



WHITECHAPEL
ART GALLERY

Shipping Exhibition

1903

INTRODUCTION.

No excuse should be needed in the capital city of the British Empire for an exhibition illustrating Shipping.

Of the inadequacy of the present attempt to treat a subject so closely interwoven with the national history and character no one can be more sensible than the promoters of the present exhibition.

The subject is grand, but it is also vast, and time, space, and funds are equally limited at the White-chapel Gallery.

Nevertheless the committee, while apologising for the inevitable incompleteness of the exhibition, feel confident that even the present imperfect attempt to illustrate the different sides of shipping, historical, artistic and mechanical, will serve a useful purpose and prove of interest.

Their thanks are due to many helpers, public and private, who have temporarily sacrificed cherished (and in many cases easily-injured) possessions for the public good. Their thanks are due, above all, to the King and to the Prince of Wales.

It is the desire of the Trustees to continue to hold the Exhibitions without charging for admission, but the expenses are great and all who can afford to contribute are earnestly asked to help to maintain these exhibitions by giving contributions.

The Flags are the House Flags of many of the chief Shipping Companies, kindly lent by them for the Exhibition.

The enlarged drawings of illustrations of mediæval and Tudor ships have been kindly done specially for the Exhibition by Miss Anna Richards and Mr. Gabriel Bunney, as the ordinary reproductions are small for exhibition purposes. These ships were painted often in bright colours, but from Elizabeth's time "timber colour" was usual, becoming the regulation yellow of the later 17th century.

Pictures lent by the artists are marked thus (*); many of them are for sale.

A few other objects which are for sale are marked thus (+). The Director will answer inquiries.

An interesting series of lectures has been arranged for most of the Tuesday, Friday, and Saturday evenings during the Exhibition. They will be held in the Upper Gallery at 8 p.m.

PREFACE.

ISLANDS imply ships, if they are to know and be known to the world outside. The island of Britain—its Celtic name was “Clas Merdin” (the sea-defended green spot)—is well-known to the world, if Britons are not yet as omniscient as some among them could wish. Therefore, Britain has had, and must have, a navy “upon which,” according to the Act of Parliament, “under the good providence of God, the wealth, safety, and strength of the Kingdom chiefly depend.”

The Emperor Claudius is supposed to have created the first British navy in A.D. 43, when he formed a British division of the Roman Fleet with ports at Dover, Richborough and Hythe. His ships were probably of the Mediterranean galley type, rowed by oarsmen. Such boats, in spite of Henry VIII.'s attempt to revive and adapt them to Northern requirement, were never popular.

The free Norsemen preferred to master the forces of nature, and devised ships the winds would carry for them.

Modern designers are returning to these lines, abandoning the less seaworthy forms, induced by the desire to carry heavy guns, which were adapted from the tub-shaped, round-bowed, flat-bottomed cargo boats always existing, solid in build and purpose, side by side with their more war-like fellows.

The type of Norse galley may be seen in the models of the Viking Ship (Nos. 228-231).

The Anglo-Saxons, once settled, let shipbuilding somewhat decline, but the Danes brought fresh seamanship. Trade ranged from German ports to the Bay of Biscay.

Alfred created a navy, but it was not sufficiently powerful to wrest the command of the sea from the Danes, and it was therefore unable to prevent invasion. Etheldred, in 1008, levied a ship, or the equivalent in money, on every 310 hides of land. Harold owed his defeat to his failure to keep command of the Channel.

William the Conqueror had few ships, and for 200 years from his time, kings more and more made use of the ships of the Cinque Ports. The skill in seamanship and concerted action of these towns may perhaps date from Roman times, when Dover, Hythe and Richborough served as ports for the British Division of the Roman Fleet. In return for special privileges these towns for centuries supplied the English kings with ships—free for the short periods for which they were required, at a certain rate of pay for longer campaigns. They were the Channel Squadron of the day.

But by the Norman Conquest, for a time, the Channel became a waterway uniting the two parts of the king's dominion. It was only after 1204, when John lost

Normandy, that the services of the Cinque Ports were greatly requisitioned. Their fidelity to John saved him his throne, when Louis invaded England.

Besides the ships of the Cinque Ports the kings had ships of their own at times and could always hire or requisition the ordinary merchant ships, which in those days required little altering for fighting purposes, and as commerce grew, so, gradually, the relative importance of the Cinque ports declined. Nature did the rest in silting up their harbours.

The Crusades acquainted Northerners with the more advanced shipbuilding of the Mediterranean. The merchant men increased the size of their ships to carry larger cargoes, and gradually the light galley of the Norseman, which could not board these ships of high freeboard, or face the storms of winter, ceased to be used.

During the 15th century ships increased in size, and in the number of sails and masts, so that by 1500 the modern type of sailing vessel was nearly evolved. In 1460, William Canynge, of Bristol, possessed a fleet with vessels of 400, 800 and even 900 tons. English merchants traded with the Baltic, Iceland, and the Mediterranean. The conveyance of pilgrims to Compostella in Spain and to other shrines largely increased their passenger trade.

Henry V. is important in the history of the Navy, as he first established a strong standing navy and employed large sailing vessels, on the plans of the broad, deep cargo boats, exclusively in place of galleys.

The introduction of heavy artillery made galleys useless, and led to that characteristic narrowing of the hull towards the deck so as to get the great weight of the guns in the centre. Henry V. was an innovator. His feebler successors failed to maintain a standing navy. With the Tudors advances were once more made. Henry VII. established the first permanent dockyard at Portsmouth, and began the bounty system to encourage merchants to build large ships. He tried to insist on imports being brought into England only in English ships, manned, for the most part, by English crews.

With Henry VIII.'s reign, and the growth of strong kingdoms in Spain and France a regular navy became a necessity. The King showed considerable personal interest and initiative in trying to adapt the Southern galley to Northern requirements. 85 vessels were added to the navy, and the King introduced guns weighing 3,000 lbs. instead of 250 lbs. This introduction of powerful guns saved England at the time of the Armada.

Henry VIII. also increased the administrative staff of the navy, the duties of the "Clerk of the Ships" were divided between a Treasurer, Comptroller and Surveyor, and this organisation, enlarged, has continued. Woolwich and Deptford Yards were added. The seamen began to take part in the fighting, though soldiers were still carried.

Under Elizabeth, merchant shipping increased, and daring seamanship became common; but Elizabeth, who only added 29 new ships to the navy, does not appear to have under-

stood the importance of sea power as well as her father, and the victory over the Armada belongs to Henry and to the British seamen.

In 1552 there were 16,000 seamen available, and except during the Armada, when 12,000 were in pay, the Fleet required only from 2,000 to 4,000. Drake, Raleigh, and Essex continued and more explicitly stated the principles of naval strategy, previously practised by the English kings, although Elizabeth's timidity and parsimony frustrated their efforts. Nevertheless Elizabeth left England supreme at sea, with the finest fleet of men-of-war afloat, for it was only at the close of the 16th century that Spain and Holland began to build ships purely for fighting purposes.

James I., though he spent more in peace than Elizabeth in times of war, by his choice of inefficient men, allowed this splendid navy to crumble away. The build of ships did not improve, and the administration was dishonest. They were "over-pestered and clogged with great ordnance." Measurements were made by eye instead of with mathematical exactness. Pett, the famous builder of the "Prince Royal," used twice the amount of timber he had estimated for.

In 1618 Buckingham managed to stop this degeneration to a certain extent by getting a Board of Navy Commoners instituted, responsible to himself as Lord Admiral. Fortunately the reigns of James I. and Charles I. were a kind of truce. The power of Spain was practically gone, and the quarrels with the much richer and more powerful States of France and Holland scarcely developed. No attempt was made to provide for the feeding or health of sailors at this time. Men preferred the galleys, and even hanging, to serving on the King's ships. Plymouth petitioned against crews being disbanded there, as 1600 of the townspeople died from diseases caught from the sailors paid off there after the return of the fleet from Cadiz. The Commonwealth treated the sailors, who joined it readily owing to their discontent with the royal bad treatment, better.

The Commonwealth found a strong fleet necessary to prevent its outside foes helping its internal enemies, and confiscations paid somewhat recklessly for a lavish expenditure on the navy. Fortunately this care for the navy enabled England, though far poorer and possessed of less trade, to defeat the Dutch in the wars that followed.

The Dutch Wars, for which many merchant vessels had to be hired, revealed danger of friction with their commanders, and it was enacted that in all cases the officers must be appointed by the State. The Navy List thus began to assume a degree of permanence. These wars, too, proved the advantage of ships larger than the usual merchantmen, and the hiring of them became less common.

On the Restoration, James, Duke of York, was appointed Lord High Admiral, and a Navy Board acted under him. He found in Samuel Pepys, the diarist, an able principal officer of the navy. In 1676 there were 97 fighting ships of various rates besides ketches, yachts, etc. A year later the first Naval Defence Act was passed, which added 30 new

vessels to the navy. The war scare with France, to which the Defence Act was due, passed away, and political dissensions caused neglect of the navy and of its deterioration.

In 1685 James, as king, continued the office of Lord High Admiral in himself, recalled Pepys, and appointed a new Navy Board. Various reforms were carried out. At the Revolution there were 121 fighting ships, besides bomb vessels (just introduced), fireships, etc.

The system of naval administration, organised by Henry VIII. as far as it was organised at all, continued little changed. Under William III. the navy was doubled, partly owing to the prizes captured from the French. Queen Anne and George I. maintained the navy at about the same strength at which they found it. George II.'s successful naval wars with Spain and France in 1748 and 1756, and the building of larger ships for them brought the numbers up to 412 ships at his death, and George III. had 700 ships at the Peace of Amiens. The expanding trade of which England had practically a monopoly in time of war, and the growth of colonies beyond the seas contributed to making the British navy far more powerful than all the navies of the world taken together.

The idea of fighting in line was gradually developed, and the strength of fleets came to be counted, not by the actual number of ships, but by the number of "ships fit to lie in a line," whence came the term "ships of the line." Any variation from fighting in line was forbidden, though it did not prove advantageous without great superiority of numbers.

Byng at Cape Passaro, 1718, and Sir Edward Hawke in Quiberon Bay, 1759, and Rodney accidentally at Dominica, showed how much might be gained by violating the rule on occasion. The greatness of Howe, St. Vincent, Duncan, and Nelson, showed itself in their freedom from traditional routine, and resulted in the glorious victories of Ushant, St. Vincent, Camperdown, The Nile, Copenhagen, and Trafalgar.

A great danger of successful war is the reliance on prestige which follows, and the navy became perilously weak during the half-century which followed the peace of 1815. Although the Admiralty withstood the introduction of steam and iron as long as possible, the industrial supremacy of England gave her every advantage when the necessity for change was once admitted. The first paddle war steamers were soon followed by the first screw, the "Rattler," in 1842. The screw soon superseded the paddle, as it allowed the machinery to be better protected, and enabled the ship to sail, if wished. (*v.* No. 25, with its removable screw.)

The Crimean War found England with a powerful fleet of screw ships of war, of which the "Wellington," "Agamemnon" and "Shannon" were the finest examples. From this time ships depending entirely on sails became obsolete for war purposes. The advance of gunnery now gave the death blow to wooden ships. The idea of plating with iron originated in America, but was first put into prac-

tice by the French in 1855. The British Admiralty at once followed with the "Erebus" and "Terror."

Lord Derby's Commission of 1858, while recognizing the necessity of converting sailing ships into steam-ships, failed to see the necessity for ironclads, but in 1860 this was manifest, and the "Warrior," the first sea-going ironclad, was launched, her great length led to her ends being left unarmoured. The "Black Prince," the "Defence" and "Resistance" followed, and in 1861 eleven ironclads were ordered. The "Minotaur," "Agincourt" and "Northumberland" were first armoured all over. (*v.* Picture No. 80.)

The check given by armour-plating to the effect of artillery led to the revival of the ram; used so much by mediæval galleys. (*v.* Model above Case II.)

The study of torpedoes was carefully pursued after the Crimean War, and in 1871 the Whitehead fish-torpedo was invented.

Messrs. Thornycroft introduced fast screw-boats to carry torpedoes: the "Vesuvius," in 1874, was the first torpedo vessel in the British Navy. But artillery soon caught up protective armour, and the problem has been to combine effective defence with the maximum of offensive power and speed. Captain Coles advocated the turret system (*v.* No. 97), Sir Edward Reen the broadside, in which battery and water line are heavily armoured.

In 1862 the "Royal Sovereign," the first turret-ship was built. The "Captain," which it was hoped would combine a low freeboard with the qualities of a sailing frigate, capsized in 1870. The Commission of 1871 decided that perfection in all directions was impossible as the various excellencies were incompatible.

