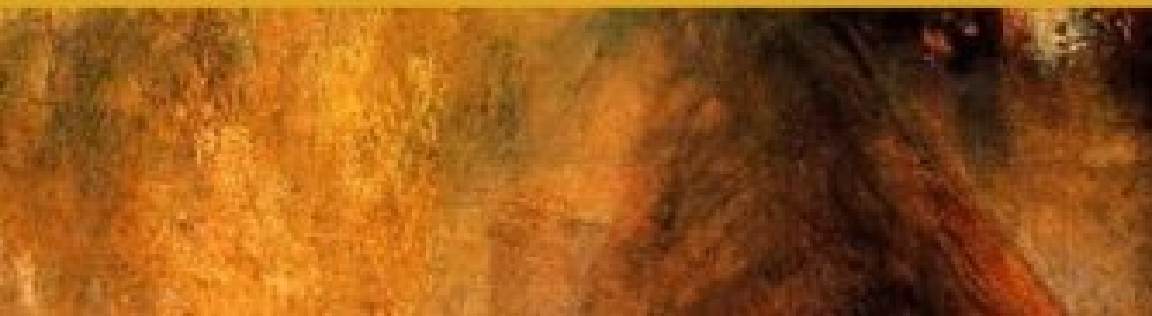
A HISTORY OF SEA POWER

William Oliver Stevens



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A HISTORY OF SEA POWER

BY

WILLIAM OLIVER STEVENS

AND

ALLAN WESTCOTT

PROFESSORS IN THE UNITED STATES NAVAL ACADEMY

WITH MAPS, DIAGRAMS,

AND ILLUSTRATIONS

NEW YORK
GEORGE H. DORAN COMPANY

PREFACE

This volume has been called into being by the absence of any brief work covering the evolution and influence of sea power from the beginnings to the present time. In a survey at once so comprehensive and so short, only the high points of naval history can be touched. Yet it is the hope of the authors that they have not, for that reason, slighted the significance of the story. Naval history is more than a sequence of battles. Sea power has always been a vital force in the rise and fall of nations and in the evolution of civilization. It is this significance, this larger, related point of view, which the authors have tried to make clear in recounting the story of the sea. In regard to naval principles, also, this general survey should reveal those unchanging truths of warfare which have been demonstrated from Salamis to Jutland. The tendency of our modern era of mechanical development has been to forget the value

of history. It is true that the 16" gun is a great advance over the 32-pounder of Trafalgar, but it is equally true that the naval officer of to-day must still sit at the feet of Nelson.

The authors would acknowledge their indebtedness to Professor F. Wells Williams of Yale, and to the Classical Departments of Harvard and the University of Chicago for valuable aid in bibliography. Thanks are due also to Commander C. C. Gill, U. S. N., Captain T. G. Frothingam, U. S. N. R., Dr. C. Alphonso Smith, and to colleagues of the Department of English at the Naval Academy for helpful criticism. As to the "References" at the conclusion of each chapter, it should be said that they are merely references, not bibliographies. The titles are recommended to the reader who may wish to study a period in greater detail, and who would prefer a short list to a complete bibliography.

WILLIAM OLIVER STEVENS
ALLAN WESTCOTT

United States Naval Academy,
June, 1920.

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A HISTORY OF SEA POWER

CHAPTER I

THE BEGINNINGS OF NAVIES

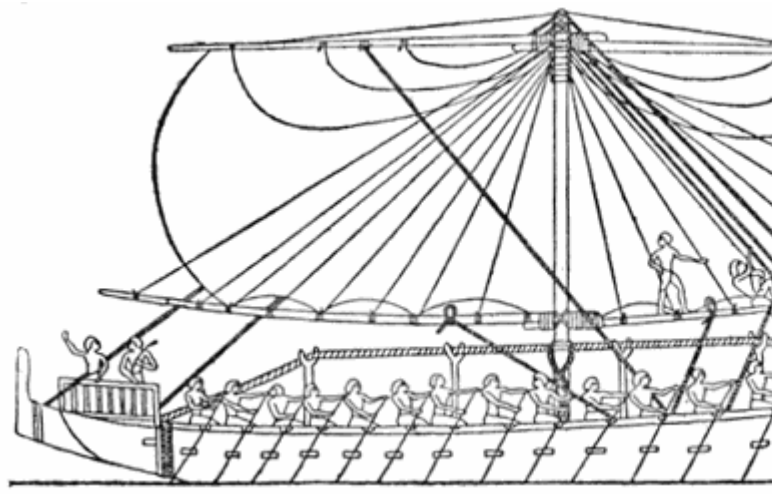
Civilization and sea power arose from the Mediterranean, and the progress of recent archeological research has shown that civilizations

and empires had been reared in the Mediterranean on sea power long before the dawn of history. Since the records of Egypt are far better preserved than those of any other nation of antiquity, and the discovery of the Rosetta stone has made it possible to read them, we know most about the beginnings of civilization in Egypt. We know, for instance, that an Egyptian king some 2000 years before Christ possessed a fleet of 400 fighting ships. But it appears now that long before this time the island of Crete was a great naval and commercial power, that in the earliest dynasties of Egypt Cretan fleets were carrying on a commerce with the Nile valley. Indeed, the Cretans may have taught the Egyptians something of the art of building sea-going ships for trade and war.[1] At all events, Crete may be regarded as the first great sea power of history, an island empire like Great Britain to-day, extending its influence from Sicily to Palestine and dominating the eastern Mediterranean for many centuries. From recent excavations of the ancient capital we get an interesting light on the old Greek legends of the Minotaur and the Labyrinth, going back to the time when the island kingdom levied tribute, human as well as monetary, on its subject cities throughout the Ægean.

[Footnote 1: It is interesting to note that the earliest empires, Assyria and Egypt, were not naval powers, because they arose in rich river valleys abundantly capable of sustaining their inhabitants. They did not need to command the sea.]

On this sea power Crete reared an astonishingly advanced civilization. Until recent times, for instance, the Phœnicians had been credited with the invention of the alphabet. We know now that 1000 years before the Phœnicians began to write the

Cretans had evolved a system of written characters—as yet undeciphered—and a decimal system for numbers. A correspondingly high stage of excellence had been reached in engineering, architecture, and the fine arts, and even in decay Crete left to Greece the tradition of mastery in laws and government.



EGYPTIAN

The power of Crete was already in its decline centuries before the Trojan War, but during a thousand years it had spread its own and Egyptian culture over the shores of the Ægean. The destruction of the island empire in about 1400 B.C. apparently was due to some great disaster that destroyed her fleet and left her open to invasion by a conquering race—probably the Greeks—who ravaged her cities by sword and fire. On account of her commanding position in the Mediterranean, Crete might again have risen to sea power but for the endless civil wars that marked her subsequent

history.

The successor to Crete as mistress of the sea was Phœnicia. The Phœnicians, oddly enough, were a Semitic people, a nomadic race with no traditions of the sea whatever. When, however, they migrated to the coast and settled, they found themselves in a narrow strip of coast between a range of mountains and the sea. The city of Tyre itself was erected on an island. Consequently these descendants of herdsmen were compelled to find their livelihood upon the sea —as were the Venetians and the Dutch in later ages —and for several hundred years they maintained their control of the ocean highways.

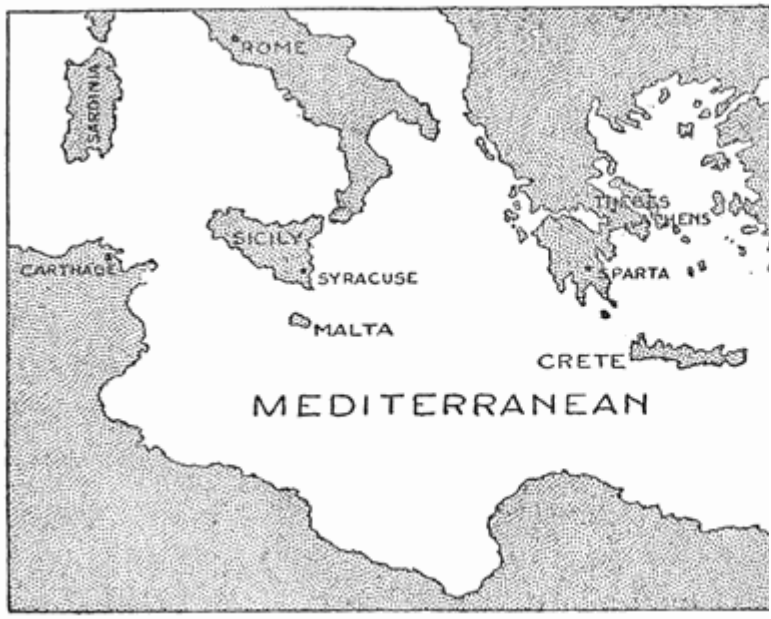
The Phœnicians were not literary, scientific, or artistic; they were commercial. Everything they did was with an eye to business. They explored the Mediterranean and beyond for the sake of tapping new sources of wealth, they planted colonies for the sake of having trading posts on their routes, and they developed fighting ships for the sake of preserving their trade monopolies. Moreover, Phœnicia lay at the end of the Asiatic caravan routes. Hence Phœnician ships received the wealth of the Nile valley and Mesopotamia and distributed it along the shores of the Mediterranean. Phœnician ships also uncovered the wealth of Spain and the North African coast, and, venturing into the Atlantic, drew metals from the British Isles. According to Herodotus, a Phœnician squadron circumnavigated Africa at the beginning of the seventh century before Christ, completing the voyage in three years. We should know far more now of the extent of the explorations made by these master mariners of antiquity were it not for the fact that they kept their trade routes secret as far as possible in order to preserve their

trade monopoly.

In developing and organizing these trade routes the Phœnicians planted colonies on the islands of the Mediterranean,—Sicily, Sardinia, Corsica, and Malta. They held both shores of the Straits of Gibraltar, and on the Atlantic shores of Spain established posts at Cadiz and Tarshish, the latter commonly supposed to have been situated just north of Cadiz at the mouth of the Guadalquivir River. Cadiz was their distributing point for the metals of northern Spain and the British Isles. The most famous colony was Carthage, situated near the present city of Tunis. Carthage was founded during the first half of the ninth century before Christ, and on the decay of the parent state became in turn mistress of the western Mediterranean, holding sway until crushed by Rome in the Punic Wars.

Of the methods of the Phœnicians and their colonists in establishing trade with primitive peoples, we get an interesting picture from Herodotus,[1] who describes how the Carthaginians conducted business with barbarous tribes on the northern coast of Africa.

[Footnote 1: HISTORY, translated by Geo. Rawlinson, vol. III, p. 144.]



SCENE OF ANC

"When they (the Carthaginian traders) arrive, forthwith they unload their wares, and having disposed them in orderly fashion on the beach, leave them, and returning aboard their ships, raise a great smoke. The natives, when they see the smoke, came dawn to the shore, and laying out to view so much gold as they think the wares to be worth, withdraw to a distance. The Carthaginians upon this come ashore and look. If they think the gold enough, they take it up and go their way; but if it does not seem sufficient they go aboard their ships once more and wait patiently. Then the others approach and add to the gold till the Carthaginians are satisfied. Neither party deals unfairly with the other; for the Carthaginians never touch the gold till it comes up to the estimated value of their goods, nor do the natives

ever carry off the goads till the gold has been taken away."

In addition to the enormous profits of the carrying trade the Phœnicians had a practical monopoly of the famous "Tyrian dyes," which were in great demand throughout the known world. These dyes were obtained from two kinds of shellfish together with an alkali prepared from seaweed. Phœnicians were also pioneers in the art of making glass. It is not hard to understand, therefore, how Phœnicia grew so extraordinarily rich as to rouse the envy of neighboring rulers, and to maintain themselves the traders of Tyre and Sidon had to develop fighting fleets as well as trading fleets.

Early in Egyptian history the distinction was made between the "round" ships of commerce and the "long" ships of war. The round ship, as the name suggests, was built for cargo capacity rather than for speed. It depended on sail, with the oars as auxiliaries. The long ship was designed for speed, depending on oars and using sail only as auxiliary. And while the round ship was of deep draft and rode to anchor, the shallow flat-bottomed long ships were drawn up on shore. The Phœnicians took the Egyptian and Cretan models and improved them. They lowered the bows of the fighting ships, added to the blunt ram a beak near the water's edge, and strung the shields of the fighting men along the bulwarks to protect the rowers. To increase the driving force and the speed, they added a second and then a third bank of oars, thus producing the "bireme" and the "trireme." These were the types they handed down to the Greeks, and in fact there was little advance made beyond the Phœnician war galley during all the subsequent centuries of the Age

of the Oar.

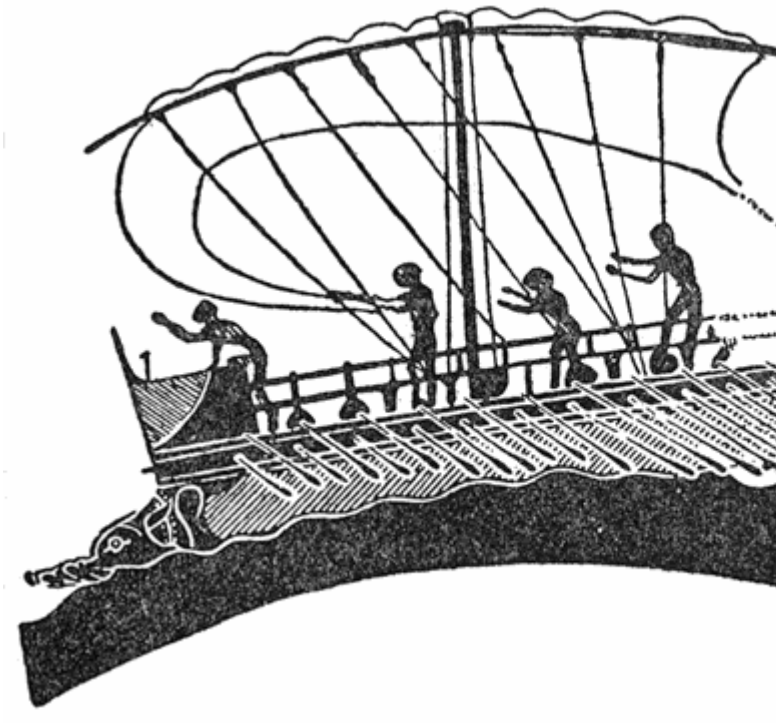
About the beginning of the seventh century before Christ the Phœnicians had reached the summit of their power on the seas. Their extraordinary wealth tempted the king of Assyria, in 725 B.C., to cross the mountain barrier with a great army. He had no difficulty in overrunning the country, but the inhabitants fled to their colonies. The great city of Tyre, being on an island, defied the invader, and finally the Assyrian king gave up and withdrew to his own country. Having realized at great cost that he could not subdue the Phœnicians without a navy, he set about finding one. By means of bribes and threats he managed to seduce three Phœnician cities to his side. These furnished him sixty ships officered by Phœnicians, but manned by Assyrian crews.

With this fleet an attack was made on Tyre, but such was the contempt felt by the Tyrians for their enemy that they held only twelve ships for defense. These twelve went out against the sixty, utterly routed them, and took 500 prisoners. For five years longer the Assyrian king maintained a siege of Tyre from the mainland, attempting to keep the city from its source of fresh water, but as the Tyrians had free command of the sea, they had no difficulty in getting supplies of all kinds from their colonies. At the end of five years the Assyrians again returned home, defeated by the Phœnician control of the sea. When, twenty years later, Phœnicia was subjugated by Assyria, it was due to the lack of union among the scattered cities and colonies of the great sea empire. Widely separated, governed by their own princes, the individual colonies had too little sense of loyalty for the mother country. Each had its own fleets and its own interests; in consequence an Assyrian fleet was

able to destroy the Phœnician fleets in detail. From this point till the rise of Athens as a sea power, the fleets of Phœnicia still controlled the sea, but they served the plans of conquest of alien rulers.

As a dependency of Persia, Phœnicia enabled Cambyses to conquer Egypt. However, when the Phœnician fleet was ordered to subjugate Carthage, already a strong power in the west, the Phœnicians refused on the ground of the kinship between Carthage and Phœnicia. And the help of Phœnicia was so essential to the Persian monarch that he countermanded the order. Indeed the relation of Phœnicia to Persia amounted to something more nearly like that of an ally than a conquered province, for it was to the interests of Persia to keep the Phœnicians happy and loyal.

When, in 498 B.C., the Greeks of Asia and the neighboring islands revolted, it was due chiefly to the loyalty of the Phœnicians that the Persian empire was saved. Thereafter, the Persian yoke was fastened on the Asiatic Greeks, and any prospect of a Greek civilization developing on the eastern shore of the Ægean was destroyed.

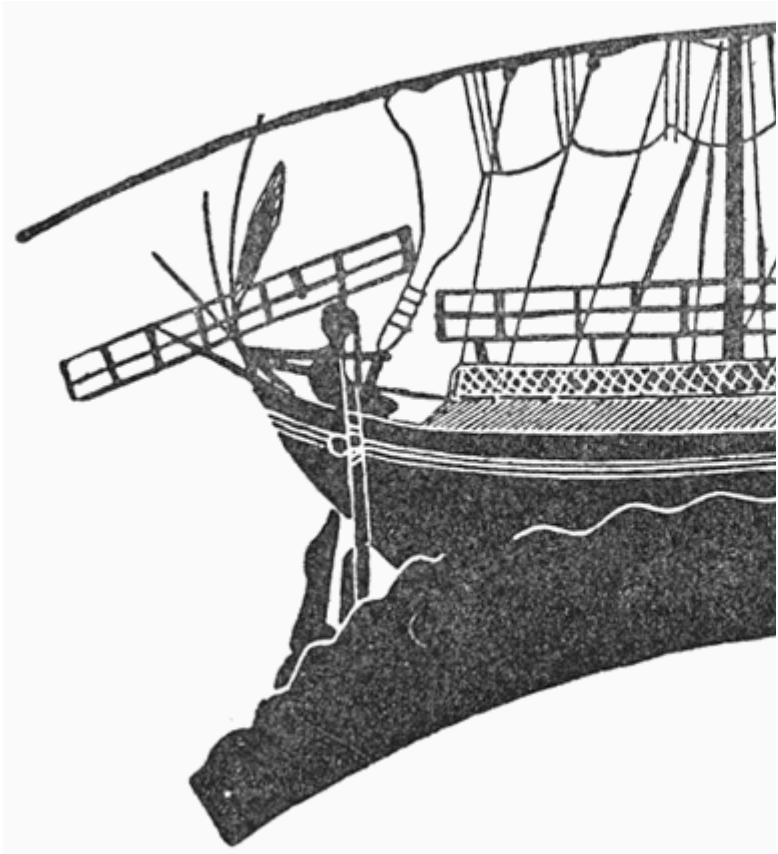


GREEK WAR

But on the western shore lay flourishing Greek cities still independent of Persian rule. Moreover, the coastal towns like Corinth and Athens were developing considerable power on the sea, and it was evident that unless European Greece were subdued it would stand as a barrier between Persia and the western Mediterranean. Darius perceived the situation and prepared to destroy these Greek states before they should become too formidable. The story of this effort, ending at Salamis and Platea, and breaking for all time the power of Persia, belongs in the subsequent chapter that narrates the rise and fall

of Athens as a sea power.

