perfection, and which all persons thirst for, though many may be unfurnished with the means of reaching it.

Although the French nation, taken in the aggregate, has made greater improvements in the form and contour of ships than any other in Europe, yet it has continually shewn itself particularly addicted to this species of absurdity; it has, however, one excuse to plead which will not bear out any other people. With them, the science is divided into two branches which are constantly kept separate. The theorist architect delivers his orders to the mechanical practitioner, who executes them without the smallest enquiry as to their propriety or defects, while the former is as totally unable to decide, whether the mechanical execution has been such as was requisite. Neither party presumes to encroach on the department of the other; to this cause it is in all likelihood owing, that the French ships in respect to many properties which their peculiar situation and circumstances demand, have contained them in a greater degree than those of any other country, because the acquisition of them was produced, by long and abstract study, matured by cool reflection and uninterrupted attention. The same reason may also be urged in explanation, as to the very indifferent materials used in the construction of French ships, and the loose careless manner in which they are put together, because

because the practical branch feeling its own inferiorities, and finding itself as it were mortifyingly subject to the commands of the superior, feels much more unconcerned in the execution of its orders, as it is conscious the principal merit will be attributed to those masters, whose abilities and studies are held in no small contempt by the practical shipwright, inasmuch as they are not purely mechanical.

In Britain the arrangement is otherwise; the two branches have long been intimately blended, and it consequently has been the endeavour of the professors in both ranks, to conciliate the mutual affection of each other, by speaking at least intelligibly to each other. If this effect has not been strictly produced, it nevertheless becomes the duty of every admirer of the science, to reconcile all differences of opinion, far as it is in his power, and render the students as well as adepts in the art, unanimous in their efforts to promote a general cause, which so materially concerns every civilized country in the world, but more particularly Great Britain. The theory of ship-building may be considered, as fairly divided into two distinct branches; the first founded on study supported by various mathematical experiments and inferences, drawn from an investigation of particular points, by means not strictly naval. The other on certain discoveries made on the forms of vessels actually built, which, on account of their magnitude, are in number infinitively more contracted, but from their determinate and incontrovertible tendency, may, by many persons, be considered as the most satisfactory of the two. The first may at an expence and trouble, comparatively speaking, extremely trivial, be extended through a diversity of supposed cases, till human ingenuity finds itself incapable of suggesting a single one untried, that can tend to elucidate the science under investigation, and instruct the practical artist in those particulars, which he himself has not possessed sufficient leisure to make himself master of. The second, pointing out peculiar, though perhaps imperfect advantages, sometimes mingled with material defects, affords no other means of remedying them, than by a fresh, laborious, and expensive attempt.

In the first class, the French as already observed have been the most numerous, and without exception the most laborious students, though their experiments do not appear to have been framed on that broad basis of true philosophical enquiry, which promises to be most successful in leading to, or pointing out, fundamental principles; for they have been apparently content with being able to ascertain effects, without attempting the labour of investigating the first cause. English students have latterly pursued the contrary system, and it will be highly proper to state what has been the extent of both. De la Croix, Bonguer, and other authors of the former school,

school, begin with stating assumed points, certainly correct in themselves, but couched in regard to their definition and explanation, in such terms as render them nearly unintelligible to persons who are not professed mathematicians. From this impolitic system, the world has in all probability been deprived of at least half that practical assistance, than which none can be more valuable, which it might in all probability have derived from the interposition and exertions of men, to whom such terms as the point of sustentation, determinate inclination, and horizontal translation, may appear an unintelligible jargon. English theorists have paid rather more attention to the understandings, capacity, and learning of their pupils; they have condescended to encourage them to the new study by more familiar conversation, rather than by attempting dogmatically to enforce the general knowlege of their science by the arrogant display of their own superiority.

The theorists in respect to the principles of Marine Architecture, which require the authority of practical aid more probably than any perhaps that exist in the world, considerably outnumber the students of the other description; and to this circumstance may be, in a great measure, attributed that division of opinion in respect to what measures may, or may not be productive of particular points, which are considered essentially necessary to the perfection, or at least the improvement of it. The most ingenious theorist of the class just mentioned can only suggest ideas, which his fellow-labourer, after all the application, and study that has been bestowed, is under the necessity of examining carefully and attentively into the propriety of. Few nations, even those whose coasts are washed by the ocean, taking the people composing them aggregately, or individually, have concerned themselves with the prosecution of such a series of experiments as might tend towards the developement of the scientific arcana: on the other hand, there are as few which have not produced writers on the subject. In respect to the first method of investigation, Britain stands almost an unrivalled exception, many attempts having been made, particularly within the space of a few years, to strike at the root of the mystery by the prosecution of such a series of experiments as might at least establish fixed fundamental principles, concerning which the students, as well theoretical as practical, of all countries whatever, seemed at least divided in opinion, if not totally unacquainted with. To begin with the most consequential, because they have been the most extensive of the kind. A fund, created a few years since made by the subscription and association of various noble and ingenious men, was most patriotically applied to the point just mentioned, under the inspection of proper persons, selected for the purpose,

purpose, who were themselves members of the same society, and consequently felt peculiarly interested in the discovery. The labour and length of time required in making this arduous attempt, was found on entering into it, very considerably to surpass what even those to whom it was confided had any conception of. This is acknowleged in peremptory terms by themselves, who have declared, in refutation of any opinion that might have been hastily formed, as to any unnecessary delay in ascertaining those points, the investigation of which was entrusted to them, that they could with confidence assert: those persons, and those persons only who attended the process, were competent to make a proper estimate of the labour and time requisite to, and consumed in the experiments respecting the velocity of floating bodies, which were considerably retarded by the long and tedious calculations which their results progressively required.

To pretend to the analization of a detail, in a great measure consisting of arithmetical calculations and mathematical deductions, may be considered by many ridiculous in the extreme, and that nothing materially diminishing the actual contents, can convey an adequate idea of their purport; it is necessary, however, the attempt should be made, and the recapitulation of the concise and ingenious definitions prefixed to the report, will be found to assist very materially in the explanation of certain points which might otherwise prove very obscure, and even unintelligible.

1st. By head pressure is meant the total pressure which exists against the head end, or foremost part of a body, immersed either wholly, or in part, in any given fluid, when such body is at rest. 2d. By stern pressure is meant the total pressure which exists against the stern end, or hindermost part of a body, immersed either wholly, or in part, in any given fluid, when such body is at rest. 3d. By plus pressure is meant the additional pressure which is sustained by the head end or foremost parts of a body moved through a fluid, which additional pressure is over and above what is termed the head pressure, and arises from the fluid being necessarily displaced, in order to permit the moving body to pass through it. 4th. By minus pressure is meant a substraction of pressure from the stern pressure, which substraction is occasioned by the fluid not pressing so strongly or impulsively against the stern end or hindermost part of a body, when such body is in motion through the fluid, as when the body is at rest. 5th. By friction (as relating to the subject) is meant that sort of resistance to a body moved through a fluid which arises either from the adhesion of the particles of the fluid to the surface of

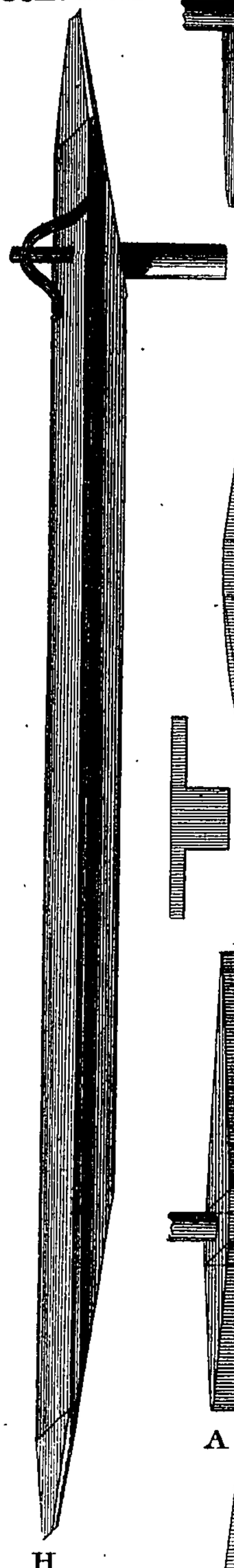
of the moving body, as well as from the roughness of the body, or from both those causes united. 6th. By total resistance is meant the sum total of the plus pressure, the minus pressure, and the friction united. 7th. By head resistance is meant the minus pressure and the friction of the water against the head end united. 8th. By stern resistance is meant the minus pressure, and the friction of the water against the stern end united. In order to ascertain the friction, the reporters procured two bodies called the long friction plank and the short friction plank, which were made equally smooth, and of the same breadth and thickness, and of the same form in every respect except in length. They caused also other bodies to be constructed with the same middle part and head end, but with differently formed stern ends, for the purpose of ascertaining the effect of the stern resistance, and the minus pressure; and also other bodies with the same middle part and stern end, but with differently formed head ends, for the purpose of ascertaining the effect of the head resistance, and plus pressure. All these different bodies were planed smooth, and painted white, and the form and dimensions of the said bodies are respectively represented in the plates annexed.

The bodies which are represented in the first section were respectively immersed by means of conductor, and its bar or bars, to the medium depth of six feet under the surface of the water; and when they were so immersed, the conductor swam with its top or horizontal upper surface exactly one inch above the surface of the water; but those given in the second section were immersed so as to keep the top, or horizontal upper surface just even or level with that of the water. When in motion, all these bodies were respectively drawn through the water, by means of the same weights, or motive powers.

Having obtained (continues a report) a set of velocities by experiment, with each of the said bodies, it then became necessary to examine and compare the said results and resistances, in order to search out the laws which belong to the different sets.

The foregoing explanation is extremely plain, though concise. It has been very immaterially abridged, and only in the instances where it extends to references, which are here omitted, because it is only necessary in the present instance to state the results themselves, instead of entering into the general detail of the method b which they were procured. It is scarcely necessary to observe, that the series of experiments alluded to, tend entirely to the investigation of one point, the ascertainment of that particular floating body which, with a given weight, or motive

Conductor



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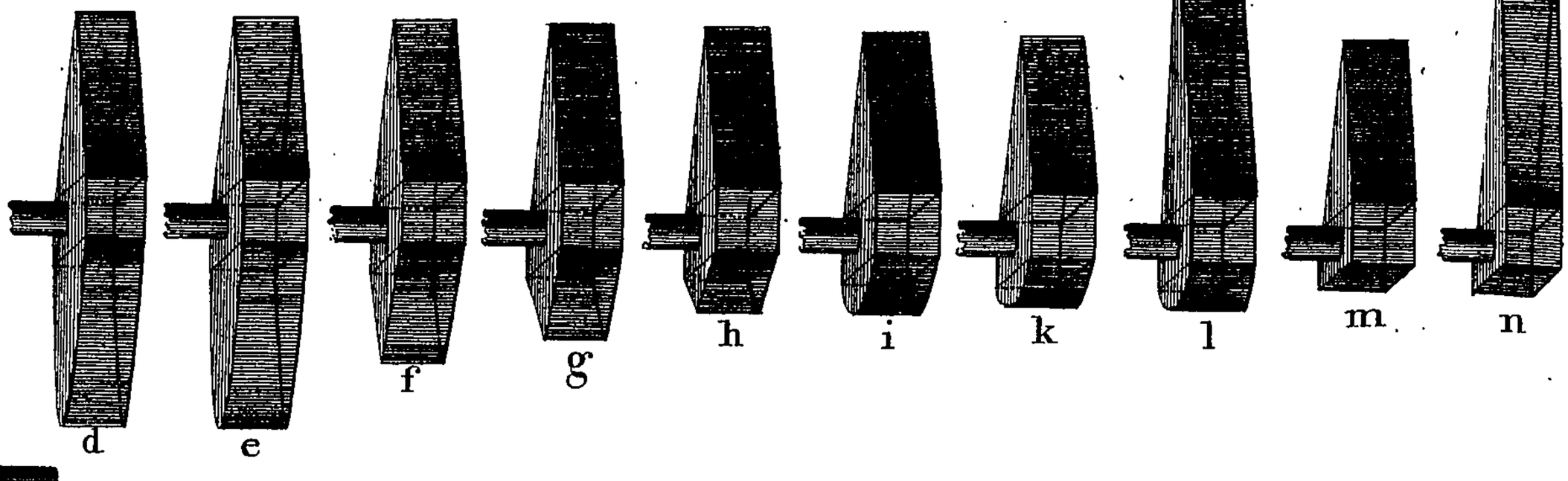
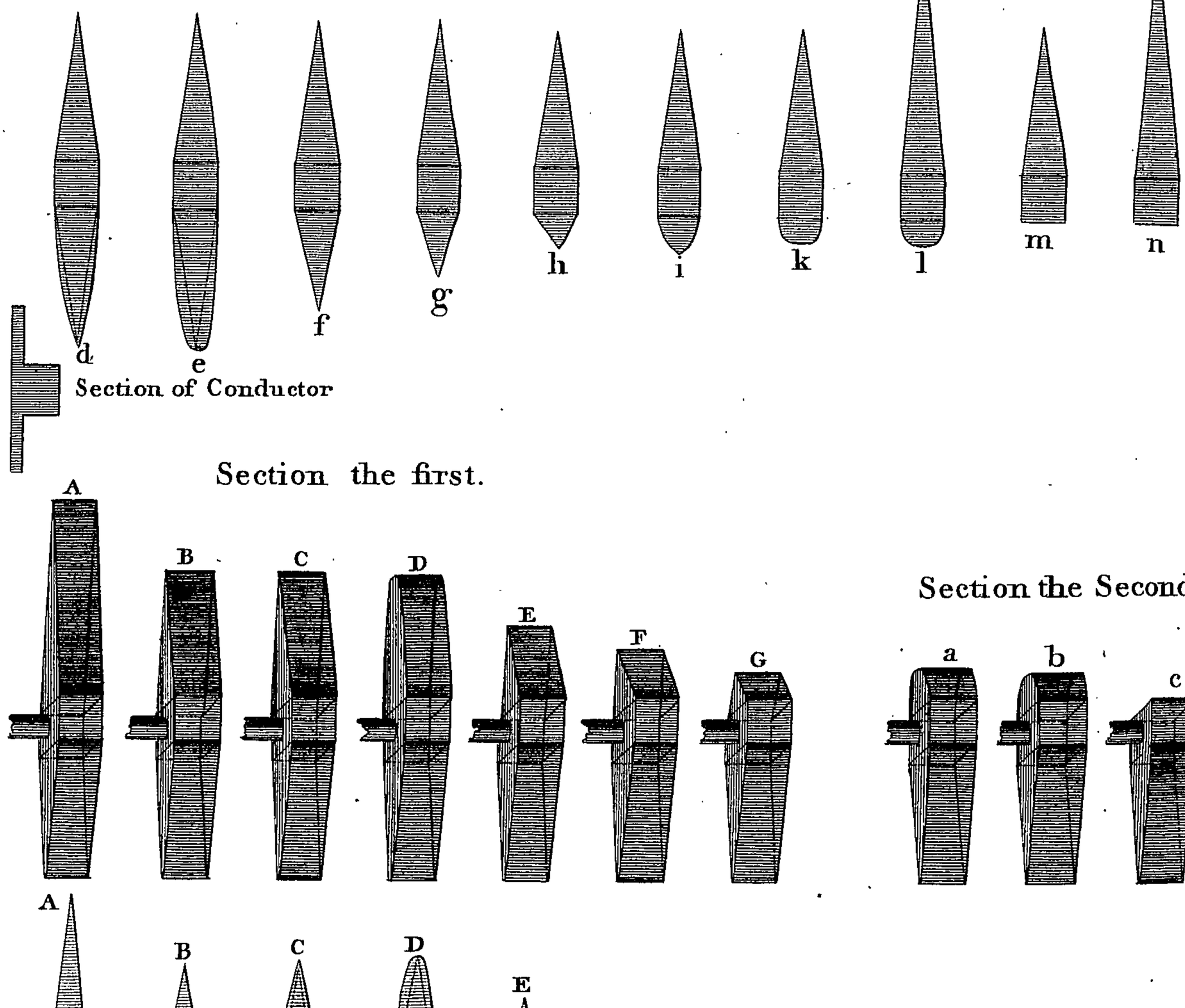
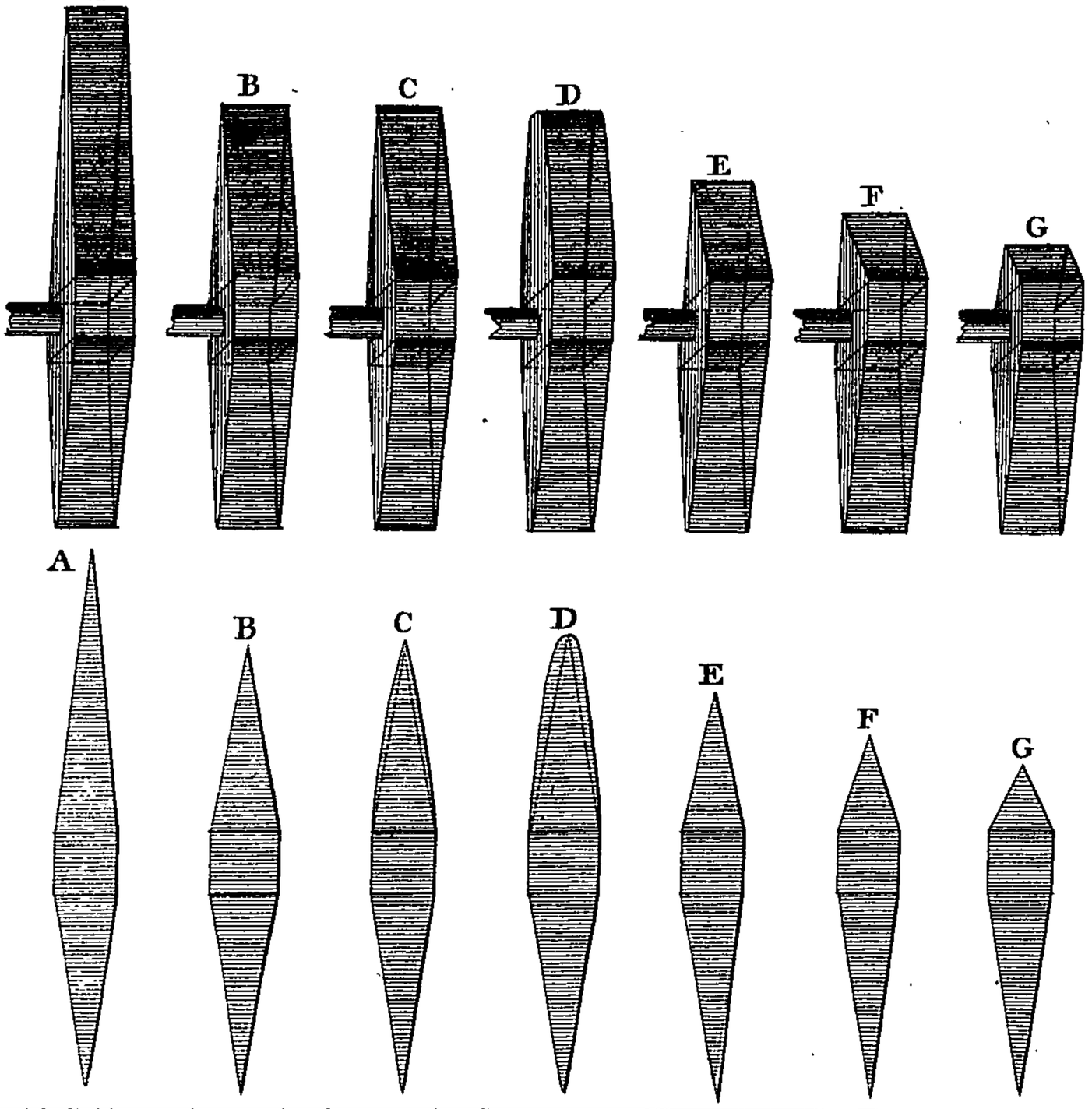




Section of Conductor

Section the first.



