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## **The naval history of Great Britain**

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**London, 1837**

**ETH-Bibliothek Zürich**

Shelf Mark: Rar 36427

Persistent Link: <https://doi.org/10.3931/e-rara-80794>

Introduction.

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## INTRODUCTION.

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PREVIOUSLY to our entering upon the main subject of these pages, an inquiry into the origin and early progress of the British navy, particularly as respects the constructing, arming, and classing of the ships, cannot fail to be useful, and will not, it is hoped, prove uninteresting. The Great-Harry, built in the third year of the reign of Henry VII. (1488), was, properly speaking, the first ship of the royal navy. The Great-Harry had three masts, and, as late as the year 1545, was the only ship of that description in the British fleet. She is represented to have been accidentally burnt at Woolwich in 1553. If so, she had run 65 years; which, according to the mean of modern terms of duration, was a very long period.

It is probable that the Great-Harry was the first ship belonging to the nation; but there is reason to believe that Richard III. owned a few of the ships which he employed. The remainder, as it appears, were either hired of the merchants, or supplied, under a law of the state, by the Cinque Ports. Whatever may be the doubts on these points, historians agree, that to Henry VIII. is due the honour of having, by his own prerogative, and at his sole expense, settled the constitution of the present royal navy. He instituted an admiralty and a navy-office, appointed commissioners, and fixed regular salaries, as well for them as for his admirals, officers, and sailors; and the sea-service, thenceforward, became a distinct profession.\*

Cannons, or great guns, were used as early as the thirteenth century, in a naval engagement between the King of Tunis and the Moorish King of Seville.† They were also used by the English on land at the battle of Cressy, fought in 1346; and by the Venetians at sea, in or about the year 1380.‡ According to some printed representations still extant, the English used them on board their ships in the reigns of Richard III. and Henry VII. The guns were not then, as now, pointed through embrasures, or portholes, but mounted *en barbette*, or so as to fire over the top-

\* *Archæologia*, vol. vi., p. 202, and vol. xi., p. 158.

† *James's Military Dictionary*, tit. *Cannon*.

‡ *Archæologia*, vol. vi., p. 205.

side, or bulwark, of the vessel.\* The ships, therefore, could have had but one deck; and, when it is considered that they undoubtedly had but one mast,† we may conceive what puny "ships" they must have been.

The first appearance of portholes (invented, with some other improvements, by Descharges, a French builder at Brest) occurs in the representation of the *Henri-Grace-à-Dieu*, built at Erith in 1515, and said to have measured 1000 tons. No idea, however, can be formed of this ship's actual burden, unless we knew in what manner the tonnage was cast. The invention of portholes gave the power of adding a second tier of guns; and, accordingly, the *Henri-Grace-à-Dieu* appears with two whole battery-decks, besides additional short decks, or platforms, both ahead and astern.

The nature, or caliber, of great guns, was not, as at present, designated by the weight of the shot which they discharged. One reason for this may have been, that the balls were not all made of the same materials, some being of iron, some of stone, and some of lead,‡ three substances which differ greatly in specific gravity. It appears, also, that hollow iron shots, filled with combustible matter, were very early brought into use. Hence, the weight of the shot was of too fluctuating a nature to serve for the classification of the gun that discharged it. Among the different species of English ship-guns of former days, was the "cannon," with its varieties, the cannon-royal, cannon-serpentine, bastard-cannon, demi-cannon, and cannon-petro. The term "cannon" is a singular conversion of the generic into a specific term. Its ambiguity may have given rise to the occasional substitution of "carthoun."

The *Henri-Grace-à-Dieu* appears to have mounted, in the whole, 80 pieces, composed of almost every caliber in use. Of these 80 guns, not more than 54, according to the clumsy drawing which has been handed down to us,§ were pointed through broadside ports. The remainder were mounted, either as bow or stern chasers, or as "murdering pieces," upon the afterpart of the forecastle; as, from its height and appearance, it then might truly be called. The use of these murdering pieces (the muzzles of which all point in the direction of the maintopmast head) is not easily discernible. The ship had four masts;|| and, as the *Great-Harry* was the first two-decked,¶ so the *Henri-Grace-à-Dieu* was the first three-decked,¶ so the *Henri-Grace-à-Dieu* was the first three-decked ship built in England. In a list of 1552, the latter appears as the *Edward*. Here all traces of her cease.

\* *Archæologia*, vol. vi., p. 207.

† *Ibid.*, p. 202.

‡ "Shottes of yron, shottes of stoen and leade."—*Charnock's Marine Architecture*, vol. ii., p. 44.

§ See the print in the 6th volume of the *Archæologia*.

|| *Derrick: Memoirs of the Royal Navy*, p. 8.

¶ *Archæologia*, vol. iii., p. 266.

The next British ship of any note, and the largest of all that had preceded her, was the "Sovereigne-of-the-Seas," built at Woolwich dock-yard in 1637, by Mr. Phineas Pett.\* Her tonnage has been variously stated. According to the account published by the designer of her decorations, Mr. Thomas Heywood, the Sovereign measured 1637 tons.† The exact agreement of this combination of figures with that denoting the year in which she was built, and its non-appearance in any tonnage-list of the time, render it likely that the figures, owing, perhaps, to the printer's mistake, were erroneously put together. In a list of the year 1652, the Sovereign, or, as subsequently named, Royal Sovereign, stands at 1141, in one of 1677, at 1543, and in one corrected up to 1740, at 1683 tons; a difference principally, if not wholly, attributable to the various methods of casting the tonnage in use at those several periods.

However, it is an account of the ship's armament which we most require, and that Mr. Heywood himself has been at the pains to record. "She has," says he, "three flush-deckes and a forecastle, an halfe-decke, a quarter-decke, and a round-house. Her lower tyre hath thirty ports, which are to be furnished with demi-cannon and whole cannon throughout, being able to beare them. Her middle tyre hath also thirty ports, for demi-culverin and whole culverin. Her third tyre hath twenty-six ports for other ordnance. Her forecastle hath twelve ports, and her halfe-decke hath fourteen ports. She hath thirteen or fourteen ports more within-board for murdering pieces, besides a great many loopholes out of the cabins for musket-shot. She carried, moreover, ten pieces of chase-ordnance in her right forward, and ten right aft, that is, according to land-service, in the front and the reare."‡ Numbering the guns, we find 126 as the establishment of this first-rate of the seventeenth century.

Mr. Heywood, doubtless, had no intention to mislead his readers; but, it should be recollected, the Sovereign-of-the-Seas, when he and his men were employed upon the carved work and ornaments about her, did not mount a gun. The ship lay in dock; and all that he or they could know of her intended armament must have rested on hearsay. In the total number of ports, Mr. Heywood is apparently correct. The error lies in his having filled with guns the ten ports "right forward, and the ten right aft," as well as the six in-board ports on the forecastle. Reduce these, and there remain 100; the number of guns which the ship, when fitted for home-service, actually mounted. The pamphlet, containing Mr. Heywood's very elaborate account § of this "incomparable ship," has, for its frontispiece, an alleged representation of her. But the authenticity of the drawing is

\* A "Sovereigne," of 800 tons, occurs in a list of 1527.—See Pepys's *Miscellanies*, vol. viii.

† Charnock, vol. ii., p. 283.

‡ Ibid.

§ It fills five quarto pages of Charnock.

doubtful; chiefly because, in many important points, in the ports and guns especially, it is at complete variance with the letter-press.

It is probable that, about the middle of the seventeenth century, the practice of placing guns of a dissimilar caliber on the same deck ceased to prevail in the British navy.\* This was a decided improvement. For a variety of calibers occasions delay and confusion in handing up and fitting the shot; especially where, as was the case here, the differently-sized balls were to be used on one deck. About coeval with this improvement, was the removal of the greater part of that cumbrous pile of timber and iron-work, raised to so ridiculous a height at each extremity of the vessel. The ship found relief, also, in being no longer armed with "murdering," or in-board pieces; and, particularly, in having no standing bow and stern chasers, a portion of which were generally among the heaviest guns on board. Hence, from this time, an English ship of war could bring half the number of her guns into broadside action; an advantage which she had never before possessed.

The earliest list of the British navy, in which there is any classification of the ships, is probably that copied into Mr. Derrick's Appendix, (p. 303,) and bearing date in 1546. There King Henry's vessels, 58 in number, are classed, according to their "quality," thus:—"Shyppes;" "galleases;" "pynnaces;" "roo-baerges." Another list, bearing date in 1612, exhibits the classes following:—"Shipp royal," measuring from 1200 to 800 tons;—"middling shipp," from 800 to 600 tons;—"small shipp," 350 tons; and "pinnaces," from 250 to 80 tons.† It will tend to clearness in our future inquiries, if we at once give an explanation of some of these terms.

A ship is defined to be "a large hollow building, made to pass over the sea with sails," without reference to the quantity, shape, or position of those sails; and, in this extended sense, the term appears to have been originally used. Hence, we are told that, before the days of the Great-Harry, all the ships of the royal navy had but one mast and one sail.‡ That ship is alleged to have had three masts,§ and the Henri-Grace-à-Dieu, as already mentioned, four.|| The galleas was probably a long, low, and sharp-built vessel, propelled by oars, as well as sails; the latter, perhaps, not fixed to the mast or any standing yard, but hoisted from the deck when required to be used. The lugger, or felucca, of modern days may serve for an example. The pinnace was a lesser description of galleas, and, most probably, had no mast, or, if any, a moveable one. The "roo-baerge," or row-barge, explains itself.

\* In the French, and some other navies, vessels so armed were occasionally captured during the eighteenth century.

† Charnock, vol. ii., p. 247.

‡ Archæologia, vol. vi., p. 202.

§ Archæologia, vol. iii., p. 266.

|| See p. 2.

The division of the British navy into rates appears, for the first time, in a table drawn up, by order of Charles I., in the year 1626, and styled, "The new rates for seamen's monthly wages, confirmed by the commissioners of his majesty's navy, according to his majesty's several rates of ships, and degrees of officers."\* Those rates were, as now, in number six, and consisted each of two classes, to which different complements of men were assigned; but the armaments of the classes are not specified, they having probably been described in some preceding order, which has not been preserved. One fact is obvious, that the division into rates was adopted, rather to regulate the pay of the officers and seamen, than to mark any distinction in the force or construction of the ships. Hence, at this day, the captain of every rate is paid differently. The same is also the case with many of the subordinate officers.

The first appearance of a classification by guns occurs in what purports to be "A list of all shippes, frigats, and other vessels belonging to the State's navy, on 1st March, 1651,"† (new style) 1652. The number of classes, or subdivisions by guns, comprised within the six rates, amounts to 23, exclusive of two, which may be called, unrated classes. These were hulks and shallops. The latter were simply row-barges; the former, stationary vessels, fitted with sheers to erect or remove masts, and also, it is probable, with accommodations to lodge the officers and crews of vessels under repair. Although the hulks were generally old and unseaworthy ships, one of them appears to have been "building at Portsmouth."

In the course of about 30 years several other unrated classes were added. Those only of which any notice need be taken are, sloops, bombs, fireships, and yachts. A list of November, 1658, shows that the sixth rate then comprised vessels mounting as few as two guns. Between that year and 1675, however, vessels of this small description appear to have been detached from the sixth rate, and to have been classed by themselves as sloops. The 13 individuals named in a list of the year 1675, mounted each four guns, and averaged in size 42 tons. In what way the latter were rigged cannot now be ascertained, because the mast and rigging books of the navy do not extend so far back; but it is probable, from their diminutive size, that they had only one mast, and were sloops in the proper sense, or that to which the term, in marine language, is restricted.‡

Bombs, which are vessels carrying, besides six or eight light guns, one or two heavy mortars, from which shells are thrown into a town or fortification, appear, for the first time, in a list of 1688, and are said to have been invented by M. Reyneau, a

\* Charnock, vol. ii., p. 277.

† Pepys's Miscellanies, vol. v., p. 595.

‡ Falconer, p. 485.

Frenchman, and to have been first employed at the bombardment of Algiers, in 1681.\*

Fireships and yachts first appear in a list of 1675. The use of the fireship, as the name implies, is, by means of ignited combustibles, to set fire to the vessels of an enemy. The yacht is simply a pleasure-vessel. According to Mr. Pepys, the Dutch, in the year 1660, gave Charles II. a yacht called the *Mary*; "until which time," he adds, "we had not heard of such a name in England."†

Although a certain number of guns is made the sign, or denomination, of every class within the six rates, the frequent occurrence of the same number of guns under different rates shows, that the classification by guns was, in some degree, subordinate to the classification by rates. A list, that gave the situation, or place of mounting, as well as the number, of the guns on board the ships, would most probably show what it was that occasioned two classes, of the same apparent force, to be registered under different rates. It so happens, that no list or abstract that has been printed, or which is to be found among the archives of the navy, contains any information on the subject. There is, however, in existence a curious manuscript-list, or rather set of lists, bearing date in 1677, and drawn up by the command, and for the private use, of Charles II. The manuscript, which is elegantly written on vellum paper, and bound in gilt morocco, with silver clasps, afterwards belonged to the late Sir Thomas Slade, who was made a surveyor of the navy in 1755. Subsequently, it came into the possession of the late Sir John Henslow, who was appointed to the same office in 1785; and at the decease of the latter, his executors presented it to Mr. John Knowles, of the Surveyor's Office, to whose kindness we are indebted for a perusal.