At this point, it is worth pausing to consider in detail the war galley which the Phœnicians had developed and which they handed down to the Greeks at this turning point in the world's history. The bireme and the trireme were adopted by the Greeks, apparently without alteration, save that at Salamis the Greek galleys were said to have been more strongly built and to have presented a lower freeboard than those of the Phœnicians. A hundred years later, about 330 B.C., the Greeks developed the four-banked ship, and Alexander of Macedon is said to have maintained on the Euphrates a squadron of seven-banked ships. In the following century the Macedonians had ships of sixteen banks of oars, and this was probably the limit for sea-going ships in antiquity. These multiple banked ships must have been most unhandy, for a reversal of policy set in till about the beginning of the Christian era the Romans had gone back to two-banked ships. In medieval times war galleys reverted to a single row of oars on each side, but required four or five men to every oar.



GREEK

At the time of the Persian war the trireme was the standard type of warship, as it had been for the hundred years before, and continued to be during the hundred years that followed. In fact, the name trireme was used loosely for all ships of war whether they had two banks of oars or three. But the fleets that fought in the Persian war and in the Peloponnesian war were composed of three-banked ships, and fortunately we have in the records of the

Athenian dockyards accurate information as to structural detail.

The Athenian trireme was about 150 feet in length with a beam of 20 feet. The beam was therefore only 2/15 of the length. (A merchant ship of the same period was about 180 feet long with a beam of 1/4 its length.) The trireme was fitted with one mast and square sail, the latter being used only when the wind was fair, as auxiliary to the oars, especially when it needed to retire from battle. In fact, the phrase "hoist the sail" came to be used colloquially like our "turn tail" as a term for running away.

The triremes carried two sails, usually made of linen, a larger one used in cruising and a smaller one for emergency in battle. Before action it was customary to stow the larger sail on shore, and the mast itself was lowered to prevent its snapping under the shock of ramming.

The forward part of the trireme was constructed with a view to effectiveness in ramming. Massive catheads projected far enough to rip away the upper works of an enemy, while the bronze beak at the waterline drove into her hull. This beak, or ram, was constructed of a core of timber heavily sheathed with bronze, presenting three teeth. Although the ram was the prime weapon of the ship, it often became so badly wrenched in collision as to start the whole forward part of the vessel leaking.

The rowers were seated on benches fitted into a rectangular structure inside the hull. These benches were so compactly adjusted that the naval architects allowed only two feet of freeboard for every bank of oars. Thus the Roman quinquiremes of the Punic

wars stood only about ten feet above water. The covering of this rectangular structure formed a sort of hurricane deck, standing about three feet above the gangway that ran around the ship at about the level of the bulwarks. This gangway and upper deck formed the platform for the fighting men in battle. Sometimes the open space between the hurricane deck and the gangway was fenced in with shields or screens to protect the rowers of the uppermost bank of oars from the arrows and javelins of the enemy.

The complement of a trireme amounted to about 200 men. The captain, or "trierarch," commanded implicit obedience. Under him were a sailing master, various petty officers, sailors, soldiers or marines, and oarsmen.

The trireme expanded in later centuries to the quinquereme: upper works were added and a second mast, but in essentials it was the same type of war vessel that dominated the Mediterranean for three thousand years—an oar driven craft that attempted to disable its enemy by ramming or breaking away the oars. After contact the fighting was of a hand to hand character such as prevailed in battles on land. These characteristics were as true of the galley of Lepanto (1571 A.D.) as of the trireme of Salamis (480 B.C.). Of the three cardinal virtues of the fighting ship, mobility, seaworthiness, and ability to keep the sea, or cruising radius, the oar-driven type possessed only the first. It was fast, it could hold position accurately, it could spin about almost on its own axis, but it was so frail that it had to run for shelter before a moderate wind and sea. In consequence naval operations were limited to the summer months. As to its cargo capacity, it was so small that it was unable to carry provisions to sustain

its own crew for more than a few days. As a rule the trireme was beached at night, with the crew sleeping on shore, and as far as possible the meals were cooked and eaten on shore. In the battle of Ægospotami (405 B.C.), for example, the Spartans fell upon the Athenians when their ships were drawn up on the beach and the crews were cooking their dinner. Moreover, the factors of speed and distance were both limited by the physical fatigue of the oarsmen. In the language of to-day, therefore, the oar-driven man-of-war had a small "cruising radius."

This dependence on the land and this sensitiveness to weather are important facts in ancient naval history. It is fair to say that storms did far more to destroy fleets and naval expeditions than battles during the entire age of the oar. The opposite extreme was reached in Nelson's day. His lumbering ships of the line made wretched speed and straggling formations, but they were able to weather a hurricane and to keep the sea for an indefinite length of time.

As a final word on the beginnings of navies, emphasis should be laid on the enormous importance of these early mariners, such as the Cretans and the Phœnicians, as builders of civilization. The venturesome explorer who brought his ship into some uncharted port not only opened up a new source of wealth but also established a reciprocal relation that quickened civilization at both ends of his route. The cargo ships that left the Nile delta distributed the arts of Egypt as well as its wheat, and the richest civilization of the ancient world, that of Greece, rose on foundation stones brought from Egypt, Assyria, and Phœnicia. It may be said of Phœnicia herself that she built-up her advanced

culture on ideas borrowed almost wholly from her customers. But control of the seas for trade involved control of the seas for war, and behind the merchantman stood the trireme. It is significant and appropriate that a Phœnician coin that has come down to us bears the relief of a ship of war.

In contrast with these early sea explorers and sea fighters stand the peoples of China and India. Having reached a high state of culture at an early period, they nevertheless, sought no contact with the world outside and became stagnant for thousands of years. Indeed, among the Hindus the crossing of the sea was a crime to be expiated only by the most agonizing penance. Hence these peoples of Asia, the most numerous in the world, exercised no influence on the development of civilization compared with a mere handful of people in Crete or the island city of Tyre. And for the same reason China and India ceased to progress and became for centuries mere backwaters of history.

It is worth noting also that the Mediterranean, leading westwards from the early developed nations of Asia Minor and Egypt, opened a westward course to the advance of discovery and colonization, and this trend continued as the Pillars of Hercules led to the Atlantic and eventually to the new world. For every nation that bordered the Mediterranean illimitable highways opened out for expansion, provided it possessed the stamina and the skill to win them. And in those days they were practically the only highways. Frail as the early ships were and great as were the perils they had to face, communications by water were far centuries faster and safer than communications by land. Hence civilization followed the path of the sea. Even in

these early beginnings it is easy to see that sea-borne commerce leads to the founding of colonies and the formation of an empire whose parts are linked together by trade routes, and finally, that the preservation of such an empire depends an the naval control of sea. This was as true of Crete and Phœnicia as it was later true of Venice, Holland, and England.

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CHAPTER II

ATHENS AS A SEA POWER

1. THE PERSIAN WAR

In determining to crush the independence of the Greek cities of the west, Darius was influenced not only by the desire to destroy a dangerous rival on the sea and an obstacle to further advances by the Persian empire, but also to tighten his hold on the Greek colonies of Asia Minor. Helped by the Phœnician fleet and the treachery of the Lesbians and Samians, he had succeeded in putting down a formidable rebellion in 500 B.C. In this rebellion the Asiatic Greeks had received help from their Athenian brethren on the other side of the Ægean; indeed just so long as Greek independence flourished anywhere there would always be the threat of revolt in the Greek colonies of Persia. Darius perceived rightly that the prestige and the future power of his empire depended on his conquering Greece.

In 492 he dispatched Mardonius with an army of invasion to subdue Attica and Eretria, and at the same time sent forth a great fleet to conquer the independent island communities of the Ægean. Mardonius succeeded in overcoming the tribes of Thrace and Macedonia, but the fleet, after taking the island of Thasus, was struck by a storm that wrecked three hundred triremes with a loss of 20,000 lives. As the broken remnants of the fleet returned to Asia, leaving Mardonius with no sea communications, and harassed by increasing opposition, he was compelled to retreat also. In 490 Darius sent out another army under Mardonius, this time embarking it on a fleet of 600 triremes which succeeded in arriving safely at the coast of Attica in the bay of Marathon. While the army was disembarking it was attacked by Miltiades and utterly defeated. The second expedition, therefore, came to nothing. But Marathon can hardly be called a decisive battle because it merely

postponed the invasion; it affected in no way the communications of the Persians and it did not weaken seriously their military resources.

The great savior of Greece at this crisis was the Athenian, Themistocles. He foresaw the renewed efforts of the Persian king to destroy Greece, and realized also that the most vital point in the coming conflict would be the control of the sea. Accordingly he urged upon the Athenians the necessity of building a powerful fleet. In this policy he was aided by one of those futile wars so characteristic of Greek history, a war between Athens and the island of Ægina. In order to overcome the Æginetans, who had a large fleet, the Athenians were compelled to build a larger one, and by the time this purpose was accomplished rumors came that the Persian king was getting ready another invasion of Greece.

Campaign of Salamis

The third attempt was undertaken ten years after the second, in the year 480, under Xerxes, the successor to Darius. This time the very immensity of the forces employed was to overcome all opposition and all misfortunes. An army, variously estimated at from one to five million men, crossed the Hellespont on a bridge of boats to invade the peninsula from the north, while a fleet of 1200 triremes was assembled to insure the command of the sea.

Against the unlimited resources of the Persian empire and the unity of plan represented by Xerxes and his generals, the Greeks had little to offer. They possessed the two advantages of the defensive, knowledge of the terrain and interior lines,[1] but their resources were small and their spirit divided.

Greece in those days was, as was later said of Italy, "merely a geographical expression." The various cities were mutually jealous and hostile, and it took a great common danger to bring them even into a semblance of coöperation. Even during this desperate crisis the cities of western Greece, counting themselves reasonably safe from invasion, declined to send a ship or a man for the common cause.

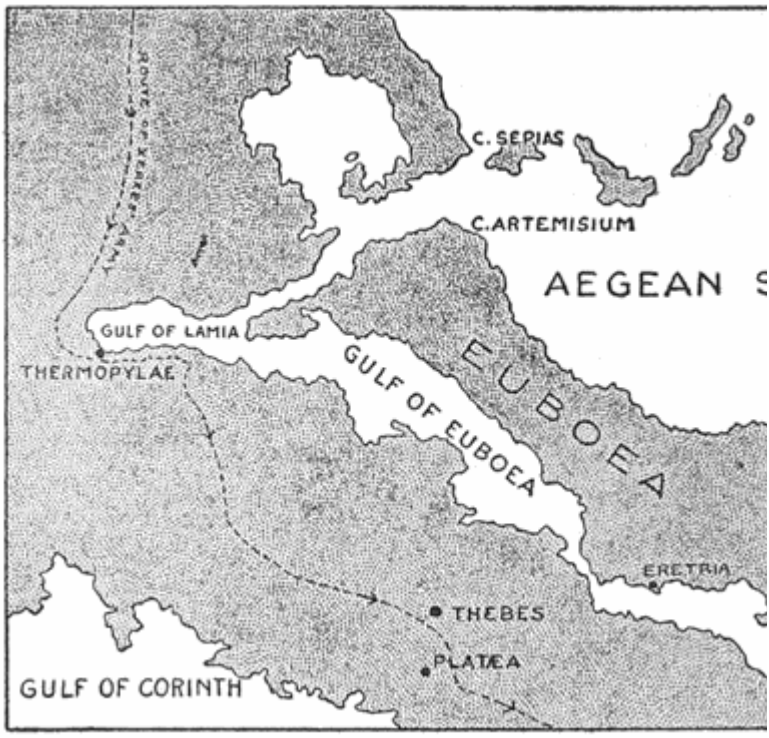
[Footnote 1: "'Interior Lines' conveys the meaning that from a central position one can assemble more rapidly on either of two opposite fronts than the enemy can, and therefore utilize force more effectively." NAVAL STRATEGY, A. T. Mahan, p. 32.]



ROUTE OF XERXES' FLEE

The Persian army advanced without opposition as far as the pass of Thermopylæ, which guarded the only road into the rest of Greece. Twelve days after the army had started on its march the great fleet crossed the Ægean to establish contact with the army and bring supplies. The army was checked by the valor of Leonidas, and the Persian fleet was intercepted by a Greek fleet which stood guard over the channel leading to the Gulf of Lamia, thus

protecting the sea flank of Leonidas. The Persian fleet, after crossing the open sea safely, made its base at Sepias preparatory to the attack on the Greek fleet. The latter numbered only about 380 vessels to some 1200 of their enemy and the prospects for the Persian cause looked bright indeed. But as the very number of the Persian ships made it impossible to beach all of them for the night a large proportion of them were anchored, lying in eight lines, prows toward the sea. At dawn a northeast gale fell upon them, and, according to the Greek accounts, wrecked 400 triremes, together with an uncounted number of transports. Meanwhile the Greek ships had taken refuge under the lee of the island of Eubœa, and the news of the Persian disaster was signaled to them by the watchers on the heights.



SCENE OF PRELIMINARY NAVAL OPERATIONS, CAMI

As soon as the weather moderated the Greeks returned to their position in the straits near Artemisium, and during the next three days the two fleets fought stubbornly but without advantage to either side. During the second day a southerly gale caught a flying squadron of some 200 triremes, that had been dispatched round the island of Eubœa to catch the Greeks in the rear, and not one of the Persian ships survived. The Greek rear guard squadron of fifty brought the welcome news to the main fleet and served as a much needed reënforcement. Although the Persian armada had lost about half its force in three days by storms, the odds

were still so heavily against the Greeks that they found themselves in constant peril of having their flanks turned in this open sea fighting.

On the afternoon of the third day the pass of Thermopyæ was forced, thanks to the treachery of a Greek and the contemptible policy of the Spartan government which steadily refused the plea of Leonidas for reënforcements. With Thermopyæ taken there was no further reason for the Greek fleet to try to hold the straits north of Eubœa, and during the night it retired unobserved. The following day the Persian fleet advanced and brought to the army the supplies which it sorely needed.

With the fall of Thermopyæ and the contact established between his army and his fleet, Xerxes found his route open for the invasion of Attica. Since there was no possibility of opposing him on land, the population of the province was removed and Athens left to its fate. Themistocles, who was in command of the Athenian division of the Greek fleet, now urged the assembling of the fleet at Salamis, partly to cover the withdrawal of the Athenians and partly to assist in the defense of the Isthmus of Corinth, which was to be the next stand of the Greeks. The advice was adopted and the fleet assembled off the town of Salamis. Athenian refugees had crowded into the town and from the heights above they watched the smoke of their burning city. Their own future and the future of Athenian civilization hung on the long lines of triremes drawn up on the shore.

A glance at the map of the region of Salamis shows the advantages offered by the position for the defensive. The fighting off Artemisium had shown the peril of attacking a greatly superior force in the

open because of the danger of being outflanked. In the narrow straits between Salamis and the mainland the Greek line of battle would rest its flanks on the opposite shores. But it is one thing to choose a position and another to get the enemy to accept battle in that position. If the Persians ignored the Greek fleet and moved to the Isthmus, the Greeks would be caught in an awkward predicament. To regain touch with the Greek army, the fleet would be then compelled to come out of the straits and fight at a disadvantage in the open. There was only one chance of defeating the Persian fleet and that was to make it fight in the narrow waters of the strait where numbers would not count so heavily. Everything depended on bringing this to pass.

Nor could the Greeks wait indefinitely for the Persians. Already the incorrigible jealousies of rival cities had almost reached the point of disintegrating the fleet. Although the commander in chief was the Spartan general Eurybiades, the whole Spartan contingent was on the point of deserting in a body to its own coasts. The situation was saved by Themistocles. Having wrung from his allies a reluctant consent to stop at Salamis temporarily to cover the withdrawal of the Athenian populace, the story is that he secretly dispatched a messenger to Xerxes to say that if he would attack at once he could crush the entire naval forces of the Greeks at a blow, but if he delayed the Greeks would scatter. Acting on this advice, Xerxes landed troops on the island of Psyttaleia, dispatched a squadron to block the western outlet of Salamis Straits, and proceeded to move the main body of his fleet to attack the Greeks by way of the eastern channel. The preparations were made during the night and were

not completed till dawn of the day of battle, September 20, 480 B.C.

The debates in the allied fleet came to an end with the appearance of the Persians. The shrewd plan of Themistocles had succeeded. The Greeks would have to fight with their backs to the wall, but they would fight with better chance of success than under any other circumstances.

The Greek force consisted of about 380 vessels. Of these, Athens contributed 180, Sparta and the rest of the Peloponnesus were represented by 89 and the remainder were made up of squadrons from the island states. Some of these island contingents contained a type of ship different from the triremes, the penteconter. This was a galley with only one bank of oars, but these were long sweeps, each manned by five oarsmen. The penteconter was an early prototype of the galley of the Christian era.