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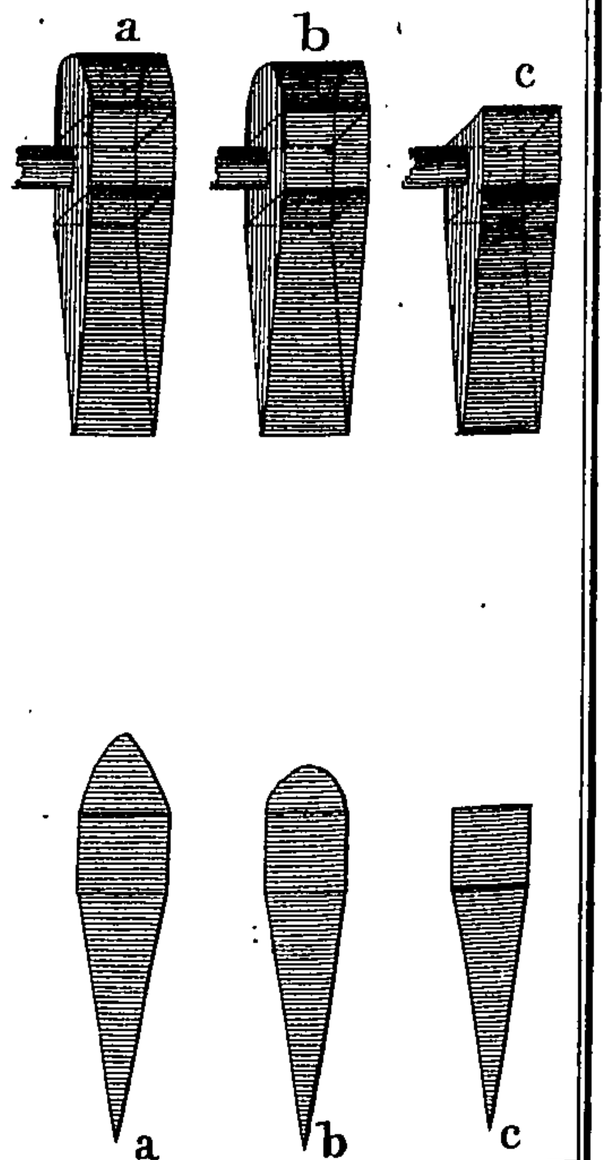

Experiments on the Velocity of Floating Bodies, Plate the First.

Published by Darton & Harvey London March 10th 1802.

motive power, will divide and pass through the fluid with the greatest ease and velocity. In order to abridge the results of those long and arduous philosophical, as well as mathematical labours, which the minute investigation of the subject requires, and to place the whole in one plain and conspicuous point of view, it will be necessary to state, that the bodies progressively marked A B C D E F G were attached, as already described in the words used by the gentlemen entrusted with making the experiments, to the conductor H, and drawn through the water by different motive powers, or weights, from 12 to 120 pounds. That of 48 is here selected, and from the effect produced by it on the different bodies, the gross results and inferences will be drawn.

It is first to be remarked, that all the bodies in the selected section have the same middle * part and head end, but are differently formed in the stern, or after-part, for the purpose of ascertaining what is called the stern-resistance and minus pressure, or to use a language which may perhaps be more generally intelligible to marine architects, to many of whom such terms may perhaps appear strange, which is the properest part of the ship's body, where the extreme breadth should be placed. The progressive rates per second, when acted upon by the motive power or weight already mentioned, was of A 7,353—B 7,334—C 7,307—D 7,166—E 7,227—F 7,220—G 6,750; from whence it may seem to be inferred, that the midship breadth should, for the purpose of the hull acquiring the greatest velocity, be placed considerably nearer to the bow than the stern; and that the smallest swell or deviation from a right line in the run, is materially obstructive to the passage of a floating body. In proof, D, which in its stern or after-part, deviates from a straight line, passes through the fluid when under the influence of a weight amounting to 48 pounds, at the rate of 7,166 parts per second, when C, the after body of which approaches nearer to a right line, has a velocity equal to 7,307.

The figures in the second section are of a different description; the head or fore bodies of the three first only are alike, and similar to that of the figures already described. Their comparative velocities, when acted upon by a weight equal to the former, are, *a* 6,917—*b* 7,076—*c* 6,935 feet and decimal parts per second, the conclusion is obvious. In the simple instance of passage through

* Which for the sake of precision, and in order to shew the scale on which the experiments were conducted with the proportion of the bodies whose parts may be measured according to the same scale, it will be necessary to observe, was a cube of 12 inches.

the water that *b* is entitled to the preference, and that *c* stands next in apparent excellence. * Fig *d* somewhat resembles B in the preceding section, the fore body varying only, that instead of being formed by a right line from the extreme breadth to the apex, or end, it is composed from circles of eight feet radius. Its velocity being 7,367, is greater than either of the three preceding; and the motive power necessary to cause its passage through the fluid, at the rate of eight transical miles an hour, being 40—22, is infinitely less than any in the whole section; so that in both instances it appears to surpass its companions, and from thence may be inferred, that the main body central, forebody somewhat fuller than the after body, but not too bluff, the after body lean, are the indispensable requisites to be attended to by marine architects, having attention to nothing more than the ease or velocity with which the hull of the vessel they construct, will divide the fluid.

To proceed with the remainder of the experiments in progression, fig. *e* varies from its predecessor, inasmuch as its fore body is a semi-elliptical cylindroid, and as will be apparent on the slightest inspection, infinitely fuller than the former; its velocity was found to be 7,234, and its motive power 43. 79.: the first 133 diminished, and the latter 3. 57. augmented. Fig. *f.* has the same after-body with the two former, but the fore-body is materially shortened. Here again the experiments appear to cross each other; the velocity given, being 7,277, creating an increase amounting to 43 decimal parts of a foot beyond the former, while its motive power is 44. 96. or 1. 17. exceeding the last, a circumstance which in appearance seems to militate against its velocity. Fig. *g*, whose fore-body is still more contracted, has for its assigned rate of passage, 7,224, and for its necessary motive power 50. 68. The only observation resulting from the experiment on the last figure is, that the rate does not appear so much diminished below that of *e* as the great addition made to the motive power might have led the enquirer to suspect would be the case, on the first inspection of the latter. The fore-body of fig. *h* is an equilateral triangle; its rate 7,005, and motive power 59. 73. a very heavy augmentation, which plainly condemns that system, though some very ingenious men have, though erroneously, considered highly

* By an adjoined table, this opinion appears however to be in some measure counteracted, since the motive power stated from experiment as necessary to move the body *c*, (independent of the conductor) at the rate of eight nautical miles per hour, is stated to be 65. 18. and that required to communicate the same velocity to *a* only 59. 77.

contributive

contributive to the excellence of a ship. The forward situation of the extreme breadth in fig. *i*, is similar to its position in *h*, but it resembles the form generally given to a ship's bow, much closer than the preceding, the forebody, which is of the same length with the last, being formed by the segments of two circles. The result perfectly accords with reasonable expectation, the velocity is encreased to 7.351, being 346 above, and its motive power diminished to 42.17, or 17.56, below the former; a circumstance plainly demonstrating the necessity of a proper swell being given to the bow or fore-body, provided other essential points are, at the same time, attended to, and the required addition, or what is called by ship-builders fullness, is not carried to an improper and extravagant height. The truth of this becomes fully established, by the experiments made on fig. *k*; the forebody of which answering the description just excepted against, being a semi-cylinder, its velocity consequently becomes diminished to 7.223, or .128 below *i*, while its motive weight is augmented to 48,26, or 6-.09. Fig. *l*, has the same fore-body; but its after-body * considerably lengthened, a measure which diminishes the rate to

* "The bodies used in the years 1796 and 1798, (says the report) were respectively immersed to the depth of six feet under the surface of the water. In order, therefore, to make comparisons between the same bodies, considering them as ships, it may be found necessary to deduct the friction, which takes place against the top surface of the said bodies, and the remainder will establish the resistance sustained by the said bodies, considered as the immersed part of ships or navigable vessels."

The bodies A B C D E F G, *a b c*, plate the first, were constructed for the purpose of ascertaining the advantages and disadvantages arising from their differently formed stern ends. By inspecting, therefore, the resistance on the bodies A B, it will be found that the resistance of B is a little less than that of A, also that the resistance of *k* is a little less than that of *l*; a curious circumstance, which arises from the stern ends of A and *m*, having a greater surface for friction than those of B and *l*. From thence it is evident that the encreased resistance arises from the friction against the stern ends of H and *m*, being greater than that of the friction, and minus pressure together of the stern ends B and *l*. It must however not be forgotten to be observed, that the figure C, plate the first, considered as a ship, has less resistance in the descending velocities, from five nautical miles per hour, than B; but in the superior rates of six, seven, and eight miles per hour, B experiences the least resistancee. This apparently paradoxical variation, is occasioned by the stern resistance, in the instance of the after body of C increasing, in a greater ratio, than in the case of B, a circumstance which probably arises from the angular part of C, in the after body, or stern, being more obtuse than that of B. The cause is obvious.

In respect to the bodies D E, &c. to *c*, it appears they have all greater resistances than A B or C; disadvantages which evidently arise out of the form given to their after-bodies respectively, from among which that of G is the worst of all. The bodies B *d e f g h i k m*, were constructed for the purpose of ascertaining the comparative advantages and disadvantages arising from the different formation of the

to 7.212, and augments the motive power to 49.28. Fig. *m*, cannot be said to possess a fore-body, being composed of the central cube only; which has hitherto, both in size and in form, been invariably adopted through the whole of the experiments: and an after-body, of the same size and form with those used in all the experiments, from *d* to *k* inclusive. Its rate is rapidly decreased to 5.742, and the necessary motive weight augmented to 155.97. Fig. *n* differs from the former, in nothing but the elongation of the after-body, which is of the same length with that of *l*: the rate of passage is still farther lessened to 5.697; but the motive weight, by a still farther apparent cross in the experiment, is diminished, though very immaterially, to 155.78.

Fig. *a*,

fore-body; a point that may easily be discovered, for, as is very properly observed, it relates to mere resistance only. "But," proceed the gentlemen who have made the report in question, "it must be noticed that considering the bodies alluded to as ships, they have different magnitudes, and consequently different degrees of stability, or power of carrying sail: the relation also which the resistance bears to the capacity, or the relation which the resistance bears to the force or power of going forward, and the momentum will be different in each body. Taking the subject in this, which certainly is the proper point of view, it of course becomes necessary to ascertain the relation which the resistance bears to the capacity, and also the comparative degrees of stability possessed by the said bodies respectively, from whence such conclusions may be drawn as are applicable to practice. As the said bodies are all of the same form and dimensions in their midship section or body, differing only in the form and length of their fore and after-bodies, the comparative stability will be nearly in proportion to the capacities of the different bodies respectively; from whence it is conceived the comparative power, or quantity of sail, which they are capable of sustaining, will be nearly in proportion to their different capacities. Acting on this datum, it appears, by mathematical calculation, that of the fig. A and *e*, plate 1, fig. A possesses the greatest advantage, and fig. *e* the next in value. But supposing them actual vessels in motion at sea, then it may be inferred that *e* would be materially the worst of the three; because its fore-body would not make so much lateral resistance to keep the vessel up to windward, and would meet with more resistance in its pitching motion than either A or *d*.

"It has been thought advisable," add these gentlemen very liberally, "to say thus much respecting the method of comparing the results of the experiments made on the said bodies, in order to prevent persons, who may not have it in their power to consider the subject fully, from drawing their conclusions comparing their resistances only."

Proceeding onward they remark, "That on comparing the resistance made by the bodies *e* and *i*, their resistance will be found to be nearly the same; but considering those bodies in the light of ships at sea, impelled forwards by the force of the wind acting on their sails, then, by mathematical calculation, it will appear that *e* has a very evident advantage; its stability, or power of carrying sail, being equal to 17.523, while that of *i* is no more than 11.899. Thus does the long-body *e* possess not only the advantage of being able to carry about one-third more sail than *i*, but has the additional power of overcoming such resistance as might be occasioned by the undulation of the water, or what is commonly called a popling sea, to its direct motion."

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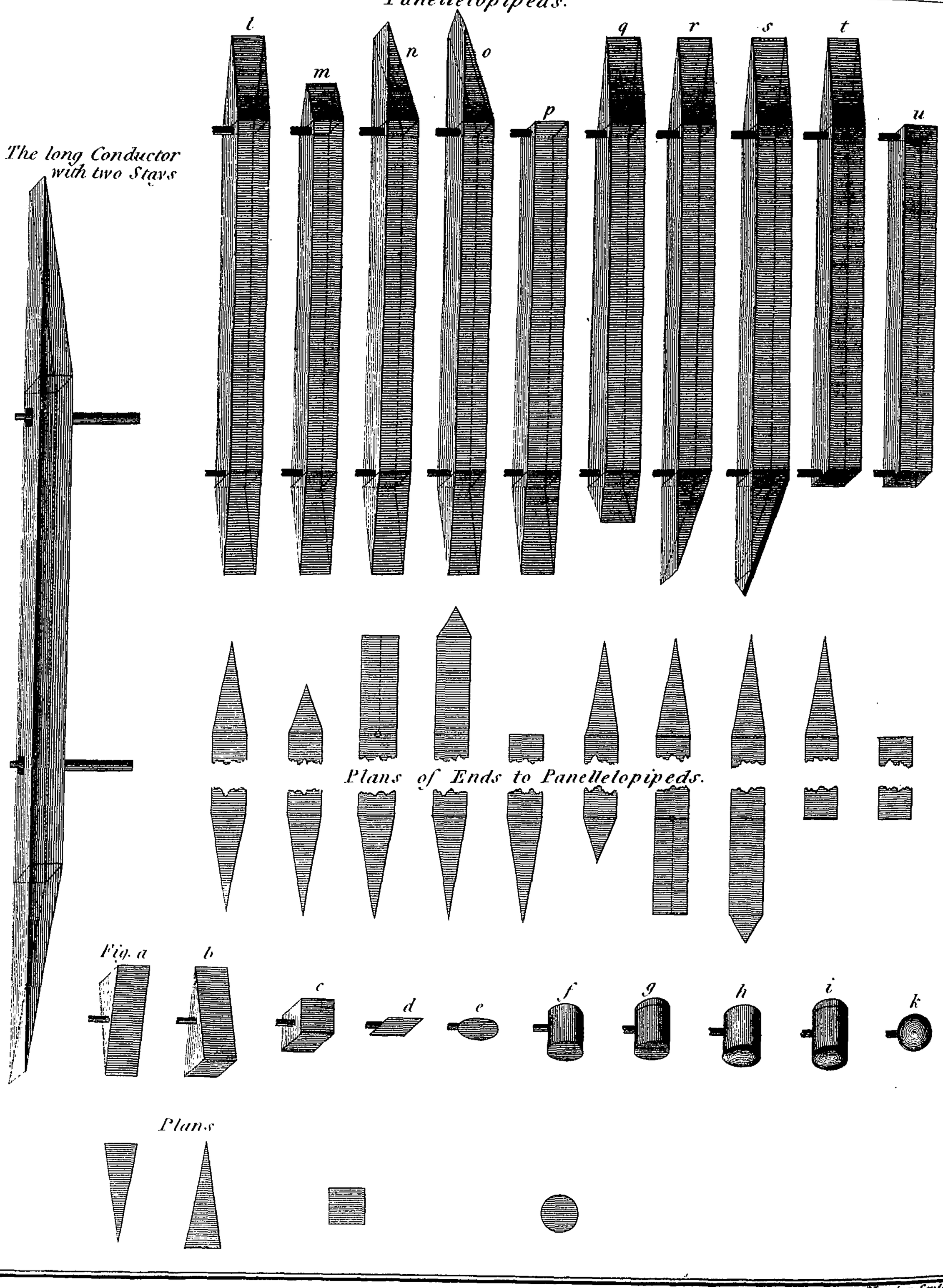

Newton Sculp.