It is impossible even to mention recent inventions and improvement. The introduction of hard-faced steel armour, which gives as much protection, with 6 or 7 inch plates, as 14 inch plates of wrought iron armour, enabled armour to be greatly extended without increase of weight.

Whitechapel Art Gallery

SHIPPING EXHIBITION,

OCTOBER 7 to NOVEMBER 29, 1903.

CATALOGUE.

1 Navy League Map.
Lent by Navy League.

2 Diagram of Cunard Steamers.

This shows the increase in size in recent steamers. Unless great speed is required, the larger the boat the cheaper the cost of transport. But there is a limit to the strain iron will stand, and in heavy seas more than half the vast hulls are unsupported. It is questionable how far increase of size beyond a certain point is economical in the long run.

2A A Britannic Sentinel.
Lent by C. Swan, Esq.

3—6 Model of a Self-righting Lifeboat.
Lent by National Lifeboat Institution.

During the 18th century there were several suggestions made to the Admiralty for the adoption of un-sinkable boats; these were all based on the use of cork. In 1785, Mr. Lionel Lukin, a coach-builder, of Long Acre, combined a gunwale of cork with an air chamber running from stem to stern, and in 1790, Mr. Henry Greathead, a boat builder of South Shields, and Mr. William Wouldhave, built a cork-lined boat with curved keel and three centre-boards, thus leading up to the self-righting principle. By 1803, Greathead had built 31 boats, and the House of Commons had voted him a grant of £1200. The first boat was working until 1821, when it broke upon the rocks at the mouth of the Tyne. Another, built in 1802, was still stationed at Redcar three-quarters of a century later. In 1824, the "Royal National Institution for the Preservation of Life from Shipwreck" was founded, but the public enthusiasm which originated it gradually died away, and 1849, its income was only £350, and there were very few efficient boats round the coast. Under Royal and noble patronage the Institution was re-organised, and in response to an offer made to the then Duke of Northumberland, Mr. James Beeching, of Great Yarmouth, built the first self-righting boat in 1850, which was at once stationed at Ramsgate. In 1854, the Institution was re-named in its present

form, "The Royal National Lifeboat Institution, founded in 1824 for the Preservation of Life from Shipwreck," and in 1860 it was incorporated by Royal Charter.

These boats possess the property of turning to the upright even when upside-down. The end boxes are very large to ensure this.

The lifeboats round the coast are of many different types to suit the locality. They are not all self-righting.

- 6A Chart. British Seamen for British Ships.
Lent by Navy League.
- 7 Drogue.
Acts as a drag to Lifeboats and fishing boats.
- 8 Nelson's last Signal at Trafalgar.
Photogravure from the Painting by Thos. Davidson.
- 9 Model of Ship's Lifeboat Clearing Apparatus
Lent by Eric Wolfgang.
- 10 Hydraulic Steam Life Boat "Duke of Northumberland."
Lent by Messrs. R. & H. Green.
- 11 "Marie." Model of Life Boat.
Lent by H.R.H. THE PRINCE OF WALES.
- 12 Circular Quay at Sydney, N.S.W.
Lent by Eastern and Australian Steamship Co.
- 13 The famous Game of Bowls on Plymouth Hoe, July 15th, 1588.
Painted by Seymour Lucas, R.A.
Engraved by Paul Girardet (in pure line).
- 14 "Albert Victor." Model of Life Boat.
Lent by H.R.H. THE PRINCE OF WALES.
- 15 "Michael Henry." Model of Life Boat.
Lent by Thames Ironworks Co.
- 17 "Alfred." Model of Life Boat.
Lent by H.R.H. THE PRINCE OF WALES.
- 18 Cork Life Jacket.
7 & 18 lent by National Lifeboat Institution.
- 19 The Armada from Ferrol, July 12th 1588.
Painted by Sir Oswald W. Brierley, R.W.S. (Marine Painter to the Queen).
Etched by David Law.
8-13-19 lent by Arthur Lucas, Esq.
- 20 Photographs of the Great Eastern.
Lent by the Eastern Steam Navigation Company, and F. Kempson, Esq.
The Great Eastern was the first and solitary boat of a line of steamers suggested by I. K. Brunel

to take the entire Eastern trade as far as Ceylon, as all boats for the East went so far together. It was to reduce the voyage from eighty to forty days, as against the time taken by the Aberdeen Tea Clippers. This Leviathan was the largest ship ever built. Its builders expected that the larger the ship, the quicker it would be. It had two sets of engines for screw and paddles, and a cellular construction, 13 knots speed. The idea was to carry all coal for the the 5,000-mile voyage so as to avoid stoppages. Built in Mr. Scott Russell's yard at Millwall. It had a double hull below water-line, and 6,500 square yards of canvas, being an eighth of a mile long. Though a failure, it proved very useful for laying the Atlantic Cable.

21 Books on Naval Subjects.
Lent by Messrs. B. T. Batsford.

22 Model of Triple Expansion Engines.
Lent by Victoria and Albert Museum, South Kensington.

So called, because the steam is used three times, passing by expansion from smaller to larger cylinders, It is then condensed so as to be returned to the boilers as "fresh" water.

The earliest steam engines for driving boats were those of Papin on the Weser in 1701 and Jonathan Hulls in 1736. Symington, in 1801, constructed a successful horizontal direct acting engine for driving a stern paddle-wheel in the first 'Charlotte Dundas.' Bell's 'Comet' first ran commercially in Britain. Boulton and Watt introduced the side-lever type, which was usual till 1860.

In the mercantile marine the inverted cylinder or steam-hammer type has been in favour since 1860, as it occupies little space and can be adapted to any number of cylinders for successive expansion.

Successive expansion in three stages was introduced in 1874 by Messrs. John Elder & Co., and led to a great saving in fuel.

Messrs. Parsons' 'Turbinia' shows a step further in advance. These engines expand their steam a hundredfold, and drive nine screws on three shafts. but the central shaft has been found comparatively ineffective, and on the latest boat, for the Newhaven service, only the two side shafts for screws are used.

BAY A. STEAMSHIPS.

23 "William Fawcett."
Lent by P. & O. Company.

This was the first vessel to open the Contract Mail to the Peninsular Ports in 1837. She was built in 1829, and her tonnage was 206, and horse-power 60.

- 24 The "True Briton."
Lent by St. Andrew's Mission to Seamen.
- 25 Models of stem and stern of Warships of the 19th Century (about 1865).
Lent by Thames Iron Works.
These are before the H.M.S. Vulcan and the change back to the ram form. That change was due to the comparative ineffectiveness of guns against steel-faced armour.
An aperture is noticeable, for lifting the screw when under sail, to avoid the drag of the propeller.
- 26 The Second "Charlotte Dundas."
This was the second steam vessel of which there is authentic account. She was built by Symington and was on a Scottish canal for a short time. Owing to objections of the owner of the canal banks, who feared for his estate, if this sort of thing was allowed to go on, the steamer was broken up for scrap-iron.
- 27 "Wilberforce."
Lent by General Steam Navigation Co.
- 28 "Water Witch." 500 tons, paddle, 1841.
- 29 "Great Western."
Built for the Great Western Company, the largest steamship of her time. Tonnage, 1640; horse power, 450.
The "Great Western" came just after the Sirius, April 7th, 1838.
She was the first ship constructed specially for North American trade. Built by Patterson of Bristol. 212 feet in length; 1340 tons; 440 horse power on lever principle. She reached New York after 13 days; 14 days back; 4th voyage, 12 days.
- †30 Model in glass of the "Thames," an early paddle boat, wrecked off the Scilly Islands.
Lent by C. Ranford, Esq.
The paddle-wheels are very far forward. Cargo in stern was supposed to balance weight of the engines.
- 31 Model and Advertisement of the "Comet."
Latter lent by Messrs Sleath.
- 32 Print of the "Comet."
This was the first steamship to sail on open water. She was designed in 1812 by Henry Bell, who adopted the engine of James Watt, the great engineer, who first found a practical use for steam. She was called the Comet because she flashed through the water at a rate of nearly six miles an hour. She was built on the Clyde and her successors gave that smoky river the supremacy in shipbuilding, which it has had ever since.

- 33 Oil painting of "Dundee."
Steam Paddle-steamer of 640 tons, built by Wood, and engined by Napier for the Dundee, Perth and London Shipping Co.
- 34 Print of "Monarch" and "Leith."
Lent by General Steam Navigation Co.
The "Monarch," built ten years after the "Earl of Liverpool," shows an immense advance.
- 35 Case containing models of a Barque being towed by a paddle-wheel tug boat, and of two powerful screw steam tugs.
These are models of the little paddle tug "Monarch" of 1833, the "Simla" and twin screw up-to-date "Oceana."
The tough build of steam-tugs allows them to dare almost any weather. And so their use for life-boats is great, as was their use for sailing vessels nearing land. Steamers only need them in narrow channels.
- 36 Model of the "Vulcan."
- 37 Sailing Cards of Carron Line. Old and New.
The Carron Company was founded in George the Second's time. Few companies can claim a more honourable antiquity than the Carron Line. At first makers of guns, the firm took to carrying its own merchandise. In the good old times of privateers, no passenger who would not promise to fight was accepted for the voyage from Grangemouth to London.
- 38 Advertisement of The Etna-Tranmere Ferry (1817).
Lent by C. Ainsworth Mitchell, Esq.
- 39 Picture of the Steam Passenger Boat, The "Comet."
The long funnel was not so much to help the draught as to keep the smoke out of passengers eyes.
- 40 Models of old and new Thames Paddle Steamers.
Lent by Thames Iron Works.
What a pity it is that the natural highway of London is without the means of transit.
- 41 Illustration of the "Earl of Liverpool."
Lent by J. D. MacIntosh, Esq.
Built on Thames, 1822; 108 tons, 80 horse-power. One of the earliest steamers of the Steam Navigation Company.
- 42 Picture of "Royal George" Yacht.
Lent by General Steam Navigation Company.
- 43 Coloured Print of "Britannia."
26, 31, 32, 33, 36, 39, lent by Corporation of Glasgow.
Britannia built by Robert Duncan & Co., Greenock, for the Cunard Company in 1839. The Britannia and

her three sister ships were designed by Robert Napier and by the speed of their paddles just brought America within 14 days of Europe.

- 44 "Vivid."
Same type as "Monarch," 500 tons.
- 45 The "Alaska."
Lent by D. D. Bone, Esq.
Built at the Fairfield Yard on the Clyde for the Guion Line. This was one of the dramatic surprises in shipbuilding. The Guion Line was a new line started in opposition to the Cunard Line. The "Alaska" was designed by Sir William Pearce, the great shipbuilder, as an experiment. The Guion Company bought her on the stocks and she at once began her career by breaking the Atlantic record, reducing it to seven days. She was called by a Glasgow journalist "The Greyhound of the Atlantic," and this name has since been used for each great successor. The Guion Company retired from business and the "Greyhound of the Atlantic" afterwards became a floating lodging house for Barrow workmen. She is now broken up.
- 46 S.S. "Colombo."
Lent by the P. & O. Co.
One of the early screws, the "Colombo arriving off Sebastopol with provisions for wounded soldiers and sailors, on Christmas day, 1854."
- 47 Model of a Yacht used by the Trinity House Corporation, in connection with the Light-house Service on the British Coasts.
Lent by HIS MAJESTY THE KING.
- 48 Model of Paddle Steam-tug "Anglia," (1866).
Lent by Messrs. William Watkins.
Its three funnels were very familiar on the Thames. In 1867 it towed a disabled steamer home from St. Helena.
- 50 Painting of the "Walamo," an early Indian passenger steamer of Wilson Sons & Co.
Lent by Messrs. Gellatly, Hankey & Co.
- 51 The "Ripon" leaving Southampton for the Crimea, carrying the Grenadier Guards (1854).
Lent by P. & O. Company.
The "Ripon" was a Paddle Steamer, built in 1846 at Blackwall, with a tonnage of 1508 tons and a horse-power of 1350.
- 52 Model of Stern-wheel Boat.
Lent by Messrs. Yarrow and Co.
These steamers are built for use on shallow rivers. The single paddle is in the stern.