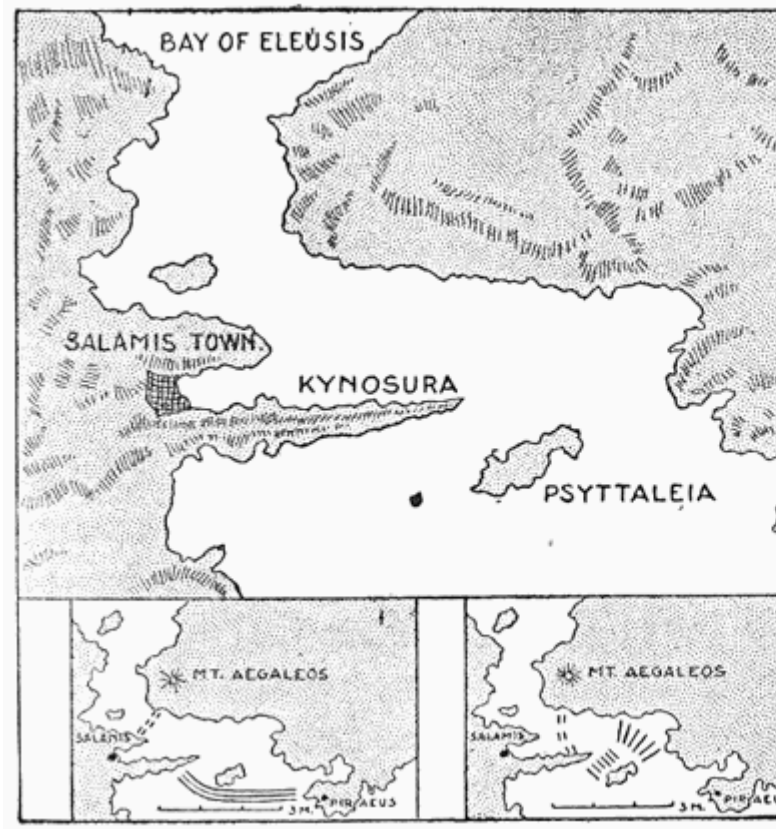
The Persians had been reduced by this time to about 600 ships, although there had been numerous reënforcements since the disaster at Cape Sepias. The fleet was "Persian" only in name, for, except for bands of Persian archers on some of the ships, it was composed of elements levied from each of the subject nations that followed the sea. Indeed Persia is a curious example in history of a nation with a purely artificial sea power, for its navy was composed of aliens entirely. Thus the squadron that was sent to blockade the western end of the straits was Egyptian, the right wing of the fleet as it advanced to the attack was composed of Phœnicians, and the center and left was made up of Cyprians, Cilicians, Samothracians, and Ionians, the latter only recently in rebellion against Persia and at that time

welcoming help from Athens in a cause in which Athens herself was now involved. Apparently there was no compunction felt on this account, for the Ionians distinguished themselves by gallant fighting against their Greek brethren. Nevertheless, it is not hard to imagine difficulties involved in the task of making a unit of such an assortment of peoples. The fleet was commanded by a Persian, Prince Ariabignes, brother of Xerxes.

At daybreak the Persian triremes drew up in three lines on each side of the island of Psyttaleia and advanced into the straits. But the narrowing waters of the channel made it necessary to reduce the front and bear to the left. Consequently all formation was lost, and the Persian triremes poured into the narrows "in a stream,"—to quote the phrase of the tragedian Æschylus, who fought on an Athenian trireme in this battle and describes it in one of his plays.

Facing the invader was a smaller array of ships but a better ordered line of battle. On the Greek left was the Athenian division opposing the advancing triremes of Phœnicia; on the right was the Spartan division facing the Greeks of Asia Minor. The two fleets rushed toward each other, but just before contact the Persians found themselves embarrassed by their very number of ships. As may be seen by the map, they had an awkward turn to make in entering the narrows. At this point, just opposite the peninsula of Salamis, the straits are only about 2000 yards wide, making it impossible for more than 80 or 90 triremes to advance abreast. As a result the Phœnician wing of the line was extended considerably in advance of the rest, forced ahead by the pressure of ships behind. Although, as a matter of

fact, the Spartan wing also was somewhat in advance of the rest of the Greek line, the first shock of battle came between the Phœnicians and the Athenians.



THE BATTLE

1. The Original Position
2. The Advance
3. The Contact

This initial advantage offered by an exposed wing was immediately seized upon. While the Athenians bore the frontal attack, the Æginetans on their right fell upon the Phœnicians' flank. This double attack on the Persian right wing eventually proved the turning point of the battle. The Phœnicians, however, had the reputation of being the foremost sea fighters in the world, and they bore themselves well. Similarly the Asiatic Greeks proved themselves foemen worthy of their brethren from the Peloponnesus, and the fight was maintained with great ferocity all along the line. The inhabitants of Athens who had been removed to Salamis blackened the shores on one side of the Strait, as anxious watchers of the tremendous spectacle. Opposite them on the slope of Mt. Ægaleos sat Xerxes himself, surrounded by his staff, a less anxious spectator but no less interested in the outcome.

About seven o'clock a fresh westerly wind arose, as it does at this day in that region, and as it did some years later during a battle won by an Athenian admiral in the Gulf of Corinth.[1] This wind blows every morning with considerable violence for about two hours; and in this battle it must have tended to make the bows of the Persian ships pay off—thus exposing their sides to the Greek rams—and drift back upon the galleys that were crowding forward from the rear in the attempt to get into the battle.

[Footnote 1: The Battle of the Corinthian Gulf: v. p. 43]

The Greeks pressed their advantage, using their rams to sink an adversary or disable her by cutting away her oars. Where the mêlée was too close for such tactics they tried to take their enemy by boarding. On every Greek trireme was a specially

organized boarding party consisting of 36 men—18 marines, 14 heavily armed soldiers, and four bowmen; and the Greeks seem to have been superior to their enemy at close quarters. On the Persian side the superiority lay in their archers and javelin throwers. Toward the end of the battle, for instance, a Samothracian trireme performed a remarkable feat. Having been disabled by an Æginetan ship, the Samothracian cleared the decks of her assailant with arrows and javelins and took possession. Although the invaders seem to have fought with the greatest courage and determination, the disadvantage of confusion at the outset of the battle, augmented by the head wind, told decisively against them. They were unable to take advantage of their superiority in ships on account of the narrowness of the channel, and indeed found that the very multitude of their ships only added to their difficulties.

The retreat began with the flower of the Persian fleet, the Phœnician division. Caught at the opening of the battle with the Athenians in front and the Æginetans on the left flank, they were never able to extricate themselves, although they fought stubbornly. The foremost ships, many in a disabled condition, began to retreat; others backed water to make way for them; the rearmost finding it impossible to reach the battle at all, withdrew out of the straits; and soon the retreat became general. As the Phœnicians withdrew, the Athenians and the Æginetans fell upon the center of the Persian line, and the rout became general with the Greeks in full pursuit. The latter pressed their enemy as far as the island of Psyttaleia, thus cutting off the Persian force on the island from their communications. Whereupon Aristides, the Athenian, led a force in

boats from Salamis to the island and put to death every man of the Persian garrison. The Persian ships fled to their base at Phaleron, while the Greeks returned to their base at Salamis.

The battle of Salamis was won, but at the moment neither side realized its decisive character. The Greeks had lost 40 ships; the Persians had lost over 200 sunk, and an indeterminate number captured. Nevertheless, the latter could probably have mustered a considerable force for another attack—which the Greeks expected—if their morale had not been so badly shaken. Their commander, Ariabignes, was among the killed, and there was no one else capable of reorganizing the shattered forces. Xerxes, fearing for the safety of his bridge over the Hellespont, gave orders for his ships to retire thither to protect it, and the very night after the battle found the remains of the Persian fleet in full flight across the Ægean.

The news reached the Greeks at noon of the following day and they set out in pursuit, but having gone as far as Andros without coming up with the enemy, they paused for a council of war. The Athenians urged the policy of going on and destroying the bridge over the Hellespont, but they were voted down by their allies, who preferred to leave well enough alone.

It is customary to speak of the victory of the Greeks at Salamis as due to their superior physique and fighting qualities. This superiority may be claimed for the Greek soldiers at Marathon and Platæ, where the Persian army was actually Persian. The Asiatic soldier, forced into service and flogged into battle, was indeed no match for the virile and

warlike Greek. But at Salamis it was literally a case of Greek meeting Greek, except in the case of the Phœnicians—who had the reputation of being the finest seafighters in the world—and it is not easy to see how the battle was won by sheer physical prowess. There is no evidence to show any lack of either courage or fighting ability on the Persian side. The decisive feature of the battle was the fatal exposure of the Phœnician wing at the very outset. However, it is worth noting that the invaders had been maneuvering all night and were tired—especially the oarsmen—when called upon to enter battle against an enemy that was fresh. In that respect there was undoubtedly some advantage to the Greeks, but it can hardly have been of prime importance.

The immediate results of the victory at Salamis were soon apparent. The all-conquering Persian army suddenly found itself in a critical situation. Cut off from its supplies by sea, it had to retreat or starve, for the country which it occupied was incapable of furnishing supplies for a host so enormous. Xerxes left an army of occupation in Thessaly consisting of 300,000 men under Mardonius, but the rest were ordered to get back to Persia as best they could. A panic-stricken rout to the Hellespont began, and for the next forty-five days a great host, that had never been even opposed in battle, went to pieces under famine, disease, and the guerilla warfare of the inhabitants of the country it traversed, and it was only a broken and demoralized remnant of the great army that survived to see the Hellespont. This great military disaster was due entirely to the fact that Salamis had deprived Xerxes of the command of the sea. Indeed, if the advice of Themistodes had been

taken and the Greek fleet had proceeded to the Hellespont and held the position, not even a remnant of the retreating army would have survived. It happened that the bridge had been carried away by storms and the army had to be ferried over by the ships of the beaten and demoralized Persian fleet, an operation which would have been impossible in the face of the victorious Greeks.

Xerxes still held to the idea of conquering Greece; but the chance was gone. Mardonius, it is true, remained in Thessaly with an army, but it was no longer an army of millions. The Greeks assembled an army of about 100,000 men and in the battle of Platæa the following year utterly defeated it. On the same day the Greeks destroyed what was left of the Persian fleet in the battle of Mycale, on the coast of Asia Minor. This, strictly speaking, was not a naval battle at all, for the Persians had drawn their ships up on shore and built a stockade around them. The Greeks landed their crews, took the stockade by storm and burnt the ships. These later victories were the direct consequences of the earlier victory of Salamis.

Another phase of the Persian plan of conquering the Greeks must not be overlooked. Xerxes had stirred up Carthage to undertake a naval and military expedition against the Greeks of Sicily, in order that all the independent Greek states might be crushed simultaneously. Again the weather came to the rescue, for the greater part of the Carthaginian fleet was wrecked by storms. The survivors of the expedition laid siege to the city of Himera, but were eventually driven back to their ships in rout with the loss of their general. Thus the Greek civilization of Sicily was saved at the same time as that of Athens.

East and west, therefore, the grandiose plan of the Persian despot fell in ruin, and with it fell the prestige and the power of the empire. The Ionians revolted and joined Athens as allies, and the control of the Ægean passed from Persia to Athens. With this loss of sea power began the decline of Persia as a world power.

The significance of this astounding defeat of the greatest military and naval power of the time lies in the fact that European, or more particularly Greek, civilization was spared to develop its own individuality. Had Xerxes succeeded, the paralyzing régime of an Asiatic despotism would have stifled the genius of the Greek people. Self-government would never have had its beginnings in Greece, and a subjugated Athens would never have produced the "Age of Pericles." In the two generations following Salamis, Athens made a greater original contribution to literature, philosophy, science, and art than any other nation in any two centuries of its existence.

For the fact that this priceless heritage was left to later ages the world is indebted chiefly to the Greeks who fought at Salamis. The night before that battle the cause of Greece seemed doomed beyond hope. The day after, the invaders began a retreat that ended forever their hopes of conquest. This amazing change of fortune was due to the fact that the success of the Persian invasion depended on the control of the sea. Hence the Greeks, though unable to muster an army large enough to meet the Persian host on land, defeated it disastrously by winning a victory on the sea.

2. THE PELOPONNESIAN WAR

After Salamis, Athens rose to a commanding position among the Greek states. Her period of supremacy was brief, lasting less than 75 years, but while it endured it rested on her triremes. In the middle of the fifth century she had 100,000 men in her navy, practically as many as Great Britain in her fleet before 1914. Although the period of Athenian supremacy was short-lived, it is interesting because it produced a great naval genius, Phormio, and because it wrecked itself as Persian sea power had done, in an attempt at foreign conquest.

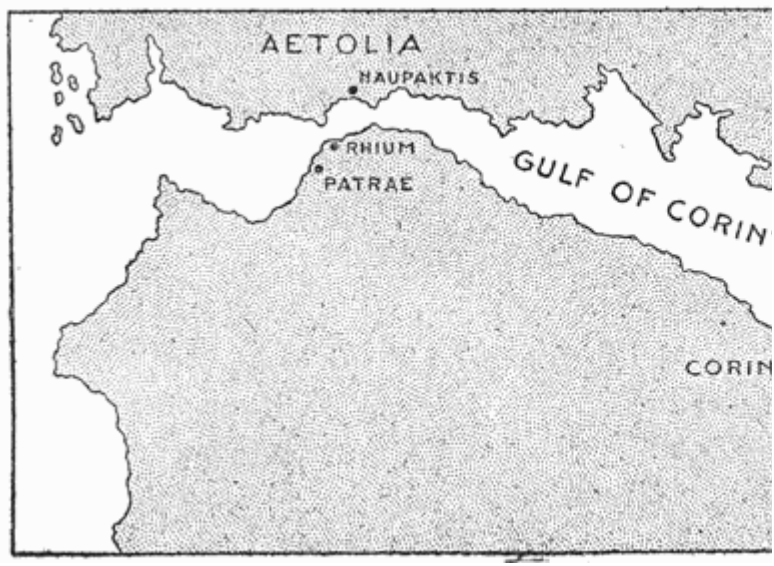
Scarcely had the Persian invasion come to an end when bickering broke out among the various Greek states, much of it directed against Athens. She had small difficulty, however, in maintaining her ascendancy in northern Greece on account of her superiority on the sea, and it was during the half century after Salamis that Athens arose to her splendid climax as the intellectual and artistic center of the world.



THE ATHENIAN EMPIRE AT

In 431 began the Peloponnesian War. Its immediate cause was the help given by Athens to Corcyra (Corfu) in a war against Corinth. Corinth called on Sparta for help, and in consequence northern and southern Greece were locked in a mortal struggle. The Athenians had a naval base at Naupaktis on the Gulf of Corinth, and in 429, two years after war broke out, the Athenian Phormio

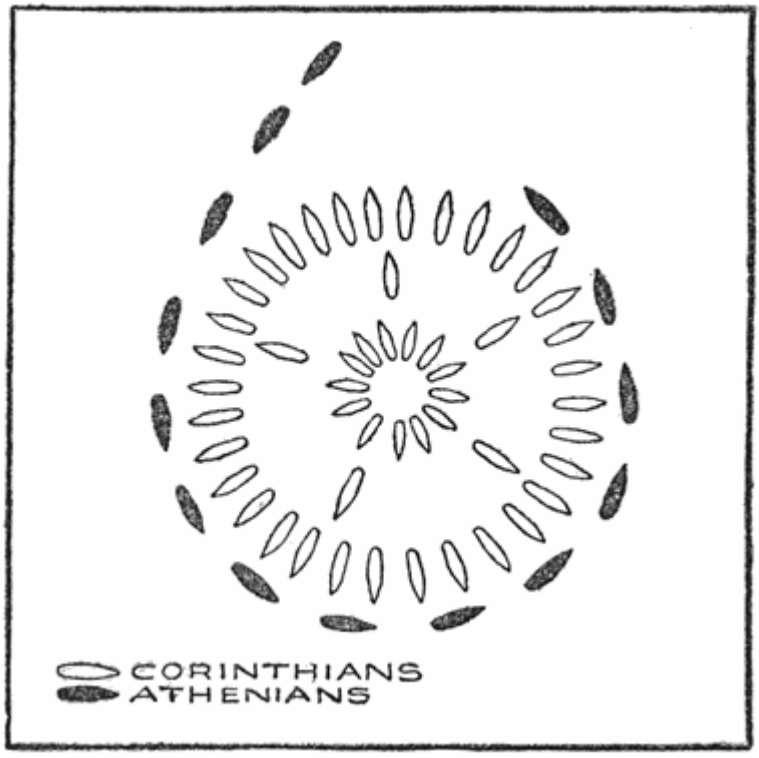
found himself supplied with only twenty triremes with which to maintain control of that important waterway. At the same time Sparta was setting in motion a large land and water expedition with the object of sweeping Athenian influence from all of western Greece and of obtaining control of the Gulf of Corinth. A fleet from Corinth was to join another at Leukas, one of the Ionian Islands, and then proceed to operate on the northern coast of the gulf while an army invaded the province.



SCENE OF PHOF

As it happened, the army moved off without waiting for the coöperation of the fleet and eventually went to pieces in an ineffectual siege of an inland city. When the fleet started out from Corinth it numbered 47 triremes. As this was more than twice the number possessed by Phormio, the Corinthian admiral evidently counted on being

secure from attack. Accordingly he used some of his triremes as transports and started on his journey without taking the precaution to train his oarsmen or practice maneuvers. But as he skirted along the southern coast he was surprised to see the Athenian ships moving in a parallel course as if on the alert for an opportunity to attack. When the Corinthian ships bore up from Patræ to cross to the Ætolian shore, the Athenian column steered directly toward them. At this threat the Corinthian fleet turned away and put in at Rhium, a point near the narrowest part of the strait, in order to make the crossing under cover of night. The Corinthian admiral made the same fatal mistake committed by the commander of the Spanish Armada 2000 years later in a similar undertaking, that of trying to avoid an enemy on the sea rather than fight him before carrying out an invasion of the enemy's coast. This ignominious conduct on the part of the Corinthian admiral was partly due to the fact that he was encumbered with his transports, but chiefly to the fact that he knew that in fighting qualities his men were no match for the Athenians. The latter had no peers on the sea at that time. Since Salamis they had progressed far in naval science and efficiency and were filled with the confidence that comes from knowledge and experience.



BATTLE OF THE CORINTHIAN GULF, 429 B. C.
Corinthian Formation and Circling Tactics of Phormi

All night Phormio watched his enemy and at dawn surprised him in mid-crossing. On seeing Phormio advance to the attack, the Corinthian drew up his squadron in a defensive position, ranging his vessels in concentric circles, bows outward, like the spokes of a wheel. In the center of this formation he placed his transports, together with five of his largest triremes to assist at any threatened spot. The formation suggests a leader of infantry rather than an admiral; moreover, it revealed a fatal readiness to give up the offensive to an enemy force less than half

his own.