Experiments on the Velocity of Floating Bodies. Plate the II.

London. Published as the Act directs. 1 March 25. 1802. by John Sewell. Cornhill.

Fig. *a*, plate the second, is the after body alone of the fig. *d e f*, drawn through the water, with the apex or point foremost. Its rate is stated at 6.650; its motive power at 04. 61. Fig. *b* is the same body drawn through the water, with its culminated end foremost. Its rate is diminished to 5.081, and its motive weight augmented to 194. 37, an incontrovertible proof of the absurdity attached to the system of giving an extravagant breadth and flatness to the bows of ships, and affording a complete confutation of the common but erroneously embraced opinion, that a spar is to be towed through the water with the greatest ease and rapidity, having its butt foremost. Fig. *c* is the cube or main body, made use of all the foregoing experiments; its rate is given at 5.012, and its motive power 202. 30. Fig. *d*. is a square iron plane of the same dimensions or surface as one of the cubic faces, but its velocity is only 4. 970, with a required augmentation of motive weight to 205. 13, an experiment sufficiently corroborative of that apparently neglected circumstance, arising from the impulse of floating bodies through water; which discovery is called, in the ingenious set of definitions prefixed to the experiments under present examination, minus pressure. The explanation is to be given in very few words. In the instance of the cube, the fluid is indeed by one violent effort compelled to divide, instead of being opened gradually, as is the case in bodies bearing more resemblance to the form of a ship;

It must be readily assented to, not only by all persons who have ever been at sea, but by those who have not, provided they have paid any serious attention to the subject, that the pitching motion is not so quick, nor the arcs of vibration generally so great, in long, as in short ships. For the purpose of drawing the comparison more exactly, it must be made between vessels possessing the same fore and after-body, and the same form in the midship section, the latter varying only in its length; or the difference may be most easily investigated, in the instance of a ship that has been lengthened, by comparing her improved, with what, by recollection, was her pristine state. There cannot be entertained a shadow of doubt, but that the short ship not only lies under a disadvantage arising from its contracted power of carrying sail, but also in having its progressive motion, in a very considerable degree, more retarded, in pitching, than that of the long ship can. It must, moreover, be remembered, that the power of the wind, by the action of which on the sails, vessels are impelled forward, varies almost momentarily in its force and direction; consequently the long ship, which, when once put in motion, possesses the greatest vis insita, or innate force, will maintain a superior advantage over the short ship, in being able to move forward with more uniformity and steadiness; a circumstance that will naturally cause the wind to act with greater power, and with greater effect, on its sails, than on that which is brought into comparison with it. The foregoing remarks have been very closely drawn from the words of the report itself, the principal alteration being that of abridgment in the mathematical calculation, which must be referred to by persons inclined to closer investigation. The observations are replete with good sense, and what is, if possible, still more valuable, with truth and accuracy.

and

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The long Conductor with two Stays

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Fig. a b c d e f g h i k

Plans

Newton Sculp.

Experiments on the Velocity of Floating Bodies. Plate the II.

London. Published as the Act directs. March 25. 1802. by John Sewell. Cornhill.

Fig. *a*, plate the second, is the after body alone of the fig. *d e f*, drawn through the water, with the apex or point foremost. Its rate is stated at 6. 650; its motive power at 04. 61. Fig. *b* is the same body drawn through the water, with its culminated end foremost. Its rate is diminished to 5. 081, and its motive weight augmented to 194. 37, an incontrovertible proof of the absurdity attached to the system of giving an extravagant breadth and flatness to the bows of ships, and affording a complete confutation of the common but erroneously embraced opinion, that a spar is to be towed through the water with the greatest ease and rapidity, having its butt foremost. Fig. *c* is the cube or main body, made use of all the foregoing experiments; its rate is given at 5. 012, and its motive power 202. 30. Fig. *d*. is a square iron plane of the same dimensions or surface as one of the cubic faces, but its velocity is only 4. 970, with a required augmentation of motive weight to 205. 13, an experiment sufficiently corroborative of that apparently neglected circumstance, arising from the impulse of floating bodies through water; which discovery is called, in the ingenious set of definitions prefixed to the experiments under present examination, minus pressure. The explanation is to be given in very few words. In the instance of the cube, the fluid is indeed by one violent effort compelled to divide, instead of being opened gradually, as is the case in bodies bearing more resemblance to the form of a ship;

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and after yielding laterally for the same space that occasioned its division, falls in behind, creating what is defined to be minus pressure, that is to say, the temporary and superficial vacuum, which for a period certainly existing, though so short as to be nearly incomprehensible to those who are not accustomed to consider even a second of time divided into an almost infinite number of parts. This vacuum varies in its extent and consequence, in proportion to the power which creates it; as for instance, a round sterned vessel, built after the Dutch fashion, and passing through the water with the same rapidity, as a ship having a clear run abaft, will create a vacuum far more extensive than a cutter will. In short, the vacuum made by the cube in question will be very great; that by fig. *b*, in the same plate, so trivial as to be scarcely perceptible. In the experiment made on the plane, the fluid is divided with the same violence as in the instance of the cube, but owing to its being as instantaneously obliged to unite by its own collapsing weight, without being kept asunder during the smallest particle of time, as is the case in the preceding experiment, the vacuum is rendered far greater, and all, or at least the greater part of the fluid pressure on the stern face, (to use a new term) being taken off, the total natural resistance of the water is left almost at perfect liberty to act on the front or bow face, without being counter-ballanced by the stern impulsive pressure of the fluid which is destroyed by the vacuum alluded to. The four succeeding experiments afford a further corroboration of this principle. Fig. *e* is a round iron plane, of the same thickness with the last, which was square, its velocity differs very immaterially from the former, being 4. 968. two decimal parts only less than the former; its motive weight 205. 15. The superficies are equal, the diameter being 13 in 54. which is exactly equal to a square of one foot. Fig. *f* is a cylinder presenting the same face, and one foot in length. The difference in velocity, when acted upon by the same weight, which was uniformly used throughout, is as irregular as any result that has hitherto appeared. The variation between the square and round plane is, as just observed, in velocity no more than two decimal parts per second, and that of the motive weight required to impel it through the fluid at the rate of eight nautical miles per hour, is only 1. 34. in addition to 203. 79. made use of in the first instance; but the cylindrical body marked *f*, not only acquires a velocity of 5. 131. per second, which is 131. more than the cube, but requires for its allotted impulse of eight miles each hour only 190. 78, which is 13. 01. less than the former, in respect to motive weight. By the addition of a semi-globe to the stern end, as represented in fig. *g*, and the consequent augmentation of the

stern

stern pressure, the velocity is encreased from 5. 131 to 5. 395, and the motive weight diminished from 190. 78. to 167. 97. By the addition of the semi-globe to the head end, or bow, as shewn in fig. *b*, the velocity is again increased to 6. 834, and the requisite motive power more wonderfully diminished than on any former occasion, the weight required being no more than 55. 34. By a third addition of a semi-globe to both ends, as in fig. *i*, the velocity per second is increased to 7. 112. and the weight diminished to 46. 29. a circumstance which will be found, even on a trivial consideration, to explain completely the theories of plus pressure and minus pressure together, with the means by which the first may be diminished, and the latter increased.* Fig. *k* is a globe, the introduction of which is less conse-

* In addition to the remarks made above, the following observations, made by the reporters themselves, may probably tend to elucidate the subject. The isosceles triangle *a*, plate the second, is exactly of the same form and dimensions with the angular fore body of A B, &c. down to *c*. It is obvious, therefore, that the plus, or actual pressure against the fore body of *c*, and the triangle *a*, must be equal. The minus pressure of the triangle is also conceived to be nearly the same with that of *c*. However the plus and minus pressure of *c* to the known friction on the triangle, the sum of motive power required to communicate the rate of eight nautical miles per hour will be found to be 63. 46. whereas the resistance of the triangle in toto appears, from actual experiment, to be 64. 61. This difference is supposed to arise from the deflection of the water on the minus pressure of the triangle; for the water that is deflected from the oblique surface, or sides of the triangle, acts with its deflected force to prevent the surrounding water from filling up the void or vacuum at the base of the triangle: whereas in the body *c*, the water that is deflected by the oblique surface, has time to lose the effect of deflection, and becomes parallel to the sides of the moving body, before it arrives at its stern end; therefore the surrounding water is not impeded by deflection from acting with its full force and pressure to fill up the void behind. The cube *c*, plate 2, the square iron plane *d*, the round iron plane *e*, and cylinder *f*, were constructed with the same area of flat surface in each, that is to say, one foot, for the purpose of ascertaining the advantages and disadvantages arising from those forms, in respect to their effect of deflection on the water. It will appear, from experiment, that the cube *c* acts with less resistance than the plane *d*; as also the cylinder *f* does, than the round plane *e*. The difference evidently arises from the water deflected from the front of the planes acting with its utmost force, to prevent the surrounding fluid from filling up the vacuum behind; on the other hand, in the cases of the cube and cylinder, the water deflected by the front of those, has, as in the instance first given, sufficient time to lose a considerable part of its deflected force 'ere it arrives at the stern, or aftermost part of those bodies when in motion; consequently the surrounding fluid is but little impeded from filling up the vacuum of *e* and *f* respectively. The experiments made with the cylinders marked *g* and *h*, will shew the advantages or inconveniencies arising from such forms, by the mere inspection of their rates. The cylinder *i*, with its addition of semi-globes to each end, was also constructed for the purpose of trying the effect and consequence of deflection. It appears from experience that the resistance of *i*, when impelled at the rate of eight miles per hour, is 46. 29. while that of the globe *k* is 64. 87.; 'tis evident, therefore, that *i* has considerably the

and after yielding laterally for the same space that occasioned its division, falls in behind, creating what is defined to be minus pressure, that is to say, the temporary and superficial vacuum, which for a period certainly existing, though so short as to be nearly incomprehensible to those who are not accustomed to consider even a second of time divided into an almost infinite number of parts. This vacuum varies in its extent and consequence, in proportion to the power which creates it; as for instance, a round sterned vessel, built after the Dutch fashion, and passing through the water with the same rapidity, as a ship having a clear run abaft, will create a vacuum far more extensive than a cutter will. In short, the vacuum made by the cube in question will be very great; that by fig. *b*, in the same plate, so trivial as to be scarcely perceptible. In the experiment made on the plane, the fluid is divided with the same violence as in the instance of the cube, but owing to its being as instantaneously obliged to unite by its own collapsing weight, without being kept asunder during the smallest particle of time, as is the case in the preceding experiment, the vacuum is rendered far greater, and all, or at least the greater part of the fluid pressure on the stern face, (to use a new term) being taken off, the total natural resistance of the water is left almost at perfect liberty to act on the front or bow face, without being counter-ballanced by the stern impulsive pressure of the fluid which is destroyed by the vacuum alluded to. The four succeeding experiments afford a further corroboration of this principle. Fig. *e* is a round iron plane, of the same thickness with the last, which was square, its velocity differs very immaterially from the former, being 4. 968. two decimal parts only less than the former; its motive weight 205. 15. The superficies are equal, the diameter being 13 in 54. which is exactly equal to a square of one foot. Fig. *f* is a cylinder presenting the same face, and one foot in length. The difference in velocity, when acted upon by the same weight, which was uniformly used throughout, is as irregular as any result that has hitherto appeared. The variation between the square and round plane is, as just observed, in velocity no more than two decimal parts per second, and that of the motive weight required to impel it through the fluid at the rate of eight nautical miles per hour, is only 1. 34. in addition to 203. 79. made use of in the first instance; but the cylindrical body marked *f*, not only acquires a velocity of 5. 131. per second, which is 131. more than the cube, but requires for its allotted impulse of eight miles each hour only 190. 78, which is 13. 01, less than the former, in respect to motive weight. By the addition of a semi-globe to the stern end, as represented in fig. *g*, and the consequent augmentation of the

stern

stern pressure, the velocity is encreased from 5. 131 to 5. 395, and the motive weight diminished from 190. 78. to 167. 97. By the addition of the semi-globe to the head end, or bow, as shewn in fig. *b*, the velocity is again increased to 6. 834, and the requisite motive power more wonderfully diminished than on any former occasion, the weight required being no more than 55. 34. By a third addition of a semi-globe to both ends, as in fig. *i*, the velocity per second is increased to 7. 112. and the weight diminished to 46. 29. a circumstance which will be found, even on a trivial consideration, to explain completely the theories of plus pressure and minus pressure together, with the means by which the first may be diminished, and the latter increased.* Fig. *k* is a globe, the introduction of which is less conse-

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consequential than perhaps any one of the preceding has proved, particularly after the experiments progressively shewn on fig. *e*, and the three which follow immediately in succession. Its velocity is 6. 838. its motive power 64. 87.; it is, however, an additional proof of the truth of that theory and explanation already given, why the planes, fig. *d* and *e*, should pass slower through the fluid, and require a greater weight to impel them, than the cube and cylinder *e* and *f*. The globe wanting the length of the fig. *i*, which has been proved so conducive to velocity, not only has its rate diminished from that of the former, 274. but requires an augmentation also of 18. 58. to its impelling power, in order to communicate the same speed as the former.

Fig. A *a* represents a longer conducting body than those already described. It is furnished with two stays instead of one for the purpose of keeping steady the bodies on which the experiments were made, which were also considerably longer in their main, and undiminished breadth than any of those before given, which were more simple. Though last introduced, the following experiments composed the early part of the investigation, having been made in the year 1796. Fig. B *b*, which is an exact repetition of B, plate the first, with its central part, or body, elongated, has a velocity of 6. 818, and requires a weight of 61. 83. to force it through the water at the rate of eight nautical miles per hour; the former being diminished 716. the latter being augmented 20. 24. by the increase of length already mentioned. Fig. C *c* bears the same degree of affinity or resemblance to fig. F, plate the first, which the last mentioned did to B, and the elongation causes a diminution in rate equal to 701. requiring an increase of power amounting to 20. 72. Fig. D *d*, the head and centre part, is exactly like the former; but the after, or stern part, is square, and sloped like the end of a barge, as is visible in the figure. Its speed is somewhat increased by the alteration last mentioned, its rate being 6.633, or 114 parts of a foot in a second greater than the last, and the motive power is also diminished 52. or nearly 151th part of the whole weight required. Fig. E *e* varies from the last, by the addition of an equilateral triangle

the advantage. This arises from the minus pressure of *i* being very immaterially, if at all, affected by the deflection of the water from the fore body; inasmuch as the water, displaced by the circular surface of the latter, gains sufficient time to prevent the effect of deflection, and become parallel to the sides of the moving body 'ere it reaches the stern; consequently the water is not impeded from acting with nearly its full force and pressure, to fill up the vacuum behind. In the globe marked *k*, on the contrary, the deflected fluid acts with considerable force to prevent the water from filling up the vacuum behind, and the resisting effect produced by deflection alone on the globe, appears to be no less than 18. 58. greater than on *i*.