These lists exhibit the number, nature, and weight of the guns on every deck; the number of men assigned, as well for each caliber of gun, as for the ship's full complement; the number and specification of the officers; the tonnages; the years and places in and at which, and the persons by whom, the ships were built; together with many other useful particulars. In or about the year 1650 a difference began to prevail, between the number of guns and men established upon the ships in "war at home," and in "peace at home, and peace and war abroad."

That difference, which is carefully noted in these lists, arose from an inability to carry a sufficiency of provisions for their crews. Hence, in the event of the ship's being ordered to a distance from home, both the men and the guns were partially reduced, in order to allow room for an additional supply of provisions; and that in time of war as well as of peace. Upon the

\* See James's Military Dictionary, p. 56.

† Derrick, p. 89.

whole, the information contained in these lists fills up, what has hitherto been considered, a chasm in the early history of the British navy; and so much of their contents, as will elucidate our further inquiries respecting the armament and classification of the ships of the seventeenth century, we have incorporated in an abstract.\*

A single glance at the abstract referred to will show what it was, besides the number of guns, that governed the classification of several of the ships. For instance, No. 11 in the second, and No. 15 in the third rate, mount each 70 guns; but the one carries them on three, the other on two decks. Nos. 12 and 19 are similarly situated; and so are a few among the inferior classes. Hence, it is a difference in the number of battery-decks, that, without reference to the number of guns, distinguishes the rates. The characteristic of a first-rate of 1677 seems to have been, to mount her guns on three whole decks, a quarter-deck, fore-castle, and poop; † of a second-rate, to mount her guns on three whole decks and a quarterdeck; ‡ of a third-rate, to mount hers on two whole decks, a quarterdeck, fore-castle, and poop; of a fourth-rate, to mount hers on two whole decks and a quarter-deck; of a fifth-rate, to mount hers on her first gundeck, from end to end, on her second, partially, with a few guns on the quarterdeck; and of a sixth-rate, to mount her guns on a single deck, with or without any on her quarterdeck. It is worthy of remark, that there were, in these times, three-deckers of 64, and two-deckers of 30 guns; and that many single-decked ships of the present day exceed, nay, nearly double, even the former in tonnage.

Our attention is next called to the calibers of the guns, assigned to the different classes in the foregoing abstract. Considering the "VII" subjoined to cannon, to signify that the piece was that variety of the cannon, whose cylinder was about seven inches in diameter, we at once identify the gun to be either the cannon-serpentine, or the bastard-cannon of Sir William Monson. Before we fix which of these two it was, it may be proper to state, that the 8½ and 8 inch cannon (cannon-royal and cannon) appear in no one list or abstract of the navy that we have seen. If they had been used previously to 1677, it could only have been for a short time, and then merely as bow or stern chasers on the lower deck. It is probable, too, that they were of brass, in order to be of diminished weight. Looking at the weight of the cannon VII, as expressed in the original list, we find it to range between 65 and 54 cwt.: whereas, the weight of the cannon-serpentine, Sir William states to have been 49 cwt., and that of the bastard-cannon 40 cwt. Now, the caliber, or diameter of the bore, of the cannon-serpentine and bastard-cannon, agrees

\* See Appendix, No. 1.

† No. 6 in the abstract is the only exception to this rule.

‡ Except No. 7.

not only with that of the cannon VII, but with that of the 42-pounder, the sea-service gun which has since been brought into use. Moreover, the last-named gun agrees in weight, if not with the cannon-serpentine and bastard-cannon, at least with the cannon VII.

With respect, also, to the shots severally thrown by the cannon-serpentine, bastard-cannon, cannon-VII, and 42-pound gun, we shall have no difficulty in showing, that they were all of nearly the same weight. For instance, the solid iron shot, that exactly fits a cylinder of seven inches diameter, weighs a trifle over 48 lbs.; but, a small space being usually allowed to intervene between the circumference of the shot and that of the cylinder, denominated, windage, (the expansion of the shot by a white heat, the incrustation of rust from damp, and the foulness of the cylinder after repeated firing, are the three chief considerations to be provided against by the windage,) the shot becomes reduced in diameter, until it weighs about 42 lbs. Or rather, the shot itself being the datum from which the caliber of the gun was originally determined, the latter was made to correspond with the former, allowing the customary windage. The shot of seven inches diameter cannot, as we have shown, weigh more than 48 lbs. and a trifle: therefore, the 53½ lbs. assigned by Sir William Monson,\* as the weight of the shot belonging to the cannon-serpentine, whose cylinder did not exceed seven inches, must be erroneous. It may have arisen from a typographical mistake, in substituting a 5 for a 4; and then 43½ lbs. would serve for the weight of a shot calculated for a seven-inch cylinder, only with less than the usual windage.† If any further proof were wanted, to show that the cannon VII and the 42-pounder were the same gun under different denominations, it might be found in the fact, that such first-rates in the list of 1677, as survived the first fifteen years of the new century, appear in the gun establishment of that time, with no other difference in their lowerdeck armament, than the substitution of "42-pounders" for "cannons VII."

The demi-cannon, without doubt, was the 32-pounder of afterwards. The cannon-petro had, in the list of 1677, already changed its name to 24-pounder, and a 12-pounder (probably the ancient basilisk) also appears there. The whole-culverin and demi-culverin became subsequently the 18, and the 9-pounder. The saker, or sacer, both from its caliber and weight, was the 8½ feet, 22 cwt. 6-pounder; as was the light saker, the modern gun of the same nature, measuring six feet, and weighing 17 cwt.

\* See Appendix, No. 2.

† Different nations have different proportions for determining the windage. The English, for their long guns, divide the shot into 20, and the bore into 21 parts; the French, into 44 and 45, and, in some of their light pieces, 46 and 47. The English windage, except for carronades, is notoriously too great, and ought to be reduced.

The minion was the 4-pounder: what name the 3-pounder of 1677 had previously taken does not appear.

It will be sufficient to say of the lesser calibers in Sir William's list, that they, or most of them, were afterwards called swivels; simply because, when again brought into use, they were mounted on stocks, or upright timbers, having a pivot on which the gun traversed. Upon the degree of credit due to Sir William Monson's account of the ancient sea-service ordnance, we are unable to pronounce; but the list certainly appears to have been drawn up without much care. At the same time, it must be owned, that great confusion prevails in all the accounts which have been published on the subject; as far, at least, as our researches have extended. The precise time at which the whole of the British sea-service guns dropped their names of beasts and birds of prey, to assume those designating the weight of the shot they respectively discharged, cannot well be ascertained; but the change certainly took place between the years 1685 and 1716, and that is sufficiently near for our purpose.

Soon after the commencement of the new century, a surprising diminution appears in the number of rated classes belonging to the British navy. In the abstract of 1677, a total of 129 ships divide into 31 classes, exclusive of 10 sub-classes, separated on account of a difference in the distribution or calibers of their guns, or in the amount of their complements of men; while, in an abstract taken in August, 1714, a total of 198 ships divide into only 10 classes. There is no great difficulty in explaining how this arose. A reference to the abstract of 1677 shows, that the 90, 70, 54, and 48, gun classes were the most numerous; the majority of the others comprising but one or two individuals each, and those among the earliest built in the abstract. Hence, the capture, wreck, or other disposal of a ship frequently annihilated a class; and we find that, between the years 1689 and 1697, the British navy actually lost, by capture alone, 50 vessels: it is probable, too, that at least an equal number fell by the perils of the sea.

King William, in the mean time, had built 30 large ships; (17 of 80, 3 of 70, and 10 of 60 guns;) and half that number of still finer ships had been captured from the French. Such ships of the 54-gun class, and of the classes between the 48 and 42 inclusive, as had not been lost or disposed of, appear to have been reduced, the first to 50, the latter to 40 gun ships. Besides which, some ships, constructed to mount 40 guns, had been built. Several 30 and 20 gun ships had been built, or taken from the enemy. Hence, the 10 rated classes of the year 1714 were, the 100, 90, 80, 70, 60, 50, 40, 30, 20, and 10, gun-ship class; the latter consisting of only one individual.

The rates themselves appear, about this time, to have also undergone a reorganization. The first-rate now descended no lower than the 100, and the second, no lower than the 90 gun

class. The third admitted all classes below the 90, and above the 60. The fourth took for its limits the 60 and 50; and the fifth received all below the 50, down to the 30. The sixth-rate found room for every class below the 30, that had not, for its denomination, a term in which, as sloops, bombs, &c., the number of guns was not expressed. Desirous to show what, if any, progress in classification, armament, and size, half a century has produced, we will, by the aid of an abstract, investigate the state of the navy at the death of George I., in June 1727.

AN ABSTRACT OF THE BRITISH NAVY IN JUNE, 1727.\*

No.	RATE.	CLASS.	CARRIAGE-GUNS.								Gross Weight of Guns.	Complement of men.	Ships in each class.	Burden.
			First or main deck.		Second deck.		Third deck.		Quarter-deck and Forecastle.					
			No.	Pds.	No.	rds.	No.	Pds.	No.	Pds.				
1	First.	gun-ships. 100	28	42	28	24	28	12	16	6	Tons. 214	No. 780	No. 7	Tons. 1869
2	Second.	90	26	32	26	18	26	9	12	"	175	680	13	1566
3	Third.	80	"	"	"	12	24	6	4	"	147½	520	16	1350
4	"	70	"	24	"	"	"	"	"	18	126¼	480	24	1128
5	Fourth.	60	24	"	"	9	"	"	10	"	104	365	18	195
6	"	50	22	18	22	"	"	"	6	"	85½	280	46	755
7	Fifth.	40	20	12	20	6	"	"	"	"	57½	190	24	594
8	"	30	8	9	"	"	"	"	"	"	34	135	3	421
9	Sixth.	20	20	6	"	"	"	"	"	"	22½	115	27	374

On the face of this abstract, there does not appear any greater increase in the size of the ships, than the increased weight of the guns seems to authorize. One improvement, however, is evident: the poop or roundhouse deck is no longer armed. The two or four 3-pounders, formerly mounted there, now appear as 6-pounders on the quarterdeck and forecastle. We have here no clashing of classes on account of a similarity in the number of guns. On the other hand, that distinction between the rates,

\* The items of the table in the text have been carefully compiled from official and other documents. The guns are those established upon the several classes by an order of 1716; and which order continued in force until 1743. The complements are those borne between 1719 and 1733. The tonnage is that established in 1719, and which was not materially varied until 1743. The employment of swivel-guns in the navy, at or about this period (see page 12), renders necessary the distinction of carriage-guns.

founded on the number of decks, and which so particularly characterizes the abstract of 1677, is destroyed.

The number of decks of a fighting ship is generally considered to be a tolerable criterion of her force; and, if every ship of war notoriously mounted the same number and nature of guns upon a deck, the expression, single-decker, two-decker, or three-decker, would be thoroughly understood. By this a deal of circumlocution, and of private, as well as of international bickering would be saved. As, however, ships' decks vary in length from 70 or 80, to upwards of 200 feet; and ships' guns, in caliber and weight, from the 3-pounder of 11, to the 42-pounder of 65 cwt., the simple term, one, two, or three-decker explains nothing. A strong instance, that occurs in the abstract of 1677, will illustrate this. There the three-decker, No. 12, is classed above the two-decker, No. 13;\* and no one would imagine, that a second-rate, of three decks, was not of greater force than a third-rate, of two decks. The first discovery to the contrary is, that the two-decker mounts the greater number of guns; but that is only by a seventh: the next discovery is, that, in broadside-weight of metal, she is the more formidable ship by nearly a third; that of the 64 being 511, of the 74, 751 lbs.

Let us suppose, for argument sake, that some such expressions as these were in use: "A 10-port two-decker," "A 13, or a 14 port two-decker." Any one of these three terms ought to enable us to get at the total number of guns in the ship, as readily as if, according to the former supposititious case, all ships' decks were armed alike. Take a person, wholly unacquainted with naval technicalities, and, pointing to the ship, No. 7,† as she lies on the water, ask him what number of decks she has. He replies, "Two." If he takes the pains to count her guns, he will agree with you, that she is a "10-port two-decker." Show him, next, No. 4, and ask him what she is. After a slight pause, he will say, "A 13-port *three-decker*, that seems to want four ports in the middle of her *upper deck*."

You smile at this double mistake of the landman's; and, as the best mode of convincing him of his error, carry him on board the ship. As he stands on the gangway, looking with wonder above, around, and below him, you, pointing down the waist, ask him what is the name of that deck? He answers you, "The lower;" or, if his eyes can penetrate the hatchway below, or his recollection furnish him with the number of tiers of cannon he counted when on shore, he may reply, "The middle deck." You assure him that the deck he is looking *down* upon is the *upper deck*. He raises his eyes towards the deck on which he is standing. You tell him that is the *quarter deck*. "Quarter!" he may think, if not exclaim, "why it extends over more than half the ship, and only wants planking up in the middle to be the

\* See Appendix, No. 1.