- 53 The "Majestic" and "City of Glasgow."
Lent by T. Finlay, Esq.
These were among the earliest steamships in the Channel service.
- 54 Photographs of the "Great Eastern."
Lent by F. Kempson, Esq.
- 55 Various ships of the P. & O. Company, from its foundation up to the last generation, in which masts and sails formed a serious part of a Steamer's equipment.
Lent by the P. & O. Co.
Note the graceful lines of the "Oceana."
This Company was founded in 1837, to trade with Spain and Portugal. In 1840, it was expanded into the Peninsular and Oriental Steam Navigation Company.
The opening of the Suez Canal severely affected the company for a time and necessitated the building of a new fleet, but the trade of Great Britain with the East having increased from 20 to 100 million pounds in 50 years, the importance of this company, for 33 of these years practically the exclusive carrier to the East, can be imagined.
- 56 Torpedo Boat Destroyer.
Painted by W. S. TOMKIN.
Lent by W. G. Glover, Esq.
- 57-58 Water Colours, I.C.S. "Lawrence" and the Troopship "Clive."
Lent by the India Office.
- 59 Photographs of Steamer "Australian" before launching and after.
Lent by Eastern and Australian Steamship Co.
- 60 Facsimile of Promissory Note granted for payment of the boiler of the "Comet," the first Steamer to carry passengers in Europe.
Lent by Sailors' Palace.
- 61 Model of Stern-wheel Passenger Steamer.
Lent by J. I. Thornycroft & Co.
- 62-63 Model and Photographs of Steamer "Sikh."
Lent by Messrs. Gellatly, Hankey & Co.
Built in 1902, by Messrs. Napier & Miller, Ltd., for Japan and China trade.
- 64 Photographs of "Orontes"
Lent by Orient Pacific Co.

- 65 Painting of the Orient Pacific Liner R.M.S.
"Ophir."

By Frank Brangwyn.

Lent by Anderson, Anderson & Co.

The original of the justly popular poster. The imagination of the artist has brought out the eternal contrast of East and West.

- 66 Fast Screw Yacht.

Lent by Thames Iron Works.

Built by the Thames Iron Works for the Russian Ambassador at Constantinople.

- 67 Model of "Turbinia."

Lent by Parsons' Marine Steam Turbine Co.

This Steamer carries the expansion of steam still further. Just as a bullet gains velocity in the spiral groove of a rifle, so the steam in the Turbine Engine gains force by being buffeted in a somewhat similar spiral.

The turbine, with which Mr. Parsons' name will always be connected, appears to be the marine engine of the future. A committee is now sitting to consider the advisability of adopting it for the new Cunarders to be built. The 'Turbinia' is interesting as being the first boat fitted with turbines.

- 68 Model of Steamship on Stand.

Lent by H.R.H. THE PRINCE OF WALES.

- 69 Model of small Steamship.

Lent by H.R.H. THE PRINCE OF WALES.

- 70 Photograph of S.S. "St. Paul" of Philadelphia.

Lent by American Line.

This ship, and the sister ship "St. Louis," were built at Cramp's Yard, Philadelphia, and were the first modern passenger lines built in the United States.

- 71 American Line Steamship "Philadelphia."

- 72 Picture of the White Star Liner R.M.S.
"Oceanic."

Lent by Messrs. Ismay, Imrie & Co.

Built by Harland & Wolff, Belfast, for the White Star Line. When first launched she was the largest vessel afloat. Her tonnage is 17,274 tons, and her speed 22 knots. The "Celtic" is a larger vessel, but the "Oceanic" is still the largest vessel of her class. She is 24 feet longer than the "Great Eastern" and 6½ feet deeper. An idea of her size may be had from the fact that she is as long as the Haymarket from Pall Mall to the middle of the Civil Service Stores, and as high as the buildings.

- 73 Model of Tank Steamer "Silverslip."

Lent by Messrs. M. Samuel & Co.

At one time Insurance Companies would not insure inflammable cargoes, but these vast steamers now

supply the East with oil, special arrangements being made to protect the cargo against fire. The engines are removed to one end.

A typical modern steamer of moderate speed, but enormous cargo capacity. She is practically of constant section for nearly the whole length. This ship could carry oil or cargo, as desired.

- 74 Congo Steamer in Dry Dock undergoing repairs to stem and bows, probably after collision.
Lent by The Hartmann Anti-fouling Composition Co., Limited.
- 75 Picture of Cunard R.M.S. "Campania."
Lent by The Hartmann Anti-fouling Composition Co., Limited.
Built at Fairfield on the Clyde for the Cunard Company in 1893. The tonnage is 12,950, and her speed 22 knots an hour. She is the best liner that the Clyde has yet produced.
- *76 S.S. "Britannic."
By A. J. Carson.
- 77 Model of Steam Yacht.
Lent by HIS MAJESTY THE KING.
Flying Royal Standard at main. A Royal yacht of the old type. Tonnage 132 tons.
- 78 H.M.S. "Ophir."
By Chevalier E. de Martino.
Lent the Proprietors of the "Graphic."
- *79 A Cape Liner.
By W. S. Tomkin.
- 80 Model of "Ophir."
Lent by H.R.H. THE PRINCE OF WALES.
Built by the Fairfield Ship-building on the Clyde for the Orient Line. This is perhaps the most distinguished vessel in the British Mercantile Marine, as she conveyed the Prince and Princess of Wales on their tour round the World in 1901. The model is a very highly finished example of modern model making
- *81 Her Maiden Voyage.
By A. J. Carson.
- 82 Model of Screw Yacht for H.M. The King of Spain.
Iron Screw Yacht, wood sheathed, 2,519 tons, 13,700 h.p., built by the Thames Iron Works for the King of Spain, 1875.
- 83 Roumanian Police Boat "Oltul."
Built by the Thames Iron Works in 1888.
82 & 83 Lent by the Thames Iron Works.

BAY B.

MODERN WAR SHIPS.

The great change in the Navy began with the introduction of Steam, about 1832. The first paddle boats, like the "Salamander" of 1832, were soon succeeded by Screw Steamers like the "Rattler" of 1843. But it was only in 1848 that steam propulsion was applied to regular line of battle ships, and then only as an auxiliary power to fully rigged sailing vessels. Though iron armour applied to wooden ships was found successful as early as 1832, it was only used for war vessels in 1856, the shell fire in the Crimean War having proved very destructive to wooden ships. In 1860 came the "Warrior," the first iron-built armoured vessel. From this time vessels of war diverged more and more from merchant ships and the Tudor plan of hiring merchant vessels in time of war for fighting purposes would now be impossible. Armour was at first of wrought iron. This was not a sufficient protection against steel shot. The iron was then plated with steel. The later armour is of nickel steel or other special metal with a hardened face.

Armour is now usually applied completely round the water line and curved protective decks project to shield the part of the ship under the water line.

The heavy armoured gun turrets which prevailed from 1870 to 1889, have given way to barbette mounting, the guns being worked on a revolving platform protected by a stationary ring of armour.

84 Twin Screw Armoured Barbette Battle Ship.

Built by the Thames Iron Works, London, for the Emperor of China. Tonnage, 10,500 tons; speed, 18 knots; carries four 12-inch guns and four 6-inch quick firing guns, and five torpedo tubes.
Lent by Thames Iron Works.

*85 Water Colour of Torpedo Boats.

By Miss Clara Montalba.

86 Photographs of Steamers and Machinery.

Lent by Messrs. Yarrow & Co.

87 Seven Drawings by Charles Dixon.

Lent by the Proprietors of the "Graphic Gallery."

*88 Eight Pastels of the Jubilee Naval Review, 1897.

By George C. Haité.

*89 H.M.S. "Duncan" and "Cornwallis."

By W. S. Tomkin.

90 The "Ophir" entering Malta.

By Charles Dixon.

Lent by W. G. Glover, Esq.

- 91 Model of Torpedo Boat Destroyer, 31 knots,
"Shirakumo."
Lent by J. I. Thornycroft & Co.
- 91A Two old Prints and four Water Colours
showing sailors' dress at various times.
Lent by Commander C. N. Robinson, R.N.
- 92 Model of Torpedo Boat constructed for
Imperial Japanese Navy.
Lent by Messrs. Yarrow & Co.
- 93 Model of Clockwork for blowing up a Fire-
ship.
Lent by United Service Institution.
- 94 Model of Twin-screw Battleship "Albion."
Lent by Thames Iron Works.
- 95 Two Models of sectional flat boats for
pontoon bridges for Cavalry.
Lent by United Service Institution.
- 96 Model of H.M. Shallow Draft Twin-screw
Gunboats, "Teal and Moorhen," for use
on rivers of China.
Lent by Messrs. Yarrow & Co.
- 97 Captain Coles' Shield Ship.
Type of warship with auxiliary sails and remov-
able screw, carrying eight 300-pounders, screw, steam-
ing 12.5 knots, 4 turrets, tonnage, 3,700; 3-mast, mizzen,
wearing stern. This class of vessel was used in the
Crimean War.
Designed by Captain Coles, who afterwards built
the "Captain," modified by the Admiralty and lost in
1870 off Finisterre, with almost all her crew.
- *98 The Passing of the Mistress of the Seas.
The "Alberta" bringing the body of Queen
Victoria from the Isle of Wight.
By W. S. Tomkin.
- 99 Illustrations of Old Naval Uniforms.
Lent by Messrs. L. & H. Nathan.

NAVAL UNIFORMS.

The subject of naval uniforms is not as clear as one would expect. Officers, judging by their portraits, wore the ordinary dress of the time. Edward IV. provided "Jackets." Henry VIII., when in funds, clothed his sailors in the Tudor colours, white and green. Certain kings granted liveries, sometimes of "Watchet blue," the colour being, like Khaki, meant to act as a protection. No regular uniform seems to have been insisted on, till George II. decided in 1748 on the now well-known blue cloth uniform for officers, choosing this colour rather than the combination of scarlet and blue, more common at the time, owing to the favourable impression made on him by the blue habit faced with white of a lady he saw riding.

Ordinary seamen are constantly represented as wearing a kind of petticoat, not unlike the kilt, as a protection against wet and hard wear. (No. 91A.) This lasted till Captain Maryatt's time. Epaulets were adopted about 1795, and white lappels and cuffs disappeared. It was only in 1857 that a uniform, very like that now worn, was established for the sailors.

Recently, beards have been allowed. Till the end of the the Napoleonic wars all sailors were clean shaven.

100 Naval Uniforms, mostly of Nelson's period.
Lent by Messrs. L. & H. Nathan.

101 Portrait of the Earl of St. Vincent.

By Sir William Beechy.

Lent by the Fishmongers' Company.

John Jervis, Earl of St. Vincent, Admiral of the Fleet (1735-1823), and the famous disciplinarian and strategist. He captured the French 74-gun ship "Pegasus," 1782, and was with Lord Howe at the relief of Gibraltar. He commanded the naval forces at the reduction of the French West India Islands, 1794, and on February 14th, 1797, obtained a splendid victory over the Spanish fleet off Cape St. Vincent. His three great services consisted in disciplining the Mediterranean fleet, triumphing at St. Vincent in a critical political time, and suppressing the mutiny of 1797-98. "Though he must yield to Nelson the rare charm of genius, yet was the glory of Nelson, from the Nile to Trafalgar, the fair flower that could only have bloomed upon the rugged stalk of Jervis's navy." (Captain Mahan.)

101A H.M.S. "Marlborough."

Lent by T. H. Small, Esq.

A wooden screw line of battle ship of 131 guns, and 800 h.p., Launched 31st July, 1855. Boats of this type only trusted to steam as an auxiliary power.

DECORATIVE ART

The decorative value of shipping to our eyes is disappearing with the changes in form, consequent on the introduction of iron ships and steam. Possibly future generations will acquire a more vivid appreciation of the beauty of iron construction. Even now the lines which insure the highest speed and efficiency strike us by their simple grace. Nevertheless, we miss the sails and rigging of ships of past times. Up to the middle of the 19th century, shipping remained almost alone, except for scaffolding, a perfectly beautiful thing of daily use, and naturally artists make use of ships as motives in decorative work.

102 Tiles, Vases and Plates with decoration of
Ships and Fishes.

Lent by W. De Morgan & Co

Some of these have the lusted glaze, a sometime lost art of the Italians of the 16th century, now revived.

Such things pretend to no accuracy of detail, but they make us realise the charm of ships of olden time.