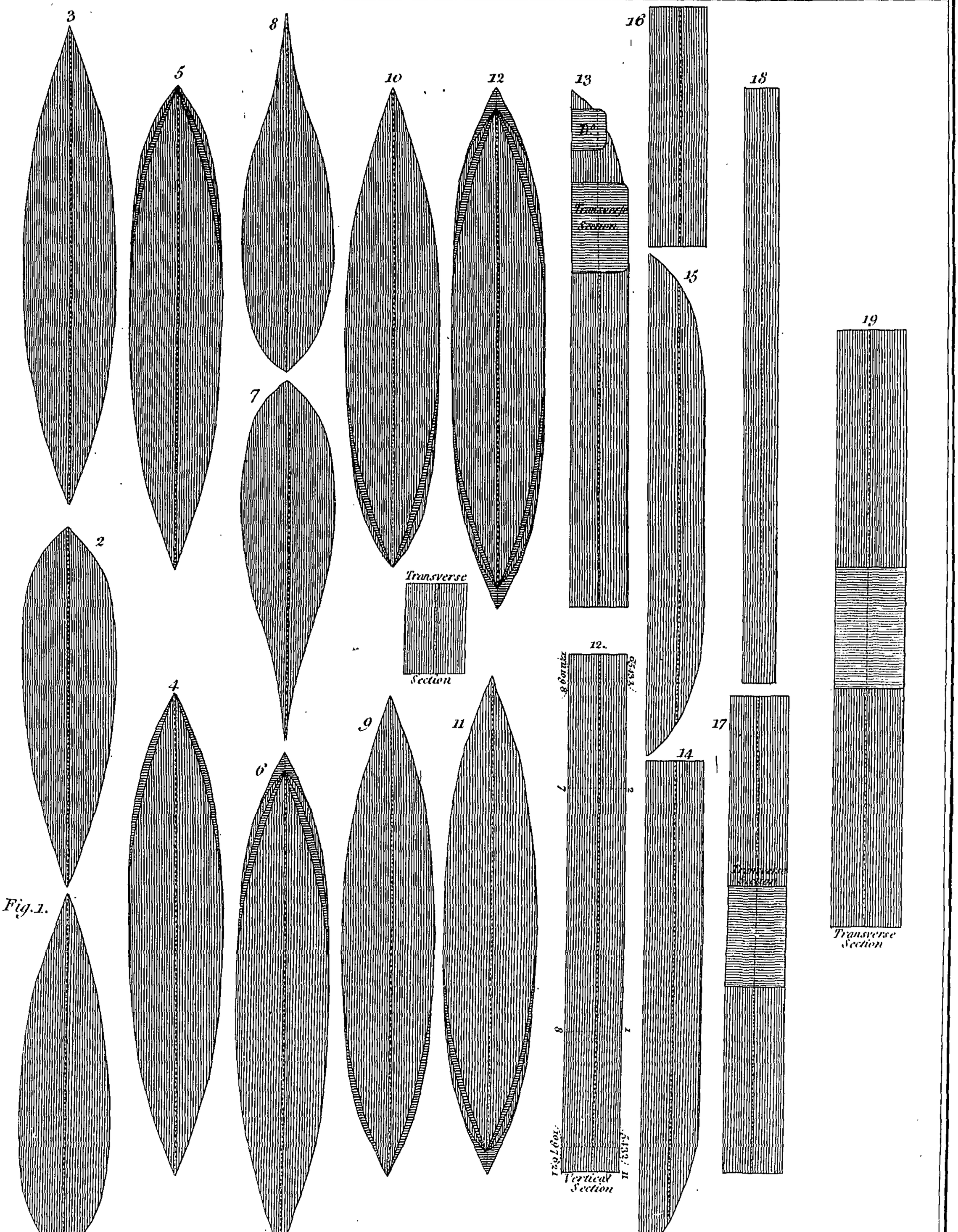
added

added to the stern, and that bevil which is occasioned, by a right line drawn from the point of the triangle, to the centre of the bottom of the parallelopiped, with the natural slope which takes place between that centre line and the lateral extremities of the stern body. Its velocity is 12. greater than that of the body used in the last experiment, and its motive power 2. 74. less, circumstances in favour of the latter, which are produced by the diminution of the stern vacuum, and consequent partial counterbalance of the fluid in that part, to its plus pressure on the head. F *f* is a parallelopiped, with the addition of a fore body only, exactly similar to that made use of in the four last experiments; its velocity, compared with B *b*, from which it varies in being deprived of its after body, (a circumstance that occasions a greater vacuum at the stern,) is much less: a great augmentation of power, amounting to 24. 51, or in gross numbers, more than one fourth part of the whole, becomes necessary to make its rate of eight miles per hour equal to that of B *b*, a tardiness evidently occasioned by the abrupt termination of the stern, or after body. G *g* is a parallelopiped also, with a fore and after body similar to fig. *g*, in plate the first; the difference is 604. in diminution of rate or velocity, and in required augmentation of power 22. 07. an alteration entirely occasioned by the disproportion of the fore body to the centre. Figures H *h*, I *i*, and K *k*, are merely D *d*, E *e*, and F *f*, turned the contrary way; and it will be necessary to point out progressively the variation between each, and their predecessor. H *h* gives 6. 655. velocity, and 75. 14. motive weight required, being an augmentation in the former of 22, and a diminution in the latter of 2. 33. in favour of the barge end, which from its shape appears the most apposite term that can be given to it. I *i* compared with E *e* acquires an increase of velocity amounting to 54, or something more than one part in fourteen, and diminution as to required power of 1. 45, or in rough calculation about one forty seventh part of the whole. K *k*, compared with F *f*, loses 1. 022. in velocity, and requires in motive power an addition of no less than 89. 29. being considerably more than double the whole which the body F *f* had needed, with the end reversed, a result which very materially contributes to prove the correctness of the different assumptions taken from the experiments under present consideration. L *l* is the parallelopiped itself; its velocity is no more than 5. 167, or 177. less than that of K *k*; its requisition of motive weight 22. 84. proofs still additionally corroborative of the evils resulting from stems being too bluff or full. The last comparison that will be necessary in this part of the examination, will be that between the cube marked *c*, and the parallelopiped L *l*; the latter has an advantage over the former,

former, in respect to velocity, of 155, with a requisition of 3. 38. less motive power; a firm and incontrovertible proof that the actual increase of weight in the body, and the enlarged capacity, is far more than counterbalanced by the advantage derived from the diminution of resistance made by the fluid, in consequence of the increased length from one to ten feet, which is that of the parallelopiped. The last experiment very clearly and concisely explains the cause why vessels whose length is extensive, are generally able to outsail those of more contracted dimensions. As it is the professed intention of the present examination to give broad results only, with brief and plain explanations of the causes which have produced the several effects, the laborious mathematical minutiæ which, in the investigation, have attended the different experiments, are omitted: these not only prove the assiduity, the indefatigable constancy of the gentlemen under whose inspection and direction they were made, but may render the most beneficial service and advantage to the labours of the industrious theorist. Fired by the ambition of extending knowlege, and encouraged by finding no inconsiderable part of the impediments and difficulties overcome, whose opposition appeared to forbid encounter, the student may now not hesitate to dive farther into the mystery, which certainly not only requires labour and patience, almost incredible, to attempt the developement of, but till recent patriotism and those labours just alluded to, with the exertions other ingenious individuals have proved to the contrary, was considered as a nugatory attempt, because it was thought impossible it should ever be crowned with success.*

other

* Of the resistance occasioned by the friction of the water, it appears unnecessary to take very material notice in this place, because it is included in the subjoined table of resistances, and, as above observed, the present intention of giving broad results concerning the resistance made by particular bodies, is meant for the information of the practical marine architect only, referring the studious theorist to the examination of the report at large. The following, however, is a description given in the report of the method taken to ascertain the effect, in proportion to the question of pressure on the surface exposed to the fluid. Having found the motive powers requisite to bring the different bodies exactly to the same rates of velocity, from one to eight nautical miles per hour, the next object necessary to be obtained was the ascertainment of the resistance arising from the friction of the water, against the several bodies respectively. For this purpose, two planks were prepared, one called the long, the other the short friction plank, the first of which was precisely eight feet longer, than the other. They had the same degree of smoothness, and were exactly similar in the dimensions of their head, and stern ends, so that they were alike in every respect, except in length. From the experiment, therefore, it is evident that whatever difference shall be found to arise between the resistance of the two planks, such difference must be the resistance of the water only, against 46 square feet of surface, being what is contained in the long friction plank, over and above that of the short one. The velocity of the former, when



Newton Sculp.t

Experiments on the Velocity of Floating Bodies. Plate the III.d

Lon. Published as the Act directs. March 31st 1809. by John Sewell, Cornhill.

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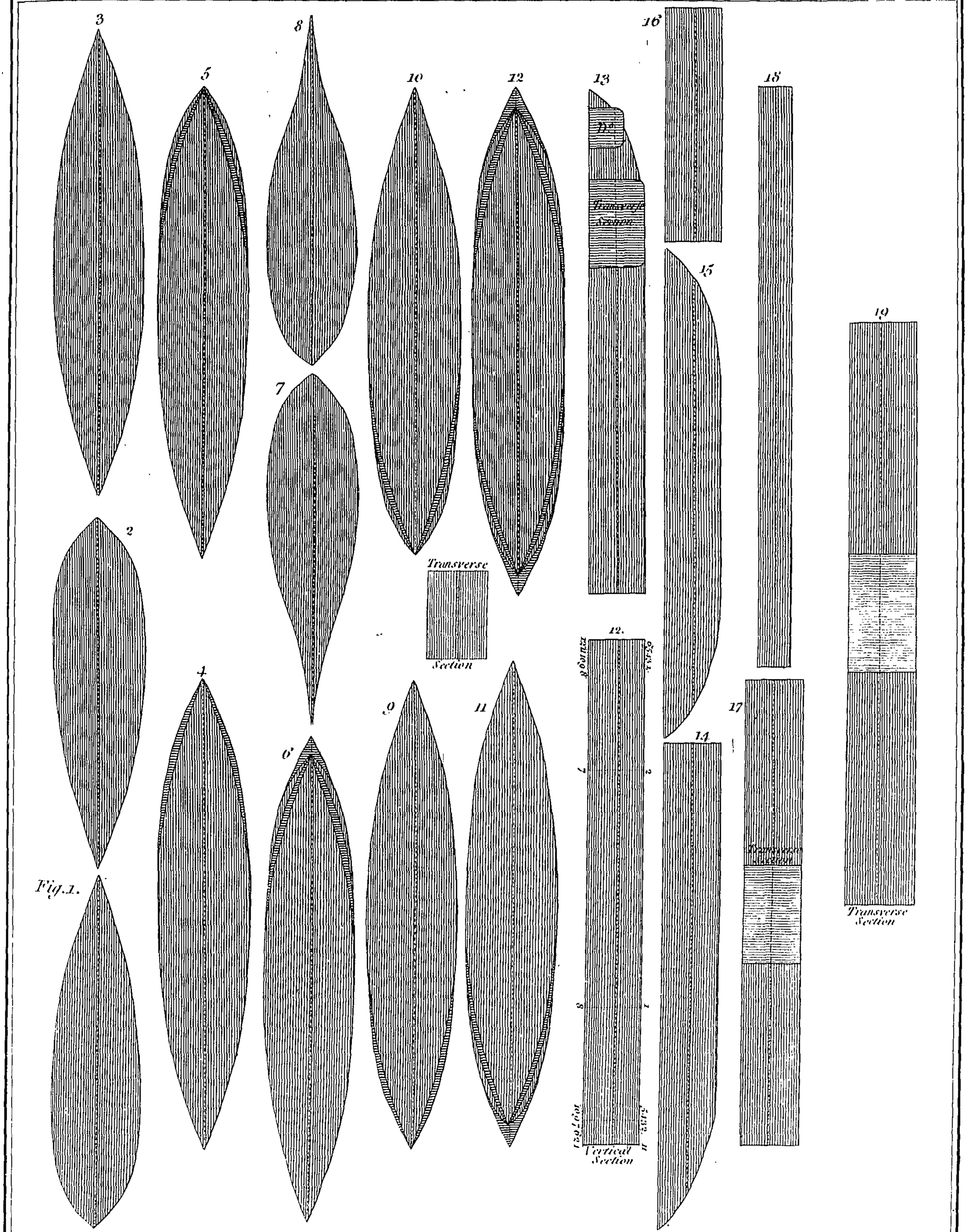


Newton Sculp.

Experiments on the Velocity of Floating Bodies. Plate the III.d

a. Published as the Act directs. March 31st 1803. by John Sewell, Cornhill.

Nearly contemporary with the foregoing, were other experiments, made by Mr. Gore, already mentioned, assisted by Messrs. Hallet and Hayward, whose practical knowlege and experience in marine architecture, rendered them peculiarly qualified to engage in so interesting an undertaking. Mr. Gore, in the course of the necessary description given of the experiments, very shrewdly and truly remarks, that the first principles of marine architecture have hitherto been (in great measure) unknown, that the science is still in its infancy, but that a wide field is opened, tending to a thorough reformation in the art. From these considerations he is induced to hope, that many absurd maxims which have long influenced the constructors of ships, will submit to refutation, and be laid aside, although he fears there still remain many persons who will with difficulty consent to acknowlege their error, and submit to the task of examining into the cause of it. This gentleman, in particular, hopes of being able to explode a favourite, and prevalent fashion, quaintly distinguished from its approaching similitude, by the appellation of the cod's head, and the mackarel's tail.

when acted upon by a weight of 48 pounds, appears to have been, per second, in feet and decimal parts 6. 668. of the latter 7156; the motive power required to carry forward the former, at the rate of eight miles per hour, was 70. 048.; for the purpose of effecting the like with the latter, 50. 192.

		Motive Power required.
Fig. A	Plate 1,	40. 04.
Fig. B	- -	39. 83.
Fig. C	- -	40. 69.
Fig. D	- -	44. 79.
Fig. E	- -	43. 62.
Fig. F	- -	50. 99.
Fig. G	- -	75. 18.
Fig. *a*	- -	58. 44.
Fig. *b*	- -	52. 96.
Fig. *c*	- -	64. 11.
Fig. *d*	- -	38. 38.
Fig. *e*	- -	41. 72.
Fig. *f*	- -	43. 47.
Fig. *g*	- -	49. 30.
Fig. *h*	- -	58. 47.
Fig. *i*	- .	40. 84.
Fig. *k*	- -	47. 02.
Fig. *l*	- -	41. 72.
Fig. *m*	- -	154. 90.
Fig. *n*	- -	154. 39.

		Motive Power required.
Fig. A	Plate 2,	55. 34.
Fig. B	- -	69. 89.
Fig. C	- -	68. 30.
Fig. D	- -	65. 35.
Fig. E	- -	80. 59.
Fig. F	- -	66. 95.
Fig. G	- -	65. 97.
Fig. H	- -	63. 90.
Fig. I	- -	169. 90.

It follows, therefore, that the nearer the hull of a ship can be brought to resemble Fig. *d*, plate 1, and fig. H, plate 2, the greater velocity it will have through the water, when acted upon directly astern, by any given impulse. On the other hand, the more it approaches in similitude, Fig. *m*, plate 1, and fig. I, plate 2, the slower will be its passage.

The bodies, of which the different forms are annexed, were drawn through the water by the same motive weight, that is to say 1 lb. and ½, and the ensuing observations given in the words of Mr. Gore himself, were made in the course of the experiments. Fig. 1 exceeded fig. 2 in its velocity, reckoning by feet and decimal parts per second, .053, each of them weighing 25 lb. 4 oz. fig. 3, though weighing 28 lb. 8 oz. exceeded fig. 1 by 277. fig. 4 being similar in form to fig. 3, with the addition only of a little fullness forward, as seen in the plate, (which increased its weight to 29lb. 4oz.) suffered in velocity only 106. which is supposed to be counterbalanced by the power of the additional canvass which this augmentation would enable the ship to carry. Fig. 5 has a further addition forward, as appears by the plate, and its weight is thereby increased to 30lb. 8oz. yet it loses in its velocity only .051, by the last increase, though it still exceeds considerably fig. 1 and 2, notwithstanding an addition of 5lb. 8oz. is made to the weight. Fig. 6 is similar to fig. 5, with the addition only of a sharp beak forward, as per plate, which, though the weight becomes thereby increased to 32lb. 8oz. brings the velocity equal to fig. 3, within ,076, notwithstanding the considerable increase both in capacity, and stiffness. Here it is to be observed, that the extreme breadth is abaft the centre. Fig. 7 is similar to fig. 2, except that the line in the after part of the ship is hollow, instead of round, which reduces the weight to 28lb. 8oz. being 1lb. 8oz. less than fig. 2, and thereby causes the velocity to exceed that of fig. 2, by ,111, which is supposed unequal to the defalcation of capacity, and consequently of stability. It is also certain, that this form would be subject to more oscillation in a sea, on account of the great inequality in the two ends, by which the essential counterpoise is destroyed, and it follows therefore, that the velocity must be diminished, as it cannot be doubted but that the vessel which is nearest balanced in the sea will oscillate or pitch less, and must, consequently, *cæteris paribus*, be capable of greater velocity.

