“ If you cannot steer by the compass, steer by the land,” because they had no choice. War ship and merchant ship alike clung to the coast—or if they ventured out to sea, they did so for a voyage to be counted by the hour, as, for instance, from the south-west of Sicily to the opposite coast of Africa—or they relied on regular trade winds, like the seamen who sailed from the Red Sea to the coast of Malabar going and coming with the monsoons. In spite of exceptions, more apparent perhaps than real, such as the voyages of Irish anchorites to Iceland, and of the Norsemen to that island, and to Greenland, seamanship continued to be the art of the coaster till the close of the middle ages. Chaucer’s sailor has hardly lost sight of the coast. Such treatises as were written for seamen were books of pilotage. Examples will be found at the end of the Hakluyt Society’s edition of *Hues Tractatus de globis.* The warships, Phoenician, Greek, Roman, Norse, Byzantine and Italian throughout the middle ages, used sails only when not in action. They were rowed in battle, and the mast was lowered, or left on shore. Whenever they could they avoided passing the night at sea. Their galleys were beached or anchored close to the shore and the men landed. We know from Thucydides’ narrative of the expedition to Syracuse, that the crews were landed even for their meals; from the chronicle of Ramon de Muntaner, we know that this was also the case with the best Mediterranean squadrons at the end of the 13th century. The Athenians, clinging to the coast, spent two months in going from Athens to Syracuse. Roger di Lauria, the admiral of Aragon, when coming from Sicily in circumstances of great urgency to Catalonia, went round by the coast of Africa and Spain. When under sail the ships of war and of commerce alike had, at the outside, very few sails, and generally only one great course (see Sails) square and slung by the middle of the yard. It could be trained fore and aft by bowlines, so as to enable the vessel to sail on the wind. Under these restrictions seamanship was necessarily a limited art. From Marco Polo we learn that the seamen of the China Sea and of the Indian Ocean were coasters like their European contemporaries.

Though the art of seamanship is distinct both from the art of shipbuilding and the science of navigation, it has naturally developed with them. The discovery of the mariner’s compass, the advance of astronomical knowledge, the invention of the rude early instruments of navigation, the astrolabe, the back staff, the quarter staff, loosened the dependence of the sailor on the shore. Thence came the need for larger ships, and they demanded a more developed rigging (*q.v.*). Modem seamanship begins with the voyage of Columbus. The previous and contemporary voyages of the Portuguese were coasting voyages round Africa. But Columbus struck across the ocean, and within thirty years Sebastian de Elcano, who accompanied Magellan, had sailed round the world.

Many of the seamen wrote treatises for the benefit of their fellow- seamen, but, like the *Brief Compendium* of the Spaniard Martin Cortes, or the *Seaman's Secrets* of the Englishman John Davis, and the so-called “ Waggoners ” (a corruption of the name of the Dutch author Waggenaer), they were devoted to navigation, or were “ rutters,” *i.e.* route books and sailing directions. A curious little volume named *Six Dialogues about Sea Service between a High Admiral and a Captain at Sea,* published in London in 1685, and written by Nathaniel Boteler, contains interesting details of the seamanship of the time, but is mainly concerned with naval organiza- tion. Such a well-known text-book as *The Mariners' Magazine,* of Captain Samuel Sturmy, reprinted in the 17th century, from which Swift took the sea phrases used in *Gulliver's Travels*, is de- voted to “ the doctrine of Triangles, ” “ Navigation,” “ Dialling,” “ Gunnery,” &c. Little attention is paid to pure seamanship, and the author practically confesses that his brother seamen regarded all book knowledge as superfluous if not actually injurious. The art continued in short to be purely empirical till the middle of the 18th century, and it suffered from adherence to rule of thumb and want of study of principles.