† See the short abstract at p. 10.

largest deck of the three." He may then be emboldened, on his part, to ask, "Why not call it the half-deck?" He is carried below, and shown a small space between the wardroom door and the break of the quarter deck, and informed that *that* is the half-deck.

Although it would be a vain hope to expect to change names, which have stood their ground for ages, and are perfectly understood by the persons for whose use they were made; yet an endeavour to trace the origin of the terms by which the different decks of a fighting ship are distinguished, may tend to elucidate many of the statements, and those by no means the least important, in the following pages. It is a remarkable fact, that the fore-castle and quarter, or poop deck, although now the most insignificant, were once the only decks armed with guns. These were mounted, not as broadside, but as chase guns. Afterwards, a tier of them was placed on each side of the principal, or main deck; but, until the invention of portholes, all the guns were mounted as formerly mentioned, *en barbette*.\*

Almost the first use made of the power of pointing the guns through, instead of over, the ship's side, was to employ an additional tier of them. The deck, which sustained the lower and heavier tier, was named, by the English, the lower, or gun deck; by foreigners in general, the first deck.† The deck next above the principal deck, the English called the upper,‡ foreigners the second deck. Hence, when a third deck was added, the latter had only to express it by that name; while the English had to change upper into middle, and apply the former term to the third deck.

Conformably to this arrangement, the English admiralty and navy boards call the single gun deck of what is commonly termed a one-decked ship, the upper deck, and the deck below it, upon which no guns are mounted, the lower, or gun deck. With them, therefore, every reputed single-decked ship, except she be so small as to have no 'tween decks, is, properly speaking, a two-decked ship: while foreigners, the French in particular, designate the upper as the second deck, when only any guns are mounted upon the lower. When otherwise, the upper deck is described as *the deck*,§ and the guns placed upon it, as mounted in single battery;|| the lower deck, as the English would call it, being named the false, or imperfect deck.¶ To

\* See p. 1.

† Premier pont, *Fr.* Prima coperta, *It.* Primera cubierta, *Sp.* Primeira cuberta, *Portug.* Ver dek, *Dutch.* Forsta laget, *Swed. &c.*

‡ Sailors frequently name this the main deck; but shipwrights, when they use that term, apply it, very properly, to the lower, or principal deck.

§ Le pont; la seule batterie.

|| En batterie.

¶ "Faux-pont; pont au-dessous de la première batterie." The Americans usually call this deck the *berth-deck*, meaning that on which the ship's company is lodged.

call the lower, the gun deck, when, as in the case of two, or three decked ships, guns are also mounted upon the deck or decks above it, tends to confuse, rather than to distinguish; but to call that the gundeck, upon which no guns are mounted, is a gross absurdity. Yet, in official language, the lower deck of every ship is indiscriminately named the gun deck, and the cabin at the after-part of it, the gun room. So that the length of a modern frigate's "gun deck," so frequently published for our information, is not the length of the deck whereon she mounts her guns, but of the deck beneath it, on which she lodges her men.

It is, however, in the storey erected above the upper deck, so called, that we must look for the most glaring, and, as respects the armament of a ship, the most important, perversion of terms. The ancients were accustomed to build upon the short prow, or fore-deck of their galleys, a kind of turret, or small castle;\* and the rudiments of this were plainly visible in the Venetian galleas, or greater war-galley, employed as late as 1571. The origin of the names, fore-castle, with the English, castella di proa, with the Italians, gaillard d'avant, or, chateau de proa, with the French, as well as of the terms of similar import used by other nations,† is thus readily traced. The term "gaillards," taken alone, includes, apparently, all that part of a ship's upperworks intended for the accommodation of the principal officers. "Communément les logemens se pratiquent sur les ponts les plus élevés, pour avoir des jours dans l'accastillage: c'est cette combinaison d'ornement et de commodité qui forme ce que l'on appelle les châteaux ou gaillards."‡ The corresponding elevation at the after-part of the ship, was designated by substituting, either *after for for*, § or *poop for prow*, || except in England, where, in one instance, the term half-deck was used;¶ but, in all others, quarter deck, in reference, probably, to that portion of the ship's length over which it originally extended. The quarter of a ship is that part of the side which lies towards the stern, or which is comprehended between the aftmost end of the main-chains, and the sides of the stern where it is terminated by the quarter-pieces; but the quarter-deck is stated to extend all the way from the mainmast to the stern. This, however, applies to English ships only: the French usually

\* As early as the twelfth century, "towers" in ships are recommended, from which to use the spears and other arms of the time. See *Antiquarian Repository*, vol. iii., p. 62.

† Castillo de proa, *Span.* Castillo du proa, *Portug.* Voor-kastreel, *Dutch.* Skents, *Swedish.*

‡ *Traité Élémentaire de la Construction des Bâtimens de Mer*; par M. Vial du Clairbois, &c., à Paris, 1805, tom. i., p. 148.

§ Gaillard d'arrière, ou chateau de poupe.

|| Castella di poppa, *Ital.* Castillo de popa, *Span.* &c.

¶ See p. 3; also Charnock, vol. ii., p. 44: where Admiral Sir Cloudesly Shovel, as late as 1690, uses the term in the same way.

make the extent of their "gaillard d'arrière" depend on the rate and class of the ship; in some it extends to about three feet ahead of the mainmast, in others to scarcely double that distance from the mizenmast. Most nations, as we have just shown, called the elevation above the quarter deck the poop.\* The French, however, named it *la dunette*.

The fallacy of the term *quarter deck* betrayed itself as early, at least, as the year 1673; when the ship No. 16 in the first-given abstract,† was armed with seven guns of a side on her quarterdeck, while mounting only twelve of a side on either of her whole decks. It was but to add to these, the two guns of a side on the forecastle, and on the poop, to produce within one gun of a third complete tier: yet no one, but an unsophisticated landman, would think of calling the ship a three-decker. No, not although the great Mr. Pepys himself may be found denominating certain French ships, from one of which the two ships at No. 16 in the abstract were actually modelled, "ships with two decks and a half." These are Mr. Pepys's words: "In 1672 and 1673, the French brought a squadron of about 35 ships to Spithead, to join our fleet. There were several excellent ships with *two decks and a half*, that carried from 60 to 74 guns; more especially one called the *Superbe*, which his majesty and royal highness went on board of: she was 40 feet broad, carried 74 guns, and six months' provisions. Our frigates, being narrower, could not stow so much provision, nor carry their guns so far from the water; which Sir Anthony Deane observing, measured the ship, and gave his majesty an account thereof, who was pleased to command Sir Anthony to build the *Harwich*,‡ as near as he could of the *Superbe*'s dimensions; which was done accordingly, with such general satisfaction, as to be the pattern of the second and third rates built by the late act of parliament."§

In spite of so high an authority, however, the *Harwich*, and all ships built like her, were, and still continue to be, called two-decked ships.

The forecastle and quarter deck, which, in their practical application as terms, have thus so violated precision, were originally detached elevations, that left the deck immediately below them, or so much of it as intervened between the fore and main masts, open and exposed. Hence, ships so constructed, were said to be deep-waisted. The French term analogous to this is *haut accastillé*, signifying a ship with high, or lofty upperworks; certainly, a more intelligible expression. Afterwards it

\* The elevation that, in former days, was frequently to be seen above the poop, was called by the English the poop-royal.

† See Appendix, No. 1.

‡ One ship of class No. 16 in the abstract of 1677, was the *Harwich*; the other, the *Swiftsure*.

§ See Pepys's *Miscellanies*, p. 268. The second and third rates alluded to are those at Nos. 7 and 17 in the abstract.

was found convenient, particularly in ships of war, to connect the two short decks by a boarded passage on each side, called the gangway; to support which were placed beams, or rafters, that reached right across the ship. This gave to the whole such a continuous appearance, that no person, not otherwise taught, would hesitate to call it as our landman did,\* the upper deck of the ship. And even a marine writer of France justifies the term:—"On peut regarder les gaillards comme *le pont le plus élevé* des vaisseaux, dont une partie est interrompue entre le grand mât et le mât de misaine; ce qui forme deux *demi-ponts* au niveau l'un de l'autre."†

Some advances have, however, since been made. The French, for instance, were accustomed occasionally to cover with a grating the open space between the two "half-decks;" and then it was no longer "les gaillards," or "les demi-ponts," but "le pont de cailbottis," the deck with a grating. "Je crois donc que les vaisseaux du second rang pourroient avoir trois ponts sans gaillards, ou plutôt les gaillards qui formeroient le troisième pont, seroient joints par des cailbottis, comme on l'a vu au Tonnant. De tels bâtimens, qu'on pourroit regarder comme n'ayant que deux ponts, seroient, au moyen du *pont de cailbottis*, &c."‡ In more modern times, each passage, or gangway, has in some cases been widened, so as to admit a gun to recoil; or, if necessary, as many guns as the passage, from its length, can receive. But even this, with the English, is not allowed to take from the deck that is underneath, and which is now almost covered from sight, its ancient name of *upper*. The ship, therefore, should particularly be requisite, not otherwise, has a new deck assigned to her, called the *spar* deck; a name the origin or application of which every one seems ignorant. If it is because the ship's spare spars are stowed on that deck, so are they in the same place on board every ship; namely, on each side of the launch, between the fore and main masts. The French say, "Pont sur gueule," which may be rendered, "the deck built over the *mouth* of the upper deck," commonly called the waist. Why is this not as complete a deck as any in the ship? Hence, as no one ventures, in common utterance, to speak of a *spar-decked* one, two, or three decker, a ship of this construction may mount a whole tier of cannon beyond what her denomination expresses; and we shall, by and by, have to adduce some very formidable examples.

Not only the three and the two, but the single decked ship feels, and that to a greater extent, the inconvenience of this ambiguous nomenclature. For instance, a ship that mounts

\* See p. 11.

† Vocabulaire des Termes de Marine; par Cn. Lescallier, Ordonnateur de Marine; à Paris, Fan 6. (1798.)

‡ Elémens de l'Architecture Navale; par M. Duhamel du Moinceau; à Paris, 1752.

28 guns on a single deck, and fourteen on the quarter deck and fore-castle, it is thought necessary to reduce, by cutting away the two latter short decks; thereby exposing to view her main battery-deck, from end to end, and disarming her, of course, of 14 out of her 40 guns. Yet this ship, materially altered as she is in her form, and stripped of a third part of her numerical force, undergoes no change of name: she is still a single-decked ship. It is true, that a similar operation performed upon the two, or the three decker, would lead to a similar alteration in the form, and some, but not so great, a reduction in the force. A two, or three decked ship, so cut down and reduced, would also retain her former name. But two, or three decked ships, without quarter decks, are of rare occurrence; while single-decked vessels of that form are very numerous. They descend to the lowest small-craft that has a deck upon which guns are, or may be mounted. It is likewise true, that the term flush-decked has been used to signify, that the single-decked ship of war, so named, is constructed without an over-built quarter deck and fore-castle.

Flush, in this its arbitrary signification, is synonymous with level. A flush-deck is, therefore, a level or even deck, throughout its extent.\* In this sense is not every principal or fore-and-aft-deck of a ship a flush-deck? Were not the three whole decks of the Sovereign-of-the-Seas called, by one who in that respect is no mean authority, "three-flushe-decks?" The term was evidently first used in the merchant-service, and stood opposed to that form of deck, which, as it runs aft, suddenly rises by a step or two, and then continuing in a line to the stern, becomes the quarter-deck of the vessel. Ships of this construction were described, properly enough, as *deep-waisted*; and the generality of merchant-vessels are, to this day, built in that manner. Were *flush*, as meaning level, without fall or rising, to be used in reference to the upper edge of the gunwale, or plans-beer, of the ship, instead of to her deck, it would serve perfectly well to distinguish an open-decked, from a quarter-decked ship of war. For both the quarter deck and the fore-castle bulwarks cease at the extremities of the gangway; and the intermediate drop in the line (now perpendicular and abrupt, formerly softened down by a scroll or figure) is merely rendered less obvious, by the presence of the hammocks stowed in the waist nettings, or of the painted canvass that covers them. The French term corresponding with flush ship, or flush-built ship, is, "Un bâtiment paré de long en long;" and that even a three-decked ship, according to the French application of the term, "les gaillards," or the quarter deck and fore-castle, may be without any decks of that description, is clear from the following example.