Fig. 8, which is fig. 7 reversed, *i. e.* the sharp end foremost, loses thereby ,030. It is observable also, that this figure, being similar to figure 1, with the variation only of the line in the fore part being hollow instead of round, gains in velocity, compared to fig. 1, ,028; therefore this increase of velocity seems to be produced rather by the decrease of weight than by the variation of form. Fig. 9 is fig. 4 reversed, by which the velocity is increased ,056. This demonstrates, that fullness abaft, even to a degree obvious to a critical eye on inspection of the plate, does not impede the motion through the water. Fig. 10 is fig. 5 reversed, by which the velocity is diminished ,096. Here the fullness abaft appears

to

to be carried to too great an height. Fig. 11 is fig. 6 reversed, by which the velocity is diminished ,047; this shews that the after part is in this instance also, too round. Here it will be observed the extreme breadth is before the centre. Fig. 12 is fig. 11 with the same addition forward, as abaft, by which it loses in velocity only ,202, a loss whose ample compensation will be found in the addition of capacity, as well as ability to carry sail. Fig. 13 and 14 are similar on the horizontal plane to fig. 12, but rounded on the perpendicular plane at one end. Fig. 13, with the rounded end foremost, exceeded fig. 12 in velocity ,328, which fully compensates the very small defalcation of capacity. Fig. 14 loses in velocity, when compared to fig. 13, ,254. This appears to furnish an additional argument for placing the sharpness forward. Fig. 15 is similar to 14, but with both ends rounded, by which alteration it gains, in comparison to 14, ,692. Fig. 16 is a parallelopiped, weighing 26lb. 8oz. Fig. 17 is likewise a parallelopiped, of the same breadth and depth, but having the length doubled and weighing 54lb.: notwithstanding which increase in length, and weight, the diminution in velocity is only ,071. This clearly demonstrates the great advantage derived from increased length. Fig. 18 is also a parallelopiped, weighing 50lb. 12oz. Fig. 19 is another parallelopiped, similar in length and breadth, but double the depth, and weighing 101lb. 8oz. This loses in velocity with comparison to the former, ,476, which proves that the resistance is increased more by the addition in depth, than by that of length. *

"From the result of the foregoing," concludes Mr. Gore, "it seems to me that the form best calculated for velocity, is a long parallel body, terminating at each end in a parabolic cuneus, and having the extreme breadth in the centre; also, that by making the cuneus more obtuse than is necessary to break with fairness the curve line into a straight one, a considerable degree of impediment is created; and I am inclined to think, from what I have stated, that the length of ships which has been already extended with success, to four times their breadth, is capable of farther extension with advantage, perhaps, to five, and in some cases to six times." Authors who have indulged their fancy, their patriotism, or their philanthropy, in writing on the subject of marine architecture, have, when treating generally of it, thought themselves extremely happy in their allusions, when comparing the hull of a ship to a fish, or water-fowl, arguing from thence, and with much ingenuity, that as nature was undoubtedly the most scientific architect, and

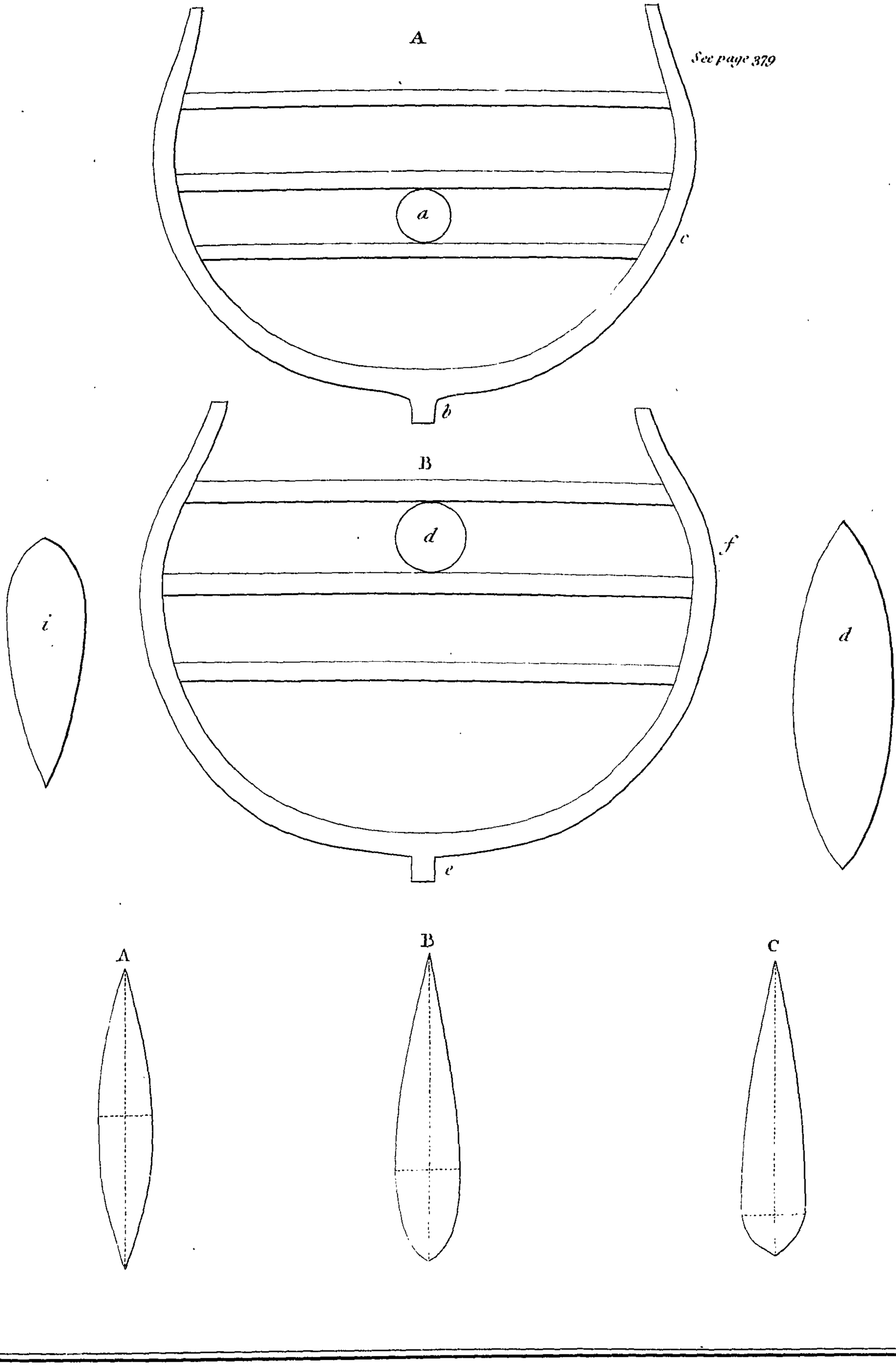
* The result of this experiment, with many others of a similar nature, exactly corresponds with the theory of Captain Schank. See page 339.

best

best acquainted with her own laws, no better system could be adopted than that which should be analogous and strictly conform to the precepts which her wants had apparently pointed out. The reasoning is just, and, generally speaking, strictly correct. The fish, say the naturalists, which swim fastest, are of considerable length in proportion to their breadth and very trivial depth; their extreme breadth is placed very forward, from whence it is to be presumed that the resistance occasioned by the pressure of the water being removed almost suddenly, instead of gradually, the closure of the fluid answering to the term minus pressure, tends, in conjunction with the wind, to the impulse of the floating body. Experiment, however, has not strictly accorded with this speculative theory, since it will be found that the body marked *d*, in the annexed plate, where the extreme breadth is in the centre, experiences far less resistance than *i*, whose form certainly bears much closer analogy to a fish than the former. Nevertheless the examination of the theoretical argument will prove how far correct the same reason that is given for the velocity of a long fish may with truth be adduced in proof of the principle remaining equal, firm, and immoveable, in the instance of a ship: and to what degree the laws of nature seem consonant, in both instances. But although nature may have formed some fish, say observers, to pass through the fluid with great velocity, a velocity acquired in consequence of their length, yet such fish are incapable of turning fast, and thereby fish which are not swift, are enabled to escape the pursuit of their foes who incessantly follow them. The same principle will not perfectly bear out the theorist in the instance of ships. The short vessel is undoubtedly enabled to tack, and put about with greater facility and speed than one of greater length; but, notwithstanding this, the superiority in sailing will inevitably prove more than a counterbalance for the advantage just stated. In respect to the velocity derived by vessels on account of their length, it is to be accounted for in the simplest and on most satisfactory grounds. The head resistance once overcome, the lateral friction is so comparatively trivial as scarcely to need notice; and in proportion to the increase of length not only the stability is augmented but the power is given of adding to the impulsive force, by the use of extra masts and sails. 'Tis on this ground that long vessels are endued with greater velocity than those of shorter construction, while the increased lateral resistance allows also at the same time an augmentation of the impulsive power; and it were an insult to the meanest understanding to enter into any argument on its effects.

CHAPTER

See page 379

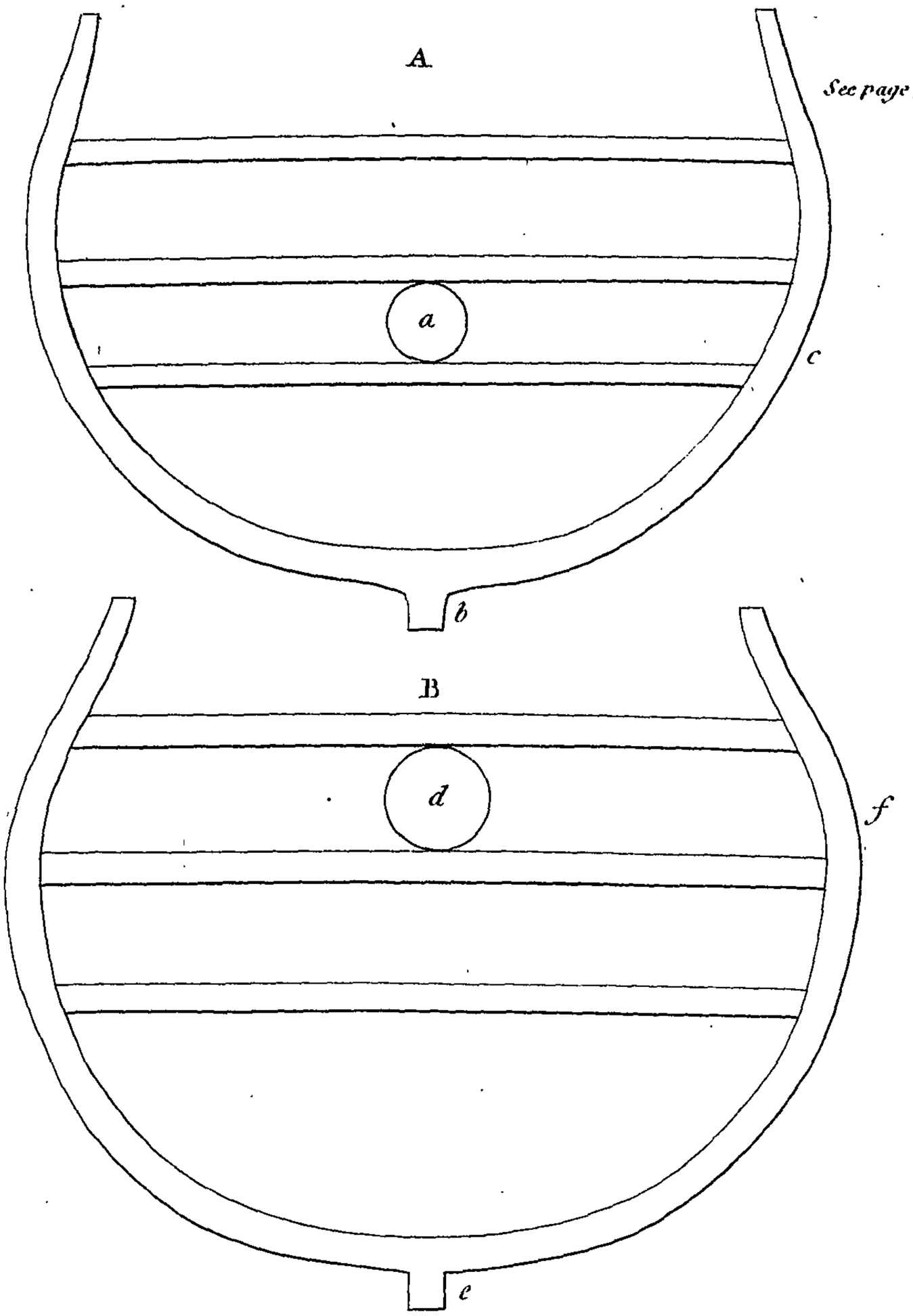


Flotation and Stability.

London. Published as the Act directs. March 31st 1800. by Cadel and Davies Strand.

best acquainted with her own laws, no better system could be adopted than that which should be analogous and strictly conform to the precepts which her wants had apparently pointed out. The reasoning is just, and, generally speaking, strictly correct. The fish, say the naturalists, which swim fastest, are of considerable length in proportion to their breadth and very trivial depth; their extreme breadth is placed very forward, from whence it is to be presumed that the resistance occasioned by the pressure of the water being removed almost suddenly, instead of gradually, the closure of the fluid answering to the term minus pressure, tends, in conjunction with the wind, to the impulse of the floating body. Experiment, however, has not strictly accorded with this speculative theory, since it will be found that the body marked *d*, in the annexed plate, where the extreme breadth is in the centre, experiences far less resistance than *i*, whose form certainly bears much closer analogy to a fish than the former. Nevertheless the examination of the theoretical argument will prove how far correct the same reason that is given for the velocity of a long fish may with truth be adduced in proof of the principle remaining equal, firm, and immoveable, in the instance of a ship: and to what degree the laws of nature seem consonant, in both instances. But although nature may have formed some fish, say observers, to pass through the fluid with great velocity, a velocity acquired in consequence of their length, yet such fish are incapable of turning fast, and thereby fish which are not swift, are enabled to escape the pursuit of their foes who incessantly follow them. The same principle will not perfectly bear out the theorist in the instance of ships. The short vessel is undoubtedly enabled to tack, and put about with greater facility and speed than one of greater length; but, notwithstanding this, the superiority in sailing will inevitably prove more than a counterbalance for the advantage just stated. In respect to the velocity derived by vessels on account of their length, it is to be accounted for in the simplest and on most satisfactory grounds. The head resistance once overcome, the lateral friction is so comparatively trivial as scarcely to need notice; and in proportion to the increase of length not only the stability is augmented but the power is given of adding to the impulsive force, by the use of extra masts and sails. 'Tis on this ground that long vessels are endued with greater velocity than those of shorter construction, while the increased lateral resistance allows also at the same time an augmentation of the impulsive power; and it were an insult to the meanest understanding to enter into any argument on its effects.

CHAPTER



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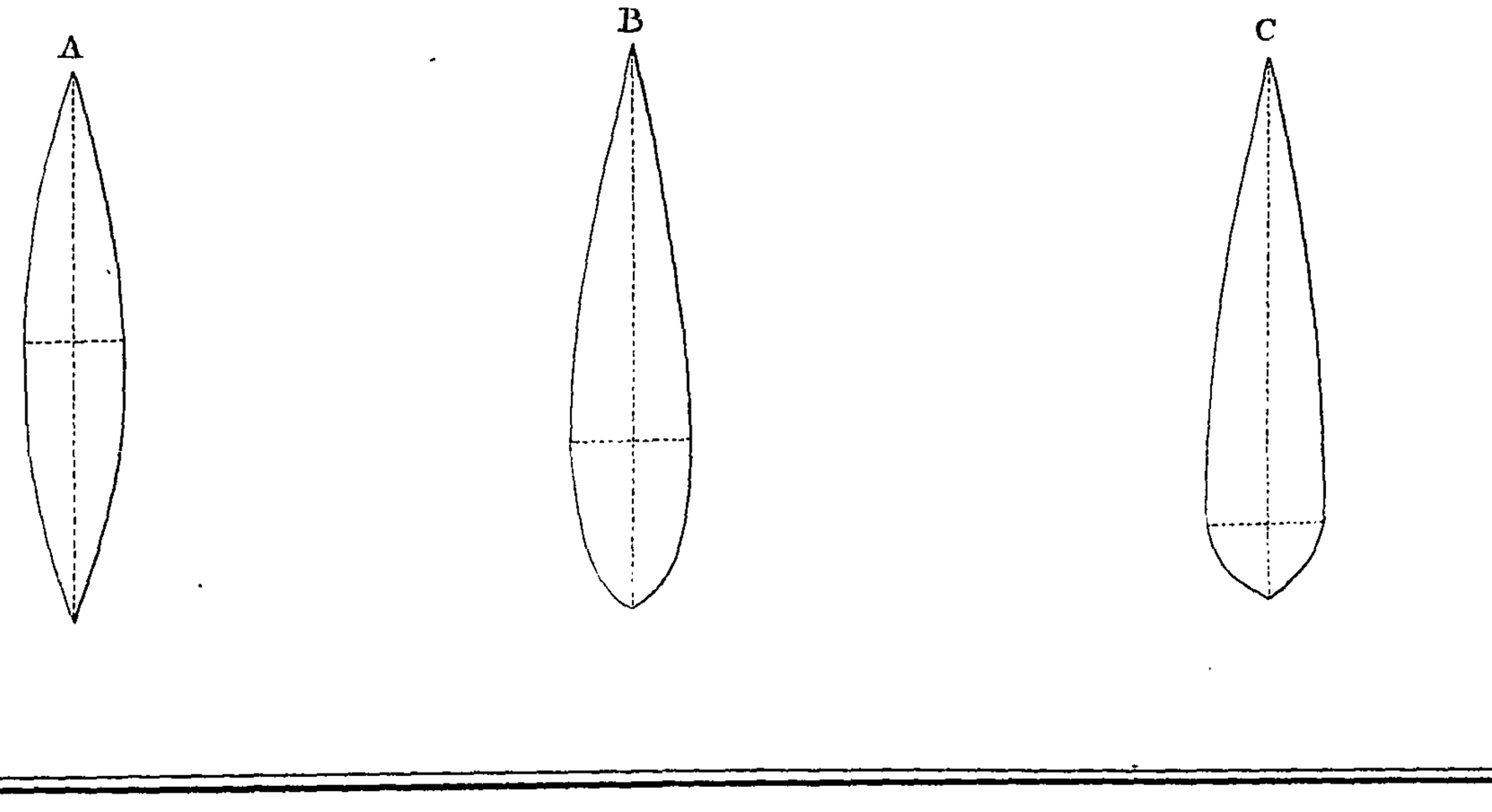


Flotation and Stability.

London. Published as the Act directs. March 31st 1800. by Cadel and Davis, Strand.

CHAPTER THE SIXTEENTH.

Causes of the Imperfections which have frequently pervaded the different Series of Experiments made in Marine Architecture—Observations on the Trim and Form of a Cutter—Singular Alterations produced in the Sailing of a Vessel by the most trivial Change in the Situation or Position of the Ballast, and Cargo—Multiplicity of Points which require being attended to in Marine Architecture—Simplification of the different Classes of Shipping—Proposals for the Construction of an Elastic Boat, or Vessel, formed of Metal, for the Purpose of Experiment in the different Requisites, and Branches of Stability, Flotation, and central Gravity, shewing that by the Adoption of such a Measure, every distinct Quality may be brought in common Contact, and under one Focus, or Point of Consideration—Description of the Arrow or Dart Sloops of War—Account of the Transit, the Life Boat, and the different Experiments tried in Construction of Vessels adapted to that philanthropic Purpose.