At any rate there was no lack of decision on the part of Phormio. He advanced rapidly in line ahead formation, closed in near the enemy's prows as if he intended to strike at any moment and circled round the line. The Corinthian triremes, having no headway and manned by inexperienced rowers, began crowding back on one another as they tried to keep in position for the expected attack. Then the same early morning wind that had embarrassed the Persian ships at Salamis sprang up and added to the confusion of fouling ships and clashing oar blades. Choosing his opening, Phormio flew the signal for attack and rammed one of the flagships of the Corinthian fleet. The Athenians fell upon their enemy and almost at the first blow routed the entire Corinthian force. In addition to those triremes that were sunk outright, twelve remained as prizes with their full complement of crews, and the rest scattered in flight. Phormio returned in triumph to Naupaktis with the loss of scarcely a man.

So humiliating a defeat had to be avenged, and Sparta organized a new expedition. This time a fleet of 77 triremes was collected. Meanwhile Phormio had sent to Athens the news of his victory together with an urgent plea for reënforcements. Unfortunately the great Pericles was dying and the government had fallen into weak and unscrupulous hands. Consequently while 20 triremes were ordered to the support of Phormio, political intrigue succeeded in diverting this squadron to carry out a futile expedition to Crete, and Phormio was left to contest the control of the gulf against a fleet of 77 with nothing more than his original twenty.

It is interesting to observe what strategy Phormio adopted in this difficult situation. In the campaign of Salamis, Themistocles chose the narrow waters of the strait as the safest position for a fleet outnumbered by the enemy, because of the protection offered to the flanks by the opposite shores. But Phormio, commanding a fleet about one-fourth that of his adversary, chose the open sea. Apparently his decision was based on the fact that the superiority of the Athenian ship lay in its greater speed and skill in maneuvering. Unable to cope with his adversary in full force, he might by his superior mobility beat him in detail. Accordingly, he boldly took the open sea.

For about a week the two fleets lay within sight of each other, with Phormio trying to draw his enemy out of the narrows into open water and his adversary attempting to crowd him into a corner against the share. Finally the Peloponnesian, realizing that Phormio would have to defend his base, and hoping to force him to fight at a disadvantage, moved upon Naupaktis. As this port was undefended, Phormio was compelled to return thither.

The Peloponnesian fleet advanced in line of four abreast with the Spartan admiral and the twenty Spartan triremes—the best in the fleet—in the lead. At the signal from the admiral the column swung "left into line" and bore down in line abreast upon the Athenians who were ranging along the shore in line ahead. The object of the maneuver was to cut the Athenians off from the port and crowd them upon the shore. The latter, however, developed such a burst of speed that eleven of the twenty succeeded in reaching Naupaktis; the remaining nine drove ashore and their crews escaped. Apparently the victory of the Spartan was as complete as it was easy.

But while the rest of the fleet busied itself with the deserted Athenian triremes on the share, the Spartan squadron continued in the pursuit of the eleven Athenian ships that were heading for Naupaktis. Ten of the eleven reached port and drew up in a position of defense. The eleventh, less speedy than the rest, was being overhauled by the Spartan flagship which was pushing the pursuit far in advance of the rest of the squadron. The captain of the Athenian ship, seeing this situation, determined on a bold stroke. Instead of pushing on into the harbor he pulled round a merchant ship that lay anchored at the mouth, and rammed his pursuer amidships, disabling her at a blow. The Spartan admiral promptly killed himself and the rest of the ship's company were too panic stricken to resist.

At this disaster the rest of the Spartan squadron hesitated, dropped oars or ran into shallow water. Seeing his opportunity, Phormio dashed out of the harbor with his ten triremes and fell upon the Spartans. In spite of the ridiculous disparity of forces, this handful of Athenian ships pressed their attack so gallantly that they destroyed the Spartan advance wing and then, catching the rest of the fleet in disorder, routed the main body as well. By nightfall Phormio had rescued eight of the nine Athenian triremes that had fallen into the hands of the enemy and sent the scattered remnants of the Peloponnesian fleet in full flight towards Corinth. This battle of Naupaktis remains one of the most brilliant naval victories in history, a victory won against overwhelming odds by quick decision and superb audacity.

Only a half century separates Salamis from the battle of the Corinthian Gulf and the battle of

Naupaktis, but during that period there had been a great advance in naval science.

As far as naval tactics are concerned, Salamis was merely a fight between two mobs of ships, except that when opportunity offered, a vessel used her ram. Otherwise the only difference from land fighting was the fact that the combatants stood on floating platforms. But in the Peloponnesian war we see not only the birth of naval tactics but a very high development, especially as revealed in these two victories of Phormio.

With the development of a naval science rose also a naval profession. At Salamis Themistocles was a politician and Eurybiades was a soldier; it happened that they were made fleet commanders for the emergency. Phormio was a naval officer by profession, and he won by genius combined with superior efficiency in the personnel under his command. In his courage, resourcefulness, in the spirit he inspired, and the high pitch of skill he developed among his officers and men, he is an ideal type for every later age. Little is known of his life and character beyond the story of these two exploits, but they are sufficient to give him the name of the first great admiral of history.

His exploits illustrate, too, at the very outset of naval history, the vital truth that the man counts more than the machine. In these later days, when the tendency is to measure naval power merely by counting dreadnoughts, and to settle all hypothetical combats by the proportion of strength at a given point on the game board, it is well to remember that the most overwhelming victories have been won by the skill and audacity of a great leader, which

overcame odds that would be reckoned by the experts as insuperable.

The Peloponnesian war dragged on with varying fortunes for ten years. The Athenians were regularly successful on the sea and unsuccessful on land. They seem to have laid an unwise dependence on their navy for a state situated on the mainland with land communications open to the enemy. They attempted to make an island of their state by withdrawing into the city of Athens the entire population of Attica, leaving open to the invader the rest of the province. The repeated ravaging of Attica by Peloponnesian armies weakened both the resources and the morale of the Athenians, and the crowding of the inhabitants into the city resulted in frightful mortality from the plague. At the same time the naval expeditions sent out to harry the coast of the Peloponnesus accomplished nothing of real advantage.

In 421 a truce was agreed upon between Athens and Sparta, which was to last fifty years. Both sides were sorely weakened by the protracted struggle and neither had gained any real advantage over the other. Without waiting to recuperate from the losses of the war, Athens embarked in 415 on an ambitious plan of conquering Syracuse, and gaining all of Sicily as an Athenian colony. In the event of success Athens would have a western outpost for the eventual control of the Mediterranean, as she already had an eastern outpost in Ionia, which gave her control of the Ægean.

In the light of the event it is customary to refer to this expedition as the climax of folly, and yet it is clear that if the commander in chief had not wasted time in interminable delays the Athenians might

easily have won their objective. At first the Syracusans felt hopeless because of the large army and fleet dispatched against them, and the great naval prestige of their enemy, but as delay succeeded delay, assistance arrived from Corinth and Sparta, and the besieged citizens took heart. The siege dragged on for the greater part of two years, with the offensive gradually slipping from the Athenians to the Syracusans, till finally the invaders found their troops besieged on shore and their ships bottled up in the harbor by a line of galleys anchored across the entrance. The Syracusans knew that they were no match for the Athenians on the open sea, but with a fleet crowded into a harbor with no room for maneuvering, the problem was not essentially different from that of fighting on land. They built a fleet of ships with specially strengthened bows for ramming and erected catapults for throwing heavy stones on the decks of the enemy. Meanwhile, the Athenian ships had deteriorated from lack of opportunity to refit and their crews had been heavily reduced by disease. In a pitched battle between the two fleets in the harbor, the Athenians were worsted. Shortly after as the Athenians were attempting to break through the barrier and escape, they were again attacked by the Syracusans. There was no room for maneuvering; the Athenian ships were jammed together in a mass in which all advantage of numbers was lost. Moreover, against the deadly rain of huge stones the Athenians had no defense whatever.

The result was an overwhelming victory for the Syracusans. Out of 110 triremes the Athenians lost fifty. The besieging army went to pieces in attempting a retreat across the island, and the whole

expedition came to a tragic end. This defeat of the Athenian fleet in the harbor of Syracuse was the ruin of Athens. When the news reached Greece, many of her dependencies revolted, the Peloponnesian war had broken out anew, and she had no strength left to hold her own. The deathblow was given when a Spartan admiral destroyed all that was left of the Athenian navy at Ægospotami in the year 405. Thereafter Athens was merely a conquered province, permitted to keep a fleet of only twelve ships, and watched by a garrison of Spartan soldiers in the citadel.

The downfall of Athenian sea power at Syracuse may be compared with the downfall of Persian sea power at Salamis. Just as the latter prevented the spread of an Asiatic form of civilization in Europe and gave Greek civilization a chance to develop, so the former put an end to the extension of a strong Hellenic power in Italy and left opportunity for the rise of the civilization of Rome.

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CHAPTER III

THE SEA POWER OF ROME

1. THE PUNIC WARS

When peoples have migrated in the past, they have frequently changed their habits to conform to new topographical surroundings. We have seen that the Phœnicians, originally a nomadic people, became a seafaring race because of the conditions of the country they settled in; and on the other hand, at a later period, the Vikings who overran Normandy or Britain forsook the sea and became farmers. The popular idea that a race follows the sea because of an "instinct in the blood of the race" has little to stand on. When, however, the colonists from Phœnicia settled Carthage and founded an empire, they continued the traditions of their ancestors and built up their power on a foundation of ships. This was due to the conditions—topographical and geographical—which surrounded them, and which were much like those of the mother country. Carthage possessed the finest harbor on the coast of Africa, situated in the middle of the Mediterranean, where all the trade routes crossed. To counteract these attractions of the sea there was nothing but the arid and mountainous character of the interior. It was inevitable, therefore, that the Carthaginians, like their ancestors, should build an empire of the sea.

As early as the sixth century B.C. Carthage had established her power so securely in the western Mediterranean as to be able to set down definite limits beyond which Rome agreed not to go. Thus the opening sentence of a treaty between the two nations in 509 B. C. ran as follows:

"Between the Romans and their allies and the

Carthaginians and their allies there shall be peace and alliance upon the conditions that neither the Romans nor their allies shall sail beyond the Fair Promontory[1] unless compelled by bad weather or an enemy; and in case they are forced beyond it they shall not be allowed to take or purchase anything except what is barely necessary for refitting their vessels or for sacrifice, and they shall depart within five days."[2]

[Footnote 1: A cape on the African coast about due north from Carthage.]

[Footnote 2: GENERAL HISTORY, Polybius, Bk. III, chap. 3.]

A second and a third treaty emphasized even mare strongly the Carthaginian dictatorship over the Mediterranean.



SCENE OF THE PUNIC WARS

It was inevitable, therefore, that as Rome expanded her interests should come in collision with those of Carthage. The immediate causes of the Punic wars are of no consequence for our purpose; the two powers had rival interests in Sicily, and the clash of these brought on the war in the year 264 B.C. There followed a mortal struggle between Rome and Carthage that extended through three distinct wars and a period of aver a hundred years.

When the two nations faced each other in arms,

Carthage had the advantage of prestige and the greatest navy in the world. Her weaknesses lay in the strife of political factions and the mercenary character of her forces. Her officers were usually Carthaginians, but it was considered beneath the dignity of a Carthaginian to be a private. The rank and file, therefore, were either hired or pressed into service from the subject provinces. In the case of Xanthippus, who defeated Regulus in the first Punic war, even the commanding officer was a Spartan mercenary. These troops would do well so long as campaigns promised plunder but would became disaffected if things went wrong.

The Romans, on the other hand, had only a small navy and no naval experience; their strength lay in their legionaries. And in further contrast with their enemy they had none but Romans in their forces, or allies who were proud of fighting on the side of Rome. Consequently they fought in the spirit of intense patriotism which could stand the moral strain of defeat and even disaster. On land there was no better fighter than the Roman soldier. At sea, however, all the advantage lay with the Carthaginian, and it soon became clear that if the Romans were to succeed they would have to learn to fight on water.

For the first three years Carthaginian fleets raided the coasts of Sicily and Italy with impunity. Finally, in desperation, Rome set about the creation of a fleet, and the story is that a Carthaginian quinquereme that had been wrecked an the coast was taken as a model, and while the ships were building, rowers were trained in rowing machines set up an shore. The first contact with the enemy was not encouraging. The new fleet, which was

constructed in two months, consisted of 100 quinqueremes and 30 triremes. Seventeen of these while on a trial cruise were blockaded in the harbor of Messina by twenty Carthaginian ships, and the Roman commander was obliged to surrender after his crews had landed and escaped.

The next encounter was a different story. The Romans, realizing their ignorance of naval tactics and their superiority in land fighting, determined to make the next naval battle as nearly as possible like an engagement of infantry. Accordingly the ships were fitted with boarding gangways with a huge hooked spike at the end, like the beak of a crow, which gave them their name, "corvi" or "crows."[1]

[Footnote 1: The following is the description in Polybius of what they were like and how they were worked.

"They [the Romans] erected on the prow of every vessel a round pillar of wood, of about twelve feet in height, and of three palms breadth in diameter, with a pulley at the top. To this pillar was fitted a kind of stage, eighteen feet in length and four feet broad, which was made ladder-wise, of strong timbers laid across, and cramped together with iron: the pillar being received into an oblong square, which was opened for that purpose, at the distance of six feet within the end of the stage. On either side of the stage lengthways was a parapet, which reached just above the knee. At the farthest end of this stage or ladder was a bar of iron, whose shape was somewhat like a pestle; but it was sharpened at the bottom, or lower point; and on the top of it was a ring. The whole appearance of this machine very much resembled those that are used in grinding corn. To the ring just mentioned was fixed a rope, by which,

with the help of the pulley that was at the top of the pillar, they hoisted up the machines, and, as the vessels of the enemy came near, let them fall upon them, sometimes on their prow, and sometimes on their sides, as occasion best served. As the machine fell, it struck into the decks of the enemy, and held them fast. In this situation, if the two vessels happened to lie side by side, the Romans leaped on board from all parts of their ships at once. But in case that they were joined only by the prow, they then entered two and two along the machine; the two foremost extending their bucklers right before them to ward off the strokes that were aimed against them in front; while those that followed rested the boss of their bucklers upon the top of the parapet on either side, and thus covered both their flanks." GENERAL HISTORY, Book 1.]

Armed with this new device, the Consul Duilius took the Roman fleet to sea to meet an advancing Carthaginian fleet and encountered it off the port of Mylæ (260 B.C.). The Carthaginians had such contempt for their enemy that they advanced in irregular order, permitting thirty of their ships to begin the battle unsupported by the rest of the fleet. One after the other the Carthaginian quinqueremes were grappled and stormed, for once the great *corvus* crashed down on a deck all the arts of seamanship were useless. Before the day was over the Carthaginians had lost 14 ships sunk and 31 captured, a total of half their fleet, and the rest had fled in disorder towards Carthage.

The unexpected had happened, as it so frequently does in history. The amateurs had beaten the professionals, not by trying to achieve the same efficiency but by inventing something new that

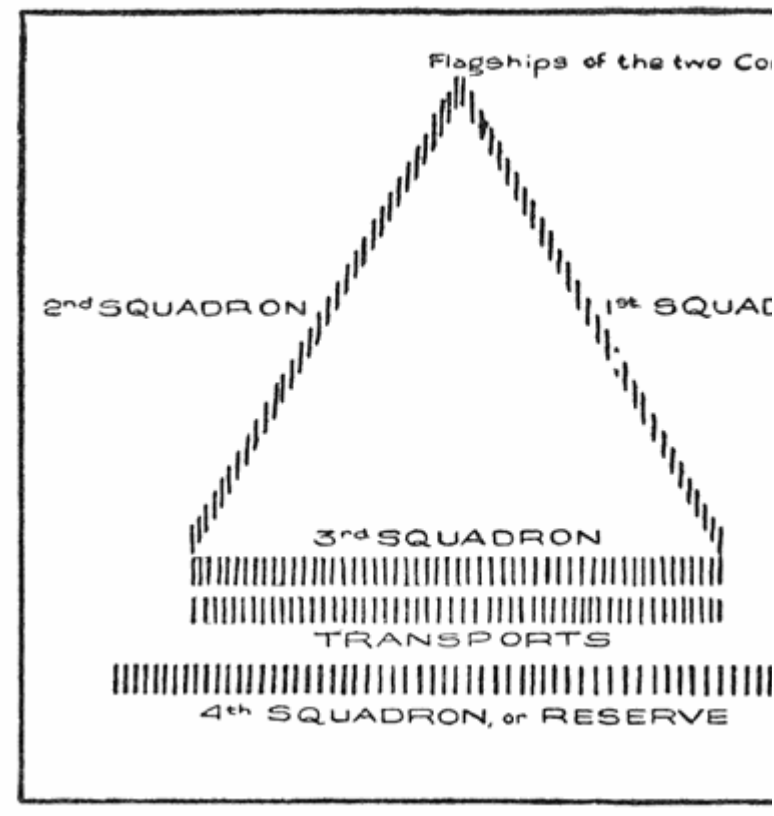
would make that efficiency useless. Thus, as we nave seen, the Syracusans, who were no match for the Athenians in the open sea, destroyed the sea power of Athens by bottling up her fleet in a harbor and bombarding it with catapults. It is an instance such as we shall see recurring throughout naval history, in which the power of a great fleet is largely or completely neutralized by a new or device in the hands of the nation with the smaller navy.

The significance of Mylæ lay in the fact that a new naval power had arisen, that henceforth Rome must be reckoned with on the sea. The victory served to encourage the Romans to enlarge their navy, and with it to press the war into the enemy's territory. Soon after Mylæ they gained possession of the greater part of Sicily, and in the year 256 they dispatched a fleet to carry the offensive into Africa. This Roman fleet of 330 ships met, just off Ecnomus, on the southern coast of Sicily, a Carthaginian fleet of 350, and a great battle took place, interesting for the grand scale on which it was fought and the tactics employed.

The Romans, an seeing their enemy, assumed a formation hitherto unknown in tactics at sea. Their first and second squadrons formed the sides of an acute-angled triangle; the third squadron formed the base of the triangle, towing the transports, and the fourth squadron brought up the rear, covering the transports. The whole formed a compact wedge, pushing forward like a great spear head to pierce the enemy's line.