- 103 Photograph of a Rhodian Plate, showing decoration of Ships. Original in Cluny Museum at Paris.
- *104 Silver Plaque of Ships. Worked by hand pressure against felt.
By Charles Emanuel, Esq.
- 105 Design of Ship and Dragon for reverse of a medal by Pisanello, the greatest Italian medallist of the 15th century.
- 106 The Fairy Ship.
Children's picture book by Walter Crane.
- *107 Queen Elizabeth at Tilbury.
By A. Ragon, Esq.
- *108 Wreck of Spanish Galleon.
By A. Ragon, Esq.
These pictures give an idea of the appearance of ships of the time of the Armada.
- 109 Dutch Tile.
Lent by F. L. Emanuel, Esq.
The Dutch as being both a great race, navally and artistically, naturally expressed their love of ships in painting and the decorative arts.
- 110 Three large Tile Panels of Ships.
Designed by W. De Morgan, Esq.
Lent by Messrs. Morris & Co.
- *111 Chandelier for Candles in copper and wrought iron, with copper Ship and Dolphin's heads.
By Nelson Dawson.
- †*112 Dutch Merchant and Fishing Boats in 1600.
By R. Morton Nance.
- *113 The Cross and the Crescent. English Ships and Turkish Galleys.
By R. Morton Nance.
- *114 No Quarter.
English and Dutch in the XVI. century.
By R. Morton Nance.
- *115 The First Lightship.
By R. Morton Nance.
- *116 Painted Screen, Blake and Tromp.
By R. Morton Nance.
The beautiful decorative work of this artist, has the additional merit of being accurate in every detail, so that it is a valuable addition to the existing knowledge of the subject.

- 117 Model of full-rigged Barque "Flo," (about 1850).

With ports painted to imitate a Man-of-War. This was often done as a protection.

Lent by F. L. Emanuel, Esq.

- 118 Dock yard Model of 18th Century Revenue Cutter, about 75 tons, 16 guns.

Lent by Messrs. Linton Hope & Co.

- *119 Broadsheets.

Broadsheets with ballads and rough coloured woodcuts of Naval subjects, were very popular formerly. Mr. Yeats has revived these, and caught the somewhat grim romance of the old seafaring life.

By Jack B. Yeats.

BAY C.

HISTORIC MODELS AND PICTURES.

OLDER WAR SHIPS.

Before the invention of gunpowder, fighting was conducted either hand-to-hand or by archers. The forecastle was an erection to protect archers. Soon after 1350 cannons already used on land were introduced on shipboard. They were arranged on deck at first, but the use of ports and the arrangement of the guns in tiers soon followed. The desire to get the weight of the guns in the centre of the ship led to that narrowing in of the hull towards the decks which is such a feature of old ships. In the 17th century ships possessed lofty sterns, a spritmast below the bowsprit, and a lateen sail on the mizzenmast. Owing to the regulations laid down by the Navy Board in 1719 for the construction of ships of war, this type of ship remained little changed until the beginning of the 19th century.

- 120 Model of 74-gun line of Battleship, 18th Century. Showing the manner in which the deck beams are laid.

English build.

Lent by J. C. Sharpe, Esq.

- 121 Midship Section of "Rodney."

Lent by F. W. Slade, Esq.

The "Rodney," 92, of 2598 tons, launched at Pembroke in 1833, built from the design of Sir Robert Seppings, predecessor of Sir Wm. Symonds as Surveyor of the Navy. First cost £76,541. Was in the Black Sea Fleet, 1854.

A specimen of the old wooden walls. Notice the great thickness of the wooden stern and timbers, and you will realise how its comes to pass that an iron or steel ship can be built much lighter than a wood ship.

- 122 Model of 28 Gun Frigate, early 19th Century.

Lent by The Sailors' Home.

- 123 Model of Man-of-War.

Lent by The Sailors' Home.

- 124 A Sea Fight.
Lent by Walter Coombs, Esq.
- 125 Picture made of Coloured Straw, representing
the arrival in port of a squadron of War
Vessels, 1718.
Lent by W. Rubbathan Smith, Esq.
- 126 The "Victory" being towed into Gibraltar,
28th October, 1805.
Painted by Clarkson Stanfield.
Lent by the Corporation of London.
- 127 In Port—A Calm.
Painted by Henry Dawson.
Lent by the Corporation of Birmingham.
- †128 Model of a 120-gun Ship.
Lent by Mrs. Edenborough.
- 129 Silver Model of a Steering Wheel.
Lent by H.R.H. THE PRINCE OF WALES.
The steering wheel was tried early in the 18th
century, but not liked. It was finally established in
use between 1740 and 1750.
- 130 Model Line of Battleship.
These models were made in large numbers by the
French prisoners at Portsmouth and other places
during the Napoleonic wars out of the bones of the
meat supplied them.
Lent by Henry Castle, Esq.
- 131 Silver Model of Training Ship "Worcester."
Lent by HIS MAJESTY THE KING.
- 133 The Relief of Gibraltar.
Lent by the Corporation of London.
Painted by R. Paton.
In the memorable siege of Gibraltar by the Spaniards,
1779—83, when the defence was conducted by Gen.
Elliot, afterwards Lord Heathfield, relief was carried
to the place by Admiral George Darby in April, 1781,
and not again until Lord Howe, in the face of a strong
force of the enemy, succeeded in reaching the harbour
with a year's supplies in October, 1782, thus render-
ing the greatest service to his country.
- 134 Portsmouth Harbour.
Lent by T. S. Oldfield, Esq.
Painted by David Cox.
- 135 On the Quarter Deck.
Lent by Vernon Weston, Esq.
- 136 The Wooden Walls of England.
Lent by the Corporation of Birmingham.
Painted by Henry Dawson.

- 137 Frigate in the Tagus.
Lent by Mrs. Cornish Bowden.
Painted by Luny.
- 138 The Fight between English and French Ships.
Lent by W. Coombs, Esq.
- 139 Model of a Barkantine.
Lent by H. Coel, Esq.
Made by a seaman, running rigging made from Spanish lute string. Hull is of teak, which once formed the jib-boom of a "clipper," in the China trade.
- *140 Model of Dutch First Rate, latter half of 17th century.
Made by R. Morton Nance.
The hull, copied from an "ex-voto" *i.e.* model put up in churches, especially in Holland, and rigging from contemporary drawings.
- 141 Old Devonport Dock Yard.
Painted by J. M. W. Turner.
Lent by T. S. Oldfield, Esq.
Mr. Ruskin declared this to be a genuine early work of the painter.
- 142 The "Victory" being towed into Gibraltar. +
Lent by Victoria & Albert Museum.
Painted by Robert Cleverley.
After the battle of Trafalgar, the British fleet proceeded to Gibraltar, the "Victory," with a jury mast and rigging damaged, having the body of Lord Nelson on board.
- 143 Men of War off Portsmouth.
Painted by Clarkson Stanfield, R.A.
Lent by the Corporation of London.
- 144 The Prince of Orange (afterwards William III.), embarking at Helvoetsluys for England, 1688.
Lent by Victoria & Albert Museum.
Painted by E. Koster.
Probably painted early in 19th century, but fairly accurate in detail.
- 145 Model of Four-masted full-rigged Ship in a dram bottle.
Lent by Fleetwood Sandeman, Esq.
This trick is generally done as follows. The hull and riggings are pushed through the mouth of the bottle in a horizontal position, and so arranged that when once inside, pulling a string from the outside attached to the lot will raise the masts to their proper vertical position.

- 146 Model of Frigate, end of 18th century.
Lent by Henry Castle, Esq.
It has the early form of wooden davit.
- 147 Old Iron bolt from the "Royal George."
Lent by H. Castle, Esq.
- 148 Model of Stern of H.M.S. "Pique" with temporary rudders.
Lent by United Service Institution.
The "Pique," 36 guns and 1633 tons, built from the plans of Sir William Symonds, Surveyor of the Navy, and the designer of the most beautiful ships the old wooden navy possessed, was launched at Devonport in 1834. In September, 1835, when under the command of the Hon. H. J. Rous, (later the Admiral Rous of Turf fame), she went ashore in the mouth of the St. Lawrence. She was got off after throwing 20 of her guns and 100 tons of water overboard, and although leaking to the extent of 20 inches an hour continued her voyage to England. It blew a gale the whole way, and shortly after her departure she lost her rudder, having to be steered by the manipulation of a length of cable hove overboard, while the pumps were going night and day. When put into dock at Portsmouth it was found that nearly the whole of her keel and bottom timbers had been torn away, leaving in some places only two inches of sound wood as the margin of safety. "Your beautiful ship," wrote Captain Rous to Sir W. Symonds, "has had the hardest thumping that ever was stood by wood and iron."
- 148A Model of Mast. Showing how they are put together.
Lent by United Service Institution.
- 149 Model of Man-of-War.
Lent by H.R.H. THE PRINCE OF WALES.
Till the early 19th century there were no means of launching a boat clear of a ship except by one of the yards, as seen in the model here. Straight spar davits came first. Then they were made to swing from the foot. Finally came curved iron davits, Unequal lowering is a danger which many inventors have tried to overcome.
- 150 Painting of the Lighthouse in the Bay of Dublin.
Lent by Victoria & Albert Museum.
Painted by J. T. Serres, son of the more famous naval painter, Dominic Serres.
- 151 Model of French Frigate made by French Prisoners.
Lent by J. C. Sharpe, Esq.
The way in which the boat is attached to the rigging instead of being lowered by davits is indicative of the period.

- 152 Model Man of War.
Lent by HIS MAJESTY THE KING.
Early 19th century, possibly French build, judging
by the form of the bags and the netting,
- 153 Ships of War in the Medway.
Lent by Victoria and Albert Museum.
Painted by E. W. Cooke, R.A.
- 154 Saluting a Dutch State Barge.
By H. Kobell.
Lent by F. Brangwyn, Esq.
- 155 Frigate in the Hamoaze.
Lent by Mrs. Cornish Bowden.
Painted by Luny.
The Hamoaze part of Plymouth Sound where the
old battleships lie.
- 156 A Light Breeze.
Lent by Mrs. Cornish Bowden.
Painted by Van de Velde.
Van de Velde was a sailor himself. He came over
to England and became marine painter to the Court.
- 157 The Mutiny of the "Bounty" (1789).
Lent by W. Coombs, Esq.
The Bounty left Spithead for the South Seas, com-
manded by Lieut. William Bligh, a harsh and
unfeeling officer, in December, 1787. The crew
suffered the greatest hardships. Driven at length to
desperation, Bligh and eighteen officers and men were
placed in the ship's cutter, with food and spirits, a
sextant and charts, and turned adrift, and, in these
trying circumstances, Bligh showed great firmness
and strength of character, and at length reached safety
with his companions. Some of the mutineers were
brought to England, and three men were executed at
Spithead. Nothing was heard of the other mutineers
until 1813, when it was discovered that their survivors
and descendants were living on Pitcairn's Island in
the Southern Pacific, and John Adams, the sole sur-
vivor of the mutiny, was not molested. The descen-
dants of the mutineers have since been removed to
Norfolk Island in the South Pacific.
- 158 English Frigates Saluting.
Painted by J. E. F. Swaine.
Lent by Victoria and Albert Museum.
- 159 Model of Frigate late 18th Century.
Lent by the Sailors' Home.
- 160 Finely-built Model of a Warship of the early
19th century, has the name "Eole" on
stern.
Lent by Sailors' Home.
- 161 Model of Dutch Brig, "Vrou Margrita."
Lent by F. L. Emanuel.
Very fine little model with Dutch flag wrong way up.

- 162 Mats worn as clothing by Natives of friendly Islands and Embroidered shoes.
- 163 Globe which was in the Action between the "Mars" and "L'Hercule," 1792.
- 164 Orange Tree trained in form of Lion.
Brought by Captain Hood from capture of Canton.
- 165 Shark's Jaw.
- 166 Inlaid Table.

Brought by Lieut. Arthur Hood from the Defence Eupatoria, in the Crimean War.

163, 164, 165, 166, lent by Lady Hood of Avalon.

- 167 Capture of the Spanish Frigate "El Gamo" by the "Speedy," Captain Lord Cochrane, May 6th, 1801.

Painted by Clarkson Stanfield, R.A.

Lent by Victoria and Albert Museum.

This capture of a 32-gun ship by one of 14 guns, was one of the most extraordinary of the war, and demonstrated Cochrane's fearlessness, audacity, and readiness of resource.

- 168 Man of War receiving stores.

Painted by Van de Velde.

Lent by W. H. Warhurst.

- 169 H.M.S. "Victory" at Trafalgar.

Painted by J. Constable.

Lent by Victoria and Albert Museum.

- 170 Model of "Victory."

Lent by T. H. Small, Esq.