\* The French say, "Un pont entier, sans ravalement, ni interruptions."



and that short deck is called the *topgallant* forecastle. Its use is, not to be a platform for guns, but to shelter the crew from the rain and the break of the sea. Corresponding with this, there is often, on board the larger flush ships, a short deck at the stern, named after, and every way resembling, the poop. Its principal use is to be a roof to the captain's cabin. When confined to this office, the French call it "la petite teuge;" when extended forward to, or a little ahead of the mizenmast, they call it "le demi-gaillard." Their term "la dunette" seems applicable only, when this short deck is erected over "le gaillard d'arrière," or the proper quarterdeck. Both these short decks, the topgallant forecastle and poop, are usually without bulwarks, and therefore very slightly interrupt the continuous line, which, in our humble judgment, gives, or should give, the name to the flush ship. Although it is common for two, and three deckers, except the lowest class of the former, to be constructed with poops, yet some ships are built without any, and others have them, for various reasons, cut away. If we take no account of these, it is because the slight operation they undergo causes no, or a very slight, reduction in their armament; and it is as it affects her armament only, that a ships construction can claim any part of our attention.

As these pages are not intended for the exclusive perusal of professional men, we shall be pardoned for qualifying some terms, and altering others, so as to render our expressions intelligible without the aid of a paraphrase. Accordingly, in this work, the several decks of a fighting ship have been, and will be called, first, second, and third, instead of lower, middle, and upper. For example, we say, not *lower deck*, *middle deck*, *upper deck*, but, as foreigners invariably do, *first deck*, *second deck*, *third deck*. Where a ship mounts the principal part of her guns on a single deck, we shall avoid saying, with the French and others, "the deck," by adjoining the word "main." Hence, a frigate's single battery-deck is her *main* deck; and so, indeed, it is generally called, for the reason that sailors are accustomed to call by that name the *upper* deck of every ship. Shipwrights, on the other hand, denominate the *lower* the main deck; and to that, as a battery-deck, the term is every way the most applicable. We shall merely connect *main* with *first*, thus, *first or main deck*, in order to its ready application, where wanted, to single-decked ships. To meet the term "faux-pont," as applied by the French to the deck that is below the main deck of the latter class of vessels; and to avoid the paradoxical expression of lower deck, as applied to a reputed single-decked ship, we would say, with the Americans, the *birth*-deck, as being that on which the crew are lodged. However, the expression will be seldom required, and therefore less liable to offend those who may think it unwarrantably used.

As 99 out of every 100 two, and three decked ships are con-

structed with a quarterdeck and forecastle, we may consider the latter as almost necessary appendages to the former; at least, we may venture to designate a ship, so constructed, as the common (adding, if necessary, or quarterdecked) two, or three decker. No such adjunct, however, need be used, unless a flush two or three decker presents herself to notice. With respect to singledecked ships, commonly so called, the case is different. The flush ship is become a greater favourite than formerly; and the navy-lists of all countries now contain whole classes so constructed. Precision would therefore require, that we should mark well the distinction between the quarterdecked, and the flush one-decker; and, at the risk of the frequently clogging our meaning with obscurity, we should be compelled to make the attempt, were it not that some other terms have stepped in, and, by narrowing the discussion, saved both the reader and ourselves from any embarrassment on the subject.

We have already shown that the term *ship*, means any vessel that passes over the sea with sails.\* But that is its general meaning: it has also a specific one, fully as well known. According to this, the term signifies a square-rigged vessel, of, at least, three masts. The square-rigged vessel of two masts is denominated a brig; and the minor classes, that are not square-rigged, and which comprise sloops, cutters, schooners, &c., generally pass, among seafaring people at least, by the sweeping appellation of *fore-and-aft* vessels; an expression used in reference to the cut of their principal sails. Now, as the only quarterdecked brigs of war, that we know of, are a few belonging to the navy of Spain,† it may be taken for an axiom in naval affairs, that brigs of war, and all the small-craft below them, are flush-built: consequently, the latter term, when they are mentioned, need not be used, but becomes applicable to one-decked *ship*-rigged vessels only, and is even still more restricted, as we shall presently show.

No sooner was any thing like system adopted in the conduct of engagements between fleets, than it became necessary that the line of battle should be composed of the larger and stronger ships, as being those the best able to bear the brunt of such encounters. The earliest list, in which a separation of this kind appears, is that of the British channel fleet, under Admiral Russel, in 1691. There the honourable distinction of line-of-battle ship descends to the fourth-rate inclusive, and, with one exception to be noticed hereafter, has so continued ever since.‡ Exclusive of the ships destined to take their stations in the line of battle, there were attendant vessels, the duties of a portion of

\* See p. 4.

† The Port-Mahon and Vincejo, each of 277 tons, were so constructed.

‡ The first published abstract of the navy, in which the "line-of-battle" classes are separated from the others, is one of the year 1714. See Derrick, p. 124.

which were, to reconnoitre the enemy, to chase away stragglers, and to perform various other detached services: the remainder consisted of hospital-ships, bomb-vessels, and fireships. The reconnoitring or cruising portion usually comprised the fifth and sixth rates, and were denominated frigates. A navy was therefore composed of, line-of-battle ships, frigates, bomb-vessels, fire and hospital ships: the two first, as comprehending within the six rates the bulk of the fighting navy, constituted the two grand or principal divisions.

No one can dispute the propriety of the term line-of-battle ship, as above applied. We will now endeavour to ascertain how friggot,\* frigat,† or in modern English, frigate, a term that in itself conveys no meaning, became invested with the extensive signification which we have also shown it to possess. The author of the "Dictionnaire de la Marine," published at Amsterdam in 1739, is the earliest writer we know of that treats on the frigate. He says, "The word *frégate* derives its origin from the Mediterranean, where it was usual to designate as frigates long vessels, that used both sails and oars, and carried a deck, of which the top-side, being higher than that of galleys in general, had openings resembling portholes, for the oars to pass through."—"Ce mot de *frégate* tire son origine de la Méditerranée, où l'on appelloit *frégates* de longs bâtimens à voile et à rame, qui portoient couverte, et dont le bord, qui étoit beaucoup plus haut que celui des galères, avoit des ouvertures, comme des sabords, pour passer les rames."‡ What occasioned these sailing galleys to be named *frégata*§ is not very clear; but, at all events, we may safely conjecture, that the principal quality for which they were famed was swiftness of sailing.||

The contiguity of France, by her Mediterranean frontier, to the waters that gave birth to the "*frégata*," renders it easy to conceive that, ere many years had elapsed, vessels of a somewhat similar form, bearing the same name, appeared in the channel. Augmented size and a bluffer body would diminish the rate of sailing, but were requisite, nevertheless, to counteract the storms and swells of a northern sea. Towards the middle of the sixteenth century, the generality of English merchant-ships were called frigates; some of which, towards the latter part of the

\* Fuller in his worthies, Pepys, Raleigh, &c. Mr. Derrick, whenever he quotes passages from these and other English writers, alters the language to the modern standard. This is highly improper; as, were the reader not aware that such a liberty had been taken, he might justly doubt the authenticity of the quotations.

† Johnson. Mr. Todd, also, spells it in the same manner. We may here remark, that Johnson, or rather his printer, has misspelt the French word, calling it *Frigate* instead of *Frégate*. Both in Mr. Todd's edition, and Mr. Chalmers's Abridgement, the same error prevails.

‡ Dict. de la Marine, p. 498.

§ "*Frégata*; Picciol navilo da remo." Baretti.

|| The French give the name of *frégate* to a very swift-flying sea-gull.

century, were, as we are informed, hired from the merchant, to serve in the British navy. Accordingly, in a list of 1588, we find, among the "ships serving with Sir Francis Drake," the "frigate Elizabeth Fonnes," of 80 tons and 50 men; but how armed does not appear. A merchant-vessel, requiring the greater part of her hull for the stowage of her cargo, would carry her guns in a single tier; and there can be no doubt that the merchant-ships of those days were far better sea-boats than the men-of-war; the tier-upon-tier of cannon and lofty upper-works of which rendered them fitter to be gazed upon in harbour, than to withstand the rough weather they must have been expected to encounter on the ocean.

Towards the close of the sixteenth century, Sir Robert Dudley, commonly called the Duke of Northumberland, prepared draughts of seven distinct classes of ships of war: the Galleon, Rambargo, Galizabra, Frigata, Gallerone, Galerata, and Passavolante. The accounts are not very satisfactory, as to the number and nature of guns which it was intended for each to mount.\* Among them was a ship, measuring 160 feet in length, and 24 in breadth, and constructed to carry a tier of guns on a single whole deck, besides other guns on two short decks, that resembled the quarterdeck and forecastle, or rather, not being united by gangways, the poop and topgallant-forecastle. Here, the disposition of the guns is the same precisely, as that which characterizes the modern frigate; and it is a singular fact, that this ingenious nobleman named his vessel, thus constructed and armed, *Frigata*. Sir Robert, early in the ensuing century, submitted his draughts to government; but, although some beneficial hints may have been taken, it does not appear that his proposition met a favourable reception. To prove his own confidence in his plan, Sir Robert, in the year 1594, caused a vessel to be built at Southampton, of a similar form to his intended Galleon, but measuring only 300 tons. With this vessel, which mounted 30 guns (of small calibers, no doubt), the inventor made a voyage to India; and, according to his report, the vessel fully answered his expectations.†

The author of the "Dictionnaire de la Marine" states, that the English were the first to name as frigates, upon the ocean,‡ long vessels, armed for war, having the deck much lower than that of galleons and ordinary ships.§ This undoubtedly refers to single-decked vessels; but it is not clear whether, by "bâtimens armés en guerre," is meant regular king's ships, or armed ships hired of the merchants, and to which, as we have

\* For the draughts, see Charnock, vol. ii., p. 177.

† See Charnock, vol. ii., p. 177.

‡ As distinguished from the Mediterranean sea.

§ "Les Anglais sont les premiers qui aient appelé frégates, sur l'océan, les bâtimens longs, armés en guerre, qui ont le pont beaucoup plus bas que celui des galions et des navires ordinaires."—*Dict. de la Marine*, p. 498.

already shown, the name frigate was commonly applied. The probability, that the latter were those alluded to, is strengthened by the fact, that the first list of king's ships, one of 1604, in which any frigate appears, contains only "a French frigate." This vessel stands the last but one in the list, and, from her burden, 15 tons, must have been little better than a boat. The next list of king's ships, in which the frigate appears, is one of 1633. There the two last vessels are the "Swann frigate," and "Nicodemus frigate," each of 60 tons, 10 men, and 3 guns. In a subsequent list, they each appear with a different tonnage, number of men, and guns. One may conjecture that, as Charles I. made frequent visits of inspection to his different naval depots, the Swan and Nicodemus were elegant, fast-sailing little ships, built to attend him thither; and it is not unlikely, that the diminutive French Frigate of the former list had also been constructed for pleasurable purposes.

Fuller, who wrote in or about the year 1660, says, "We fetched the first model and pattern of our friggots from the Dunkirks, when, in the days of the Duke of Buckingham, then admiral, we took some friggots from them, two of which still survive in his Majestie's navy, by the names of the Providence and Expedition."\* Now, the Duke of Buckingham appears to have filled the office of Lord High Admiral from 1619 to about 1636, and the names Providence and Expedition occur, both in the list of 1633, and in that of 1652, which is the next that appears in print. But the figures denoting the tonnages, men, and guns of the ships, in these early lists, are too contradictory to enable us to state more, than that the Providence and Expedition were small ships, mounting from 20 to 30 guns, the chief of them on a single deck. Mr. Pepys, also, whose authority in all matters respecting the ships of the British navy stands very high, says thus: "The Constant-Warwick was the first frigate built in England. She was built in 1649, by Mr. Peter Pett, for a privateer for the Earl of Warwick, and was sold by him to the States. Mr. Pett took his model of a frigate from a French frigate which he had seen in the Thames; as his son, Sir Phineas Pett, acknowledged to me."† Mr. Pepys, in his "Memoirs of the Navy," invariably, we observe, spells frigate *frigat*; but Mr. Derrick's correcting hand, and our inability to get a sight of the "Miscellanies" and "Naval Minutes" (stated by Mr. D. to be in Magdalen College, Cambridge), compels us, in quotations purporting to be from them, to spell the word, and indeed all the words, as if they had been written at the close of the eighteenth, rather than of the seventeenth century.

Mr. Pett may have taken his model some years before he was called upon to build a vessel from it; and there is no reason to

\* Fuller's Worthies of England, vol. ii., p. 342.

† Derrick, p. 76.

suppose that the French frigate was a national frigate. She was, most probably, a privateer; and may have been one of the many that the enterprising "Dunkirks," as Fuller calls them, had fitted out. Both writers refer to a model, or pattern, as if there were something in their frigate to distinguish her from the generality of ships of war; and yet neither has taken the pains to give the faintest description of what that peculiarity, whether of form, or of armament, or of both, consisted. We may gather that the prototype, as she was a privateer, was a swift-sailer, and not of very large dimensions or force. To arrive at any further particulars, we must grope a little deeper into the records of these early times.

The name of the Constant-Warwick occurs in several lists between 1652 and the end of the century; but in scarcely any two of those lists, does the ship appear with the same tonnage and number of guns. Both the year in, and the place at which, and even the person by whom, she was built are differently stated; yet there was, undoubtedly, but one ship of the name in the British navy. Without quoting from so many contradictory authorities, we shall briefly state the result of our very careful researches on the subject.