Admirable as this formation was, the Carthaginians were no less skillful in their tactics for destroying it. Instead of keeping an unbroken line to

receive the attack, they stationed their left wing at same distance from the center so as to overlap the Roman right, and their right wing in column ahead, so as to overlap the Roman left. As the Romans advanced, the Carthaginian center purposely gave way, drawing the advance wings of their enemy away from the transports and the two squadrons in the rear. Then they faced about and attacked. Meanwhile the two Carthaginian squadrons on the flanks swung round the Roman wedge, the left wing engaging the Roman third squadron, which was hampered by the transports, and driving it toward the shore. At the same time the Carthaginian right wing attacked the fourth, or reserve, squadron from the rear and drove it into the open sea. Thus the battle went on in three distinct engagements, each separated by considerable distance from the others. The outcome is thus narrated by Polybius:



ROMAN FORMATION AT ECNOMU

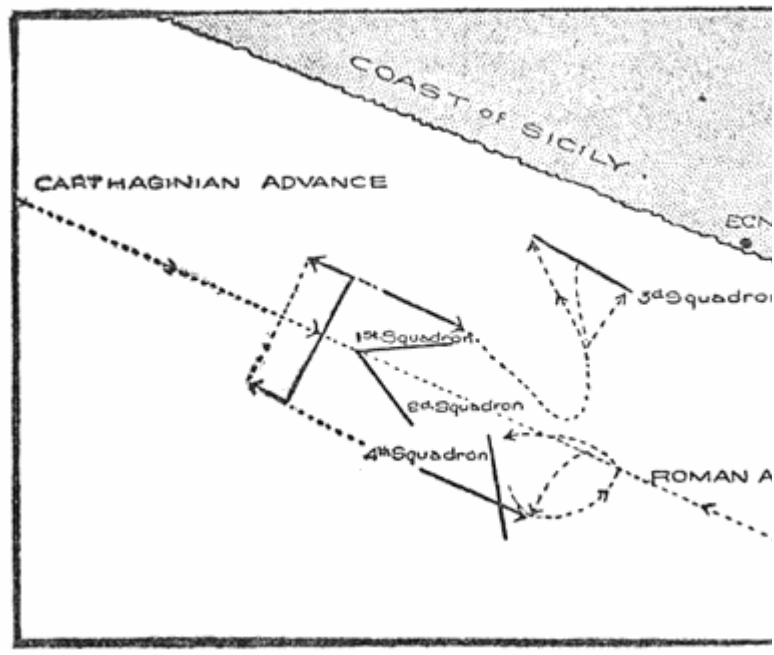
"Because in each of these divisions the strength of the combatants was nearly equal, the success was also for some time equal. But in the progress of the action the affair was brought at last to a decision: a different one, perhaps, from what might reasonably have been expected in such circumstances. For the Roman squadron that had begun the engagement gained so full a victory, that Amilcar [the Carthaginian commander] was forced to fly, and the consul Manlius brought away the vessels that were

taken.

"The other consul, having now perceived the danger in which the triarii[1] and the transports were involved, hastened to their assistance with the second squadron, which was still entire. The triarii, having received these succors, when they were Just upon the point of yielding, again resumed their courage, and renewed the fight with vigor: so that the enemy, being surrounded on every side in a manner so sudden and unexpected, and attacked at once both in the front and rear were at last constrained to steer away to sea.

[Footnote 1: The rear guard, or fourth squadron.]

"About this time Manlius also, returning from the engagement, observed that the ships of the third squadron were forced in close to the shore, and there blocked up by the left division of the Carthaginian fleet. He joined his forces, therefore, with those of the other consul, who had now placed the transports and triarii in security, and hastened to assist these vessels, which were so invested by the enemy that they seemed to suffer a kind of siege. And, indeed, they must have all been long before destroyed if the Carthaginians, through apprehension of the *corvi*, had not still kept themselves at distance, and declined a close engagement. But the consuls, having now advanced together, surround the enemy, and take fifty of their ships with all the men. The rest, being few in number, steered close along the shore, and saved themselves by flight.



CARTHAGINIAN TACTICS AT THE BATTLE OF EC

"Such were the circumstances of this engagement; in which the victory at last was wholly on the side of the Romans. Twenty-four of their ships were sunk in the action, and more than thirty of the Carthaginians. No vessel of the Romans fell into the hands of the enemy; but sixty-four of the Carthaginians were taken with their men."[2]

[Footnote 2: Polybius's GENERAL HISTORY, Book I, Chap. 2.]

The battle of Ecnomus had no such decisive effect on history as the battle of Salamis, but it was on a far greater scale and it reveals an enormous advance in tactics. Three hundred thousand men, rowers and warriors, were engaged, and nearly 700 ships. Up to the battle of Actium, two centuries later, Ecnomus

remained the greatest naval action in history. Moreover, the tactics of the rival fleets show a high degree of discipline and efficiency. The Carthaginian plan of dividing their enemy's force and defeating it by a concentrated attack on his transport division, was skillfully carried out and came perilously near succeeding. Had the first and second squadrons of the Carthaginians been able to carry out their part of the plan and "contain" the corresponding advance squadrons of the Romans, the result would have been an overwhelming victory for Carthage, involving not only the destruction of the Roman fleet but also the capture of the Roman army of invasion.

This victory left open the way for the advance into Africa. The Romans had landed and marched almost to the gates of Carthage when the army was destroyed by the skill of a Spartan, Xanthippus, and Regulus, the Consul in command, was captured. This astonishing catastrophe inflicted on the Roman legionaries was due to the use of elephants, and offers a curious parallel to the effect of the *corvi* on the Carthaginian sailors. Such was the terror inspired by these animals that the Roman soldier would not stand before them until a year or two later, in Sicily, the Consul Cecilius showed how they could not only be repulsed but turned back on their own army by the use of javelins and arrows.

Nothing daunted by the loss of their army, Rome dispatched a fleet of 350 ships to Africa to carry off the remnants of the defeated army that were besieged in the city of Aspis. They were met by a hastily organized Carthaginian fleet off the promontory of Hermæa in a brief action in which the Romans were overwhelmingly victorious. The latter took 114 vessels with their crews. The Roman

expedition continued on its course to Africa, rescued the besieged troops and turned back in high feather toward Sicily. The Consuls in command had been warned by the pilots not to attempt to skirt the southern coast of Sicily at that season of the year, but the warning was disregarded. Suddenly, as the fleet was approaching the shore it was overwhelmed by a great gale, and out of 464 vessels only eighty survived.

Frightful as this loss was in ships and men, Rome proceeded at once to build another fleet, to the number of 250, which, with characteristic energy, was made ready for service in three months. This force also, after an ineffectual raid on the African coast, fell victim to a storm on the way home with the loss of 150 ships.

Unwilling to relinquish the mastery of the sea that had been won by an uninterrupted series of victories, Rome sent another fleet to attack a Carthaginian force lying in the harbor of Drepanum. As the Romans approached, the Carthaginians went out to meet them, and so maneuvered as to force them to fight with an enemy in front and the rocks and shoals of the coast in their rear. The Roman ships were never able to extricate themselves from this predicament, and the greater part were either taken or wrecked on the coast. The Consul in command managed to escape with about thirty of his vessels, but 93 were taken with their crews. This is the single instance of a pitched battle between Roman and Carthaginian fleets in which the victory went to Carthage, a victory due entirely to better seamanship. The immediate result of this success was the destruction of the Roman squadron lying in the port of Lilybæum which was assisting the troops in

the siege of that town.

Still another Roman fleet that had the temerity to anchor in an exposed position was destroyed by a storm. "For so complete was the destruction," writes Polybius, "that scarcely a single plank remained entire."

Stunned by these disasters, the government at Rome gave up the idea of contesting any further the command of the sea. The citizens, how ever, were not willing to submit, and displayed a magnificent spirit of patriotism in this the darkest period of the war. Individuals of means, or groups of individuals, pledged each a quinquereme, fully equipped, for a new fleet, asking reimbursement from the government only in case of victory. By these private efforts a force of 200 quinqueremes was constructed. At this time, as at the very beginning, the model for the Roman ships was a prize taken from the enemy.



POINTS OF INTEREST IN TH

Meanwhile the Carthaginians, confident that the Romans were finally driven from the sea, had allowed their own fleet to disintegrate. Accordingly when the astonishing news reached them that the Romans were again abroad they were compelled to fill their ships with raw levies of troops and inexperienced rowers and sailors. And, since the Carthaginian troops who were besieging the city of Eryx in Sicily were in need of supplies, a large number of transports were sent with the fleet. The Carthaginian commander planned to make a landing

unobserved, leave his transports, exchange his raw crews for some of the veterans before Eryx and then give battle to the Roman fleet.

This program failed because of the initiative of the Roman Consul commanding the new fleet. Having got word of the coming of the Carthaginians and divining their plan, he braved an unfavorable wind and a rough sea for the sake of forcing an action before they could establish contact with their army. Accordingly he sought out his enemy and met him (in the year 241 B.C.) off the island of Ægusa, near Lilybæum. Almost at the first onset the Romans won an overwhelming victory, capturing seventy and sinking fifty of the Carthaginian force.

This final desperate effort of Rome was decisive. The Carthaginians had no navy left, and their armies in Sicily were cut off from all communications with their base. Accordingly ambassadors went to Rome to sue for peace, and the great struggle that had lasted without intermission for twenty-four years and reduced both parties to the point of exhaustion, ended with a triumph for Rome through a victory on the sea. By the treaty of peace Carthage was obliged to pay a heavy indemnity and yield all claim to Sicily.

Whatever historical moral may be drawn from the story of the first Punic war, the fact remains that a nation of landsmen met the greatest maritime power in the world and defeated it on its own element. In every naval battle save one the Romans were victors. It is true, however, that in the single defeat off Drepanum and in the dreadful disasters inflicted by storms, Rome lost through lack of knowledge of wind and sea. No great naval genius stands above the rest,

to whom the final success can be attributed. Rome won simply through the better fighting qualities of her rank and file and the stamina of her citizens. To quote the phrase of a British writer,[1] Rome showed the superior "fitness to win."

[Footnote 1: Fred Jane, HERESIES OF SEA POWER, *passim*.]

The Second Punic War

In the first Punic war the prize was an island, Sicily. Naturally, therefore, the fighting was primarily naval. The second Punic war (218-202 B.C.) was essentially a war on land. Carthage, driven from Sicily, turned to Spain and made the southern part of the peninsula her province. Using this as his base, Hannibal marched overland, crossed the Alps, and invaded Italy from the north. Had he followed up his unbroken series of victories by marching on the capital instead of going into winter quarters at Capua, it is possible that Rome might have been destroyed and all subsequent history radically changed. The Romans had no general who could measure up to the genius of Hannibal, but their spirit was unbroken even by the slaughter of Cannæ, and their allies remained loyal. Moreover, Carthage, thanks to factional quarrels and personal jealousies, was deaf to all the requests sent by Hannibal for reënforcements when he needed them most. In the end, Scipio, after having driven the Carthaginians out of Spain, dislodged Hannibal from Italy by carrying an invasion into Africa. At the battle of Zama the Romans defeated Hannibal and won the war.

It is difficult to see any significant use of sea power in this second Punic war. Neither side seemed to

realize what might be done in cutting the communications of the other, and both sides seemed to be able to use the sea at will. Of course due allowance must be made for the limitations of naval activity. The quinquereme was too frail to attempt a blockade or to patrol the sea lanes in all seasons. Nevertheless both sides used the sea for the transport of troops and the conveying of intelligence, and neither side made any determined effort to establish a real control of the sea.[1]

[Footnote 1: For a distinguished opinion to the contrary, v. Mahan, INFLUENCE OF SEA POWER UPON HISTORY, 14 ff. In this view, however, Mahan is not supported by Mommsen (vol. II, p. 100). See also Jane, HERESIES OF SEA POWER, 60 ff.]

The Third Punic War (149-146 B.C.)

The third Punic war has no naval interest. Rome, not satisfied with defeating her rival in the two previous wars, took a convenient pretext to invade Carthage and destroy every vestige of the city. With this the great maritime empire came to an end, and Rome became supreme in the Mediterranean.

2. THE IMPERIAL NAVY; THE CAMPAIGN OF ACTIUM

After the fall of Carthage no rival appeared to contest the sovereignty of Rome upon the sea. The next great naval battle was waged between two rival factions of Rome herself at the time when the republic had fallen and the empire was about to be reared on its ruins. This was the battle of Actium, one of the most decisive in the world's history.

The rivalry between Antony and Octavius as to who should control the destinies of Rome was the

immediate cause of the conflict. In the parceling out of spoil from the civil wars following the murder of Cæsar, Octavius had taken the West, Lepidus the African provinces, and Antony the East. Octavius soon ousted Lepidus and then turned to settle the issue of mastery with Antony. In this he had motives of revenge as well as ambition. Antony had robbed him of his inheritance from Cæsar, and divorced his wife, the sister of Octavius, in favor of Cleopatra, with whom he had become completely infatuated. In this quarrel the people of Rome were inclined to support Octavius, because of their indignation over a reported declaration made by Antony to the effect that he intended to make Alexandria rather than Rome the capital of the empire and rule East and West from the Nile rather than the Tiber. Both sides began preparations for the conflict. Antony possessed the bulk of the Roman navy and the Roman legions of the eastern provinces. To his fleet he added squadrons of Egyptian and Phœnician vessels of war, and to his army he brought large bodies of troops from the subject provinces of the East. In addition he spent great sums of money by means of his agents in Rome to arouse disaffection against Octavius. At the outset he acted with energy and caused his antagonist the gravest anxiety. It was clear also that Antony intended to take the offensive. He established winter quarters at Patras, on the Gulf of Corinth, during the winter of 32-31 B.C., billeting his army in various towns on the west coast of Greece, and keeping it supplied by grain ships from Alexandria. His fleet he anchored in the Ambracian Gulf, a landlocked bay, thirty miles wide, lying north of the Gulf of Corinth; it is known to-day as the Gulf of Arta.

Octavius, however, was equally determined not to yield the offensive to his adversary, and boldly collected ships and troops for a movement in force against Antony's position. His troops were also Roman legionaries, experienced in war, but his fleet was considerably less in numbers and the individual ships much smaller than the quinqueremes and octiremes of Antony. The ships of Octavius were mostly biremes and triremes. These disadvantages, however, were offset by the fact that his admiral, Agrippa, was an experienced sea-fighter, having won a victory near Mylæ during the civil wars, and by the other fact that the crews under him, recruited from the Dalmatian coast, were hardy, seafaring men. These were called Liburni, and the type of ship they used was known as the *Liburna*. This was a two-banked galley, but the term was already becoming current for any light man of war, irrespective of the number of banks of oars. In contrast with these Liburni, who divided their days between fishing and piracy and knew all the tricks of fighting at sea, the crews of Antony's great fleet were in many cases landsmen who had been suddenly impressed into service.

As soon as Antony had moved his force to western Greece he seemed paralyzed by indecision and made no move to avail himself of his advantageous position to strike. He had plenty of money, while his adversary was at his wit's end to find even credit. He had the admiration of his soldiers, who had followed him through many a campaign to victory, while Octavius had no popularity with his troops, most of whom were reluctant to fight against their old comrades in arms. And finally, Antony had a preponderating fleet with which he could command

the sea and compel his opponent to fight on the defensive in Italian territory. All these advantages he allowed to slip away.

During the winter of 32-31 one-third of Antony's crews perished from lack of proper supplies and the gaps were filled by slaves, mule-drivers, and plowmen—any one whom his captains could seize and impress from the surrounding country. The following spring Agrippa made a feint to the south by capturing Methone at the southern tip of the Peloponnesus, thus threatening the wheat squadrons from Egypt on which Antony depended. Next came the news that Octavius had landed an army in Epirus and was marching south. Then Antony realized that his adversary was aiming to destroy the fleet in the Ambracian Gulf and hastened thither. He arrived with a squadron ahead of his troops, at almost the same instant as Octavius, and if Octavius had had the courage to attack the tired and disorganized crews of Antony's squadron, Antony would have been lost. But by dressing his crews in the armor of legionaries and drawing up his ships in a position for fighting, with oars suspended, he "bluffed" his enemy into thinking that he had the support of his troops. When the latter arrived Antony established a great camp on Cape Actium, which closes the southern side of the Gulf, and fortified the entrance on that side.

Thereafter for months the two forces faced each other on opposite sides of the Gulf, neither side risking more than insignificant skirmishes. During this time Octavius had free use of the sea for his supplies, while the heavier fleet of Antony lay idle in harbor. Nevertheless, Octavius did not dare to risk all on a land battle, and conducted his campaign in a characteristically timid and vacillating manner which

should have made it easy for Antony to take the aggressive and win. But the famous lieutenant of Julius Cæsar was no longer the man who used to win the devotion of his soldiers by his courage and audacity. He was broken by debauchery and torn this way and that by two violently hostile parties in his own camp. One party, called the Roman, wanted him to come to an understanding with Octavius, or beat him in battle, and go to Rome as the restorer of the republic. The other party, the Egyptian, was Cleopatra and her following. Cleopatra was interested in holding Antony to Egypt, to consolidate through him a strong Egyptian empire, and she was not at all interested in the restoration of Roman liberties. In Antony's desire to please Cleopatra and his attempt to deceive his Roman friends into thinking that he was working for their aims, may be seen the explanation of the utter lack of strategy or consistent plan in his entire campaign against Octavius.