The earliest "Victory" in the navy is of the reign of Elizabeth, and took her share in the Armada fight of 1588, when Howard and Drake, Hawkins and Fro-bisher "drummed the Spaniards up the Channel long ago." She had four successors before 1765, and the immediate predecessor of the present "Victory," an almost new ship of 110 guns was lost with Admiral Sir Balchen and 800 men in 1744, only one spar drifting ashore at Guernsey to indicate her fate. There is a beautiful model of this ship in the Naval Museum at Greenwich. Our "Victory," launched at Chatham, 7th May, 1765, was built from the plans of Sir Thos. Slade, the then Surveyor of the Navy, who had risen from the position of working shipwright and who designed most of the finest ships of the 18th century navy. Her dimensions were:—

Length from figure head to taffrail	226 ft. 6 in.
" of keel	151 " 3 "
" of gun-deck	186 " 0 "
Extreme beam	52 " 0 "
Depth of hold	21 " 6 "

She is of 2162 tons, her ordinary rate in a topsail wind was 8 knots, and although her armaments varied

at different times, she usually carried thirty 32-pounders on her lower deck, thirty 24-pounders on her middle deck, thirty-two 12-pounders on the main deck and others on the upper deck, the total number ranging from 98 to 112 guns.

Her first service was in 1778, when she was Keppel's flagship in the battle of 27th July, off Ushant; in 1772 she was Sir Charles Hardy's flagship when, for the last time, the combined French and Spanish fleets held the command of the Channel, so that in her career she has seen the nadir and the zenith of modern English naval history. In 1781 she wore the flag of Rear Admiral Kempenfelt, and on 12th December was again in action off Ushant; and, in 1782, was Howe's Flagship at the relief of Gibraltar. Until recent times first-rates were seldom commissioned except in years of war, and her next services belong to the great war. In 1793 she was Lord Hood's flagship in the Mediterranean, was present at the capture of Toulon, and bore her part in the battle of St. Vincent in 1797. Between 1781-3 she was almost rebuilt, and the model here is probably of that period. She was then chosen by Nelson, and remained his flagship in the Mediterranean and West Indies until the final day at Trafalgar. In 1808 she went to the Baltic with the flag of Sir James Saumary, and in 1812 performed her last sea service wearing the flag of Sir J. S. Yorke. No fewer than six Admirals applied for her in 1815, but her work was done, and after lying in ordinary for some years, she was made flagship at Portsmouth in 1825.

As she now lies in Portsmouth harbour, her appearance is very different from that of 1805, and still more in 1765. The present bow is quite modern: when launched it was a ponderous highly decorated open-work beakhead, painted, carved, and gilded. Her sides were painted black with a broad yellow band running along some distance above the waterline portion of the hull, shewed white with the graven stuff. Copper sheathing did not come into general use until about 1780.

- 171 Nelson's Coffin. Illustration.
Lent by Messrs. Collingridge Bros.

GROUP OF PORTRAITS OF MEN DISTINGUISHED FOR THEIR ACHIEVEMENTS IN NAVAL HISTORY.

- 172 Captain James Cook (1728-1779).

The famous circumnavigator. He discovered the Society Islands, proved New Zealand to be two islands, followed the unknown coast of New Holland for 2000 miles, and separated it from New Guinea, traversed the Antarctic Ocean on three successive voyages, discovered and explored a great part of the coast of

New Caledonia, discovered the Sandwich Islands Archipelago, explored 3500 miles of the North American coast, and navigated the North Pacific. He was killed at Owyhee by the natives, 1779, on his third voyage of discovery.

- 173 Vice-Admiral Sir Samuel Hood, Bart.,
1762-1814.

Captain of the "Zealous" at Santa Cruz, 1797, and in the battle of the Nile, 1788, when he was in action with the "Guerrier." He afterwards blockaded the French at Alexandria. As a commodore, he captured St. Lucia, 1803, and Surinam, 1804. Afterwards he was second in command with Sumarez in the Baltic, 1808, and in single action captured the Russian ship "Sevolod."

- 174 Samuel Pepys (1633-1703).

The inimitable diarist, appointed Clerk of the Acts, 1660. He acted as Secretary of the Admiralty from 1673 to 1689, and was a zealous administrator. The Naval transactions in his time are reflected most vividly in his diary.

- 175 James II. (1633-1701).

As Duke of York in the reign of Charles II. he acted as Lord High Admiral, and displayed great administrative powers. On coming to the throne he exercised both the regal authority and that of Lord High Admiral, and was one of the best of our Naval Administrators, as is seen in his instructions and standing orders to the fleet.

- 176 Samuel Hood (Viscount Hood), Admiral,
1724-1816.

The great seaman, who was second in command in the action off the Chesapeake, 1781, and in Rodney's total defeat of the French Fleet in 1782. He has been spoken of as the instructor and precursor of Nelson, who, undoubtedly, owed much to him. Hood was a great and upright Administrator, and ranks very high among British seamen.

- 177 Horatio, Viscount Nelson, Vice-Admiral,
1758-1805.

Lent by the Corporation of London.
Painted by Sir William Beechey, R.A.

The greatest of all British Seamen. He was victorious at the Nile, at Copenhagen, and at Trafalgar. He commanded the "Agamemnon" at the reduction of Corsica, in 1794, losing an eye at siege of Calvi. At St. Vincent, 14th February, 1747, he also became Duke of Bronte in Sicily, and was created Viscount Nelson after Copenhagen, in 1801. After his memorable blockade of Toulon, and his long pursuit of the French, he fell at Trafalgar in the hour of victory, 21st October, 1805. His last words were, "I have

done my duty." Happy is he, who, like Nelson, lives to complete his task.

178 Queen Elizabeth, 1533-1603.

The monarch in whose reign the fruit of the fruits of the early explorations began to be won. She has been charged with niggardliness in dealing with the fleet, but it grew largely in her time, proved itself equal to its duties in the war with Spain, and assumed a more sailor-like character, the seamen largely replacing the soldiers who had embarked in earlier ships.

179 Henry VIII., 1509-1547.

The king, under whom the modern Navy may be said to have had its birth. He built ships, did much to improve naval architecture, took great interest in the organisation of the fleet, extended its establishment on the Thames, and set up the Dockyard at Portsmouth.

180 Model of the Nelson Monument.

Lent by Messrs. Mappin and Webb.

181 Henry V.

The first king to have a standing Navy.

182 Sir Walter Raleigh, 1552-1618.

Took a principal part in the early attempts to colonise Virginia, and in several expeditions against the Spanish. He was one of the Council for the Defence of the Country in 1588. He discovered Guiana in 1595, and had a command at the sack of Cadiz, 1596. Tried for high treason and condemned to death, 1603; he was imprisoned for 14 years in the Tower, during which period he wrote his "History of the World." He was released to take a voyage to Guinea, and returning without success, was executed on his old sentence, 1618. Raleigh was a most sagacious thinker upon naval problems, and upon questions relating to national defence.

183 Alexander Hood (Viscount Bridport), Admiral, 1724-1814.

He fought in many actions as a captain, and commanded a division of the Fleet at the relief of Gibraltar, 1782. He was second in command in the great victory of the "Glorious First of June," 1794. He defeated the French Fleet off Groix, June, 1795. Commanded the Channel Fleet, 1797-1800.

173, 176, 183. Lent by Lady Hood of Avalon.

184 Model of Statue recently erected on the Hoe at Plymouth.

Lent by Messrs. Mappin and Webb.

185 Sir Francis Drake, 1546-1596.

The first Englishman to win great distinction as a seaman. His character was cautious but energetic,

giving him promptness in action, with good judgment, as well as unflinching courage, and fearlessness of responsibility. He was the embodiment of the maritime genius of his time, and was principally instrumental in breaking the Spanish monopolies. He took Nombre de Dios and sacked Vera Cruz, 1572-3; led an expedition through the Straits of Magellan to the Pacific, 1578, and returned by the Cape of Good Hope, 1580, bringing the pillage of Spanish treasuries. He burned the king of Spain's ships in Cadiz, 1587; he commanded under the Lord-Admiral against the Armada, 1588; and died off Porto Bello, January, 1596.

172, 174, 175, 179, 178, 181, 182, 185, lent by Art for Schools Association.

186 The Death of Captain Alexander Hood, R.N.

Painted by J. Northcote.

Engraved by S. W. Reynolds.

Lent by Lady Hood of Avalon.

Alexander Hood was a Nephew of Lords Hood and Bridport, born in 1758. He became a Captain in 1781. On April 21st, 1798, in command of the "Mars," he engaged the French 74-gun ship "Hercule," and was wounded by a ball in the femoral artery; twenty minutes after the action began, it was desperately contested, the French ship being captured, and Hood died just as she hauled down her flag.

187 Model of the British Merchant Ship "Two Sisters," with Studding Sails set.

Lent by The Sailors' Home.

The studding sails are light extra sails set beyond the yard arms by means of projecting booms, and are used as a help when light winds prevail. The sails in this model are cut from pieces of wood.

188 Action off Trincomalee, 1782.

Painted by Dominic Serres.

Lent by Corporation of Ipswich.

188A Flag of "Brunswick."

Lent by Capt. F. Harvey, R.N.

The flag flown by the "Brunswick" in the battle of the First of June, Lord Howe's action. The ship was commanded by Capt. John Harvey, who died of his wounds received in that action.

The Cross of St. Patrick is not in the Jack, as the battle was fought before the Union with Ireland.

189 Fishing Boats at Honfleur.

Lent by Francis W. Slade, Esq.

Painted by W. Flower, 1841.

190 The Landing of H.M. Forces in Cuba, 1762.

Lent by Francis W. Slade.

Painted by Dominic Serres, R.A.

- †191 View of Town and Harbour of Portsmouth,
with His Majesty's Fleet under sail, 1735.
Lent by Messrs. Collingridge Bros.
- ✓ 192 Dutch Shipping.
By Van de Velde.
Lent by Thos. Carwardine, Esq.
- 193 Model of an early Screw Man-of-War,
dressed with flags.
Lent by The Sailors' Home.
- †194 Case containing Relics and Medals.
Lent by the United Service Institution, Messrs.
Collingridge Bros, Shipwrecked Mariners' Society,
and others.
- 196 A Stiff Breeze.
Painted by L. Backhuizen.
Lent by F. H. Partridge, Esq.
A fine picture by this celebrated Dutch marine
painter.
- 197 Portrait of Adml. Sir Edward Hughes, K.B.
Painted in 1785, by Sir Joshua Reynolds, P.R.A.
Lent by the Corporation of Ipswich.
He was present at reduction of Portobello, 1739, and
at the unsuccessful operations against Cartagena in
1741, and promoted to the Captaincy of the "Lark,"
1747. In the "Somerset" he was present at the
reduction of Louisbourg and of Quebec. In 1748 he
was made Rear-Admiral, and in 1779, went to the
East Indies with a squadron of six ships and checked
the French and Dutch there. In 1782, he took Trin-
comalee. Soon after he seized prizes and held his
own against the French Commander, M. de Suffren,
who had twelve ships to his nine, both near Madras
and later off the Isle of Providien. Five battles were
fought in little more than a year, without decided
advantage to either side, a most unusual case.
- †198 Allegorical Representation of Her Most Grac-
ious Majesty Queen Charlotte, Crowned
with laurel by Britannia.
Lent by Messrs. Collingridge Bros.
- 199 English Warships of about 1700.
Painted Panel.
Lent by R. Morton Nance, Esq.
- 200 The Capture of Havanna by H.M. Forces
in 1762.
Painted by Dominic Serres.
Lent by Thos. W. Slade, Esq.

- 201 Action off Providien (Ceylon) between English Fleet, under Admiral Sir Hughes K.B., and the French, under Admiral de Suffren, 1782.
Painted by Dominic Serres.
Lent by the Ipswich Corporation.
- 202 Ships of 17th century.
Lent by Frank Brangwyn, Esq.
- 203 Model of the "Queen Adelaide," Merchant Ship of Liverpool.
Lent by the United Service Institution.
- 204 State Barges approaching Westminster.
Artist unknown.
Lent by Victoria & Albert Museum.
- 205 Britannia viewing the Conquerors of the Seas.
Lent by Lady Hood of Avalon.
- 206 Shipping.
Painted in 1795 by T. Harris.
Lent by Victoria & Albert Museum.
- 207 H.M.S. "Howe."
Lent by the Sailors' Palace.
- 208 Engraved Medallion with 12 portraits of officers, commemorating the Crimean war.
A typical specimen of Mid-Victorian Art.
Messrs. Collingridge Bros.
- 209 American Citizen's Pass, claiming exemption from the English Press Gang, 1807.
Lent by Walter Coombs, Esq.
- 210 Shipping off Cape Town, early 19th Century.
Lent by Victoria and Albert Museum.
- 211 English Line of Battle Ship.
Painted by C. Brooking,
Lent by Victoria & Albert Museum.
- 212 Humorous Colour Prints, illustrating nautical life in the old days.
Lent by Commander Sir Charles Cust, Bart., R.N., C.M.G., M.V.O.