The Constant-Warwick was built in 1646, at Ratcliffe, by Mr. Peter Pett the elder, for the use of the Earl of Warwick, as a privateer, or, in softer language, as a sort of private-armed cruising yacht. She measured, in the modern way of computing the tonnage, from 380 to 400 tons, and mounted 26 guns; consisting of 18 light demi-culverins, or short 9-pounders, on the main deck, six light sakers, or short 6-pounders, on what was virtually the quarterdeck, and two minions on what, as being of no greater extent than was requisite for a roof to the chief officer's cabin, may be called the poop. We have seen several draughts of English fifth and sixth rates, as they were constructed in the latter half of the seventeenth century, that correspond exactly with this arrangement of the guns. The deck on which the sakers are mounted is really a whole deck, reaching from stem to stern; but the bulwark, or barricade, commences only where that of the modern quarterdeck does, at the after side of the gangway-entrance. A ship, of the size and armament of the Constant-Warwick, well formed in her *carène*, or lower body, lightly but handsomely ornamented in her upperworks, and rigged according to the most approved plan of the day, did no discredit to the name of frigate, now first applied in England to any determinate form of vessel.

The earl subsequently disposed of his frigate to the commonwealth, but not, as it would appear, until she had afforded decided proofs of her superiority of sailing. At what precise time the transfer took place is uncertain; but the first list, in which the Constant-Warwick appears as a national ship, is one of 1652. There she classes as a fifth-rate, of 28 guns. In another

list of the same year, her guns are stated at 32: a difference to be explained, perhaps, by one being the lowest, the other the highest, number of guns assigned to the ship in her new employ.\*

The English were always fond of over-gunning their vessels; and it generally happened, when an English ship of war was taken by the French, that the latter, before they sent her forth as a cruiser, reduced, sometimes by a full sixth, the number of her guns. One instance may suffice. The Pembroke, when captured by the French, at the commencement of the eighteenth century, mounted 64 guns; but, when recaptured shortly afterwards, had on board only 50 guns, and these as the whole of her establishment.†

An addition of six guns to the Constant-Warwick's original number was, perhaps, no improvement; but what shall we say to an increase of 20, or, at all events, of 16 guns? Our suspicion that this had taken place was excited by seeing the name of the Constant-Warwick, as one of the six fourth-rate 42-gun ships, enumerated at No. 30 in the abstract of 1677. ‡ There the ship, having her two bow-ports filled, carries 20, instead of 18 demi-culverins on, what is now, in truth, the first gundeck; and, having her quarterdeck bulwark continued forward on each side to her stem, readily finds room for a second whole tier of guns. The number first mounted on this second deck was probably 20, the same as on the deck below. Afterwards, 18 were considered enough; especially as the guns were not sakers, but demi-culverins, the same as on the first gundeck. The poop, by this new operation, and, perhaps, by a little extension forward, becomes the quarterdeck, and is armed, at first probably, with six, but afterwards, with four minions; making 46 guns as the temporary, and 42 as the permanent, establishment of the ship.

When, to the increased weight of the guns, their carriages and shot, is added the weight of wood and iron, consumed as well in the barricade to the second gundeck, as in strengthening the ship in every part, we may well give credit to a writer of 1665, who, in complaining that ships of the British navy are "over-gunned," instances, among others, "the Constant-Warwick, from 26 guns and an incomparable sayler, to 46 guns and a slugg."§ The worst is, that the Constant-Warwick, although thus changed in her form and qualifications, although, from an "incomparable sayler," converted to a "slugg," was allowed to retain her original appellation. So that, according to the loose accounts handed down to us, "the first frigate built in England" was an over-gunned, top-heavy, two-decker, instead of, as a little investigation now proves her to have been, a properly armed, snug, one-decker.

\* See this explained at p. 6.

† See Charnock, vol. ii., p. 18.

‡ See Appendix, No. 1.

§ "Gibson's Observations on Military Management," as copied into Charnock's second volume.

There was, however, one part of the *Constant-Warwick's* peculiarity of construction that could not be altered, without a complete rebuild from the keel upwards: it was the sharpness of her lower body, or, as the naval draughtsman would call it, the fineness of her lines. This sharpness of form appears to have been the only characteristic of the frigate which the English builders thought worthy to be retained. It seemed to them a most convenient property, that suited all sizes and classes of ships; and, accordingly, between the years 1646 and 1653, upwards of 60 "frigates" were built, or building. One, among the latter, was to carry "from 50 to 80 guns." The remainder were variously classed, from 56 down to 12 guns; and the first was the only rate, from which they appear to have been excluded.

One natural effect of this extraordinary degree of sharpness, when applied to an overloaded ship carrying 60 or 70 guns, was so to increase the immersion of the vessel, that her lower battery approached too near to the water to be useful. This evil we shall explain in the words of Mr. Pepys. "In 1663 and 1664," says he, "the Dutch and French built ships with two decks, which carried from 60 to 70 guns, and so contrived, that they carried their lower guns four feet from the water, and to stow four months' provisions; whereas, our frigates, from the *Dunkirk*-built, which were narrower and sharper, carried their guns but little more than three feet from the water, and but ten weeks' provisions."\* Mr. Pepys then states, that five frigates (three of 70, one of 66, and one of 64 guns, according to the list of 1677†) were ordered to be built of such dimensions, as to obviate those defects. In eight or ten years afterwards, we find Mr. Pepys still complaining of this want of buoyancy in the British frigates; as appears by another of his statements, already quoted to illustrate a point in our inquiries.‡

Thus had the "first frigate," in less than 20 years, spread her name, if not her qualifications, over nearly the whole of the British navy. From the time, however, that the first and second rates excluded all two-decked ships, as was certainly the case at the date of the abstract of 1677,§ and may have been the case a year or two earlier, the frigate-classes were confined to the third, and the three inferior rates. When, too, at the close of the seventeenth century, the classes within the first four rates assumed the name of line-of-battle-ships,|| the frigate became further restricted to the fifth and sixth rates; which, as the fifth-rate, by the new regulation, was confined to classes below the 50-gun ship, afforded but a very limited range. So that, by the year 1727, as already shown, the frigate-classes were reduced to three, the 40, the 30, and the 20 gun ship.

Our next object is to show, to a certain extent, what classes have

\* Derrick, p. 84.

† See Appendix, No. 1.

‡ See p. 14.

§ See p. 7.

|| See p. 19.

emanated from these three; but, as some foreign, particularly French, frigate-classes may occasionally come before us, it may render the subject more intelligible, if we here introduce a few general remarks on the system of classification adopted in the principal foreign navies.

It is difficult to say, whether the English or the French were the first to divide their navy into rates. We can only state, that in the year 1670, the French navy appears to have consisted of five *rangs*, or rates, each composed of several *ordres*, or classes; and that their first-class first-rates mounted 120 guns, and measured 1500 tons French; which, allowing for the difference both of weight and of casting the tonnage in the two countries, may be about equal to 1800 tons English. As a substitute for their sixth-rate, they had a class which they called *frégates légères*, or little frigates. Probably the name, without an adjunct, was applied to some ships of the fifth-rate, whose exterior form and manner of carrying their guns may have justified the appellation. Next to *frégates légères* were fireships; then *barca-longas*, and pinks. Of the composition of the Spanish navy, in these early times, we can say nothing: we can only remark upon their ships, as they appeared at sea, or in English ports.

The Dutch seem to have divided their navy into six (some accounts say, seven) rates. Their heaviest ships, of which there were but a few, are represented to have mounted 92 or 94 guns, of which a portion were probably swivels. The shallowness of their waters cramped the Hollanders in the dimensions of their ships, and compelled them to adopt, in their larger vessels especially, a flatter floor and bluffer contour than characterized the vessels of other nations, of their southern neighbours in particular.

The great fault attributed to British men-of-war, at the latter part of the seventeenth, and early part of the eighteenth century, was their insufficient size, in reference to the guns they were forced to carry. Hence, their lower batteries could seldom be used in blowing weather; and they sailed and worked heavily. But even this had its advantages; for the British generally recaptured their ships, whenever they formed part of an enemy's chased fleet: and it is remarkable that, of the Comte de Forbin's fleet, which, in 1708, attempted a descent on Scotland, the only ships, which perished in the gale that happened, were such as had been taken from the English.

The foreign builders appear to have allowed a greater width to the portholes, and to the spaces between them. This, in a given number of portholes and spaces, necessarily added to the length of the vessel; and as that increased length required a proportionate breadth, a general increase of bulk, and thence of tonnage, became the consequence. The ship was thus rendered more buoyant, and her lower battery stood higher from the water; advantages which were sensibly felt by the British, in

almost every encounter attended by a rough sea, or a wind fresher than common. In the form of the lower body of their ships, the French greatly surpassed the English; but, in point of materials and workmanship, the advantage was, and perhaps is to this day, on the side of the latter. To the British, however, is certainly due the merit of having been the first to introduce the curved form to that part of the stern against which the sea beats: on the other hand, they were among the last to abandon the immoderate contraction of the upper decks of their ships, and the consequent low position of their chain-plates.

The Spaniards appear to have taken the lead, even of the French, in the proportion between the size and the numerical force of their ships. As a sense of pride had induced Spain to build her ships higher, a sense of safety had impelled her to build them broader, than those of any other nation. When, therefore, the example of other states permitted her to ease her ships of a part of their cumbrous superstructure, Spain continued, for a while at least, to give them their former breadth. They undoubtedly possessed the advantages of greater stability, and of sides less penetrable by an enemy's shot. If the increased thickness of the sides added to the intrinsic weight of the ship, a counterbalancing property was found in the superior buoyancy derived from her increased width. One example will suffice, to show the difference that prevailed between the builders of Spain and of England. The following are the dimensions of a Spanish, and an English ship, of the same class, or denomination; the one built, the other captured, in 1740.

	gun-ship.	Length of first deck.		Breadth extreme.		Depth of hold.		TONS.
		ft.	in.	ft.	in.	ft.	in.	
Princessa.....	70	165	1	49	8	22	3	1709
Bedford.....	„	150	10½	43	7½	17	10	1230

We may now resume our inquiries relative to the various frigate-classes that followed the three of 1727.\* Two new classes were added in 1740: the one a 44-gun ship, averaging about 710 tons, and established with 40 guns on her two decks, similar to No. 7 in the short abstract at p. 10, but with 18 and 9, instead of 12 and 6 pounders; also with four 6-pounders on the quarterdeck. The other class was a 24-gun ship, averaging about 440 tons, and established with two 9-pounders only on the first deck, and twenty of the same caliber on the second deck, with two 3-pounders on the quarterdeck. Before nine years had elapsed, 38 individuals of the 44-gun class, several of them of increased dimensions, had been built, and such of the old

\* See p. 25.

40s as could bear them, had been allowed four sixes for their quarterdecks ; which made them also 44-gun ships, although of a weaker description. The remaining 40s were few in number ; and, by the year 1755, the class became extinct. In 1748 a 28-gun ship was added, measuring about 585 tons, and constructed to carry twenty-four 9-pounders on the main deck, and four 3-pounders on the quarterdeck. This was a decided improvement on the 24, as well as on the old 30 gun class : moreover, the 28 is the first ship that, in the arrangement of her guns, conveys any idea of the modern frigate.

In the year 1757 the following five frigates of the 28-gun class were built of fir instead of oak, as had hitherto been the general practice :

	Tons.	Year.
Actæon .....	585, sold as unserviceable .....	1766
Boreas .....	587, ditto ditto .....	1770
Hussar .....	586, captured by the French .....	1762
Shannon .....	587, taken to pieces .....	1765
Trent.....	587, sold as unserviceable.....	1764

So that the four of these fir-built ships, not cut off by capture, lasted, upon an average, nine years.

In the year 1757, also, were added two classes, of no mean importance ; one a 32, the other a 36 gun ship. The first of these merits a particular account. On the 29th of March, 1756, the Navy Board agreed with Mr. Robert Inwood, of Rotherhithe, at the rate of 9*l.* 17*s.* per ton, to build a fifth-rate ship, according to a draught proposed by Sir Thomas Slade, one of the surveyors of the navy. The ship was to measure 671 tons, and to mount twenty-six 12-pounders on the main deck, four 6-pounders on the quarterdeck, and two 6-pounders on the forecastle. She began building in the succeeding April ; and, after being named the Southampton, was launched on the 5th of May, 1757. Another ship from the same draught, named the Diana, and built by Messieurs Batsons, on the Thames, was launched in August of the same year : she was sold out of the service in 1793.