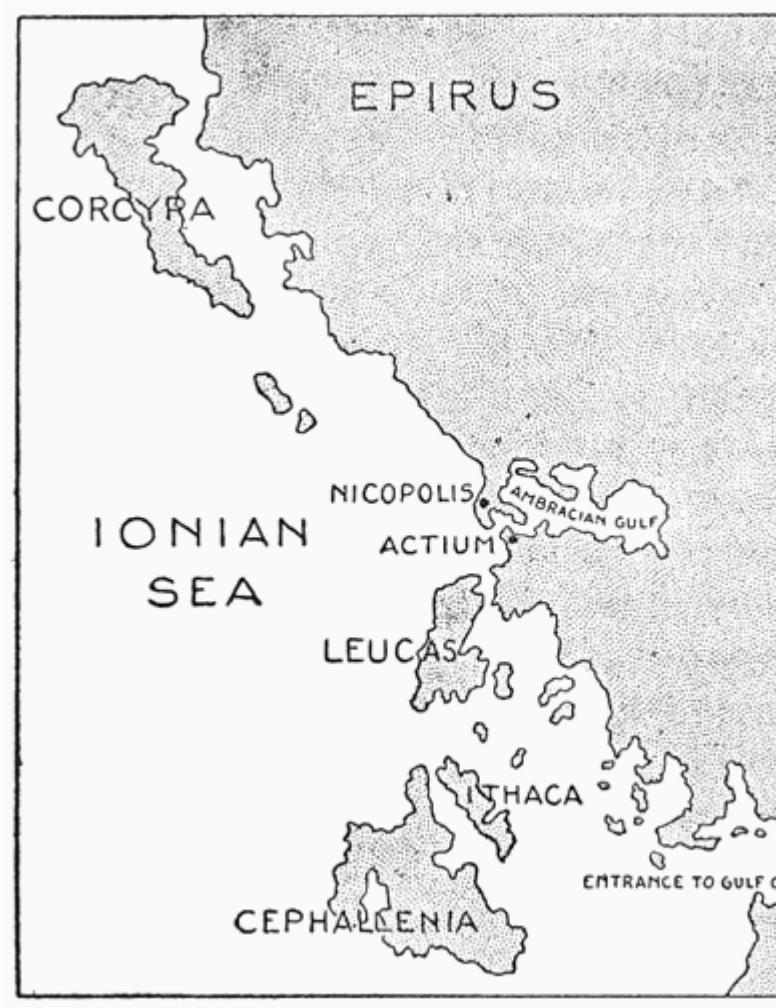
At the beginning of July Antony apparently proposed a naval battle. Instantly the suspicions of the Roman party were awakened. They cried out that Antony was evidently going back to Egypt without having won the decisive battle against Octavius on land, which would really break the enemy's power, and without paying any heed to the political problems at Rome. Such a furor was raised between the two parties that Antony abandoned his plan and made a feint toward the land battle in Epirus that the Romans wanted. Meanwhile two of his adherents, one a Roman, the other a king from Asia Minor, exasperated by the insolence of Cleopatra, deserted to Octavius.

August came and went without action or change in

the situation. Meanwhile as Antony's camp had been placed in a pestilential spot for midsummer heat, he suffered great losses from disease. By this time Cleopatra was interested in nothing but a return to Egypt. Accordingly she persuaded Antony to order a naval battle without asking anybody's advice, and he set the date August 29 for the sally of his fleet. The Romans were amazed and protested, but in vain. Preparations went on in such a way as to make it clear to the observing that what Antony was planning was not so much a battle as a return to Egypt. Vessels which he did not need outside for battle he ordered burned, although such ships would usually be kept as reserves to make up losses in fighting. Moreover, he astonished the captains by ordering them to take out into action the big sails which were always left ashore before a battle. Nor did his explanation that they would be needed in pursuit satisfy them. It appeared also that he was employing trusted slaves at night to load the Egyptian galleys with all of Cleopatra's treasure. Two more Roman leaders, satisfied as to Antony's real intention, deserted to Octavius and informed him of Antony's plans.

Meanwhile a heavy storm had made it impossible to attempt the action on August 29 or several days after. On the 2d of September (31 B.C.) the sea became smooth again. Octavius and Agrippa drew out their fleet into open water, about three-quarters of a mile from the mouth of the gulf, forming line in three divisions. They waited till nearly noon before Antony's fleet began to make its expected appearance to offer battle. This also was formed in three divisions corresponding to those of their enemy. The Egyptian division of sixty ships under Cleopatra took

up a safe position in the rear of the center.



SCENE OF BATTLE OF ACTIU

There was a striking contrast in the types of ships in the opposing ranks. The galleys of Octavius were low in the water, and nimble in their handling; those

of Antony were bulky and high, with five to ten banks of oars, and their natural unhandiness was made worse by a device intended to protect them against ramming. This consisted of a kind of boom of heavy timbers rigged out on all sides of the hull. In addition to the higher sides these ships supported towers and citadels built upon their decks, equipped with every form of the artillery of that day, especially catapults capable of hurling heavy stones upon the enemy's deck.

Against such formidable floating castles, the light ships of Agrippa and Octavius could adopt only skirmishing tactics. They rushed in where they could shear away the oar blades of an enemy without getting caught by the great grappling irons swung out from his decks. They kept clear of the heavy stones from the catapults through superior speed and ability to maneuver quickly, but they were unable to strike their ponderous adversaries any vital blow. On the other hand the great hulks of Antony were unable to close with them, and though the air was filled with a storm of arrows, stones and javelins, neither side was able to strike decisively at the other. As at Salamis the opposite shores were lined with the opposing armies, and every small success was hailed by shouts from a hundred thousand throats on the one side and long drawn murmurs of dismay from an equal host on the other.

In these waters a north wind springs up every afternoon—a fact that Antony and Cleopatra had counted on—and as soon as the breeze shifted the royal galley of Cleopatra spread its crimson sail and, followed by the entire Egyptian division, sailed through the lines and headed south. Antony immediately left his flagship, boarded a quinquereme

and followed. This contemptible desertion of the commander in chief was not generally known in his fleet; as for the disappearance of the Egyptian squadron, it was doubtless regarded as a good riddance. The battle, therefore, went on as stubbornly as ever.

Late in the afternoon Agrippa, despairing of harming his enemy by ordinary tactics, achieved considerable success by the use of javelins wrapped in burning tow, and fire rafts that were set drifting upon the clumsy hulks which could not get out of their way. By this means a number of Antony's ships were destroyed, but the contest remained indecisive. At sunset Antony's fleet retired in some disorder to their anchorage in the gulf. Octavius attempted no pursuit but kept the sea all night, fearing a surprise attack or an attempted flight from the gulf.

Meanwhile a flying wing of Octavius's fleet had been sent in pursuit of Antony and Cleopatra, who escaped only after a rear guard action had been fought in which two of Cleopatra's ships were captured. The fugitives put ashore at Cape Tænarus, to enable Antony to send a message to his general, Canidius, ordering him to take his army through Macedonia into Asia. Then the flight was resumed to Alexandria.

On the morning of the 3d Octavius sent a message to the enemy's camp announcing the fact of Antony's desertion and calling on the fleet and army to surrender. The Roman soldiers were unwilling to believe that their commander had been guilty of desertion, and were confident that he had been summoned away on important business connected with the campaign. Their general, however, did not

dare convey to them Antony's orders because they would betray the truth and provoke mutiny. Consequently he did nothing. Certain Roman senators and eastern princes saw the light and quietly went over to the camp of Octavius. Several days of inaction followed, during which the desertions continued and the rumor of Antony's flight found increasing belief. On the seventh day, Canidius, who found himself in a hopeless dilemma, also went over to Octavius. This desertion by the commander settled the rest of the force. A few scattered into Macedonia, but the great bulk of the army and all that was left of the fleet surrendered. Nineteen legions and more than ten thousand cavalry thus came over to Octavius and took service under him. This was the real victory of Actium. In the words of the Italian historian Ferrero, "it was a victory gained without fighting, and Antony was defeated in this supreme struggle, not by the valor of his adversary or by his own defective strategy or tactics, but by the hopeless inconsistency of his double-faced policy, which, while professing to be republican and Roman, was actually Egyptian and monarchical."

The story of the naval battle of Actium is a baffling problem to reconstruct on account of the wide divergence in the accounts. For instance, the actual number of ships engaged is a matter of choice between the extremes of 200 to 500 on a side. And the consequences were so important to Octavius and to Rome that the accounts were naturally adorned afterwards with the most glowing colors. Every poet who lived by the bounty of Augustus in later years naturally felt inspired to pay tribute to it in verse. But the actual naval battle seems to have been of an

indecisive character. For that matter, even after the wholesale surrender of Antony's Roman army and fleet, neither Anthony nor Octavius realized the importance of what had happened. Antony had recovered from worse disasters before, and felt secure in Alexandria. Octavius at first followed up his advantage with timid and uncertain steps. Only after the way was made easy by the hasty submission of the Asiatic princes and the wave of popularity and enthusiasm that was raised in Rome by the news of the victory, did Octavius press the issue to Egypt itself. There the war came to an end with the suicide of both Antony and Cleopatra.

As in the case of the indecisive naval battle off the capes of the Chesapeake, which led directly to the surrender of Cornwallis, an action indecisive in character may be most decisive in results. Actium may not have been a pronounced naval victory but it had tremendous consequences. As at Salamis, East and West met for the supremacy of the western world, and the East was beaten back. It is not likely that the Egyptian or the Syrian would have dominated the genius of the western world for any length of time, but the defeat of Octavius would have meant a hybrid empire which would have fallen to pieces like the empire of Alexander, leaving western Europe split into a number of petty states. On the other hand, Octavius was enabled to build on the consequences of Actium the great outlines of the Roman empire, the influence of which on the civilized world to-day is still incalculable. When he left Rome to fight Antony, the government was bankrupt and the people torn with faction. When he returned he brought the vast treasure of Egypt and found a people united to support him. Actium,

therefore, is properly taken as the significant date for the beginning of the Roman empire. Octavius took the name of his grand-uncle Cæsar, the title of Augustus, and as "Imperator" became the first of the Roman emperors.

The relation of the battle of Actium to this portentous change in the fortunes of Octavius was formally recognized by him on the scene where it took place. Nicopolis, the City of Victory, was founded upon the site of his camp, with the beaks of the captured ships as trophies adorning its forum. The little temple of Apollo on the point of Actium he rebuilt on an imposing scale and instituted there in honor of his victory the "Actian games," which were held thereafter for two hundred years.

After the battle of Actium and the establishment of a powerful Roman empire without a rival in the world, there follows a long period in which the Mediterranean, and indeed all the waterways known to the civilized nations, belonged without challenge to the galleys of Rome. Naval stations were established to assist in the one activity left to ships of war, the pursuit of pirates, but otherwise there was little or nothing to do. And during this long period, indeed, down to the Middle Ages, practically nothing is known of the development in naval types until the emergence of the low, one- or two-banked galley of the wars between the Christian and the Mohammedan. The first definite description we have of warships after the period of Actium comes at the end of the ninth century.

There was some futile naval fighting against the Vandals in the days when Rome was crumbling. Finally, by a curious freak of history, Genseric the

Vandal took a fleet out from Carthage against Rome, and swept the Mediterranean. In the year 455, some six centuries after Rome had wreaked her vengeance on Carthage, this Vandal fleet anchored unopposed in the Tiber and landed an army that sacked the imperial city, which had been for so long a period mistress of the world, and had given her name to a great civilization.

During the four centuries in which the *Pax Romana* rested upon the world, it is easy to conceive of the enormous importance to history and civilization of having sea and river, the known world over, an undisputed highway for the fleets of Rome. Along these routes, even more than along the military roads, traveled the institutions, the arts, the language, the literature, the laws, of one of the greatest civilizations in history. And ruthless as was the destruction of Vandal and Goth in the city itself and in the peninsula, they could not destroy the heritage that had been spread from Britain to the Black Sea and from the Elbe to the upper waters of the Nile.

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CHAPTER IV

THE NAVIES OF THE MIDDLE AGES: THE EASTERN EMPIRE

The thousand years following the collapse of the Roman empire, a period generally referred to as the Middle Ages, are characterized by a series of barbarian invasions. Angles, Saxons, Goths, Visigoths, Huns, Vandals, Vikings, Slavs, Arabs, and Turks poured over the broken barriers of the empire and threatened to extinguish the last spark of western and Christian civilization. Out of this welter of invasions and the anarchy of petty kingdoms arose finally the powerful nations that perpetuated the inheritance from Athens, Rome, and Jerusalem, and developed on this foundation the newer institutions of political and intellectual freedom that have made western civilization mistress of the world. For this triumph of West over East, of Christianity over barbarism, we have to thank partly the courage and genius of great warriors and statesmen who arose here and there, like Alfred of England and Martel of

France, but chiefly the Eastern Empire, with its capital at Constantinople, which stood through this entire epoch as the one great bulwark against which the invasions dashed in vain. In this story of defense, the Christian fleets won more than one Salamis, as we shall see in the course of this chapter.

In the year 328 A.D. the Emperor Constantine the Great moved his capital to Byzantium and named it "New Rome." In honor of its founder, however, the name was changed soon to "Constantinople," which it has retained ever since. It may seem strange that after so many glorious centuries Rome should have been deprived of the honor of being the center of the great empire which bore its own name, but in the fourth century the city itself had no real significance. All power rested in the person of the Emperor himself, and wherever he went became for the time being the capital for all practical purposes. At this time the empire was already on the defensive and the danger lay in the east. Constantine needed a capital nearer the scene of future campaigns, nearer his weakest frontier, the Danube, and nearer the center of the empire. Byzantium not only served these purposes but also possessed natural advantages of a very high order. It was situated where Europe and Asia meet, it commanded the waterway between the Black Sea and the Mediterranean, and it was a natural citadel. Whoever captured the city must needs be powerful by land and sea. Under the emperor's direction the new capital was greatly enlarged and protected by a system of massive walls. Behind these walls the city stood fast for over a thousand years against wave after wave of barbarian invasion.

Of the wars with the Persians, the Vandals, and the

Huns nothing need be said here, for they do not involve the operations of fleets. The city was safe so long as no enemy appeared with the power to hold the sea. That power appeared in the seventh century when the Arabs, or "Saracens," as they were called in Europe, swept westward and northward in the first great Mohammedan invasion.

Most migrations are to be explained by the pressure of enemies, or the lack of food and pasturage in the countries left behind, or the discovery of better living conditions in the neighboring countries. But the impulse behind the two tremendous assaults of Islam upon Europe seems to have been religious fanaticism of a character and extent unmatched in history. The founder of the Faith, Mohammed, taught from 622 to 632. He succeeded in imbuing his followers with the passion of winning the world to the knowledge of Allah and Mohammed his prophet. The unbeliever was to be offered the alternatives of conversion or death, and the believer who fell in the holy wars would be instantly transported to Paradise. Men who actually believe that they will be sent to a blissful immortality after death are the most terrible soldiers to face, for they would as readily die as live. In fact Cromwell's "Ironsides" of a later day owed their invincibility to very much the same spirit. At all events, by the time of Mohammed's death all Arabia had been converted to his faith and, fired with zeal, turned to conquer the world. Hitherto the tribes of Arabia were scattered and disorganized, and Arabia as a country meant nothing to the outside world. Now under the leadership of the Prophet it had become a driving force of tremendous power. Mohammedan armies swept over Syria into Persia. In

637, only five years after Mohammed's death, Jerusalem surrendered, and shortly afterwards Egypt was conquered. Early in the eighth century the Arabs ruled from the Indus on the east, and the Caucasus on the north, to the shores of the Atlantic on the west. Their empire curved westward along the coast of northern Africa, through Spain, like one of their own scimitars, threatening all Christendom. Indeed, the Arab invasion stands unparalleled in history for its rapidity and extent.



THE SARACEN EMPIRE

The one great obstacle in the way was the Christian, or Roman, empire with its center at Constantinople. Muaviah, the Emir of Syria, was the first to perceive that nothing could be done against the empire until the Arabs had wrested from it the

command of the sea. Accordingly he set about building a great naval armament. In 649 this fleet made an attack on Cyprus but was defeated. The following year, however, it took an important island, Aradus, off the coast of Syria, once a stronghold of the Phœnicians, and sacked it with savage barbarity. An expedition sent from Constantinople to recover Alexandria was met by this fleet and routed. This first naval victory over the Christians gave the Saracens unbounded confidence in their ability to fight on the sea. They sailed into the Ægean, took Rhodes, plundered Cos, and returned loaded with booty. Muaviah, elated with these successes, planned a great combined land and water expedition against the Christian capital.

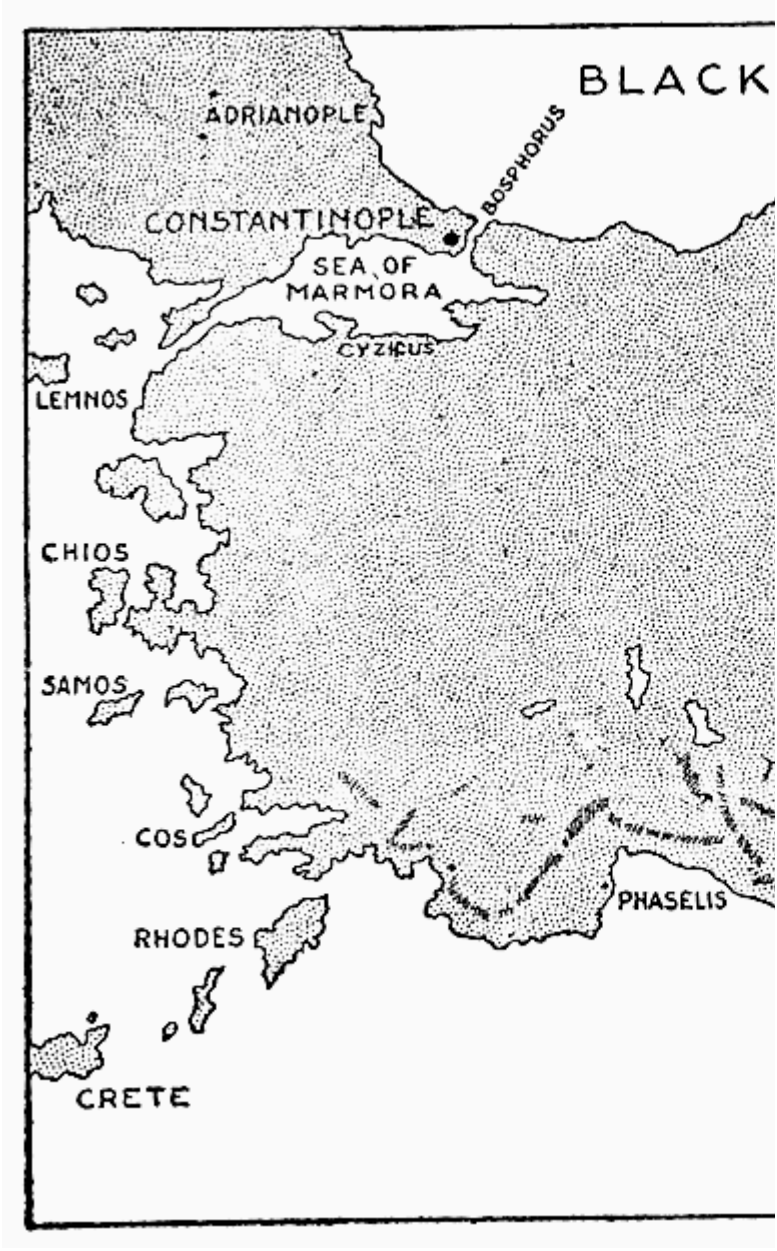
At this point it is worth pausing to consider what the fighting ship of this period was like. As we have seen in the preceding chapter the Roman navy sank into complete decay. At the end of the fourth century there was practically no imperial navy in existence. The conquest of the Vandals by Belisarius in the sixth century involved the creation of a fleet, but when that task was over the navy again disappeared until the appearance of the Arabs compelled the building of a new imperial fleet. The small provincial squadrons then used to patrol the coasts were by no means adequate to meet the crisis.