HERE IS THE ENTRANCE TO SMALL ROOM.

Separate Catalogue for Small Room and Upper Gallery

To be obtained from the attendants, or at the turnstile,
PRICE 1d.

- 213 William III. reviewing the Dutch Fleet.
Painted by E. Koster.
Lent by Victoria and Albert Museum.

- 214 Model of Merchantman Middle 19th Century
Lent by the Sailors' Home.
Ports painted to look like man-of-war during war time to impress enemy.
- 215 Sectional Model of a Russian Line of Battle Ship.
- 216 A Scene on the Main Deck.
Published 1841 by J. W. Laird.
Lent by Walter Coombs, Esq.
- 217 The Midshipman's Berth.
Published 1841, by J. W. Laird.
Lent by Walter Coombs, Esq.
- 218 Perspective views of the principal Sea Ports in England.
Lent by Walter Coombs, Esq.

ORIENTAL SHIPPING.

BAY D.

- 219-220-221 Model of Norwegian Boats.
Lent by W. Johnstone, Esq.
- 222 Model of a Norwegian Cod Fishing Boat, bearing a striking resemblance to an old Viking Ship.
Lent by Henry Balfour, Esq.
- 223 Illustrations of Ancient Ships.
Lent by H. R. Levinsohn Esq.
- The earliest ships were used for any purpose, being dug-out canoes or made of mats or wicker work. The Phœnicians as early as 900 B.C. built ships with two banks of oars, and the Greeks by 350 B.C. had a navy and dockyards. Their ships had banks of oars (as in No. 233) with beaks for ramming. The Roman ships were shorter than the Greeks in proportion to their length. The merchantmen relied on sails rather than rowers and would carry as a rule 250 tons. The narrow galley type of ship of war, rowed by slaves or convicts existed on the Mediterranean up to the introduction of steamships.
- 224 Plates from "Fowke's Bayeux Tapestry," published by George Bell & Son, illustrating Shipping in 11th century.

The Bayeux Tapestry shows that the ships of the 11th century were partially decked vessels, of about

20 tons, rigged with one mast and one large sail. They curved at bow and stern, and when used for fighting, were provided with a castle at either end. There was also a smaller castle for fighting on the top of the mast. The bows were built very strong to enable the vessels to ram. Each sailor had a long and a short spear.

- 225 9 Plates taken out of Arenhold's book on "The Historical Development of Ship-building."

Lent by John Leyland, Esq.

- 226 Drawing of Viking Ships.

Lent by A. F. Major, Esq., Hon. Sec. of Viking Club.

A ship was discovered in 1880 buried in a burial mound at Gökstadt in Southern Norway. It is assigned to the 9th century. It shows us the splendid build of ship used by our Norse ancestors—66 feet long on the keel, 78 feet all over, with $15\frac{1}{2}$ feet extreme breadth. It is clincher built, plank lapping over plank, caulked with hair, and iron fastened. The proportions are beautiful; strong, swift and seaworthy. Most of these ships varied from 50 to 150 feet, but king Cnut had one 300 feet long. The larger ones were decked. They were painted white, blue and red and the warriors' shields were ranged round the gunwales and served as an extra protection. These ships being alike at both ends could be steered from either end. They had seats for rowers but a single sail was used. The sails of woollenstuff were probably obtained from the Romans, whom the Norsemen came across coming up the Russian rivers from Constantinople. In boats like these, poetically called "Deer of the Surf," or "Horse of the Sea," the Anglo-Saxons, Danes and Normans came to England.

- 227 Model of a Coracle.

Lent by the United Service Institution.

Used chiefly in Ireland and South Wales. Similar boats were found in Britain by Cæsar. They are made of wicker covered with skin, but with timber keels and gunwales. They are so light that a man can carry one on his back.

- 228 Model of the Viking Ship with sails and oars. (Norway).

The Shields of the Warriors are ranged round the gunwales to afford more protection.

- 229 Model of an early Egyptian Boat found in a tomb in Egypt.

Lent by Messrs. Thos. Cook & Sons.

- 230 Four photographs of the Viking Ship discovered buried in Norway.
Now in the Museum at Christiania.
Lent by the Consul for Sweden and Norway.
- 231 Model of Viking Ship.
Lent by A. F. Major, Esq., Hon. Sec. of Viking Club.
- 232 Model of North American Canoe.
- 233 Xerxes burning Athens: flight of the Athenians (showing a Greek Trireme).
By T. Gilchrist, Esq.
- 234 Model of an Eskimo Kayak.
Lent by Frank L. Emanuel, Esq.
- 235 Model of Eskimo Kayak.
Lent by The Church Missionary Society.
For use in Arctic regions. Light frames of wood covered with skins.
- 236 Model of Eskimo Kayak.
Fitted with a sealing harpoon and lance.
This is exceptionally complete and interesting. Curious float, an inflated sealskin, here represented by a little wooden seal.
Lent by Henry Balfour, Esq.
- 237 Model of Canoe. Cook's River, North America.
(North-West Coast of America.)
- 238 Model of Canoe.
Lent by the United Service Institution.
(North-West Coast of America.) Over this skeleton framework skin is stretched.

ORIENTAL SHIPS.

The variations of climate and customs in different parts of the world produce interesting variations in the form of boats and their rig. As a rule, in Eastern ships, one or else two lateen sails are used and little rigging. Very stout masts supplying the necessary strength. The Oriental peoples used watertight compartments, flat sails and balanced rudders long before Western nations.

In the catamaran we see the simplest form of Eastern boat, it is a raft of logs or bamboos, as also the jangada of the South American rivers.

A lee-board can be protruded through the bottom of these to enable them to sail well,

- 239 Model of a Malay Fishing Boat.
- 240 Mandarin's hat brought back from Canton
by Captain Hood, R.N., in 1858.
Lent by Lady Hood of Avalon.
- 241 Photographs of Ancient Egyptian Boats.
Lent by the Victoria and Albert Museum.
- 242 Flags of the Eastern Nations; Elephant,
Siam; Dragon, China: Rising Sun (for
the land of Sunrise, as considered from
the mainland of Asia), Japan.
- 243 Models of an Outrigger Boat used in Ceylon,
and of a Corean Fishing Boat.
Lent by Mrs. Thorne.
- 244 Model of an Outrigger Boat.
(Andaman Islands, Bay of Bengal.)
Lent by Henry Balfour, Esq.
- 245 Model of Rice Boat, Ceylon Rivers.
Lent by Frank L. Emanuel, Esq.
- 246 Model of a Gig Canoe. (Brass—West
Africa).
Lent by the Church Missionary Society.
The only means of transit in that country.
- 247 Model of a Canoe with Outrigger. (Sand-
wich Islands).
- 248 Model of Canoe, Vancouver's Island.
With eyes painted on the bows. These boats show
the strong feeling for decoration among the Red
Indian Tribes, who tattoo themselves so elaborately.
- 249 Model of a Passenger boat with sails and
oars, Java.
- 250 Model of Canoe from Vancouver's Island.
Lent by Thos. Kirk, Esq.
- 251 Model of a Point-de-Galle Boat.
Lent by Frank L. Emanuel, Esq.
An outrigger boat used on the coast of Ceylon.
- 252 Model of an Arab Dhow (Red Sea).
Lent by The United Service Institution.
- *253 Fishing Boats on the Nile.
By W. J. Laidlay.

- 254 Model of a Mussulah Boat.
Lent by The United Service Institution.
Used to convey passengers and cargo through the surf at Madras.
- 255 Model of a Siamese Paddy (rice) Boat.
- 256 Model of a Burmese Junk or boat.
Lent by W. Harding Smith, Esq.
Probably a river boat. Made by a native. Note the baked clay lantern on a pole.
- 257 Model of a Sailing Boat. Burma.
- 258 Model of a Raft from Formosa.
Used for getting through the terrific surf round the inhospitable coast of the island of Formosa.
- 259 Model of a Bugla.—Merchant Vessel.
Trading between Bombay and the Persian Gulf.
- 260 Model of Burmese Rowing Boat.
- 261 Model of Sailing Vessel.—(India — with Lateen sails).
Lateen sails are usually irregular in shape, fastened to a spar, crossing the mast at an oblique angle.
- 262 Model of Fishing Boat with figures.—China.
Carved from a large bamboo.
- 263 Model of Sailing Boat, Japan, with eyes painted into bows.
- 264 Model of a Surf Boat. (Ceylon).
- 265 Model of an Outrigger Boat. (Savage Island.—South Pacific).
Lent by Henry Balfour, Esq.
- 266 Model of a double Canoe. (Sandwich Islands. North Pacific).
- 267 Model of a Double Canoe (with sails).
From Humphrey Island or Maniluki (Central Pacific).
- 268 Model of a Canoe.
Lent by James Fowler, Esq.
From Nuie or the Savage Islands, South Pacific.
- 269 Model of a Siamese Marketing Boat.
Used for the sale of fruit, vegetables, tobacco, etc., along the banks of the rivers and canals.

- 270 Model of a Siamese Boat for the conveyance of Paddy (rice).
- 271 Model of a Siamese Boat for the conveyance of Paddy or Rice.
- 272 Model of a Siamese Marketing Boat.
- 273 Model of a Siamese Paddy (rice) Boat.
- 274 Model of Siamese Boat for the conveyance of Paddy (rice).
269, 270, 271, 272, 273, 274, lent by His Excellency the Minister for Siam.
- 275 Model of a Japanese Junk.
Lent by Frank Brangwyn, Esq.
Note the anchor.
Junks are common to both China and Japan. The Japanese are clumsier and less seaworthy and always have the stripes of their sails running up and down, those of the Chinese run across. The Japanese sails are used square before the wind, while the Chinese by trimming can sail against the wind.
- 276 Model of a Chinese Temple from Canton, 1858.
Lent by Lady Hood of Avalon.
Brought by Captain Hood, R.N.
- 277 Model of a Paddy Boat, Ceylon.
228, 232, 233, 237, 239, 247, 248, 249, 257, 258, 260, 264, 266, 277, lent by the L.C.C. from The Horniman Museum
- *278 From 901 A.D. to 1901 A.D.—a contrast.
*By W. Chambers, Esq.
This picture shows the difference in ships which a thousand years of European progress has made.
- *279 Arab Coalies at Port Said.
By Frank L. Emanuel.
- 280 The Emperor of China's Gardens, Pekin, about 1800.
By W. Alexander.
Lent by The Victoria and Albert Museum.
- 281-282-283—286-287-288 Japanese Colour Prints.
Lent by Messrs. Shozo Kato.
- 284 Japanese Kakemono.
Painted by Utagawa Toronobu when a boy, 1765-1770. Representing the Imperial Corean Embassy ship, which at that time brought an annual tribute to Japan.
Lent by Arthur Morrison, Esq.
- 285 Japanese Flower Boat, mounted on wheels for a Procession.
Lent by Messrs. Yamanaka.

BAY E.

- 289 Figure head of the "Scylla."
Lent by Henry Castle, Esq.
Figure heads were in use with the Norsemen. Dragons and lions taken from the royal arms were common in Elizabethan times as figure heads. Saints were common on foreign ships. English ships usually adopted classical or fancy figures. With the renewal of the ram form of bow, figure heads are doomed.
- 290 Sword Fish and Sea-horses; Skull of Porpoise.
- 291 Photograph of the "Temeraire" Mantel-piece.
Lent by Henry Castle, Esq.
- 292 The Brig "Johns."
- 293 An Albatross.
Lent by Vernon Weston, Esq.
Common all over the Atlantic and Pacific Oceans. Sailors' superstitions about these birds are well known
- 294 Paddle Steamer "Trident," 1830.
- 295 The Clipper Ship "Duncan Dunbar,"
1400 Tons.
Lent by Messrs. Gellatly, Hankey and Co.
- 296 Photograph of the "Hotspur."
Lent by Commander Caborne, C.B., R.N.R.
- 297 The Channel Fleet, 1874.
Lent by Spencer Butler, Esq.
The ram beak is shown as in model 148, but sails are still prominent.
- 298 Model of Merchant Brig.
Lent by The Strangers' Rest.
- 299 Harpoon Gun.
Lent by Henry Castle, Esq.
The introduction of cheap mineral oils from America and Russia has done for the picturesque whaling of former times.
- 300 The Steamship "Far East," 1300 Tons.
Lent by Messrs. Gellatly, Hankey and Co.
- 301 Frames made by Sailors from old cigar boxes.
- 302 Half section Model of a Brigantine or square rigged Schooner.
Lent by Messrs. Collingridge Bros.
- 303 Half section Model of the "Fox" which went in search of Sir John Franklin.
Lent by T. Kirk, Esq.