The Southampton may be considered as the first genuine frigate, built in England ; that is, as the first English ship, constructed to carry her guns on a single whole deck, a quarterdeck, and a forecastle, the characteristic, in the opinion of all the maritime nations, of the proper frigate. A naval writer of France, M. Lescallier, thus describes the frigate : “ *Frégate ; navire de guerre, grée de même que les vaisseaux de ligne, qui leurs ressemblent en tous dans ses manœuvres, et qui ne diffère d’eux qu’en ce qu’il est plus petit, et qu’il n’a qu’une batterie de long en long. Les frégates ont le plus souvent depuis vingt-six jusqu’à quarante canons, dont les calibres sont de 12 ou de 18, pour ceux en batterie, et du 6 ou du 8 sur les gaillards.*” \* The

\* Vocabulaire des Termes de Marine.

frigates of the celebrated Chapman are all of the same form; and, indeed, no modern naval architect recommends any other. The Southampton always bore the character of a good sea-boat and a prime sailer, and reigned as such for 56 years; when a reef of rocks in the Crooked Island passage put a stop to her career. The 36-gun frigate carried the same number and nature of guns on the main deck as the 32, with four additional 6-pounders on the quarterdeck. The class, which consisted but of three individuals, averaged about 720 tons. The first launched was the Pallas. She was ordered in July, 1756, and launched August 30, 1757. The two others were the Brilliant and Venus.

We may notice in passing, that it was upon one of the 32-gun class of frigates, the Alarm, that, in November, 1761, copper sheathing was first employed in the British navy. Like most other innovations, this seems to have had a weight of prejudice to remove. It was not until April, 1764, that a second ship, the Dolphin, of 24 guns, underwent the same operation. In nine months afterwards the Jason, of 32 guns, was coppered; and in March, 1776, the new ship, Daphne, of 20 guns. In that year four ships were coppered; in 1777, 10 or 12; and, before the termination of hostilities in 1783, there was scarcely a ship in the British navy, that had not received the benefit of this highly important invention. In November, 1783, after various vain attempts to counteract the effects of the copper sheathing upon the iron bolts, and in consequence of the success of several experiments made with 44-gun ships, and others of the smaller classes, it was ordered that copper bolts should in future be used, under the load-draught of water, in all the ships of the navy.

In the same year in which the above new classes, the 32 and 36 gun frigate, made their appearance, the British captured a French ship, the Bon-Acquis, of 946, tons, mounting eight 18-pounders on the first deck, twenty-eight 12-pounders on the second deck, and two 6-pounders on the fore-castle; total, 38 guns. In 1758 the British also captured the French 36-gun frigate *Mélampe*, of 747 tons, and armed the same as the 36-gun class, already described; and, in the following year, the Southampton, assisted by the *Mélampe*, captured the French 36-gun frigate *Danaé*, of 941 tons, mounting twenty-eight 12-pounders on her main deck, six 6-pounders on her quarterdeck, and two 6-pounders on her fore-castle. Between 1759 and 1761 the British took three French 32-gun frigates, armed like the Southampton, and averaging about 700 tons. It appears, therefore, that the English, if not beforehand with, were very little behind, the French, in the construction of that justly celebrated class of ship, the modern one-decked, or proper frigate.

In or about the year 1756 the British 50-gun ship, being found too weak to cope with any ship which the enemy usually admitted into his line of battle, was reduced to an under-line

class. The ship, however, although armed much in the same way as the two-decked 44, was not considered as a frigate, but continued to be called, as formerly, 50-gun ship.

In 1744 some newly-discovered virtues in the British 44-gun ship caused 29 individuals to be added to a class, which would otherwise have been extinct in a third of the time. The ships, like the old ones, were complained of as crank, and as carrying their guns too near the water. Some attempts were made to render a few of the latter-built ships more stiff and buoyant; but all would not do, and the greater number being deprived of their lowerdeck guns and fitted with poops, were converted into store-ships. A few individuals remained to attend convoys; but, although a provoking durability, common to the class, continued them for years in the service, they lost the appellation of frigates, and took that of the "old two-decked 44-gun ship;" a name, the very mention of which raises a smile among modern men-of-war's-men.

In 1780 the 38-gun frigate appeared, for the first time, as a British-built class. Before 1782 five individuals were launched, averaging 946 tons. These were named, *Arethusa*, *Latona*, *Minerva*, *Phaëton*, and *Thetis*. The *Minerva* appears to have been the first afloat. She was built at Woolwich dock-yard, and launched June 3, 1780. The ships had ports for mounting, and were ordered to carry twenty-eight 18-pounders on the main deck. The first admiralty order for establishing them with guns is dated September 30, 1779. There the quarterdeck and forecastle armament stands at ten 6-pounders, eight 18-pound carronades, and 14 swivels, and the complement of men at 270. On the 25th of the succeeding April 9-pounders were ordered in lieu of the sixes, and the complement was increased to 280 men. Subsequently the two forecastle 9-pounders were exchanged for twelves (afterwards again altered to nines), and the swivels ordered to be omitted. For these, carronades were substituted; a new kind of sea-service ordnance, of which we shall presently give an account. In 1780, also, the old 36-gun frigate was revived, but in a highly improved state, the average size of the ships being 880 tons, and the calibers of the guns changed from 12 and 6, to 18 and (first 6, then) 9 pounders. This increase of the maindeck calibers, from 12 to 18 pounders, was a very great improvement, and appears to have been adopted about the same time by the French; from whom were captured, in 1782, two 40-gun frigates, the *Aigle* and *Hébé*. The first measured 1003 tons, and mounted twenty-six, the second, 1063 tons, and mounted twenty-eight 18-pounders on the maindeck, with each of them 8-pounders on the quarterdeck and forecastle. The Spaniards, also, appear to have built, in 1781, one 40-gun 18-pounder frigate, the *Santa-Sabina*. Of 12-pounder 34s, they had built several, of very large dimensions. The *Santa-Margarita*, for instance, captured in 1779, measured 993 tons,

and long proved herself a capital ship; and the *Santa-Leocadia*, captured in 1781, measured 952 tons. Indeed, such even still continued to be the difference of ideas in England and foreign countries, as to the due proportion to be observed between the size of the ship and the armament she was destined to carry, that all the French 12-pounder 32s, built since 1761, were about equal in tonnage to the British 18-pounder 38s.

Having already disencumbered the frigate classes of the 44-gun ship, we must now step a little back, to clear them of some minor classes which, owing to their insignificant size and force, in comparison with the frigates we have just been describing, were not worthy of so high a rank. Between 1757 and 1760 four ships were built, and four captured, by the British, averaging about 312 tons, and mounting from 14 to 18 guns on a single deck. In an abstract of 1760, and in another of 1762, these eight ships were classed by themselves as "frigates." Immediately afterwards, however, they were stripped of that name, and placed among the sloops; giving rise to a since well-known sub-class, the ship-rigged sloop.

In the year 1775 a new 24-gun class commenced, averaging about 520 tons, and carrying twenty-two 9-pounders on the main deck, with four 3-pounders (in 1780 exchanged for sixes) on the quarterdeck. In or about the year 1735 a 20-gun frigate-class was built, measuring about 430 tons, and mounting 9, instead of 6 pounders. This was undoubtedly an improvement upon No. 9 in the abstract of 1727; but, notwithstanding two successive proposals of increased dimensions (one of 1741, to measure 498, and the other of 1745, to measure 508 tons), no subsequent improvement was made in the class. The great difference in size and force, between the 20 and the 28 gun frigate, occasioned the former, at what precise time is uncertain, to take the name of 20-gun *post ship*; signifying, that she was of the lowest class to which a post-captain could be appointed. Subsequently, the 24-gun frigate became also called a *post-ship*.

The French adopted a somewhat similar plan; when we are unable to say, but probably about the year 1760. They called all their frigates, from 24 guns downwards, *corvettes*, a word derived from *corvettare*, to leap or bound. Lescallier, when treating on the frigate, says, "A vingt canons, ou au dessous, ce ne sont plus des frégates: on les appelle *corvettes*, et leur calibre est ordinairement du 8 ou en dessous." In another place he says, "*Corvette*; espèce de bâtiment fait pour la guerre, de même forme à peu-pres, et portant le même grément qu'une frégate, à la réserve qu'il est plus petit. Les *corvettes* ont depuis six jusqu'à vingt canons."\* Subsequently, the French applied the name to ships of 24 guns. In later times the French have constructed very large flush *corvettes*, and they

\* Vocabulaire des Termes de Marine.

certainly possess many advantages. To mount all their guns in a single tier, their dimensions require to be increased; and this enables them to carry heavier metal than ships of the same nominal force, that mount a part of their guns on a quarterdeck and forecastle.

So that the term *post-ship* was applied to ships of 24, 22, and 20 guns, and *ship-sloop*, to ships of 18, 16, 14, and any less number of guns; while the French term *corvette* comprehended both divisions of classes. The French named their armed brigs simply *brigs* (*bricks*, or *brigantines*, and commonly *avisos*), surprised, no doubt, that the British should apply the term *sloop* to any vessel, no matter how rigged or constructed, provided she was commanded by a master and commander. For instance, a 74-gun ship, if reduced in her armament, and a master and commander appointed to her, registers as a sloop; that is, unless fitted for, and expressly classed as, a hospital, prison, or store ship. It should be observed that the French, notwithstanding they commonly call their own men-of-war brigs of the largest class, *bricks* or *avisos*, do not hesitate to apply the term *corvette* (although, as it has just appeared, originally restricted to ship-rigged vessels, or vessels "portant le même grément qu'une frégate") to British brigs of war of the smallest class. To meet this, we shall designate all French brigs of war, above an acknowledged gun-vessel so rigged, *brig-corvettes*.

§ The proper frigate, therefore, is a ship that mounts 24 guns, at the least, on a single deck, besides other guns on a quarterdeck and forecastle. So long as this arrangement of the guns is adhered to, the denomination will, we conceive, apply to a ship of any force; but, when once the waist becomes barricaded and filled with guns, the vessel is no longer a frigate, but a flush two-decked ship. It may here be observed, that the term *flush* cannot, with propriety, be applied to a frigate, because, according to the above definition, a frigate must have a quarterdeck and forecastle. The term can only be used in reference to such real single-decked vessels as are to be found among the *post-ship* and *ship-sloop* classes; and this is the restriction to which we alluded at a former page.\*

We may gather from what has been stated, that the expression, one, two, or three decked ship, is as vague in respect to the real number of battery-decks, as it undoubtedly is in respect to the number of guns mounted on those decks; and that, when the number of decks and of guns is ascertained, no accurate judgment can be formed of the ship's force, until the nature of those guns be also communicated. But, and a remarkable fact it is, let the number and nature of the guns once be known, and, owing to the long-established practice of mounting no guns of a

\* See p. 19.

dissimilar caliber on the same deck, the number of decks instantly presents itself; as, from the necessity of placing the heavier guns nearest to the water, does the manner in which all the guns are distributed.

So long as that species of ordnance, called *gun* by the English, and *canon* by the French, continued in exclusive possession of the decks of a fighting ship, no difference existed between the number of carriage pieces she actually mounted, and the number which stood as the sign of her class in the published lists. In process of time, however, the nominal, or rated, and the real force of a ship lost their synonymous signification; and that in a manner, and to an extent, too important, in every point of view, to be slightly passed over.

In the early part of 1779 a piece of carriage-ordnance, the invention, by all accounts, of the late scientific General Robert Melville, was cast, for the first time, at the iron-works of the Carron Company, situated on the banks of the river Carron, in Scotland. Although shorter than the navy 4-pounder, and lighter, by a trifle, than the navy 12-pounder, this gun equalled, in its cylinder, the 8-inch howitzer. Its destructive effects, when tried against timber, induced its ingenious inventor to give it the name of *smasher*.

As the *smasher* was calculated chiefly, if not wholly, for a ship-gun, the Carron Company made early application to have it employed in the British navy, but, owing to some not well explained cause, were unsuccessful. Upon the supposition that the size and weight of the *smasher*, particularly of its shot, would operate against its general employment as a sea-service gun, the proprietors of the foundry ordered the casting of several smaller pieces, corresponding in their calibers with the 24, 18, and 12 pounder guns in use; or rather, being of a trifle less bore, on account of the reduced windage very judiciously adopted in carronades, and which might be extended to long guns with considerable advantage. These new pieces became readily disposed of among the captains and others, employed in fitting out private armed ships to cruise against America, and were introduced, about the same time, on board a few of the frigates and smaller vessels belonging to the royal navy.

The new gun had now taken the name of *Carronade*, and its several varieties became distinguished, like those of the old gun, by the weight of their respective shot. This occasioned the *smasher* to be called, irrevocably, a 68-pounder: whereas, repeated experiments had shown, that a hollow, or cored shot, weighing 50, or even 40 lbs., would range further in the first graze, or that at which the shot first strikes the surface of the water, and the only range worth attending to in naval gunnery. The hollow shot would, also, owing to its diminished velocity in passing through a ship's side, and the consequent enlargement of the hole and increased splintering of the timbers, produce

more destructive effects than the shot in its solid form; one of the principal objections against which was, and still continues to be, its being so cumbrous to handle.