The warships of this period were called "dromons," a term that persists even in the time of the Turkish invasion eight centuries later. The word means "fast sailers" or "racers." The dromon was not the low galley of the later Middle Ages but a two-banked ship, probably quite as large as the Roman quinquereme, carrying a complement of about 300 men. Amidships was built a heavy castle or redoubt

of timbers, pierced with loopholes for archery. On the forecastle rose a kind of turret, possibly revolving, from which, after Greek fire was invented, the tubes or primitive cannon projected the substance on the decks of the enemy. The dromon had two masts, lateen rigged, and between thirty and forty oars to a side.

There were two classes of dromons, graded according to size, and a third class of ship known as the "pamphylian," which was apparently of a cruiser type, less cumbered with superstructure. In addition there were small scout and dispatch boats of various shapes and sizes.

Both Christian and Saracen fought with these kinds of warships. Apparently the Arabs simply copied the vessels they found already in use by their enemies, and added no new device of their own.


BLACK
ADRIANOPLE
BOSPHORUS
CONSTANTINOPLE
SEA OF MARMORA
CYZICUS
LEMNOS
CHIOS
SAMOS
COS
PHASELIS
RHODES
CRETE

In 655 Muaviah started his great double invasion against Constantinople. He sent his fleet into the Ægean, while he himself with an army tried to force the passes of the Taurus mountains. Before the Arab fleet had gone far it met the Christian fleet, commanded by the Emperor himself, off the town of Phaselis on the southwestern coast of Asia Minor. A great battle followed. The Christian emperor, Constantine II, distinguished himself by personal courage throughout the action, but the day went sorely against the Christians. At last the flagship was captured and he himself survived only by leaping into a vessel that came to his rescue while his men fought to cover his escape. It was a terrible defeat, for 20,000 Christians had been killed and the remnants of their fleet were in full retreat. But the Saracens had bought their victory at such a price that they were themselves in no condition to profit by it, and the naval expedition went no further. Meanwhile Muaviah had not succeeded in forcing the Taurus with his army, so that the grand assault came to nothing after all.

The following year the murder of the Caliph brought on a civil war among the Saracens, in consequence of which Muaviah arranged a truce with Constantine. The latter was thus enabled to turn his attention to the beating back of the Slavs in the east and the recovery of imperial possessions in the west, notably the city and province of Carthage. During the last of these campaigns he was killed by a slave.

The death of this energetic and able ruler seemed to Muaviah the opportunity to begin fresh operations

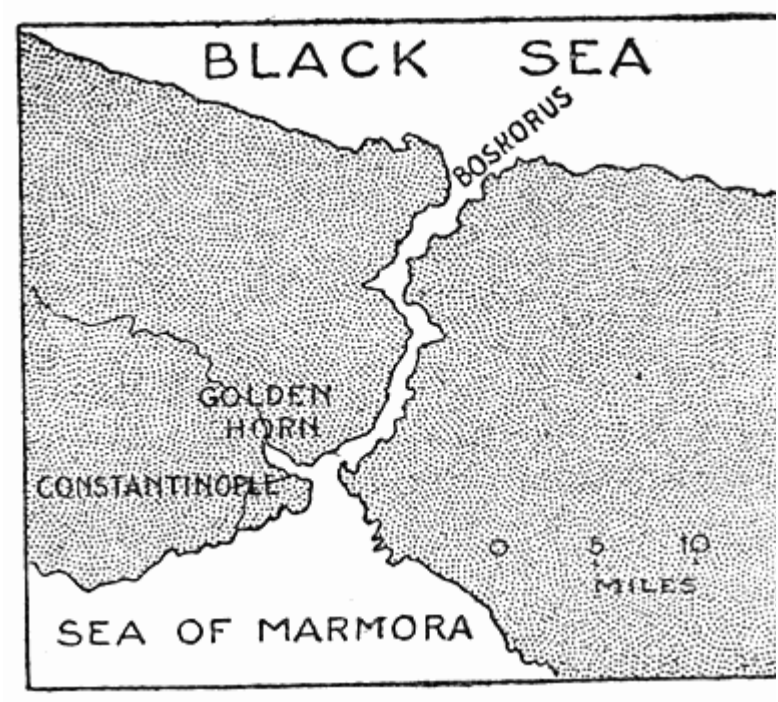
against the Christian empire. Three great armies invaded the territory of the Cross. One plundered Syracuse, another seized and fortified a post that threatened the existence of Carthage, a third pushed to the shores of the Sea of Marmora. These were, however, only preliminary to the grand assault on the capital itself.

In 673 a great Arab armada forced the Hellespont and captured Cyzicus. With this as a base, the fleet landed an army on the northern shore of the Sea of Marmora. By these means Constantinople was invested by land and sea. But the great walls proved impregnable against the attacks of the army, and the Christian fleet, sheltered in the Golden Horn, was able to sally out from time to time and make successful raids on detachments of the Saracen ships. This state of affairs continued for six months, after which Muaviah retired with his army to Cyzicus, leaving a strong naval guard to hold the straits.

The next spring Muaviah again landed his army on the European side and besieged the city for several months. The second year's operations were no more successful than the first, and again the Arab force retired to Cyzicus for the winter.

The Arab commander was determined to stick it out until he had forced the surrender of the city by sheer exhaustion, but his plan had a fatal error. During the winter months the land blockade was abandoned, with the result that supplies for the next year's siege were readily collected for the beleaguered city. Emperor and citizens alike rose to the emergency with a spirit of devotion that burned brighter with every year of the siege. Meanwhile the Christians of the outlying provinces of Syria and

Africa were also fighting stubbornly and with considerable success against the enemy. The year 676 passed without any material change in the situation.



CONSTANTINOPLE AND VICINITY

During the siege a Syrian architect named Callinicus is said to have come to Constantinople with a preparation of his own invention, "Greek fire," which he offered the Emperor for use against the Saracen. This, according to one historian, "was a semi-liquid substance, composed of sulphur, pitch, dissolved niter, and petroleum boiled together and mixed with certain less important and more obscure substances.... When ejected it caught the woodwork

which it fell and set it so thoroughly on fire that there was no possibility of extinguishing the conflagration. It could only be put out, it is said, by pouring vinegar, wine, or sand upon it."[1]

[Footnote 1: THE ART OF WAR, Oman, p. 546.]

Constantine IV, the Emperor, was quick to see the possibilities of the innovation and equipped his dromons with projecting brass tubes for squirting the substance upon the enemy's ships. These are sometimes referred to as "siphons," but it is not clear just how they were operated. One writer[2] is of the opinion that something of the secret of gunpowder had been obtained from the East and that the substance was actually projected by a charge of gunpowder; in short, that these "siphons" were primitive cannon. In addition to these tubes other means were prepared for throwing the fire. Earthenware jars containing it were to be flung by hand or arbalist, and darts and arrows were wrapped with tow soaked in the substance.

[Footnote 2: THE BYZANTINE EMPIRE, Foord, p. 139.]

The Christian fleet was no match for the Saracen in numbers, but Constantine pinned his faith on the new invention. Accordingly, during the fourth year of the siege, 677, he boldly led his fleet to the attack. We have no details of this battle beyond the fact that the Greek fire struck such terror by its destructive effect that the Saracens were utterly defeated. This unexpected blow completed the growing demoralization of the besiegers. The army returned to the Asiatic shore of the Bosphorus, and the survivors of the fleet turned homewards. Constantine followed up his victory with splendid energy. He

landed troops on the Asiatic shore, pursued the retreating Arabs and drove the shattered remnant of their army back into Syria. The fleet was overtaken by a storm in the Ægean and suffered heavily. Before the ships could reassemble, the Christians were upon them and almost nothing was left of the great Saracen armada. Thus the second great assault on Constantinople was shattered by the most staggering disaster that had ever befallen the cause of Islam.

The Christian empire once more stood supreme, and that supremacy was attested by the terms of peace which the defeated Muaviah was glad to accept. There was to be a truce of thirty years, during which the Christian emperor was to receive an annual tribute of 3000 pounds of gold, fifty Arab horses and fifty slaves.

It is unfortunate that there was no Herodotus to tell the details of this victory, for it was tremendously important to European civilization. Western Europe was then a welter of barbarism and anarchy, and if Constantinople had fallen, in all probability the last vestige of Roman civilization would have been destroyed. Moreover, the battle is of special interest from a tactical point of view because it was won by a new device, Greek fire, which was the most destructive naval weapon up to the time when gunpowder and artillery took its place. Indeed this substance may be said to have saved Christian civilization for several centuries, for the secret of its composition was carefully preserved at Constantinople and the Arabs never recovered from their fear of it.

The victory did not, however, mark the crisis of the struggle. In the half century that followed,

Constantinople suffered from weak or imbecile emperors while the Caliphate gained ground under able rulers and generals. In the first fifteen years of the eighth century the Saracens reached the climax of their power. Under a great general, Muza, they conquered Spain and spread into southern France. It was he who conceived the grandiose plan of conquering Christendom by a simultaneous attack from the west and from the east, converging at the city of Rome. One army was to advance from Asia Minor and take Constantinople; another was to cross the Pyrenees and overrun the territory of the Franks. Had the enterprise been started at the time proposed there could have been little opposition in the west, for the Franks were then busy fighting each other, but luckily Muza fell into disgrace with the Caliph at this time and his great project was undertaken by less able hands and on a piecemeal plan.

The eastern line of invasion was undertaken first in the year 717. A fleet of warships and transports to the number of 1800 sailed to the Hellespont, carrying about 80,000 troops, while a great army collected at Tarsus and marched overland toward the same destination. Meanwhile two more fleets were being prepared in the ports of Africa and Egypt, and a third army was being collected to reënforce the first expedition. This army was to be under the personal command of the Caliph himself. The third attack on the Christian capital was intended to be the supreme effort.

Fortunately, the ruler of Constantinople at this hour of peril was a man of ability and energy, Leo III; but the empire had sunk so low as a result of the misrule of his predecessors that his authority scarcely extended beyond the shores of the Sea of Marmora,

and his resources were at a low ebb. The navy on which so much depended was brought to a high point of efficiency, but it was so inferior in numbers to the Saracen armada that he dared not attempt even a defense of the Dardanelles.

For the Arabs all went well at first. Unopposed they transported a part of their army to the European shore, moved toward Constantinople and invested it by land and sea. One detachment was sent to cover Adrianople, which was occupied by a Christian garrison; the rest of the force concentrated on the capital itself.

Meanwhile the Christian fleet lay anchored in the shelter of the Golden Horn, protected by a boom of chains and logs. As the Saracen ships came up to occupy the straits above the city they fell into confusion in trying to stem the rapid current. Seeing his opportunity, the emperor ordered the boom opened, and leading the way in his flagship, he fell upon the huddle of Saracen vessels in the channel. The latter could make little resistance, and before the main body of the fleet could work up to the rescue, the Christians had destroyed twenty and taken a number of prizes back to the Horn. Again Greek fire had proved its deadly efficacy. Elated with this success, Leo ordered the boom opened wide and, lying in battle order at the mouth of the Horn, he challenged the Arab fleet to attack. But such was the terror inspired by Greek fire that the Grand Vizier, in spite of his enormous superiority in numbers, declined to close. Instead he withdrew his dromons out of the Bosphorus and thereafter followed the less risky policy of a blockade. This initial success of the Christian fleet had the important effect of leaving open the sea route to the Black Sea, through which

supplies could still reach the beleaguered city.

The Arabs then sat down to wear out the defenders by a protracted siege on land and sea. In the spring of 718 the new army and the two new fleets arrived on the scene. One of the latter succeeded, probably by night, in passing through the Bosphorus and closing the last inlet to the city. The situation for the defenders became desperate. Many of the men serving on these new fleets, however, were Christians. These took every opportunity to desert, and gave important information to the emperor as to the disposition of the Arab ships. Acting on this knowledge, Leo took his fleet out from the shelter of the boom and moved up the straits against the African and Egyptian squadrons that were blockading the northern exit. The deserters guided him to where these squadrons lay, at anchor and unprepared for action. What followed was a massacre rather than a battle. The Christian members of the crews deserted wholesale and turned upon their Moslem officers. Ship after ship was rammed by the Christian dromons or set on fire by the terrible substance which every Arab regarded with superstitious dread. Some were driven ashore, others captured, many more sunk or burnt to the water's edge. Of a total of nearly 800 vessels practically nothing was left.

Leo followed up this spectacular naval victory by transporting a force from the garrison of the city to the opposite shore of the Bosphorus, attacking the army encamped there and driving it in rout. Meanwhile the Bulgarian chieftain had responded to Leo's appeal and, relieving the siege of Adrianople, beat back the Saracen army at that point with great slaughter. The fugitives of that army served to throw

into panic the troops encamped round the walls of Constantinople, already demoralized by disease, the death of their leaders, and the annihilation of the African and Egyptian fleets in the Bosphorus.

The great retreat began. The Arab soldiers started back through Asia Minor, but only 30,000 out of the original force of 180,000 lived to reach Tarsus. The fleet set sail for the Ægean, and as in the similar retreat of a half century before, the Arabs were overwhelmed by a storm with terrible losses. The Christian ships picked off many survivors, and the Christians of the islands destroyed others that sought shelter in any port. It is said that out of the original armada of 1800 vessels only five returned to Syria! Thus the third and supreme effort of the Saracen ended in one of the greatest military disasters in history.

The service of the Christian fleet in the salvation of the empire at this time is thus summarized by a historian:

"The fleet won most of the credit for the fine defense; it invariably fought with admirable readiness and discipline, and was handled in the most masterful manner. It checked the establishment of a naval blockade at the very outset, and broke it when it was temporarily formed in 718; it enabled the army to operate at will on either shore of the Bosphorus, and it followed up the retreating Saracens and completed the ruin of the great armament."[1]

[Footnote 1: THE BYZANTINE EMPIRE, Foard, p. 170.]

The winning stroke in this campaign was the tremendous naval victory at the mouth of the

Bosphorus, and this, even more emphatically than Constantine's victory in 677, deserves to be called another Salamis. Not only did it save the Christian empire but it checked the Caliphate at the summit of its power and started it on its decline. Not for thirty years afterwards was the Saracen able to put any considerable fleet upon the sea.

It was ten years after the Arab defeat at Constantinople that the armies of the west began the other part of Muza's project—the conquest of the Franks. By this time the Frankish power was united and able to present a powerful defense. In six bitterly contested battles between Tours and Poitiers in 732 Charles Martel defeated the Arabs in a campaign that may well be called the Marathon, or better, the Platæa, of the Middle Ages, for it completed the work done by the imperial navy at Constantinople. From this time forward the power of the Saracen began to ebb by land and sea.

As it ebbed, the new cities of Genoa, Pisa, and Venice began to capture the trade and hold the control of the sea that once had been Saracen, until the Christian control was so well established as to make possible the Crusades. Later, as we shall see, a second invasion of Mohammedans, the Turks, ably assisted by the descendants of the Arabs who conquered Spain, once more threatened to control the Mediterranean for the cause of Islam. But the Persian Gulf and the Indian Ocean, which fell into the hands of the Arabs as soon as they took to the water, remained in Arab hands down to the times of the Portuguese. In those waters, because they were cut off from the Mediterranean, the Saracen had no competitor. As early as the eighth century Ceylon was an Arab trading base, and when the Portuguese

explorers arrived at the end of the 15th century they found the Arabs still dominating the water routes of India and Asia, holding as they had held for seven centuries a monopoly of the commerce of the east.

Of the Mediterranean during the struggle between Christian and Saracen a recent English writer makes the following suggestive comment:

"The function of the Mediterranean has thus undergone a change. In early times it had been a barrier; later, under the Phœnicians, it became a highway, and to the Greeks a defense. We find that the Romans made it a basis for sea power and subdued all the lands on its margin. With the weakening of Rome came a weakening of sea power. The Barbary states and Spain became Saracen only because the naval power of the eastern empire was not strong enough to hold the whole sea, but neither was the Saracen able to gain supreme control. Thus the conditions were the same as in the earlier days of the conflict between Rome and Carthage: the Mediterranean became a moat separating the rivals, though first one and then the other had somewhat more control. The islands became alternately Saracen and Christian. Crete and Sicily were held for centuries before they were regained by a Christian power."[1]

[Footnote 1: GEOGRAPHY AND WORLD POWER, Fairgrieve, p. 125.]

The victory of 718 saved Constantinople from any further peril from the Arabs, but it was again in grave peril, two centuries later, when a sudden invasion of Russians in great force threatened to accomplish at a stroke what the Saracens had failed

to do in three great expeditions. The King of Kiev, one of the race of Vikings that had fought their way into southern Russia, collected a huge number of ships, variously estimated from one to ten thousand, and suddenly appeared in the Bosphorus. Probably there were not more than 1500 of these vessels all told and they must have been small compared with the Christian dromons; nevertheless they presented an appalling danger at that moment. The Christian fleet was watching Crete, the army was in the east winning back territory from the Arabs, and Constantinople lay almost defenseless. The great walls could be depended an to hold off a barbarian army, but a fleet was needed to hold the waterways; otherwise the city was doomed.

In the Horn lay a few antiquated dromons and a few others still on the stocks. To Theophanes the Patrician was given this nucleus of a squadron with which to beat back the Russians. Desperate and even hopeless as the situation appeared, he went to work with the greatest energy, patching up the old ships, and hurrying the completion of the new. Meanwhile the invaders sent raiding parties ashore that harried the unprotected country districts with every refinement of cruelty. In order to make each ship count as much as possible as an offensive unit, Theaphanes made an innovation by fitting out Greek fire tubes on the broadsides as well as in the bows. This may be noted as the first appearance of the broadside armament idea, which had to wait six hundred years more before it became finally established.

When the new ships had been completed and the old ones made serviceable, Theophanes had exactly fifteen men of war. With this handful of vessels,

some hardly fit to take the sea, he set out from the Horn and boldly attacked the Russian fleet that blocked the entrance to the strait. Never was there a more forlorn hope. Certainly neither the citizens on the walls nor the men on the ships had any expectation of a return.