- 304 The East Indiaman "Blenheim," 1400 tons.
Lent by Commander Caborne, C.B., R.N.R.
A regular trader to Calcutta till 1867, when she was totally disabled in the Bay of Bengal.
- 305 Fight between The Honorable East India Company's Ship "Warren Hastings" and the French Frigate "La Piedmontaise," 21st June, 1806. (First Part).
Painted by J. Whitcombe. Engraved by J. Jeakes.
Lent by the India Office.
- 306 The "Viscount Melbourne" off Folkestone.
Lent by The Shipwrecked Mariners' Society.
- 307 Young Alligator.
These reptiles take 80 years to develop.
- 308 Model of Yacht.
- 309 The Red Jacket of White Star Line of Australian Packets.
Lent by Geo. Elliott Bromage, Esq.
- 310 Head of Mollyauk.
- 311 Picture.
Lent by the Shipwrecked Mariners' Society.
- 312 Model of the Sailing ship "Star of Peace."
Lent by Messrs. George Thompson and Son.
The beautiful lines of this vessel are more like a yacht than a merchantman.
- 313 Parrot Fish and Young.
- 314 The "Daring" of Lime-kilns off Naples, 1848.
Vesuvius in the background.
Lent by The Sailors' Palace.
- 315 A Naval Officer's Sword, about 1803, and Anchor.
Made in Lower East Smithfield, by Christey.
- 316 Model of 4 masted full rigged Sailing ship.
- 317 The East India Packet "Swallow."
Lent by P. & O. Co.
This is what is called a 'builder's picture.' It shows an East India-man in three positions off Dover, coming up, taking on the pilot, and going into harbour. The flag is before the Union with Ireland.
- 318 Water-colour of "Medusa" and "Roche-fort" Men of War, 1822.

319 Model of a Sailing Barque, Man-of-War, rigged.

Made by petty officer of H.M.S. 'Bacchante,' on which the Prince of Wales sailed round the world.
Lent by W. Rich, Esq.

320 Head of an Albatross.

321 Jaw of a Shark.

322 Oil Picture of the "Fy-Chow."

Lent by Messrs. Gellatly, Hankey and Co.

323 Sword Fishes and Porpoise's Head.

Nos. 290, 294, 301, 307, 300, 310, 313, 315, 316, 318, 320, 321, 323, Lent by W. Paterson Lind, Esq.

324 Fight between the Honourable East India Company's Ship "Warren Hastings," and the French Frigate "La Piedmontaise," 21st June. 1806.

Painted by J. Whitcombe. Engraved by J. Jeakes.
Lent by The India Office.

325 East Indiaman.

Lent by The Shipwrecked Mariners' Society.

*326 Bound South.

By T. J. Martin.

YACHTS.

The word yacht, derived from the Dutch 'jacht,' is applied to decked vessels used for pleasure sailing. Elizabeth had a yacht built at Cowes, in 1588. Early yachts were small and heavily built. Size was found to be of great importance in winning races, as there was no time allowance. Lead was substituted in 1846 for the earlier stone or cast-iron black ballast, and in 1856 the external lead keel was adopted.

The form till 1848 was a "Cod's head and Mackerel's tail," but the 'Mosquito' and the 'America' converted yachtsmen to a long hollow bow and short after body of considerable beam. The 'America' introduced flat sails, of Schooner rig, into British yachting.

In 1875, the 'Jullanar,' followed by 'Clorinda,' popularised the yawl rig. Many modern yachts are fitted with steam as an auxiliary power, to allow of cruising in all weathers. The 'blue ribbon' of yacht racing is the America Cup, a trophy won by the schooner 'America' in 1851, and, despite our efforts, held by the Americans ever since. Britain has spent millions of pounds in her attempts to win it, but, perhaps, because the Cup was to be sailed for in a certain place, at a certain time of the year, and the British boat has to be built strongly enough to sail over to America, the American boats have always won. The type of yacht which has been evolved in this contest is distinctly dangerous and abnormal. the America Cup is considered by many yatchmen to be a bad thing for the sport,

- 327 The "Emmetje." Lord Harborough's Yacht.
Lent by Walter Coombs, Esq.
- 328 The Two Shamrocks, I. and II., starting for
a trial race, Rothsay Bay.
By Charles Dixon, R.I.
Lent by the Proprietors of the 'Graphic' Gallery.
- 329 Model of 10-rater Yacht.
Lent by Messrs. Paxton & Co.
- 330 Half Section Model of His Majesty's Yacht,
"Britannia," R.Y.S.
Lent by HIS MAJESTY THE KING.
- 332 Painting of Sailing Vessels.
Lent by The Shipwrecked Mariners' Society.
- 333 Silver Model of His Majesty's Yacht,
"Britannia."
Lent by HIS MAJESTY THE KING.
- 334 Model of a Cutter.
Lent by H.R.H. THE PRINCE OF WALES.
Such delicate little models are made at Boulogne,
where there are excellent collections of models of
French boats in the Municipal and Technical
Museums.
- 335 Photograph of "Shamrock III."
Lent by Messrs. Hughes & Sons.
- 336 Picture of a Merchant Ship of about 1,000
tons burthen.
Painted by a Chinese artist at Hong Kong.
Lent by H. Kemp-Welch, Esq.
- 336 Ships Lanterns.
Lent by Messrs. Hughes & Sons.
- 337 Photograph.
From the famous picture "Old Friends," by Stacy
Marks, R.A.
- 338 H.M.S. "Pelican" Sailing into Malta
Harbour.
Lent by Messrs. Dyne and Evens.
- 339 The Figure Head of the Ship "Pearl"
- 340 Part of the Steering Wheel of a Troopship.
- 341 Board from bows of a Troopship.
Nos. 339, 340, 341, Lent by H. Castle, Esq.

BAY F.

FOREIGN AND LOCAL SHIPS.

- 342 Dutch Boat.
Lent by Westley Manning, Esq.
These boats are built to stand the pounding in the surf, rendered necessary by the absence of harbours on the sandy shore of Holland. Like the Thames barge and all Dutch small craft they carry leeboards. Hung on the boom are net floats painted in the national colours.
- 343 Model of flat-bottomed Boat for use in small rivers.
Lent by the United Service Institution.
- 344-5 Drawings of Dutch Ships of the line (late 17th century).
By Van De Velde, Jun.
Lent by The Victoria and Albert Museum.
- * 346 A Market Hay-boat. Holland.
By Tom Browne, R.I., R.B.A.
The waterways of Holland are used to almost as great an extent as the roads of other countries, indeed, omnibus boats may still be encountered being towed along the canals in the neighbourhood where this picture was painted.
- * 347 Dutch Fishing Boats in Lerwick Harbour, Shetland.
By Miss Ursula Wood.
- 348 A Fishing Boat leaving Volendam.
By Frank Mason.
Lent by Tom Browne, Esq., R.I., R.B.A.
A quaint little fishing village on the Zuyder-Zee, whose picturesqueness has gathered a colony of artists from all over the world.
- 349 Volendam Fishing Boat.
By George C. Haité.
- * 350 Fishing Boats.
By Miss Anna Richards.
- * 351 Dutch Canal Boats.
By Miss Anna Richards.
- 353 An old Builder's Model of a Scarborough Yawl.
Lent by Nelson Dawson, Esq.
From which a boat was built that fished for many years out off Scarborough. She was ultimately sold and converted into a little trader.
- * 352 Painting of Dutch Boat and Canal on Slate.
By Frank L. Emanuel.

- *354 Dutch Eel Sloop.
By F. G. Brown.
- *355 A quiet corner—Deptford.
By R. H. Smith.
- *356 Thames Barge.
By F. G. Brown.
- *357 A catch of Pilchards.
By Hely Smith, R.B.A.
- 358 Bringing up an old Hull.
By R. H. Smith, Esq.
- 359 Boats.
Lent by Miss Benecke.
- 360 A. French Smack; B. French Fishing Boats
Trading Brig, notice double keel; C.
English Shipping.
Lent by The Victoria and Albert Museum.
- *361 A Norfolk Wherry.
By Tom Browne, R.I., R.B.A.
- 362 Fishing Boats, Hastings.
By Alex. Maclean, R.B.A.
- *363 Crabbing (in Cornwall).
By W. E. Fox.
- *364 A Spanish Cargo Boat.
By F. G. Brown.
- *365 A French Fishing Fleet.
By Frank L. Emanuel.
- *366 The Kaiser's Training Ship in a Norwegian
Fiord, (since burnt.)
By E. L. Greenfield.
- 367 Venetian Galley.
- 368 Spanish Galley, 1796.
Lent by The Victoria and Albert Museum.
- 369 Genoese.
367, 369 Lent by S. B. Beresford.
- 370 Venice from the Lagoon.
By R. Wright.
Lent by R. W. Temple, Esq.
- *371 Spanish Faluchos.
By M. Pellegrin.
- *372 Cannon Street Railway Bridge.
By Miss Clara Montalba.
- 373 Salute, Venice; and Fishing Boats.
By R. Levick.

- 374 Decorating a Shrine on a pile in the lagoon,
Venice.
Lent by R. W. Temple, Esq.
- 375 An Amazon River Raft.
- 376 Model of a Thames Barge.
375, 376 lent by F. L. Emanuel, Esq.
- 377 A Boat Builder's Model.
Lent by Nelson Dawson, Esq.
- 378 Models of Swedish and Norwegian Boats.
Lent by G. Holmes, Esq.
- 379 Model of a Scarborough Fishing Lugger
Drifting at Nets.
- 380 Model of a Pleasure Coble.
- 382 Scarborough Herring Coble.
- 383 Carved Wooden Fish for holding starting
threads of nets in netting.
By F. L. Emanuel.
Used by French fishermen.
- 384 Model of a Cutter.
Lent by F. L. Emanuel, Esq.
- 385 A Yorkshire Ferryman's Coble.
- 386 Penzance Fishing Boat.
379, 380, 382, 385, 386 lent by E. Ellis, Esq.
- 387 Model of a Bermuda Yawl.
Lent by Mrs. Thorne.
- 388 Collection of Photographs of Venetian Boats.
These boats, "trabacoli," bring wood from Istria
and Dalmatia.
- 389 Collection of Photographs of pictures by the
great Venetian Painters of the 13th and
16th Centuries.
Mostly by Carpaccio, Tintoretto, and Veronese, show-
ing Galleys and Carracks, and the great battles of the
Venetians against the Turks.
- *390 Doge's Palace, Venice (after Turner.)
By Mrs. Kemp-Welch.
- *391 Approach to Venice (after Turner.)
By Miss Anna Richards.
- *392 Models of the "Crancie" (crabs), the staffs
with which the Doge's gondoliers held his
state gondola, the Bucentoro in which he
wedded the Adriatic Sea.

- 393 Parts of the carved fittings of a Gondola.
Copy of the relief of the Doges kneeling to the Lion, the emblem of St. Mark, the patron saint of Venice, These should be black and gold.
- 394 Model of a Modern Gondola with cover (felza) on.
Lent by Mrs. Knapp.
It has lost the iron prow (ferro).
- 395 Model Gondola in the 15th century.
At that time gondolas were yellow, probably the Elizabethan 'timber colour,' *i.e.*, varnished wood. The bottoms of new gondolas are still left this colour for one season. Modern gondolas are always painted black.
- 396 Photograph of Bronze Relief Panel of Door Baptistery at Florence, by Ghiberti. 15th century.
Showing a ship in the scene of Christ walking on the waters.
- 397 Mediæval Italian Ships.
One shows the Caravel, the kind of small ship in which Columbus discovered America.
- †398 Small Venetian Sail with the ferro or prow of a gondola on it.
393 and 398 Made and lent by Alvise Boniventi (*Gondolier*).
- 399 Case of Engines.
Lent by The Victoria and Albert Museum.
The old type of marine trunk engine which could be tucked down well below the waterline.
- 400 Collection of Oars and Sculls. Life Buoy.
- 401 Steering Wheel.
Nos. 330 to 336 lent by Messrs. Dyne and Evens.
- 402 Model of Pims' Life Saving Appliance for Ships.
- 403 Case of Grommets.
Made and lent by G. Adams, Esq.
Steel wire rope is very largely used now instead of hemp ropes formerly used. It can be made of enormous strength.
- 404 Photographs of Lights for Lighthouses.
Lent by Messrs. Chance Bros.
Modern science has invented most ingenious plans of reflecting and economising light, as these photographs show.