The first writer on seamanship who went beyond a glossary, and who looked at the way of a ship on the sea scientifically, was a Frenchman who was not a seaman—Pierre Bouguer, royal hydro- grapher for the ports of La Croisie and of Havre, member of the Academie Royale des Sciences, and of the British Royal Society. In 1757 he published his b∞k *De la manoeuvre des vaissaux, ou traité de méchanique et de dynamique, dans lequel on réduit à des*

*solutions très simples les problèmes de marine les plus difficiles qui ont pour objet le mouvement du navire.* It is to be observed that Bouguer, even at this late date, notes the lack of treatises on seamanship as compared to the abundance of books on navigation. His treatment of the theme was too scientific to be intelligible by the average sea-faring man, but his influence was gradually spread by his pupils, French and foreign. He is quoted as the dominant authority in the edition of *Falconer's Dictionary* issued by Dr Burney in 1830. Bouguer had an English follower—William Hutchinson—a merchant skipper and privateer captain, who was for some time dock master of Liverpool. In 1777 he printed, probably at Liverpool, A *Treatise on Practical Seamanship; with Hints and Remarks relating thereto: designed to contribute something towards fixing Rules upon Philo­sophical and Rational Principles; to make ships, and the Management of them; and also Navigation in general more perfect, and consequently less dangerous and destructive to Health, Lives, and Property.* Darcy Lever, whose *Young Officers' Sheet Anchor, or a Key to the leading of Rigging and to Practical Seamanship* appeared in 1835, says that Hutchinson’s was then the best treatise which had appeared in English ; but it suffers from a defect to which the writer confesses with perfect candour—his want of education. His early training as “ cook, cabin boy, and beer drawer for the men ” had not prepared him to write clearly. Darcy Lever was the standard authority of the middle of the 19th century, when the art of seamanship in sailing ships had reached its fullest development.

What that art was can now be learnt only by the study of books. Before Darcy Lever’s book appeared, steam and the use of metal for the construction of ships had already been introduced. Since 1835 a revolution has been carried out in shipbuilding and seaman- ship greater than had taken place in all the previous centuries. Even as regards the sailing ship the change from wood and hemp to soft-steel and wire, together with the employment of small engines to help in hauling the yards in the larger vessels, has made a vast difference. As between the steamer and the sailing ship, the difference can hardly be said to be one of degree at all. A comparison of two incidents in the history of the British navy in the 19th century will serve to illustrate the unlikeness better than any generalities. They are the similar perils, and the very dissimilar escapes of the 74-gun ship “ Magnificent ” on the 16th of December 1812 in the Basque roads on the French coast, and of the cruiser “ Calliope ” at Apia in Samoa on the 16th of March 1888. Both were in danger of being driven on shore by storms of extreme violence. The “ Magnificent " was saved by the resource of her captain, John Hayes, who, by making an unprecedented use of his masts and sails, tacked the ship when within her own breadth of a reef. Everything was done by his order and under his eye (see *Naval Chronicle,* vol. xxíx. p. 19). Captain Kane of the “ Calliope ” steamed to sea by the power of the machines of his ship, which were out of his sight, below the water-line, and were handled by the engineers. The old seamanship was concerned not only with directing the course of the vessel, but with the actual control of the machinery of her motive power, for masts and sails are, after all, machines. The new seamanship directs the course. The motive power is exercised below, out of sight, and by men whose function is radically different from that of the members of the crew who are on deck.

The old seamanship did not retire before the new without a long resistance. Until very recently it continued to be an article of faith both in navies and in the merchant service, that the sailor could only be trained in a sailing vessel. Special vessels were maintained in navies to give the desired training to young seamen and officers. But the navies of the world have found that the brief period which can be spent by young men in a special masted ship did not give an equivalent for the old training. This was inevitable, if only because these ships were also pro- vided with engines, and recourse was had to the machinery at all times of difficulty or peril—when entering and leaving harbour, when rounding awkward headlands or working off a lee-shore. The name of “ seamanship ” still continues to be applied to the art of handling ships under saiI, and has never been made the subject of a treatise in so far as it means the management of a steamer. Perhaps it never can be. The art of constructing and managing machines is really “ engineering.” It is by “ navigation ” that the course of a ship is laid. The modern seaman who steers and guides a steamer from the upper deck, or the bridge, must be able to navigate, and must have such a knowledge of engineering as will tell him what he may expect from the machinery and what he must not ask it to do. But he cannot see his engines, and must perforce leave to the engineers the responsibility of handling them and the initiative in the face of sudden peril. There remain to the captain, and the officers who direct the course, the superior command and the functions of the pilot.

In addition to the books already mentioned see R. H. Dana,