SOME theoretical writers have made use of strong arguments, in respect to the situation of the extreme breadth, which they have wished should be predominantly near the head: experiment in some instances, as already remarked, verifies the truth of this theory, but in others disproves it. Two parabolic cones, for instance, having one common base, that is to say, having their broad ends placed against each other, moved at the velocity of two miles an hour swifter than a parabolic cone having an obtuse end; rendering the whole of the same length as the figure first mentioned. On increasing the weight, and consequently the velocity, the second figure, which by way of distinction shall be named B, became equal to A. A third figure, which may be called C, of the same parabolic form in its after part, but with a materially contracted fore-body, the main breadth being placed within one-seventh part of its bow, or head end, still remained somewhat deficient in velocity. When the weight was still further increased, so as to augment the rate to nearly five miles an hour, it became deficient, and C was rendered equal to B. Chapman, the celebrated marine architect, who has given the experiments just quoted, has not proceeded into the higher velocities, probably owing to the difficulty of ascertaining the results with correctness; but

but

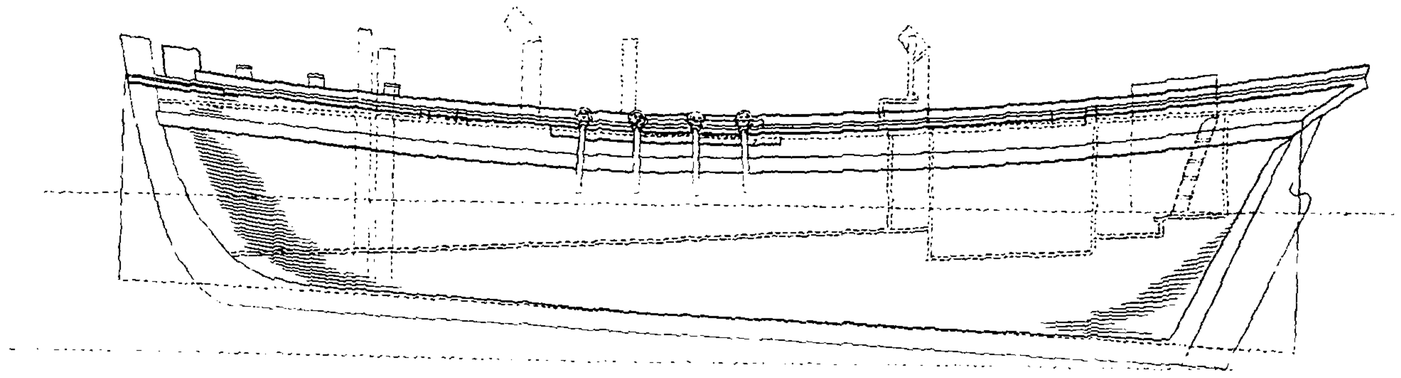
but there is little reason to doubt but that the rate, in proportion to the augmented velocity, would still continue to increase in favour of C.

Considerable doubt and dispute respecting the principles of marine architecture has been occasioned by the persons who have entered into the system of making experiments, resting satisfied with partial results instead of pursuing the series, with a proper enthusiasm, as far as industry can carry it. It has been proved that there is a considerable variation in the proportionate rates of bodies, which is occasioned by the different degrees of velocity with which they are impelled. It is even possible that, in the selection of twelve different blocks, representing the hulls of ships, that which is moved with the least impulse at the rate of one mile per hour may acquire the greatest, when the velocity shall be augmented to eight; and on this shoal the opinions of very many learned and ingenious persons have unfortunately struck. Content with the establishment of one fixed point only, they have rendered it the base of all their arguments, as though it were a rock not to be shaken by reason, by argument, or by facts themselves.

It was observed in the preceding chapter, that the vertical lines are all considered as principally tending to the stability of a vessel, and its horizontal lines to the velocity of it; this division seems perfectly consonant to common reason, and may therefore, it is trusted, be admitted without much difficulty, or dispute. It has been given as the fixed irrevocable opinion of the most scientific men, that a ship should always be so constructed as to sail with an even keel, a point which would very materially contribute to the preservation of its trim; that its breadth should be carried well forward; and that its after-body should diminish gradually from the midships; that the several water-lines should be rounding, or what in the language of the architect are termed fair: since nothing can be so injurious to the sailing of a ship as a hollow line.

There is an essential difference in the construction of vessels, passing under different denominations, and specially intended to answer different purposes. A cutter, for instance, would have its rate very materially diminished, provided its head were brought down as low as that of a square rigged vessel, or its trim much altered from that given as a specimen in the plate annexed, which is the draught of a vessel under that description now in existence, and employed in the service of the custom-house, on the western coast. The reported excellence of its qualities, in every particular of service, have induced the insertion of it, and there can be little reason to apprehend but that a perseverance in the same principles will, on any future occasion, be equally productive of the same good effects.

Sheer Draft.



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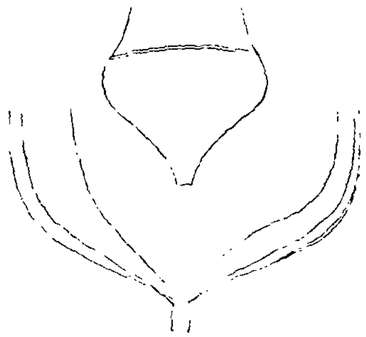

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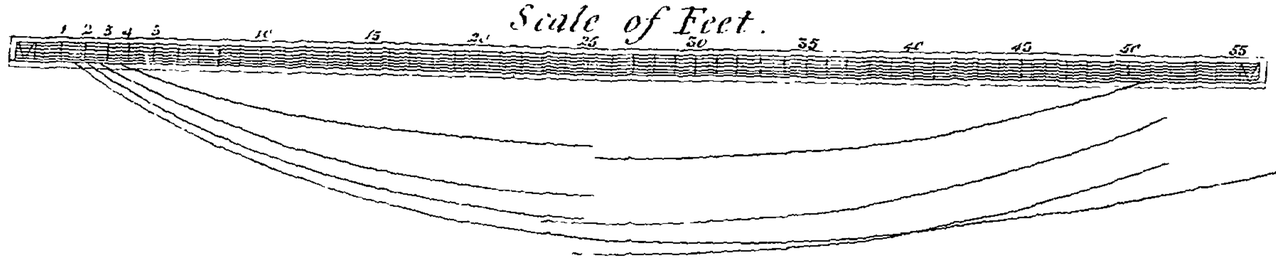

Horizontal Plan.

Draft of the Busy Cutter, in the Service of the Customs.

London. Published as the Act directs. March 25. 1802. by John Sewell. Cornhill.

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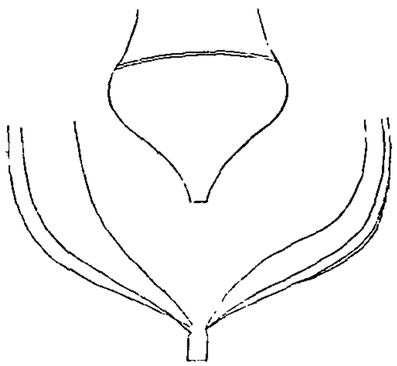

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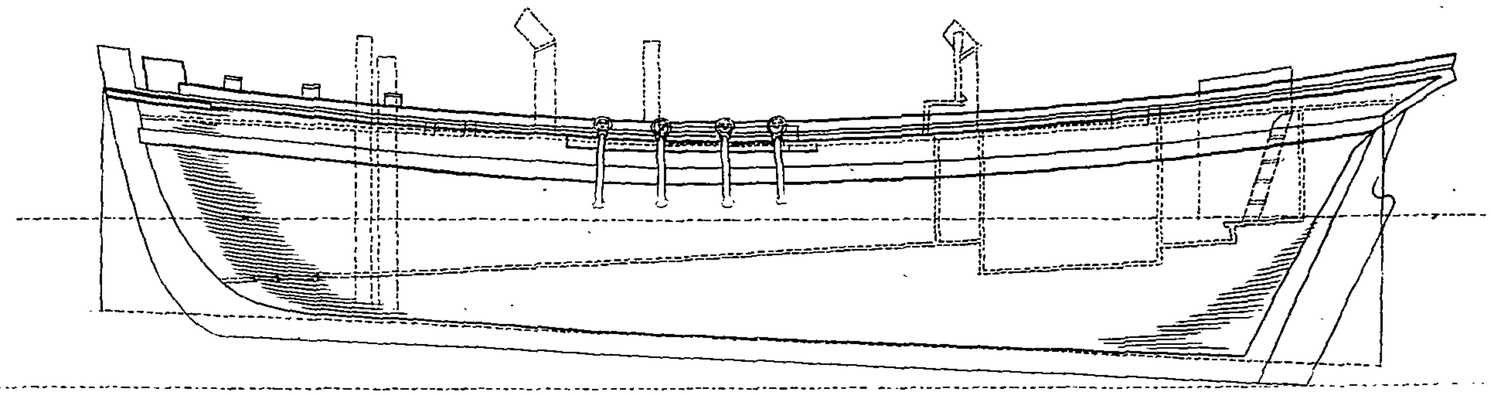

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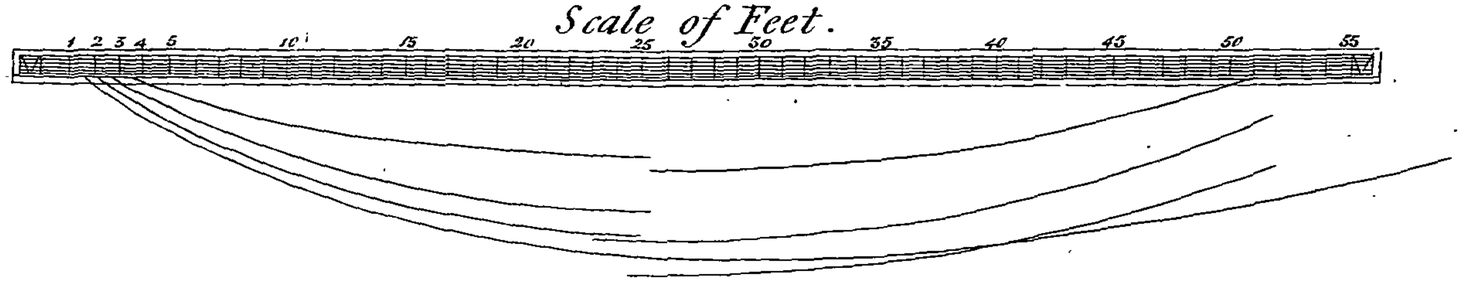


Horizontal Plan.

Draft of the Busy Cutter, in the Service of the Customs.

London Published as the Act directs. March 25. 1802. by John Sewell. Cornhill.

effects. To return to the subject of what is called trim: * It is one of the most delicate points in the art of navigation, and rather demands the consideration and attention of the seaman, than of the marine architect. Should the latter carefully construct a ship on the most scientific principles, and those which experience had proved the excellence of, it would, nevertheless, be no difficult task for the pilot, or commander, entrusted with the management of such a vessel, to completely undo, and render it of no effect, long as his ignorance or his obstinacy were permitted to be persevered in, while opposing the labour and study of the contriver. About the year 1779, a British frigate, of 38 guns, and one of the first vessels built in England of that enlarged class, was constructed according to a form which the most attentive and experienced theoretical opinions considered as likely to be conducive to velocity, as well as stability, two points with propriety considered as the principal desiderata. The vessel, however, when launched, and fitted for sea, was found by no means to answer the intentions and wishes of her builder, and she continued to remain under the same species of disgrace for some weeks, till after a variety of experiments tried, all of which proved either totally, or at best partially ineffectual, it was discovered, perhaps accidentally, that the simple operation of

* A cutter so materially varies from every other description of vessel, that it becomes particularly necessary to enter into some detail of its principles, and the reason which causes its line of flotation to make that angle with the horizon that it does, as seen in the draught given opposite, page 404, supposing the vessel to be in proper trim. It has been already shown, by the experiments hitherto made, that the bow of a vessel meeting the fluid in a diagonal instead of a nearly perpendicular direction, will experience far less forcible opposition in the former, than in the latter instance. The stem of a barge being of the description just mentioned, causes it, as it were, to slide through the water, and materially increases the facility of the passage beyond what would prove the case, were its form more analogous to that of a sloop. The same cause is productive of the same effect, in the instance of the cutter. The opposition made against the bow itself is comparatively trivial; it appears, like the barge, to slide as it were along the water, which suffers the greater part of the keel to pass through it almost without opposition. The stern, which is extremely fine or taper, consequently experiences very little resistance, but descending to a considerable depth in the water, necessarily contributes very forcibly to stability, and causes the vessel, under a proper and judicious management of the sails, to turn, as it were, on a pivot. For this reason, the bow of a cutter is frequently more full than might be considered well adapted to a swift-sailing vessel: nor would it, were the line of flotation in any degree parallel to the keel; but spreading as it does aloft, it serves to drive the spray, or break of the sea from the bow; while the depression of the stern and superior capacity of the topside towards the bow, with the consequently impulsive quality of the aftermost sails, cause a proper counterbalance to the depression just mentioned, and propel the vessel in question through the water with greater velocity than many others of a different description.

running the two bow guns completely aft, entirely effected the wished for purpose, and enabled the vessel in question, to sail as well as any ship, and superior to the majority of those, even in her own class, which were then in the British navy. If so trivial a variation in the water line, or (which is perhaps assigning a truer cause) in the disposition of the weight with which the vessel is charged, can effect so material an alteration, is it not reasonable to infer that, in other instances, where the judgment of the architect has been impeached, in consequence of a supposed failure in those principles which he, to the injury of his own reputation, had promised the completion of; the charge has been hastily and unfairly made, the disappointment not being owing to a natural defect, but to a non discovery of natural perfections?

The most perfect theory, and the profoundest knowlege, cannot extend farther than to lay down general points and principles; experiment may certainly establish, and with accuracy point out what proportion the length of a vessel should bear to its breadth: in what part of the length, the breadth when in its greatest extent, should be placed: it may shew, even beyond dispute or controversy, what is the best shape or fashion that can be given to the bow, as well as the stern. It may also, in the general acceptation of the word, serve to point out the properest method of loading a vessel, both in respect to ballast, and the various articles of stowing its cargo or stores, assigning the proper place for each distinct species, in consideration of their weight, or contrary quality. But there will still remain a considerable number of points, particularly in regard to the rigging, and the size, as well as fashion of the sails, which require no less attention than the formation of the hull. Nothing but the happy combination of a myriad of points, brought into one focus, can produce perfection in the three classes which the shipping of all countries must be divided into. War, commerce, and dispatch, are the different masters whose service is to be attended to, and the slightest reflection will readily point out to the understanding, even of a novice, what are the peculiar requisites which demand his first attention in that department, which inclination or necessity shall cause to be the object of his study.

Numerous as are the points which must be attended to, even in the study of a single branch, the simplification of the various methods by which theoretical study may be experimentally assisted, has certainly within the space of a few years, contributed more effectually to improvement, than the disquisition and united labours of preceding centuries. There appears too, one simple method, by which, if

if mechanical impediments should not rise in opposition to the execution of the design, the points of stability, flotation, with every other subordinate property and requisite might be ascertained with greater truth, perhaps, than they have been by any series of experiments hitherto contrived, notwithstanding those which have preceded certainly possess far more science than that which is now proposed. If the frame of a vessel, for instance, twenty-five feet in length, was formed of metal, with transverse pieces representing the beams, every rib of the said frame being fitted with three joints, and the transverse pieces, of which there should be three tiers, that they may correspond with the beams of a ship, doubled, so that by means of a rack and pinion they might be elongated, or contracted as inclination should require; there is little reason to suppose that such a piece of mechanism could not be made to take any form that should be deemed requisite to represent a vessel of that particular class which the model, according to the divisions already assigned, should be intended to make experiment in. That is to say, in order to give the clearest possible definition, that three model frames, constructed with attention to the primary points required in vessels intended for the purposes of war, commerce, or expedition, would enable the investigator experimentally to clear up many of those difficulties, which neither theory has as yet been able to solve, nor experience to remove. The external part, answering to the planking of a vessel built for real service, may be formed from thin plates of copper, which being screwed to the frame on the upper edge only, the lower one lapping over that immediately beneath it, and the entrance of the water excluded, as it may be, by the introduction of flannel, well moisted with oil, between the joints, lapping over each other at the ends also, for the purpose of causing both vertical and horizontal elongation and contraction; the floor might be rendered contracted or flat; the futtock strait or curved; the breadth of beam narrowed or enlarged; the bow as well as stern, full or acute; in short, the form of the vessel may be varied to a certain extent, and that extent prove sufficient for every purpose of experiment that can reasonably be required, or real utility demand. Stability, flotation, stowage, or central gravity, with a variety of subordinate points and considerations, may all be investigated with much greater certainty and precision, provided the scheme be mechanically practicable, than they can be by any other means. Though some objections and indeed difficulties may arise, yet the magnitude of the expected advantage may, perhaps, excuse whatever may be considered romantic in the proposal.