- 404A Model—Anchors and Cable Sections.
Lent by Messrs. Hingley & Sons.
- 405 Photograph of the present Douglass Eddy-
stone Lighthouse, and the base of the old
Smeaton Lighthouse.
Lent by H. Schliesing, Esq.
The famous Pharos of Alexandria was built in
B.C. 331, one of the ancient world. The earliest
lighthouses or "night-flares" in Britain were the two
erected by Romans on the E. & W. cliffs of Dover.
Religious houses and hermits kept up numerous lights
during the middle ages—St. Catherine's, Isle of
Wight, Spurn Point. Gradually the King granted
the right to levy tolls at the ports, in return for keep-
ing up a light. Many such privileges grew to be per-
quisites of enormous value. Merchants bitterly com-
plained of them, and later on when a regular Board
was appointed to look after lighthouses it had to buy
some of these lighthouse keepers out for large sums.
- 406 Charts.
Lent by the Navy League.
- 407 Exhibit of Flags, Cotton Waste, and Sail
Twines, for Ships.
Lent by Messrs. Rigby Wainwright & Co.
- 408 Exhibit of Anchors.
The earliest form was a stone and rope. Anchors
consist of a 'shank' with arms (usually two, but four
may be seen in the Japanese junk and one in early
ships) flattened out at the ends into flat-pointed flukes.
The shank has a crossbar or stock at right angles to
the arms to prevent the anchor dragging flatways.
Royal Navy anchors weigh 5 tons usually, those of
the 'Campania' 8 tons. They hold best when the
cable is nearly horizontal, if the cable is pulled ver-
tical they lose their grip, and so the anchor is weighed.
- 409 Model of the "Englehardt." Collapsible
Life-boat.
Lent by the Sailors' Palace.
- 410 Barometer and Picture.
Lent by the Shipwrecked Mariners' Society.
- 411 Photographs and Specimens of Knots.
Lent by the Committee of the 'Warspite.'
(The committee have kindly consented to allow boys
from the 'Warspite' to give displays during the
Exhibition).
- 412 Model of Life Saving Apparatus.
Lent by the Board of Trade.
- 413 Rocket Throwing & Life Saving Apparatus.
Lent by Messrs. Schermuly.

- 414 The Defeat of the Armada off Gravelines,
July 30th, 1588.
Painted by Sir Oswald W. Brierly, R.W.S., Marine
Painter to the Queen.
Etched by David Law.
- 415 The Wreck of the "Minotaur."
Lent by the Art Union of London.
- 416 The Victory: At Rest.
Original etching by C. E. Holloway, R.I.
- 417 Amateur Surgery.
By Frank Brangwyn.
Lent by the proprietors of the Graphic Gallery.
- 418 The Lion's Cubs.
'Arethusa' boys at Nelson's Memorial in St. Paul's
Painted by F. W. Lawson.
414, 416, 418 lent by Arthur Lucas, Esq.

Case I.—Harfields Compensating Steering Gear.
Lent by the Victoria and Albert Museum.

Case II.—Model of "Norman." A Steamship
employed in the Cape Mail Service be-
tween Southampton and the South African
Ports.

Lent by Messrs. Donald Currie & Co.

Above is a model of newer stern and ram beak for
warships.

Type about 1890. Since then these have been, from
an offensive point of view, further improved, and the
little trace of ornament has gone.

The stem reaches forward to ram the enemy's ship.
The stern is so shaped that the rudder and steering
gear is all below water and under protection.

Case III.—Model of "Discovery."

Lent by the Royal Geographical Society.

The "Discovery" left New Zealand for the Antarctic
Regions on Christmas Day, 1901. The estimated cost of the
expedition was £90,000 for two years, of which the Govern-
ment granted £45,000, and the public subscribed £45,000, in-
cluding a grant of £8,000 from the Royal Geographical Society.
She had on board Captain Scott, in command, and 10 officers
and members of the Scientific Staff and 26 seamen and
marines. The objects of the expedition were:—"To study
off Ross's Great Ice Barrier; if possible to discover land to
the eastward; to secure various scientific results during the
voyage and in winter quarters, and to explore the volcanic

regions and to make fresh discoveries to the south and inland to the west." The "Morning" was sent from New Zealand as a relief ship and arrived near the "Discovery" on January 23rd, 1903. Having landed provisions and coal, the "Morning" returned to New Zealand in March, leaving the Discovery and nearly all her complement of officers and men for another winter. The Government are sending out another relief ship.

Built entirely of wood and copper. No iron was allowed in its construction because of the delicate magnetic observations to be made. Notice the hole for lifting up the screw if desired. Only two firms offered to contract for this strange boat. It is unlike the V-shaped hull of Nansen's "Fram," which was designed so that it should be pushed up instead of crushed by the pressure of the ice. The internal strength of the ship is extraordinary.

Case IV.—Model of "Dunottar Castle."

The Dunottar Castle was built at Fairfield, on the Clyde, for the Castle Line. Her tonnage is 5625, and her speed 18 knots per hour. This vessel carried to South Africa many generals and troops during the war. She has been in the Mail service to the Cape for a number of years, and is now just being taken off. It is interesting to note that the newest vessels building for the Castle Line are more than double the tonnage of this ship.

Case V.—64-gun Ship, 1750.

Lent by the Victoria and Albert Museum.

Case VI.—Model of French Man of War, "Le Sceptre."

Lent by the Victoria and Albert Museum.

Case VIII.—Collection of Models of picturesque Eastern Sailing Ships.

Lent by the Victoria and Albert Museum.

Case IX.—36-gun Frigate.

Lent by the Sailors' Home.

The less square shape of the sails may indicate a French build. Early 19th century.

Case X.—Engines of H.M.S. "Dee," and H.M.S. "Valiant," also section of Turret Deck vessel.

Lent by the Victoria and Albert Museum.

Case XI.—The “Britannia.”

The “Britannia” was the earliest vessel of the Cunard Fleet. She was built in 1840, and was the first of four upon the same model. The “Britannia” measured 207-ft. long × 34-ft. 4 ins. broad × 24-ft. 4-ins. deep, with a tonnage burden of 1,154, and an indicated horse-power of 740. Her cargo capacity was 225 tons, and she was fitted for the accommodation of 115 cabin passengers, but no steerage. Her average speed was 8·5 knots per hour on a coal consumption of 38 tons per day. When on the “glorious” 4th of July, 1840—the celebration day of American Independence—she started on her first voyage it was calculated that she would reach Boston in fourteen days and a half, but she entered the harbour four hours before that time, having made the voyage in fourteen days and eight hours. The arrival of the first mail steamer in America created unbounded enthusiasm.

Case XII.—The “Scotia.”

The “Scotia” was almost a sister ship to the “Persia,” slightly exceeding her in size; a distinct improvement upon all previous efforts of marine shipbuilding, and acknowledged to be the finest specimen of a mercantile vessel then afloat. The “Scotia” was the last of the paddle wheels, and was followed in the same year by the “China,” the first of the single screw propellers.

Case XIII.—The “Saxonia.”

The “Ivernia” and “Saxonia” are practically alike in the main points of construction and general arrangement, but differ somewhat in detail. They are the largest ships carrying passengers and cargo to Boston. They are built of steel, with scantlings in excess of Lloyd’s rules, and have a straight stem, elliptical stern, and a long midship house supporting three tiers of superstructures. They carry a single funnel and four pole masts. They have bilge keels, which give them absolute steadiness in the water, and a false bottom, between which and the outer shell are water-ballast tanks, extending the whole length of the ship. The principal dimensions of the ships are—length 600-ft., beam 64-ft., and depth (moulded) 49-ft. 6-ins. The gross tonnage is 14,280 tons, the measurement capacity 20,000 tons, while the displacement is no less than 25,000 tons.

* * A separate Catalogue is needed for the prints and pictures in the Small Room and Upper Gallery, as 48 pages is the most that can be printed for one penny.

This Catalogue can be got at the turnstile or from any of the attendants.

LONDON :

PRINTED BY PENNY AND HULL, LEMAN STREET E.

Beecher, J. W. 101, 177,

Cox, J. 134

Dawson, H. 136

Hood, G. 183, 186, &c

Hoster, E. 144

Northcote, J. 186

Oldfield, T. S. 141

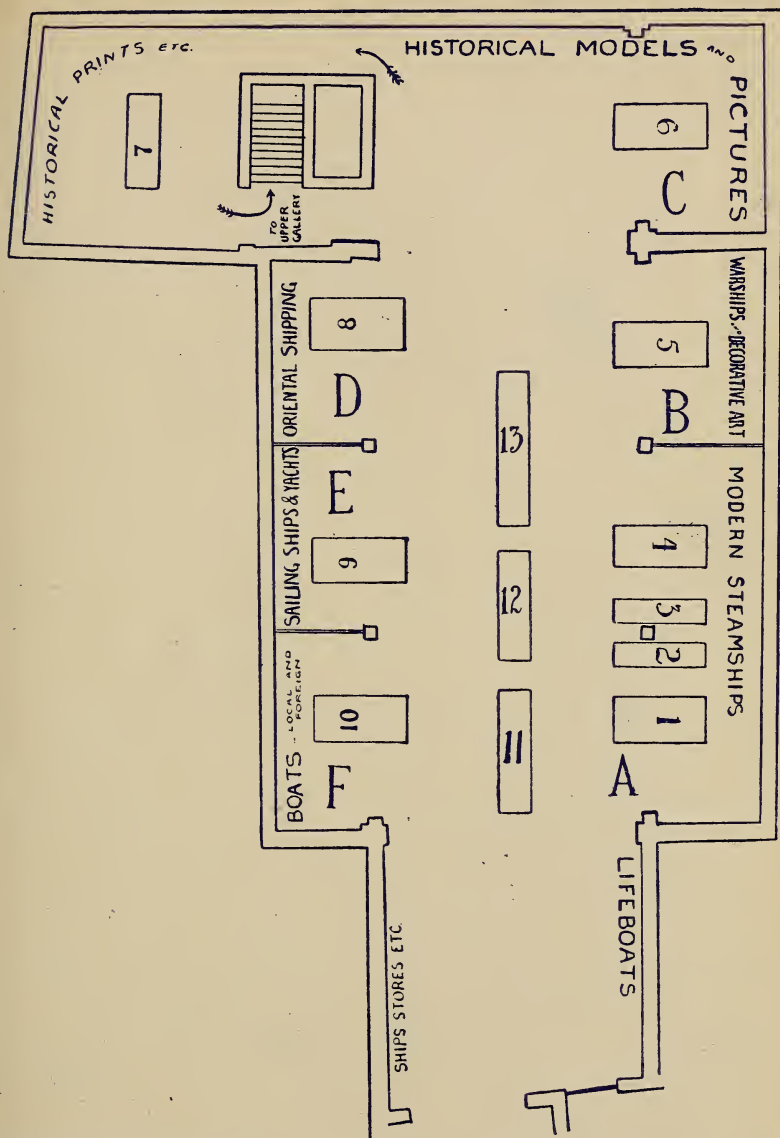
Paton, R. 133

Perres, J. 190 &c

Stansfield, C. 143, 167

Turner, J. W. 141.

GROUND PLAN OF LOWER GALLERY.



The following lectures, among others, have been arranged—

Saturday, Nov. 7: W. T. FLETCHER, Esq., "The sailor of the past."

Friday, Nov. 13: JOHN LEYLAND, Esq., "The Origin and Functions of the British Fleet."

Saturday, Nov. 14: ALAN BURGoyNE, Esq., F.R.G.S., "Submarines" (Lantern illustrations).
ADMIRAL FREMANTLE will preside.

Tuesday, Nov. 17: Paper on "Nautical Literature" by HERBERT RUSSELL, Esq.

Saturday, Nov. 21: Address by the Rt. Hon. LORD BRASSEY, K.C.B.

Committee

REV. CANON BARNETT (Chairman)
E. L. ATTWOOD, ESQ.
MRS. BARNETT.
W. M. BLYTHE, ESQ.
LORD BRASSEY, K.C.B.
J. T. BULLEN, ESQ.
T. L. DEVITT, ESQ.
C. NAPIER HEMY, ESQ. A.P.A.
LORD INVERCLYDE.
H. KEMP-WELCH, ESQ.
PROFESSOR J. K. LAUGHTON
JOHN LEYLAND, ESQ.
M. OPPENHEIM, ESQ.
RIGHT HON. WILLIAM PIRRIE, D.Sc.
COMMANDER C. N. ROBINSON, R.N.
REV. W. ROBINSON
H. N. WARD, ESQ.
C. AITKEN (Director)