Before half the expiration of the year in which the first carronade had been cast, a scale was drawn up by the Navy Board, and sanctioned by the Lords of the Admiralty, for arming the different rates in the service with the 18 and 12 pounder calibers. In consequence of the first, second, and third rate ships having their quarterdecks as fully supplied with guns, as there was room for ports on each side, no additional pieces could be placed there; but it was found that the forecastle would generally admit the opening of a pair of extra ports, and that the poop, which for nearly a century past had served chiefly as a roof to the captain's cabin, would, if timbered up on each side, afford space for three pairs of ports; making, in the whole, eight additional ports for the reception of carronades. The 50-gun ship was found to have room for a pair of additional ports on her quarterdeck, besides a pair on her forecastle, and three pairs on her poop, when the latter was barricaded; making altogether 10 ports. The 44-gun ship had no poop, and no armament on the quarterdeck;\* by furnishing the latter with a barricade, and cutting through it four pairs of ports, besides an extra pair on the forecastle, this ship might mount the same additional number of pieces as the 50. The three remaining classes of the fifth, and the first two classes of the sixth rate, would also admit of additional ports being cut through the sides of their forecastles and quarterdecks. The third class of the sixth rate, and the quarter-decked ship-sloop class, being, in respect to their quarterdecks and forecastles, in a similar state to the 44, would require to be similarly built up, before they could mount the eight carronades assigned to them.†

Several captains complained of the carronade; some of its upsetting after being heated by successive discharges; others, that, owing to its shortness, its fire scarcely passed clear of the ship's side, and that its range was too confined to be useful. The captains of some of the 32-gun frigates, in particular, represented that one pair of their quarterdeck carronades was so much in the way of the rigging, as to endanger the laniards of the shrouds, and begged to have their established number reduced from six to four. As the principal objection to carronades appeared to have arisen from defects in the manner of mounting them, some additional instructions on that head were prepared and forwarded by Mr. Gascoigne, the chief proprietor of the Carron-foundry. Some alterations were also made in the piece

\* This refers to the latest establishment, or that of 1762; wherein two of the quarterdeck sixes are shifted to the forecastle, and the remaining two removed entirely, to admit two additional 9-pounders on the main deck.

† The following is a copy of the document in question, with an additional

itself.\* Still the Board of Ordnance, in repeated conferences with the Navy Board, maintained the superiority of the old gun, resting their arguments, chiefly, on the comparative length of its range; while the Navy Board urged, that a vessel, able to carry 4-pounders of the common construction, might, with equal ease, bear 18-pounders of the new; that the latter gun was worked with fewer men; that its shot was far more formidable and destructive; and that its range was quite sufficient for the purpose required. The commissioners adduced, as one instance, the case of the *Flora* frigate, whose boatswain, assisted only by a boy, made a surprising number of discharges from a fore-castle 18-pounder, and caused great havoc and destruction on board the French frigate *Nymphe*, ultimately their prize.

Let us be permitted to remark that, with one single unimportant exception, the action between the British 36-gun frigate *Flora* and the French 32-gun frigate *Nymphe* is the first, in which the mounted force of the combatants, as compared together in all the British accounts, was mistated; and that simply because it is, with the exception above alluded to, the first action in which a British ship of war, mounting carronades, was engaged. It was a long contest, and a sanguinary one, on the part of the *Nymphe* at least. Out of her complement of 291, the latter lost 136, the *Flora*, whose number of men on board was 259, but 36, in killed and wounded.

Captain William Peere Williams, having, in his official letter,

column, showing to what amount the total of the carriage-guns of the different classes became augmented.

Scale for arming the different rates in the British navy with carronades, as drawn up by order of the Board of Admiralty, July 13, 1779.						Total number of carriage- guns.		
RATE.	CLASS.	Quarterdeck.		Fore-castle.			Poop.	
		No.	Pdrs.	No.	Pdrs.			
First. . . .	100-gun-ship	...	...	2	12	8	12	110
Second. . .	90 or 98 "	...	...	4	"	6	"	100 or 108
Third. {	74 "	...	...	2	"	"	"	82
	64 "	...	...	"	"	"	"	72
Fourth. . .	50 "	2	24	"	24	"	...	60
	44 "	8	18	"	18	...	...	54
Fifth. {	38 "	6	"	4	"	...	...	48
	36 "	4	"	"	"	...	...	44
	32 "	6	"	2	"	...	...	40
Sixth. {	28 "	4	"	"	"	...	...	34
	24 "	6	12	4	12	...	...	34
Sloops {	18, 16, and 14 ship-rigged.	"	"	2	"	...	...	28
		"	"	"	"	...	...	{ 26, 24, and 22.

\* One appears to have been, the adding of two calibers to its length.

stated that the *Nymph* "mounted 32 guns, but was pierced for 40," says, in a postscript, "The *Flora* mounted 36 guns," and, he might have added, "was pierced for 44." According to the establishment of 1779, the *Flora* was entitled to mount four 18-pounder carronades on her quarterdeck and four on her fore-castle, making her total of carriage-guns 44. That she did mount, and successfully use, one of a pair, at least, of carronades on her fore-castle, appears by the Navy Board's report; and that she also mounted four carronades on her quarterdeck, we shall establish by a document which we shall presently lay before the reader. Hence, the *Flora* mounted, not "36 guns," but 42, at the least. The French accounts say 44; thus: "*La 10 Août, la frégate Française la Nymph, de 32 canons, fut prise, après un combat opiniâtre, par la frégate la Flore, de 44 canons.*"\* The following may be stated as the real mounted force of the two ships:

	FLORA.		NYMPHE.		
	No.	Pdrs.	No.	Pdrs.	Fr.
Main deck . . . . .	26 long	18	26 long		12
Quarterdeck and fore-castle . . . . .	10 "	9	6 "		6
	6 carr.	18			
	—		—		
Carriage-guns . . . . .	42		32		

Although pierced for, and mounting, the most guns, the *Flora* was the shorter vessel by six feet.

According to an official list, dated on the 9th of January, 1781,† there were then 429 ships in the navy mounting carronades; among which the 32-pounder carronade appears, and was the first of that caliber which had been used. The total of the carronades employed were 604; namely, eight 32-pounders, four 24-pounders, three hundred and six 18-pounders, and two hundred and eighty-six 12-pounders. In December of this year a recommendation to use 68-pounder carronades on the fore-castle of large ships, and 42 and 32 pounders on the same deck of some of the smaller rates, induced the Navy Board to order the old *Rainbow* 44 to be fitted, by way of experiment, wholly with carronades of the largest description. Sir John Dalrymple proposed the casting of some that should carry a ball of 100 or 130lbs. weight; but the board resolved to confine themselves to the heaviest of the pieces already cast, the 68-pounder.

The necessary carronades were ordered from the foundry, and some of the foremen belonging to the works attended, to see them properly fitted: it was not, however, until February or March, 1782, that the *Rainbow* could be completed in her equipment. What additional force she acquired by this change in her armament, the following table will show:

\* *Abrégé Chron. de l'Hist. de la Marine Française*, 1804, p. 190.

† See Appendix, No. 3.

RAINBOW'S			
OLD ARMAMENT.		NEW ARMAMENT.	
Long guns.	Broadside weight of metal.	Carronades.	Broadside weight of metal.
First deck.....20	18-pdrs. } 318 lbs.	20	68-pdrs. } 1238 lbs.
Second deck....22	12	22	42
Quarterdeck....—	—	4	32
Forecastle..... 2	6	2	32
—	44	—	48

In the beginning of April the *Rainbow*, thus armed, and commanded by Captain (now Admiral Sir) Henry Trollope, who, with Captain Keith Elphinstone (the late Admiral Lord Keith), and the late Rear-admiral Macbride, were among the earliest patrons of the carronade, sailed on a cruise. All the well-known skill and enterprise of her captain failed, however, to bring him within gun-shot of a foe worth contending with, until the 4th of the succeeding September; when, being off Isle de Bas, he came suddenly upon a large French frigate. Owing to the latter's peculiar bearing, one of the *Rainbow's* fore-castle 32-pounders was first discharged at her. Several of the shot fell on board, and discovered their size. The French captain, rationally concluding that, if such large shot came from the fore-castle of the enemy's ship, much larger ones would follow from her lower batteries, fired his broadside "pour l'honneur de pavillon," and surrendered to the *Rainbow*. Although the capture of the *Hébé* had afforded no opportunity of trying the experiment contemplated by the Navy Board, and so ardently looked forward to by the officers and crew of the *Rainbow*, yet did the prize, in the end, prove a most valuable acquisition to the service, there being very few British frigates, even of the present day, which, in size and exterior form, are not copied from the *Hébé*. She measured 1063 tons, and mounted 40 guns, twenty-eight 18, and twelve 8 pounders.

In the course of 1782 a few of the larger sorts of the carronade were mounted on board some of the receiving ships, in order that the seamen of such vessels as were in port refitting might be exercised at handling and firing this, to them, novel piece of ordnance. As one proof of many, that carronades were gaining ground in the navy, the captains of the few 38 and 36 gun frigates in commission applied for and obtained 24-pounder carronades, in lieu of the 18s with which their ships had been established. The termination of the war in January, 1783, put a stop to any further experiments with the carronade; but its merits were now too generally acknowledged, to admit a doubt of its becoming a permanent favourite: in the British navy at least, where a short range is ever the chosen distance. The removal of the swivel-stocks invariably accompanied the cutting through of carronade portholes in the barricades of the quarter-deck and fore-castle: and no one, aware of the difference in effect

between a half and a 12 pound ball, could deny that the substitution of the latter was a surprising improvement in the art of attack and defence.

The most extraordinary circumstance connected with the employment of carronades in the British navy, is that, with all their alleged advantages, they should never have been thought worthy to be ranked among the guns of the ship that carried them. Whether they equalled in caliber the heaviest of those guns, added to their number a full third, or to their power a full half (in the 14-gun sloop-class, the additional eight carronades made the numbers as 22 to 14, and the broadside weight of metal, in pounds, as 96 to 42), still they remained as mere a blank in the ship's nominal, or rated force, as the muskets in the arm-chest. On the other hand, the addition of a single pair of guns, of the old construction, to a ship's armament, removed her at once to a higher class, and gave her, how novel or inconvenient soever, a new denomination. When, for instance, in 1740, the admiralty ordered that the old 40-gun frigate should mount four 6-pounders on her quarterdeck, she became thenceforth a 44.\* when also, in 1778, eight additional 6-pounders were placed upon the quarterdecks of the larger 90-gun ships, they were separated from their former companions, and promoted to a class by themselves, the 98.† When, in 1780, the Canada 74 received two additional 18-pounder long guns for her second deck, she became registered as a 76, and until the capture of the Hoche (afterwards named the Donegal), in 1798, was the only individual so registered; but when, in August, 1794, the Canada received two 68-pounder carronades for her fore-castle, she still remained as a 76. In 1780 the 50-gun ship Leander received on board two 6-pounder long guns, in exchange for two 24-pounder carronades:‡ what the latter, with their quadruple claim, had not interest to procure, was granted to the former unasked; and the Leander, for upwards of 30 years, continued to be the only 52-gun ship in the navy. In 1781 the 74-gun ship Goliath received on board two 68-pounder carronades; but, as they were not two 9-pounder "guns," she was not sent to keep company with the Canada. A dozen other instances might be adduced; but these will suffice.

So long as the word *gun* retains its signification, of a military engine which "forcibly discharges a ball, or other hard substance, by means of inflamed gunpowder," so long must a carronade be considered as a gun. Yet the distinction has usually been "guns and carronades;" in which sense, certainly, no ship in the British navy appears to have mounted more *guns* than were assigned to her by her rate. But why, when, at a subsequent day, the eight or ten "guns" upon the quarterdecks of

\* See p. 27.

† Derrick, p. 178.

‡ See the Leander's name in the list Appendix, No. 3.

ships became exchanged for carronades, was not the number of guns, as marked down in the list to denote the ship's class, reduced accordingly? What became of the gun-classification, when some of the most numerous classes in the navy mounted all carronades, except for bow-chasers?

Among the excuses which may perhaps be offered for these seeming inconsistencies, are, that the classification of the ships was intended only as a guide for those who had the civil affairs of the navy to manage; that the employment of carronades, although ordered generally, was, as respected the actual use of them, too partial and fluctuating, during several years at least, to warrant the subversion of the old, or become the basis of a new system; that the addition of carronades to a ship's armament did not add one man to her complement, nor affect, in the slightest degree, the length and diameter of her masts and yards, or the proportion of boatswain's and carpenter's stores served out to her: in short, that the old classification, as far as the Navy Board was concerned, fully answered the purpose required. If the carronade-innovation produced confusion any where, it must have been in the ordnance department, where the proportion of gunner's stores served out to a ship depends on the number and nature of her guns; and where, in truth, all the difficulties attendant upon the fitting of carronades, at their first employment, were sensibly felt.