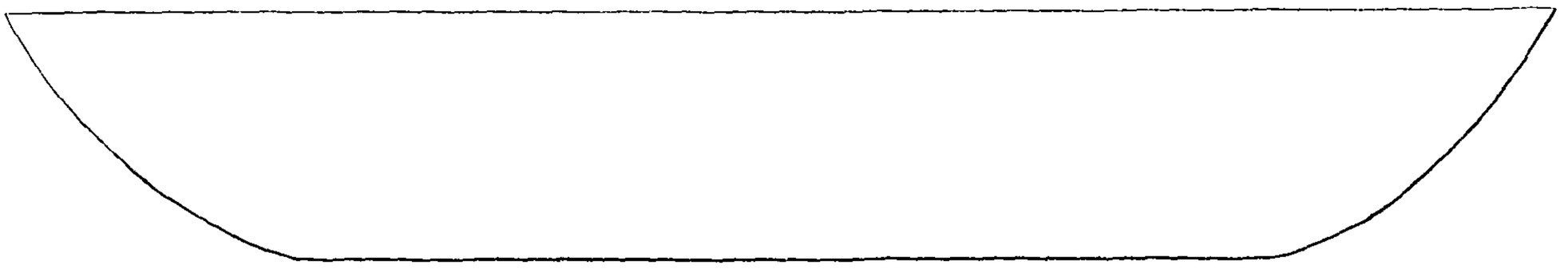
Britain and France have not confined their studies to the experiments on models, but have extended their disquisitions into actual practice, by constructing vessels totally dissimilar to any that have been heretofore in use. One example of this contempt for ancient prejudices appears particularly in two vessels * built for the royal navy, in which many former principles of supposed excellence are acted in complete opposition to. They are, nevertheless, vessels which have been navigated for some years, without injury to the lives of those on board; and one of them especially has effected, under the conduct of its brave commander, and his people, a most material service. This circumstance proves at least one point, and that most materially conducive to the interest and improvement of marine architecture. It serves as a most useful lesson to mankind, that contempt and prejudice are frequently taken up with unwarrantable peremptoriness, and on some occasions continue to be long fostered, when confirmed experience may, perhaps, excite future admiration at their having been entertained for a single moment. The present argument is not offered with the slightest intention of individual, or personal application, but merely as a general principle which ought to pervade the conduct of all mankind, and in all cases; not solely those relating to marine architecture, but to every other branch of science or mechanical knowlege. If, for instance, a projector in any class shall boldly and patriotically stand forth and propose any scheme or system for the benefit of his country, he is undoubtedly entitled to at least a candid hearing, and a fair trial: acting on this principle, there are very few new projects which, though they may be far from complete, do not contain some points entitling them to praise, if not encouragement. A kind reception might cherish the rising bud of ingenuity till pruned in respect to its exuberances, by the hand of the possessor, and matured by the genial warmth of surrounding applause, that which, on its first production, was neglected, or perhaps condemned, becomes matured into a flower, diffusing pleasure to all those who behold, or approach it.

To return, however, to the Arrow, one of the vessels in question, it has neither floor nor crooked line in its whole construction; the head and stern are exactly similar to each other, so that like the Indian proa, if the nature of the sails permitted, and the rudder could be shifted without difficulty, there would be no necessity of ever putting the vessel about. The midship body is of considerable length, and the topside straight, so that the whole form, which is extremely simple, may be described by three angles. The form of this vessel completely

* The Arrow and Dart.

offends

Sheer Outline.



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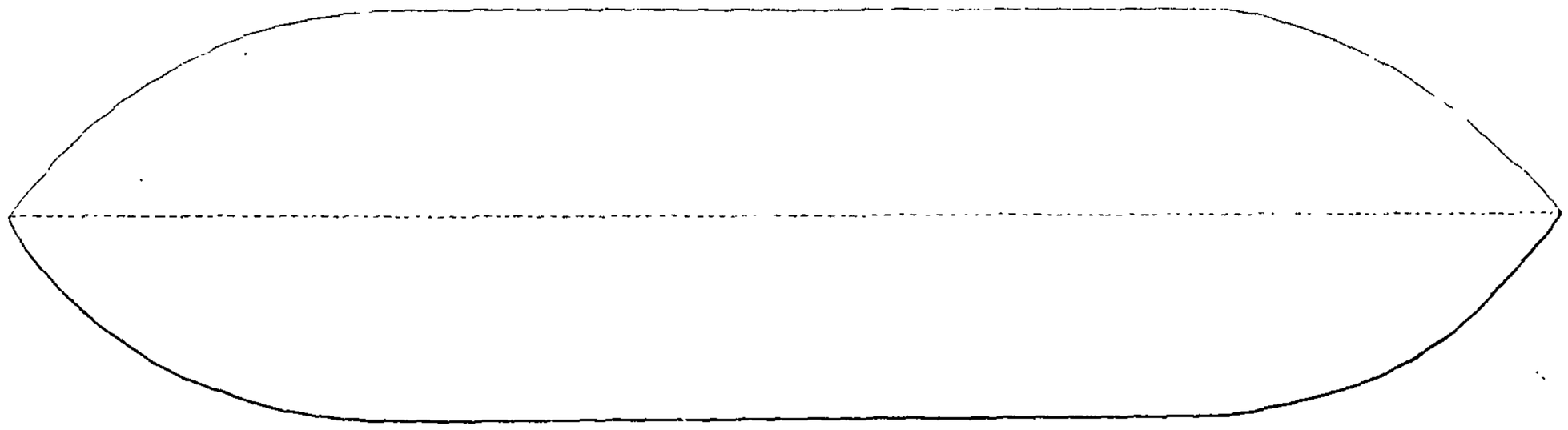
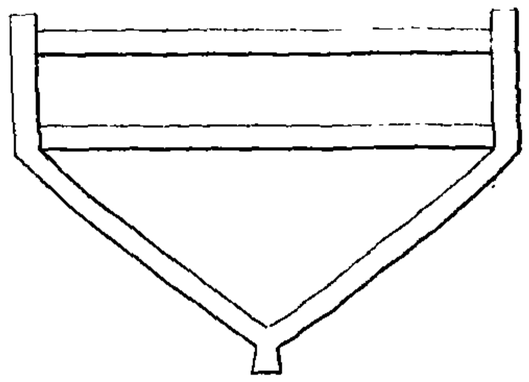


Midship Section.



Scheme and Outline of the Arrow and Dart.

London, Published as the Act directs March 25. 1802. by John Sewell, Cornhill.

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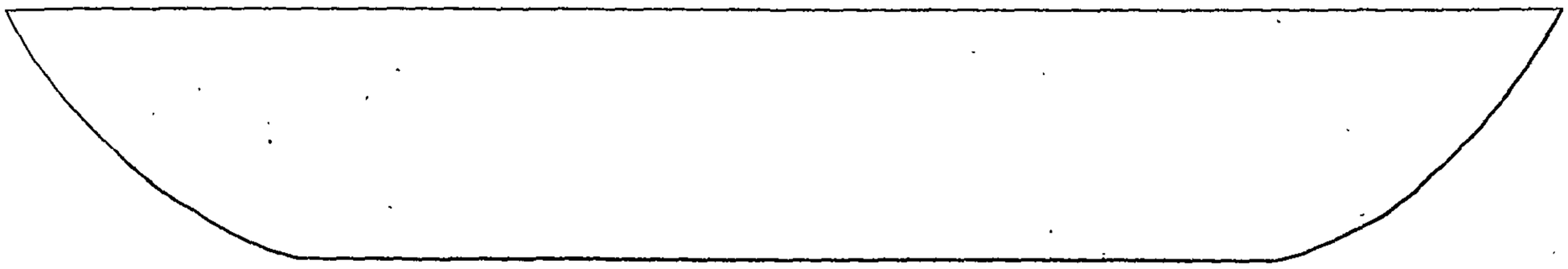
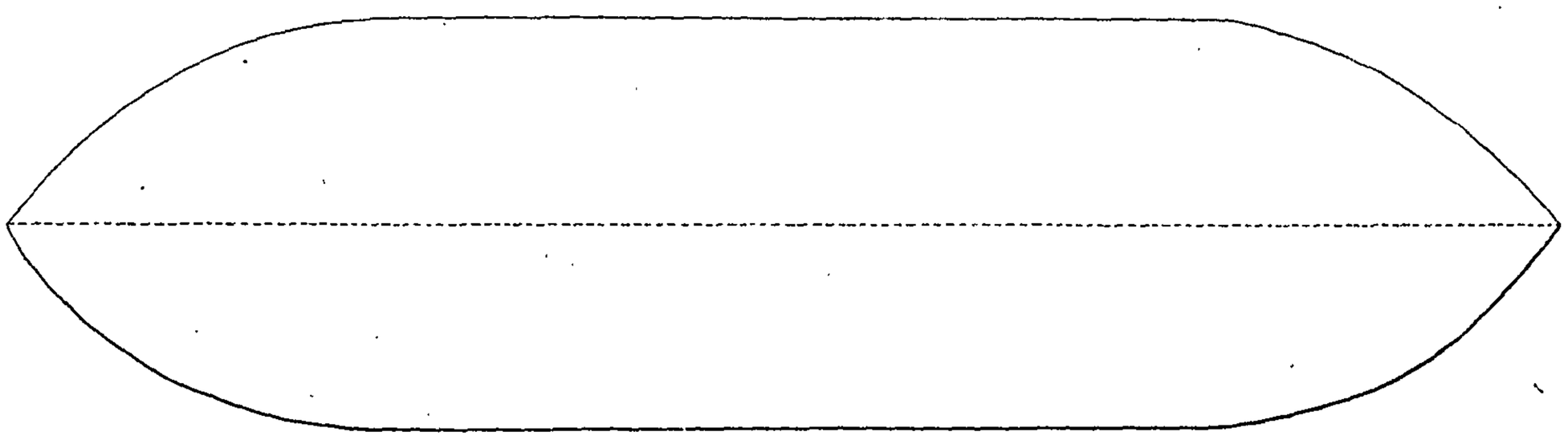
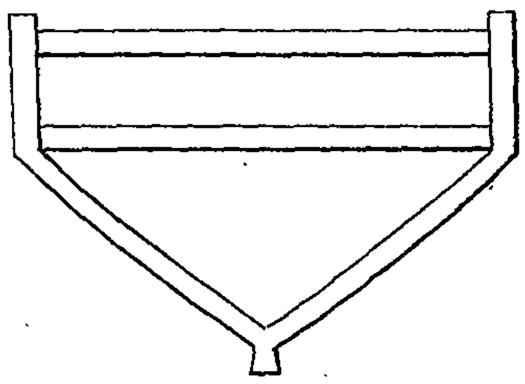


Horizontal Outline.

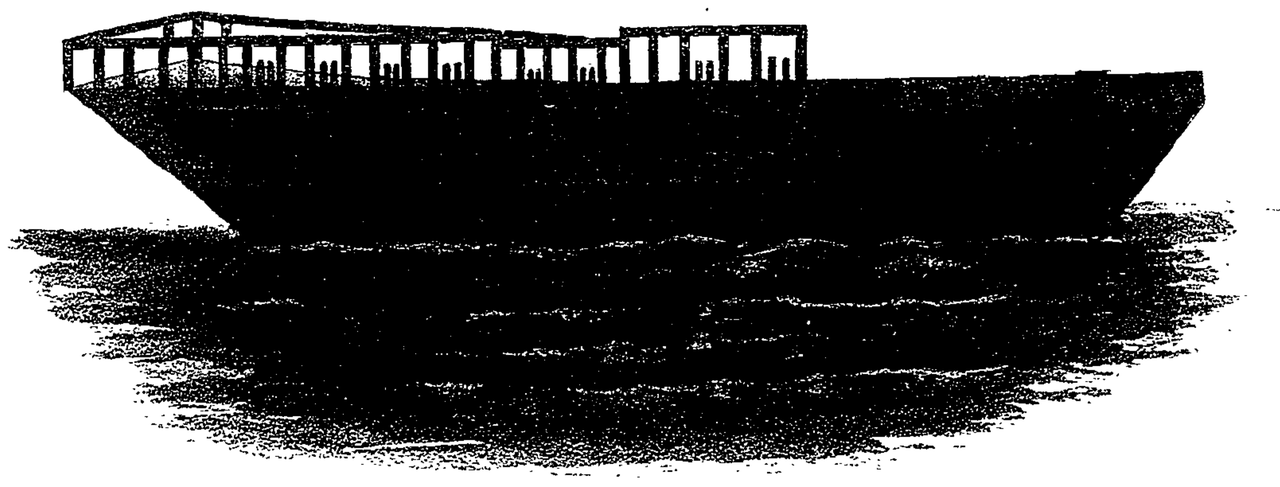


Midship Section.



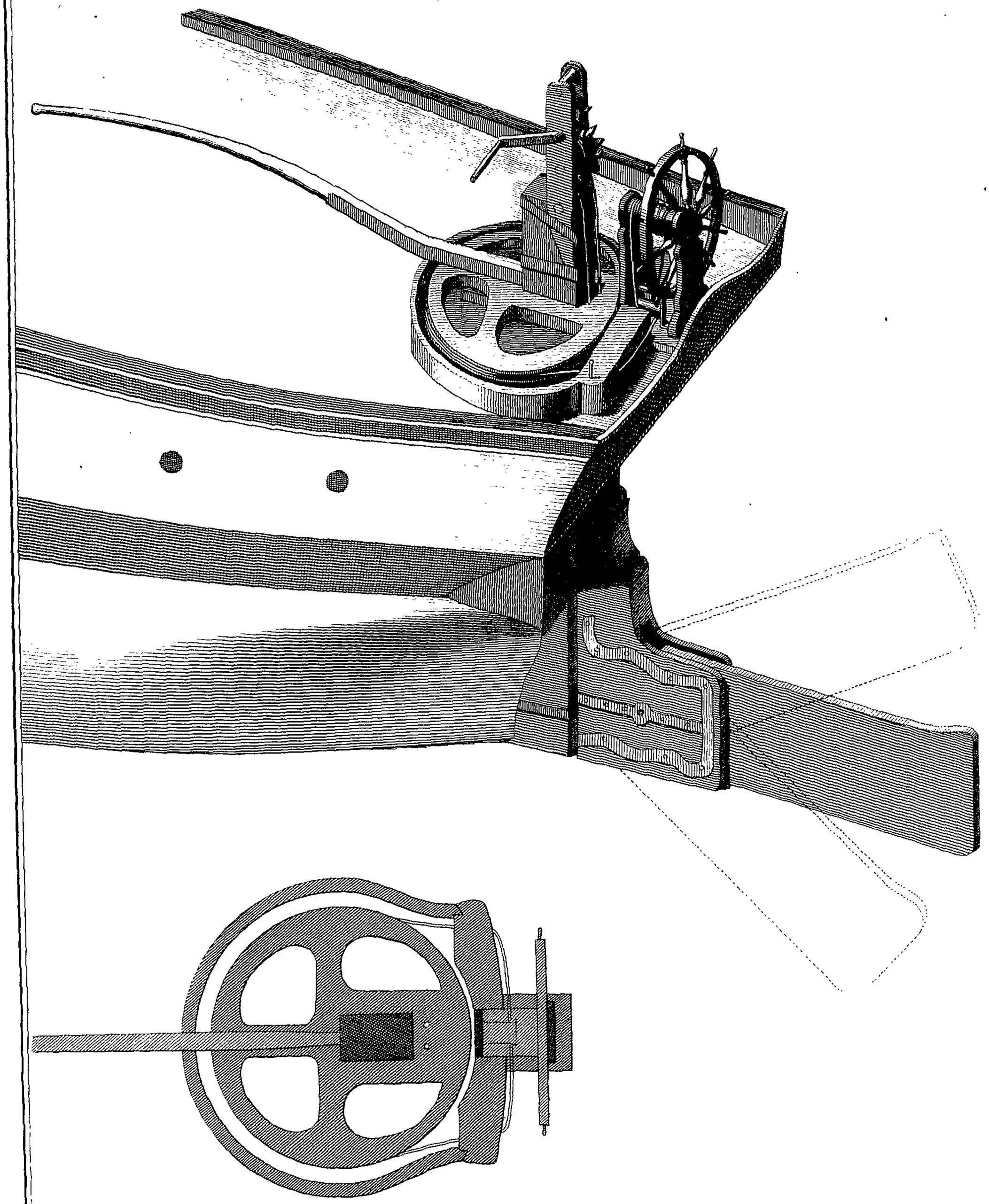
Scheme and Outline of the Arrow and Dart.

London. Published as the Act directs. March 25. 1802. by John Sewell. Cornhill.



Hall Sculp.e

The Spanker Floating Battery.



J.Charnock del.t

Newton Sculp.t

View and Plan of the jointed Rudder, Invented by Captain Schank.

London, Published as the Act directs March 25. 1802. by John Sewell, Cornhill

offends against the experiments made by Mr. Gore,* and proves, were any proofs necessary, how strongly the minds of the most ingenious men may be directed, to effect the same purpose by points opposing each other, and how wonderfully different principles may so far act in happy opposition as to destroy impropriety itself. It was once remarked by one of the most ingenious men that ever lived, that paradoxical as it might be thought, the coincidence and co-operation of imperfection, singly taken, was on some occasions fortunately productive of perfection itself. To the Arrow succeeds the introduction of a vessel equally singular,† the property and invention of a private gentleman, named Gower, differing only in the spelling of the name from the former, who had been employed many years as an officer in the service of the East India Company. In some respects it bears no small degree of resemblance to the Arrow, its midship frame being long, the lines of the hull, under water, nearly alike, both in the head and stern. But as inspection will convince, it varies materially from the vessel first mentioned, in having a floor which, though to be considered flat, is of singular form, and a keel of extraordinary depth : nor is invention on this occasion confined solely to the newly formed lines of the hull, but extends to the sails as well as rigging, from which the ingenious contriver has found the greatest advantages to be derived in their present state, and of which he himself gives the ensuing description :

* See page 378.

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A small brig, fitted with sliding keels, and being of little more than sixty tons measurement, has lately proceeded to Botany Bay, where she arrived in the most perfect safety, and without sustaining the smallest injury on her passage, though having encountered the most inclement weather, which very materially injured a number of ships that were then at sea, and in the same quarter with herself.