With respect to the employment of carronades on board the armed ships of foreign powers, it may be sufficient to state, that, as far as the prize-lists are to be relied upon, no captured ship mounted any during the war which ended in 1783. Admitting, however, that carronades had begun to be used in any one foreign navy, and that they had also begun to disorganize, or render obscure, the national classification of that navy, still the English would have no reason to complain; inasmuch as, whatever might be the registered force of any contending ship of the enemy's, her actual mounted force is that alone which would appear upon the English records. Not so with the enemy; for he would at once discover that, how accurately soever his own guns stood enumerated, those of the ship he had fought with had been in part overlooked. He could, to be sure, and doubtless would, inform his countrymen what was the real number of guns opposed to him.\* But, even then, one nation is left in the dark as to the true merits of the contest; while the other, attributing the discrepancy in the accounts to design rather than to accident, finds its animosity heightened to a pitch of rancour, as afflicting to humanity, as it is repugnant to honourable warfare. So limited, however, had been the use, and, except in the Rainbow's case, so light the calibers, of the carronade, during the short period that intervened between its first employment in

\* See p. 36.

the British navy and the termination of hostilities with France, in 1783, that few if any of the published accounts require, on that account, to be recanvassed or disturbed. How the case became altered in the succeeding war will be discovered, as the events of that war pass in order of detail.

There is another point in the armament of ships, requiring at present to be briefly noticed. Few persons but must know, that the destruction caused by discharges of cannon is, in a great degree, proportionate to the diameter and weight of the shot. Were it not for this, no ship's deck would be encumbered with guns, weighing each 56 hundred weight, when a tier that weighed one hundred weight each would answer as well. "Il est certain," says M. Duhamel, "que ce sont toujours les gros canons qui sont les plus avantageux dans un combat, et ainsi il est préférable de mettre sur un vaisseau un petit nombre de gros canons qu'un plus grand nombre de petits."\* Nor, would the expense of fitting the Rainbow with 68-pounders have been incurred, when the same end could have been attained by arming her with 12-pounders. Carronades of the latter caliber were already in the arsenal at Woolwich, with their slides and carriages, ready to be placed on board: while those of the former caliber had to be cast at the foundry in Scotland; thence transmitted to Woolwich to be proved; thence to the port at which the ship was fitting; and, when there, were to be (an arduous task it was) properly and securely mounted. A 3 and a 32 pounder are equally guns; but he that would match them, because they *are* guns, might with the same propriety, pit a man of three,† against a man of six feet in height, simply because they are men. From this difficulty, attendant more or less, upon all sea-fights, land-fights are wholly exempt. Every foot-soldier, in either army, enters the field with a musket on his soldier; every cavalry-man wields either a pike or a broadsword, and is mounted on an animal of the same species and comparative strength, and every piece of artillery employed is within a trifle of the same caliber. Fix the number of each army, and mark the nature of the ground; and what more is generally required for coming to a conclusion on the relative strength of the combatants?

On the other hand, compare the account of the opposed forces in the case of the Rainbow and Hébé, as extracted from the work of an English naval chronologist, with the true state of the case, as exhibited in a preceding page. "On the 4th of September," says Schomberg, "Captain Trollope, in the Rainbow, of 44 guns, fell in with, and captured off the isle of Bas, la Hébé French frigate, of 40 guns, and 360 men, commanded by

\* *Elémens de l'Architecture Navale*; par M. Duhamel du Monceau, p. 17.

† The only *man* three feet high was John Hauptman, who was exhibited in London in 1815.—*Ed.*

M. de Vigny, who was slightly wounded; her second captain and four men were killed, and several wounded. The Rainbow had one man killed."\* Not another word is there on the subject. Who, then, with this account before him, but must censure Monsieur de Vigny for having submitted so tamely, as well as praise Captain Trollope for having conquered an enemy's ship so nearly his equal? Exhibit the nature, as well as number of the guns on each side, and an end is put to the delusion.

The several denominations, by which English guns in either service are identified with their respective calibers, are not applicable to foreign guns, every nation possessing, besides a scale of calibers, or natures, a standard of weights and measures, peculiar to itself. Until, therefore, the calibers, or pounders, of the several sea-service guns, in use by the different powers at war, can be reduced into English weight, it will be in vain to attempt any comparison between them. For instance, the gun with which the French arm the lower decks of their line-of-battle ships, above a 64 (a class that, with them, has long since been extinct), they denominate a 36-pounder; for the plain reason, that the shot suitable to its cylinder, and which shot measures in diameter 6.239 French inches and decimal parts, is assumed to weigh 36 French pounds. But the same shot measures 6.648 English inches and decimal parts, and weighs very little less than 39 English pounds. The following table, which has been drawn up with great care, is submitted as the only statement of the kind in print.

DANISH.		DUTCH.		FRENCH.		SPANISH.		SWEDISH.		RUSSIAN.	
Pdr.	English weight.	Pdr.	English weight.	Pdr.	English weight.	Pdr.	English weight.	Pdr.	English weight.	Pdr.	English weight.
	lbs. oz.		lbs. oz.		lbs. oz.		lbs. oz.		lbs. oz.		lbs. oz.
...	.....	...	.....	...	.....	...	.....	48	44 15 $\frac{3}{4}$	...	.....
...	.....	...	.....	...	.....	...	.....	42	39 5 $\frac{1}{2}$	42	37 14 $\frac{1}{4}$
36	39 11 $\frac{1}{2}$	...	.....	36	38 14	36	36 8	36	33 11 $\frac{1}{3}$	36	32 7 $\frac{1}{2}$
...	.....	32	34 12 $\frac{3}{4}$	...	.....	...	.....	30	28 1 $\frac{3}{4}$	30	27 9 $\frac{1}{2}$
24	26 7 $\frac{3}{4}$	24	26 2 $\frac{1}{4}$	24	25 14 $\frac{1}{2}$	24	24 5 $\frac{1}{2}$	24	22 7 $\frac{3}{4}$	24	21 10 $\frac{1}{2}$
18	19 13 $\frac{1}{2}$	18	19 9 $\frac{1}{2}$	18	19 7	18	18 4	18	16 13 $\frac{3}{4}$	18	16 3 $\frac{3}{4}$
12	13 3 $\frac{1}{2}$	12	13 1	12	12 15 $\frac{1}{4}$	12	12 2 $\frac{3}{5}$	12	11 3 $\frac{3}{4}$	12	10 13 $\frac{1}{4}$
8	8 13 $\frac{1}{4}$	8	8 10 $\frac{1}{2}$	8	8 10	8 $\frac{1}{2}$	8 1 $\frac{1}{2}$	8	7 7 $\frac{3}{4}$	8	7 3 $\frac{1}{4}$
6	6 9 $\frac{3}{4}$	6	6 8 $\frac{3}{4}$	6	6 7 $\frac{1}{2}$	6	6 1 $\frac{1}{4}$	6	5 9 $\frac{1}{2}$	6	5 6 $\frac{1}{2}$

\* Schomberg's Nav. Chron., vol. ii., p. 75.

† This as well as the rest, is founded on a calculation; but practical experience has shown, that French shots usually weigh an ounce or two more than is here assigned to them. It appears, indeed, that the French 36-pound shot weigh nearly 37 pounds French. See "Voyages dans la Grand-Bretagne, par Charles Dupin, Force Navale," tome ii., p. 119. Admitting that the shots of the lesser calibers are also exceeded in their real weights in the same proportion, the usual English weight assigned to the French shots, namely, 40lb for the 36, 28lb for the 24, 20lb for the 18, 14lb for the 12, and 9lb for the 8 pounder, are perhaps more correct than the weights

Nothing can demonstrate the utility of such a table more clearly, than the material difference observable between some of the calibers: the Danish 36-pound shot, for instance, weighs nearly two pounds more than the Russian 42; yet, nominally, the latter is the heavier by one seventh. As it is for the gross, or broadside, and not for the individual calibers, that our calculations are chiefly wanted, that integral proportion, which comes nearest to the difference expressed in the table, will answer the purpose. Thus:

Add to the	{	Danish nominal weight, 5-48ths	}	and it will produce the English weight.†
		Dutch           "       1-11th		
		French*       "       1-12th		
		Spanish       "       1-72d		
Deduct from the	{	Swedish       "       1-16th	}	
		Russian       "       1-11th		

There is frequently between two ships a disparity of size, as denoted by the tonnage, not easily reconcilable with the number of guns mounted by each. Numerous instances might be adduced, but a few will suffice. The Rainbow measured 831 tons, and mounted 48 guns; while the Hébé measured 1063 tons, and mounted but 40 guns. Again, the old Blenheim measured 1827 tons, and mounted 98 guns; while the Triumph, built three years afterwards, measured 1825 tons, and mounted only 74 guns. In both pairs of cases, the disagreement of the force with the tonnage arises from the latter not being affected by the upper, or top-side construction of the ship. Had the Rainbow been built, as to her battery-decks, in the same manner as the Hébé, she would have mounted but 28 guns; and the Blenheim, at a subsequent day, had actually one of her decks removed, and then, without suffering the slightest decrease in her tonnage, mounted the same number of guns as the Triumph. A difference in size, however, is frequently observable between ships, that agree, both in the number of their guns and in the manner of carrying them.

specified in the above table. According to M. Dupin (*Force Navale*, tome ii., p. 97) the following are the weights of English shot in French pounds and decimals:

POUNDER.					
42	32	24	18	12	9
38,92	29,682	22,24	16,68	11,12	8,34

Another French writer says, "le boulet de 6 Anglaise pèse un peu plus de cinq livres et demie, poids de marc."

‡ That highly useful little work, "The Bombardier, and Pocket Gunner," gives the Spaniards, instead of this gun, a 9-pounder, but in their own nomenclature, it is invariably, as far as our discoveries have reached, an 8-pounder.

\* According to the numbers in the table, it wants a 256th part of being so; but this difference may surely be passed over, if not for its insignificance, as some allowance for the more important difference mentioned in note † of the last page.

† All fractional parts may be given up thus:  $1268 \div 12 = 105$ , and a fraction, but  $105$  (without the fraction)  $+ 1268 = 1373$ .

When it is considered that, proportionable to the size of the gun and its carriage, must be the port to which it is fitted, the space between that and the next port, and, as a necessary consequence, the whole range and extent of the deck, an increase in the principal dimensions and tonnage of the ship follows of course. Hence, one class of ship mounts twenty-six 12-pounders upon a deck 126 feet in length; another class mounts twenty-six 18-pounders upon a deck 145 feet in length; a third mounts twenty-six 24-pounders upon a deck 160 feet in length; and the tonnage of the several classes, estimated, upon an average, at 680, 1000, and 1370 tons, accords, very nearly, with the difference in the nature of the guns mounted by each.

When, therefore, two fighting ships, numerically equal in guns and decks, but differing greatly in tonnage, meet at sea, the inference is, that the larger ship mounts the heavier metal. Moreover, as the more massive the gun and its carriage, the greater is the strength required to work it; so does the enlargement of the masts, yards, sails, rigging, anchors, and cables, require additional hands to manage and control them: hence, the larger ship is more numerously manned, and, on coming to close quarters, can present the most formidable show of boarders. Several other advantages attend the larger ship; among which may be reckoned, her less liability, owing to her increased stoutness, to suffer from an enemy's guns, and the greater precision with which, owing to her increased stability, she can point her own.

The French and Spanish builders have certainly proceeded upon a more enlarged scale of dimensions than the builders of England; and the ports of their ships are, therefore, both wider and farther apart than the ports of those English ships which mount the same, or nearly the same, nature of guns. This, besides conferring many of the advantages already noticed, affords a greater space between and behind the guns, and so raises their line of fire, that they can act without risk from a troubled sea; an advantage, the want of which has often been felt by the old English two and three deckers.

A comparison of that class in the two rival navies, out of which, from the number of its individuals, the line of battle is chiefly composed, will show the different ideas that prevailed in England and in France respecting the proportion that ought to exist between the armament and the size of a ship. The following is the result of a careful examination, and refers, in point of time, to the latter end of the year 1792, or just as the war with England was about to commence.

British 74.		French 74.	
Tons.	Proportion of individuals to the class.	Tons.	Proportion of individuals to the class.
From 1565 to 1665 .....	8-10ths	From 1680 to 1720 .....	1-10th
„ 1666 to 1720 .....	1½-10th	„ 1720 to 1810 .....	3-10ths
„ 1799 to 1836 .....	½-10th	„ 1860 to 1900 .....	6-10ths

Moreover, the smallest British 74 carried 32-pounders on the lower deck, while the smallest French 74, although upwards of 100 tons larger, carried only 24s. It is true that a French 24-pounder weighs a few pounds more than an English gun of the same nominal caliber; but that overplus is amply compensated by the difference in size between the two ships.

The gradual swell of the current of architectural improvement has, however, given increased size and buoyancy to the English modern-built ships of every class; many of which equal in dimensions and form, and surpass in strength and finish, the ships of any other power on the globe.\* Still, those national navies, which, owing to frequent discomfitures, have been the oftenest renewed, are, in this respect, the most uniform; while that single navy, which has remained for ages unimpaired by defeats, and which has usually added to itself what the others have lost, exhibits in many of its classes the utmost variety of size. Its reduced scale of complements, ever its well-known characteristic, is owing, partly to the contracted size of its ships, and partly to a principle of pure native growth, a reliance upon the physical, rather than upon the numerical, strength of its seamen.

\* It is but justice in regard to America, to mention that England has benefited by her example, and that the large classes of frigates now employed in the British service are modelled after those of the United States.—*Editor.*