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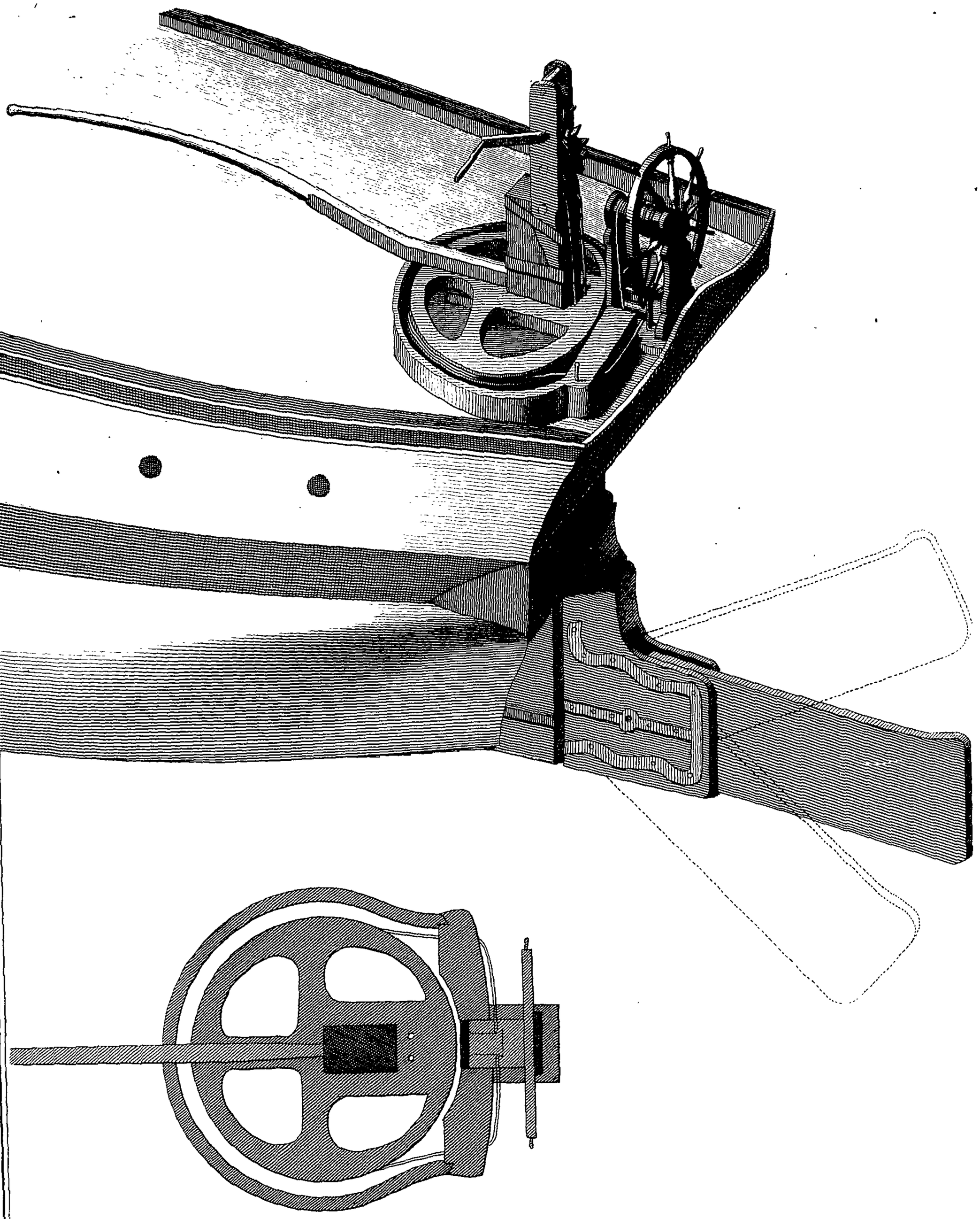

J. Charnock del.t

Newton Sculp.t

View and Plan of the jointed Rudder, Invented by Captain Schank.

London. Published as the Act directs. March 25. 1802. by John Sewell, Cornhill.

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"The construction of the Transit is grounded on philosophic principles, which admit of the following material advantages over square-rigged vessels in general: First, in being more weatherly, and sailing faster with a less proportion of canvas. Secondly, in requiring less weight of cordage and lighter masts, which are combined together with such uniformity and simplicity as to allow of very considerable economy in the system of masting and rigging. Thirdly, in being under great command of her helm; less subject to sternway; not liable to any material accident when brought by the lee; and the performing every necessary manœuvre in a superior manner. Fourthly, in the easy reduction of her sails, which, for the most part, being very small, are not likely to be split and torn in pieces by the wind. Fifthly, in the exceeding lightness and snugness of the rigging, which does away with its wear and tear in a very considerable degree, and at the same time materially reduces the labouring and straining of the hull. Sixthly, in the masts not depending upon each other, or upon the bowsprit for support, which renders the vessel less liable to be dismasted; for one of them may fall without doing any particular injury to the rest. Seventhly, in the smallness of the after-masts, which will allow of spare ones being taken on board; and by their being stepped in trunks upon deck, they may be replaced even at sea. Eighthly, in riding exceedingly light at anchor. Lastly, in being peculiarly well constructed for the accommodation of passengers and crew, and remarkably well adapted for warfare."

Although the greater part of those trials that have hitherto been made with the vessel just mentioned, have tended merely to the correction and improvement of some defects, with which the most ingenious inventions will sometimes abound, yet experimental proof, particularly in the enlarged extent of that in question, has, in the more improved state, completely answered every hope and expectation of the contriver; so that although prejudice against innovation and predilection, in favour of ancient customs, may, perhaps, oppose with an apparently determined firmness, yet in this, and every other instance whatever, they will be finally overcome, and compelled to quit the field of contest, when opposed by reason and truth.

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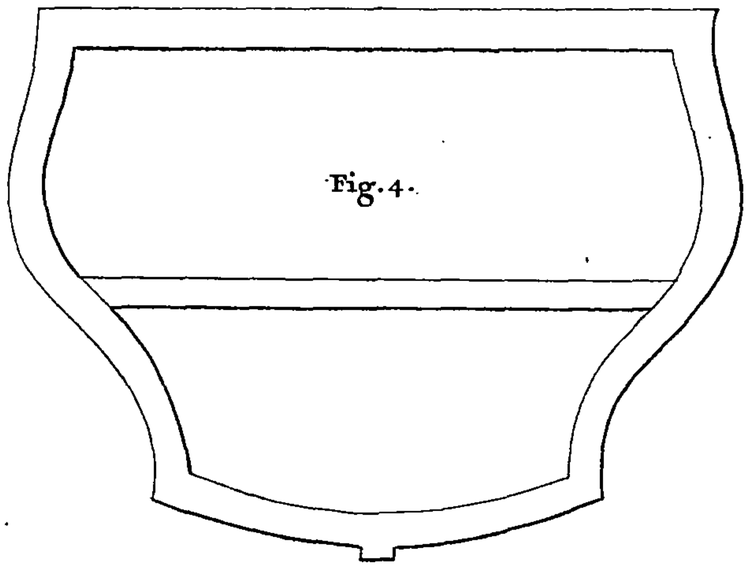

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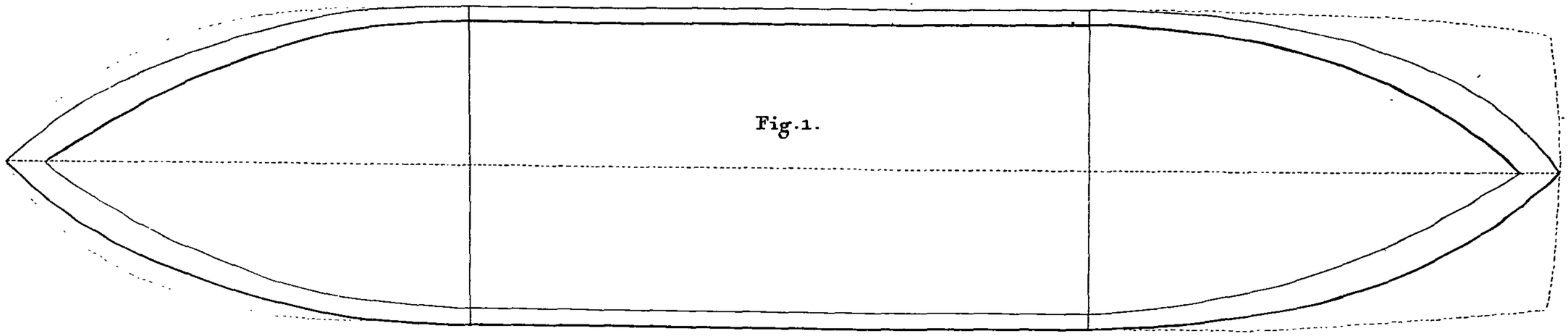

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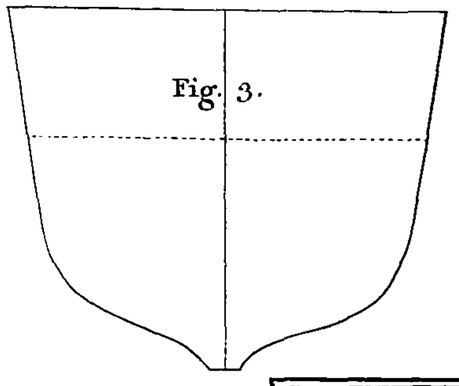

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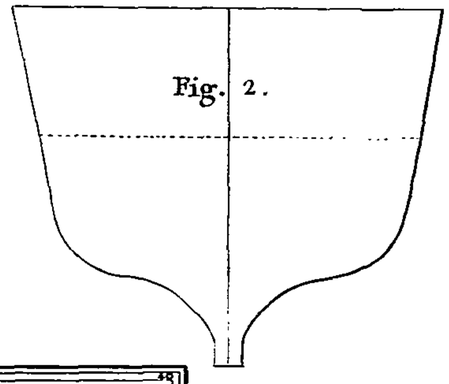

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Scale of Feet.

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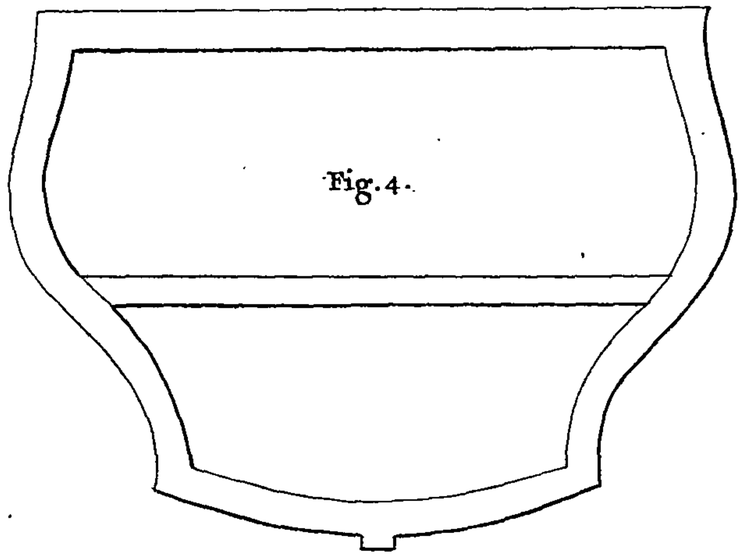

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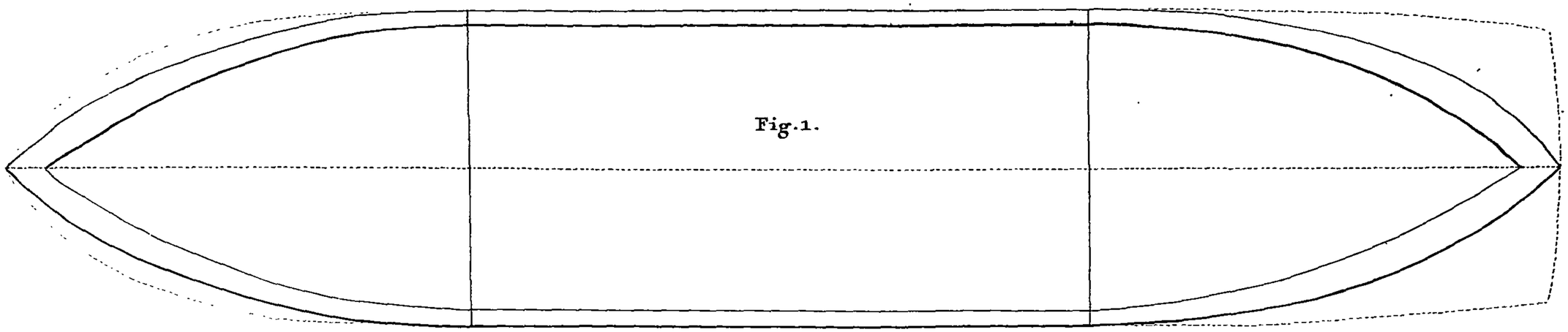

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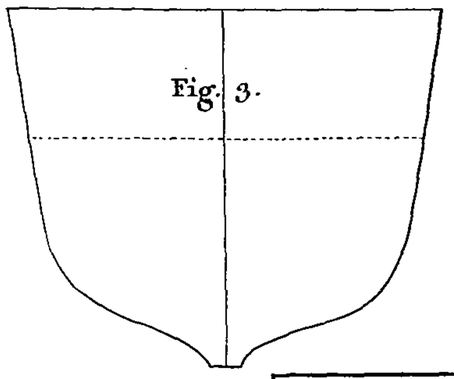

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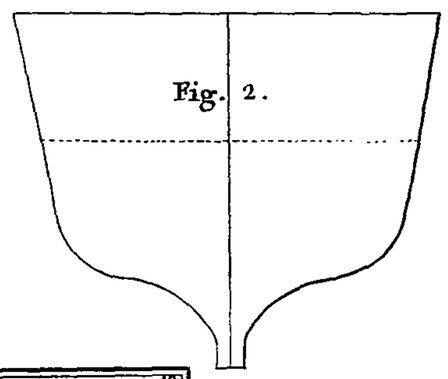

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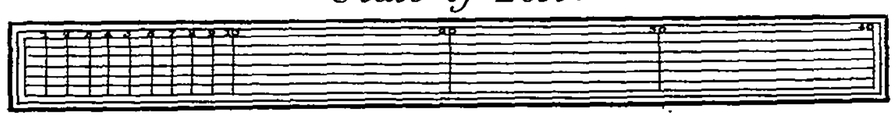

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many persons, to the extraordinary depth of the keel, and the supposed danger consequently arising out of that peculiarity, which it is supposed must inevitably attend such a vessel, if once suffered to take the ground, would be removed. Among the various improvements also, that have in recent times been introduced into marine architecture, that of the Cornwallis snow, a vessel built in India, whose midship frame is represented by fig. 4, must not be forgotten. From the account given by those persons who were employed in navigating the vessel alluded to, it far exceeded, in the qualities both of stability and velocity, any they had ever before sailed in; and full credit may perhaps be given to the assertion, when the principles of it shall have been examined. The extraordinary breadth of the floor would, of necessity, cause the projection of what is called the futtock, and would naturally render the vessel stiff, as well as capable of carrying almost any quantity of sail that could be packed upon her; so that a proper length of keel, and the same degree of attention to points bestowed on the mid-ship frame, applied to the bow and after body, could not fail to produce all those united principles of perfection, which theory has so long aimed at the acquisition of.

The conclusion of this catalogue, (for so abstract an account, which is necessarily occasioned by the impropriety of giving a decided opinion on discoveries so recent, can scarcely be said to merit any other term,) cannot take place with the description of any vessel, whose existence shall be more consonant to the feelings of humanity, and the voice of philanthropy, than the life-boat, as it is appositely called, built under the inspection, and by the subscription of a few private persons at South Shields, who had been the immediate spectators of the many dreadful disasters which had overwhelmed ships driven on the sands, at the south entrance of Tynemouth harbour, for the truly valuable purpose of attempting the preservation of persons so unfortunately circumstanced. A boat was accordingly built about thirty feet in length, and ten feet broad, the sides flamming out for the purpose of preventing the broken waves from running into the boat. It was decked at the floor heads, rowed with twelve oars, and steered also by one: it was covered with cork on the outside, two or three streaks down from the gunwale, and was found to answer the expected purpose so fully, that though cork jackets were, for the production of the greater safety, purchased for all the people, when the boat was first employed, they were almost immediately disregarded, and after a very short time, never taken to sea. The success of this most amiably noble measure caused it to be followed by his grace the Duke of Northumberland, who at his own expence, caused a second boat to be built on the same construction; and by the

the united efforts of these philanthropic colleagues, the lives of some hundreds of persons have already been fortunately preserved, who would otherwise have fallen victims to the rage of the ocean.

Success in one respect rarely fails to excite envy, or at least, to use a more benevolent, and certainly more appropriate term in the present instance, emulation. A boat was built in the River Thames, having the space under the thwarts boarded up, and rendered water-tight, by which means though the boat itself should be filled with water, the vacuum or empty space whither it could not penetrate, would prove such a counterpoise of flotation to the weight of the rowers, as would prevent the boat itself from sinking. A variety of contrivances, all tending to the same point, suggested by several ingenious persons, appeared in different quarters about the same time, but the distinguishing points are so immaterial, as to render any specific explanation unnecessary.

The science of Marine Architecture has, for many ages, been subservient to the impulses of ambition, avarice, luxury, or curiosity: it remained for Britain, in the eighteenth century, to direct it to purposes more truly noble and patriotic, of general benefit, and of universal extent—to the prevention of domestic misery; to the maintenance of national population; and to the preservation of the human species.

THE END.

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Northumberland-Court,
Strand.

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