What followed would be incredible were it not a matter of history. These fifteen ships were immediately swallowed up by the huge fleet of the enemy, but under the superb leadership of Theophanes each one fought with the fury of desperation. They had one hope, the weapon that had twice before saved the city, Greek fire. The Russians swarmed alongside only to find their ships taking fire with a flame that water would not quench. Contempt of their feeble enemy changed soon to a wild terror. There was but one impulse, to get out of reach of the Christians, and the ships struggled to escape. Soon the whole Russian fleet was in wild flight with the gallant fifteen in hot pursuit. Some of these could make but slow headway because of their unseaworthiness, but when all was over the Russians are said to have lost two-thirds of their entire force. The invaders who had been left on shore were then swept into the sea by reënforcements that had arrived at Constantinople, and not a vestige was left of the Russian invasion. Once more Greek fire and the Christian navy had saved the empire; and for sheer audacity, crowned with a victory of such magnitude, the feat of Theophanes stands unrivaled in history.

From the tenth century on, Constantinople began to find her rivalries in the west. The coronation of Charlemagne in 800 had marked the final separation of the eastern and the western empire. As noted

above, the passing of the Saracens gave opportunity for the growth of commercial city-states like Genoa, Pisa and Venice, and their interests clashed not only with one another but also with those of Constantinople.

The climax came in 1204 when Venice succeeded in diverting the Fourth Crusade to an expedition of vengeance for herself, first against the city of Zara and then against Constantinople. This time the Eastern Empire had no fleet ready for defense and the Venetian galleys filled the waters under the city walls. Many of these galleys were fitted with a kind of flying bridge, a long yard that extended from the mast to the top of the wall and stout enough to bear a file of men that scrambled by this means to the parapets. After many bloody repulses the city was finally captured, and there followed a sack that for utter barbarity outdid anything ever perpetrated by Arab or Turk. Thus the city that for nearly a thousand years had saved Christian civilization was, by a hideous irony of fate, taken and sacked by a Crusading army.

When the second Mohammedan invasion threatened Europe, Constantinople, weak on land and impotent by sea, and deserted by the Christian nations of the west, was unable to put up a strong resistance. At last, in 1453, it was captured by the Turks, and became thereafter the capital of the Moslem power. Great as this catastrophe was, it cannot compare with what would have happened if the city had fallen to the Saracen, the Hun, or the Russian during the dark centuries when the nations of the west were scarcely in embryo. In the 15th century they were strong enough to take up the sword that Constantinople had dropped and draw the

line beyond which the Turk was not permitted to go.

Although it has been the fashion since Gibbon to sneer at the Eastern Empire, it must be remembered with respect as the last treasure house of the inheritance bequeathed by Rome and Greece during the dark centuries of barbarian and Saracen. Even in its ruin it sent its fugitives westward with the manuscripts of a language and literature then little known, the Greek, and thereby added greatly to the growing impetus of the Renaissance. It is significant also that during its thousand years of life, as long as it kept its hold on the sea it stood firm. When it yielded that, its empire dwindled to a mere city fortress whose doom was assured long before it fell.

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CHAPTER V

THE NAVIES OF THE MIDDLE AGES [*Continued*]: VENICE AND THE TURK

The city-state of Venice owed its origin to the very same barbarian invasions that wrecked the old established cities of the Italian peninsula. Fugitives from these towns in northern Italy and the outlying country districts fled to the islets and lagoons for shelter from the Hun, the Goth, and the Lombard. As the sea was the Venetians' barrier from the invader, so also it had to be their source of livelihood, and step by step through the centuries they built up their commerce until they practically controlled the Mediterranean, for trade or for war.

As early as 991 a Doge of Venice made a treaty with the Saracens inaugurating a policy held thereafter by Venice till the time of Lepanto; namely, to trade with Mohammedans rather than fight them. The supreme passion of Venice was to make money, as it had been of ancient Phœnicia, and to this was subordinated every consideration of race, nationality, and religion. The first important step was the conquest of the Dalmatian pirates at the beginning of the 11th century. This meant the Venetian control of the Adriatic. When the Crusades began, the sea routes to the Holy Land were in the hands of the Venetians; indeed it was this fact that made the Crusades possible. As the carrying and convoying agent of the Crusaders, Venice developed greatly in wealth and power. With direct access to the Brenner Pass, she became a rich distributing center for Eastern goods to northern Europe. In all important Levantine cities there was a Venetian quarter, Venetians had special trading privileges, and many seaports and islands came directly under Venetian

rule.



This rapid expansion naturally roused the jealousy of others. In 1171 Venice fought an unsuccessful war

with Constantinople, and yet continued to grow in wealth and power. In 1204, as we have seen, Venice avenged herself by diverting the Fourth Crusade to the siege and sack of her eastern rival. As the reward of that nefarious exploit Venice received the greater part of the eastern empire, and became the dominating power in the Mediterranean. During the 13th and 14th centuries, however, she was compelled to fight with her rebellious colonies and her new rivals, Genoa and Padua. The wars with Genoa very nearly proved fatal to Venice, but just when matters seemed most desperate she was saved by a naval victory against a Genoese fleet in her own waters. In consequence of these wars between Venice and Genoa both were heavy losers in wealth and lives; Genoa never recovered from her defeat, but her rival showed amazing powers of recuperation. She extended her territory in Italy to include the important cities of Treviso, Padua, Vicenza, and Verona, and in 1488 acquired the island of Cyprus in the Levant. At this time the Venetian state owned 3300 ships, manned by 36,000 men, and stood at the height of her power.

Already, however, a new enemy had appeared who threatened not only Venice but all Europe. This was the Ottoman Turk. The Turks were not like the Arabs, members of the Indo-European family, but a race from the eastern borders of the Caspian Sea, a branch of the Mongolian stock. As these peoples moved south and west they came in contact with Mohammedanism and became ardent converts. Eventually they swept over Asia Minor, crossed the Dardanelles, took Adrianople, and pushed into Serbia. Thus, when Constantinople fell in 1453 it had been for some time a mere island of Christianity

surrounded by Moslems. Indeed it was only the civil wars among the Turks themselves that held them back so long from the brilliant career of conquest that characterized the 15th and early 16th centuries, for these later followers of Mohammed had all the fanaticism of the Saracens. Before the fall of Constantinople and the transfer of the Turkish seat of government to that city, a corps of infantry was organized that became the terror of the Christian world—the Janissaries. By a grim irony of the Sultan, who created this body of troops, these men were exclusively of Christian parentage, taken as children either in the form of a human tribute levied on the Christian population of Constantinople, or as captives in the various expeditions in Christian territory. The Janissaries were brought up wholly to a military life, they were not permitted to marry, and their lives were devoted to fighting for the Crescent. For a long time they were invincible in the open field.

The first half of the 16th century saw the Turks in Persia, in the east, and at the gates of Vienna in the west. For a time they got a foothold in Italy by seizing Otranto. They had conquered Egypt and Syria, penetrated Persia, and in Arabia gained the support of the Arabs for the Turkish sultan as the successor to the Caliphs. Constantinople, therefore, became not only the political capital for the Turkish empire but the religious center of the whole Moslem world. Moreover, the Arab states on the southern borders of the Mediterranean acknowledged the suzerainty of the Turkish ruler.

This fact was of great importance, for it enabled the Turks to become masters of the inland sea. In 1492 the greater part of the Moors—the descendants

of the Arab conquerors of Spain—were expelled from the Peninsula by the conquest of Granada. This event was hailed with joy throughout Christendom, but it had an unexpected and terrible consequence. Flung back into northern Africa, and filled with hatred because of the persecution they had endured, these Moors embarked on a career of piracy directed against Christians. In making common cause with the Turks they supplied the fleets that the Turkish power needed to carry out its schemes of conquest. Apparently the Turks had never taken to salt water as the Arabs had done, but in these Moorish pirates they found fighters on the sea well worthy to stand comparison with their peerless fighters on land, the Janissaries. Between 1492 and 1580, the date of Ali's death, there was a period in which the Moorish corsairs were supreme. It produced three great leaders, each of whom in turn became the terror of the sea: Kheyr ed Din, known as Barbarossa, Dragut, and Ali. It is a curious fact that the first and third were of Christian parentage.

So long as the Turk invaded Christian territory by land alone, the Venetians were unconcerned. They made what treaties they could for continuing their trade with communities that had fallen into the conquerors' hands. But when the Turk began to spread out by sea it was inevitable that he must clash with the Venetian, and so there was much fighting. Yet even after a successful naval campaign the emissary of Venice was obliged to come before the Sultan, cap in hand, to beg trading privileges in Turkish territory. Everything in Venetian policy was subordinated to the maintenance of sufficient friendly relations with the Turk to assure a commercial monopoly in the Levant. Although the

Moslem peril grew more and more menacing, Venice remained unwilling to join in any united action for the common good of Europe.

Of course Venice was not alone in this policy. In 1534 Francis the First, for example, in order to humiliate his rival, Charles V, secretly sent word to Barbarossa of the plans being made against him. Indeed France showed no interest in combating the Turk even at the time when he was at the summit of his power. But Venice, as the dominating naval power, had the means of checking the Turkish invasion if she had chosen to do so. Instead she permitted the control of the Mediterranean to slip from her into the hands of the Moslems with scarcely a blow.

The leading part in the resistance to the Moslem sea power was taken by Spain under Charles V. He had, as admiral of the navy, Andrea Doria, the Genoese, the ablest seaman on the Christian side. Early in his career he had captured a notorious corsair; later in the service of Spain, he defeated the Turks at Patras (at the entrance to the Gulf of Corinth), and again at the Dardanelles. These successes threatened Turkish supremacy on the Mediterranean, and Sultan Soliman "the Magnificent," the ruler under whom the Turkish empire reached its zenith, summoned the Algerian corsair Barbarossa and gave him supreme command over all the fleets under the Moslem banner. At this time, 1533, Barbarossa was seventy-seven years old, but he had lost none of his fire or ability. On the occasion of being presented to the Sultan, he uttered a saying that might stand as the text for all the writings of Mahan: "Sire, he who rules on the sea will shortly rule on the land also."

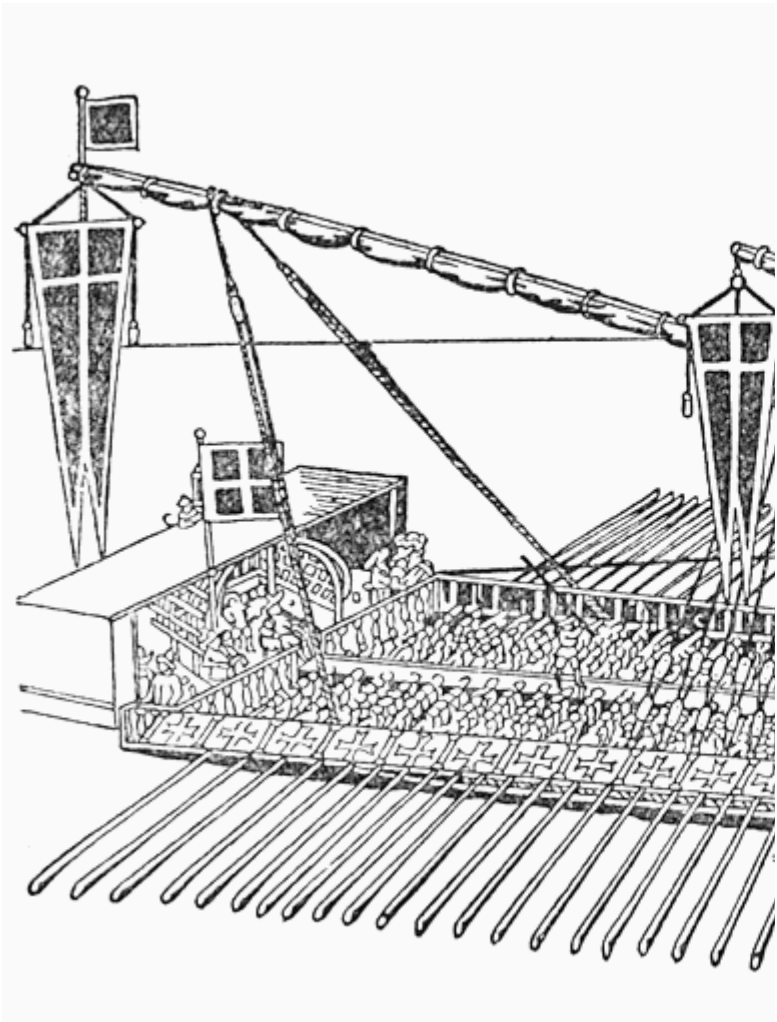
The following year Barbarossa set out from Constantinople with a powerful fleet and proceeded to ravage the coast of Italy. He sacked Reggio, burnt and massacred elsewhere on the coast without opposition, cast anchor at the mouth of the Tiber and if he had chosen could have sacked Rome and taken the Pope captive. He then returned to Constantinople with 11,000 Christian captives.

Charles V was roused by this display of corsair power and barbarity to collect a force that should put an end to such raids. Barbarossa had recently added Tunis to his personal domains, and the great expedition of ships and soldiers which the emperor assembled was directed against that city. Despite the warning given by the King of France, Barbarossa was unable to oppose the Christian host with a force sufficiently strong to defend the city. The Christians captured it and the chieftain escaped only by a flight along the desert to the port of Bona where he had a few galleys in reserve. With these he made his way to Algiers before Andrea Doria could come up with him. The Christians celebrated the capture of Tunis by a massacre of some 30,000 inhabitants and returned home, thanking God that at last Barbarossa was done for. Indeed, with the loss of his fleet and his newly acquired province it seemed as if the great pirate was not likely to give much trouble, but the Christians had made the mistake of leaving the work only half done.

In 1537, two years after the fall of Tunis, the Sultan declared war on Venice. The Turkish fleet, although led by the Sultan Soliman himself, was defeated by the Venetians off Corfu. Doria, in the service of Charles V, caught and burned ten richly laden Turkish merchant ships and then defeated a

Turkish squadron. The prestige of the Crescent on the sea was badly weakened by these events, but suddenly Barbarossa appeared and raided the islands of the Archipelago and the coasts of the Adriatic with a savagery and sweep unmatched by anything in his long career. He arrived in the Golden Horn laden with booty, and delivered to his master, the Sultan, 18,000 captives.

This exploit changed the complexion of affairs. During the winter of 1537-1538 the naval yards of Constantinople were busy with the preparations for a new fleet which should take the offensive against the Venetians and the Christians generally. In the spring Barbarossa got out into the Archipelago and, raiding at will, swept up another batch of prisoners to serve as galley slaves for the new ships. Meanwhile the Mediterranean states nerved themselves for a final effort. Venice contributed 81 galleys, the Pope sent 36, and Spain, 30. Later the Emperor sent 50 transports with 10,000 soldiers, and 49 galleys, together with a number of large sailing ships. Venice also added 14 sailing ships of war, or "nefs," and Doria 22; these formed a special squadron. The Venetian nefs were headed by Condalmiero in his flagship the *Galleon of Venice*, the most formidable warship in the Mediterranean, and the precursor of a revolution in naval architecture and naval tactics.



Although the sailing ship was coming more and more into favor because of the discoveries across the Atlantic, the galley was the man of war of this period. The dromons of the Eastern empire, with their stout build and two banks of oars, had given

way to a long, narrow vessel with a single bank of oars which had been developed by men who lived on the shores of the sheltered lagoons of the Adriatic. The prime characteristic of this type was its mobility. For the pirate whose business it was to lie in wait and dash out on a merchantman, this quality of mobility—independence of wind and speed of movement—was of chief importance. Similarly, in order to combat the pirate it was necessary to possess the same characteristic. Of course, as in all the days of rowed ships, this freedom of movement was limited by the physical exhaustion of the rowers. In the ships of Greek and Roman days these men had some protection from the weapons of the enemy and from the weather, but in the 16th century galley, whether Turkish or Christian, they were chained naked to their benches day and night, with practically nothing to shelter them from the weather or from the weapons of an enemy. So frightful were the hardships of the life that the rowers were almost always captives, or felons who worked out their sentences on the rowers' bench. An important difference between the galley of this period and the earlier types of rowed ship is the fact that in the galley there was but one row of oars on a side, but these oars were very long and manned by four or five men apiece.

A typical galley was about 180 feet over all with a beam of 19 feet and a depth of hold of about 7-1/2 feet. A single deck sloped from about the water line to a structure that ran fore and aft amidships, about six feet wide, which served as a gangway between forecastle and poop and gave access to the hold. The forecastle carried the main battery of guns, and was closed in below so as to provide quarters for the

fighting men. The poop had a deck house and a smaller battery; this deck also was closed in, furnishing quarters for the officers. There were two or three masts, lateen rigged, adorned in peace or war with the greatest profusion of banners and streamers. Indeed huge sums of money were expended on the mere ornament of these war galleys, particularly in the elaborate carvings that adorned the stern and prow.

In the conflict of Christian and Moslem, when Constantinople was the capital of Christendom, Greek fire on two critical occasions routed the Saracens. This substance was never understood in western Europe, and for centuries the secret was carefully preserved in the eastern capital. In the thirteenth and fourteenth centuries, it was used by the Moslem against the Christian, but the discovery of gunpowder soon made the earlier substance obsolete. In the 16th century cannon had already reached considerable dimensions, but in a naval battle between galleys these weapons were not used after the first volley or so. The tactics were little different from those of the day of the trireme, consisting simply of ramming, and fighting at close quarters with arquebus, bows, pike, and sword.

Twenty feet from the bows of every galley projected her metal beak, and all her guns pointed forward; hence in the naval tactics of the period everything turned on a head-on attack. The battle line, therefore, was line abreast. For the same reasons a commander had to fear an attack on his flank, and he maneuvered usually to get at least one flank protected by the shore. The battle line in the days of the galley could be dressed as accurately as a file of soldiers, but the fighting was settled in a close

mêlée in which all formation was lost from the moment of collision between the two fleets.

The Campaign of Prevesa

Such were the men of war and the tactics common to Christian and corsair during the 16th century. While the Christians were slowly collecting their armada, Barbarossa, with a force of 122 galleys, set out to catch his enemy in detail if he could. Pirate as he was, the old ruffian had a clear strategic grasp of what he might do with a force that was inferior to the fleet collecting against him. The Christians were to mobilize at Corfu. The Papal squadron had collected in the Gulf of Arta, and Barbarossa made for it. By sheer luck just before he arrived it had moved to the rendezvous. If he had followed it up immediately, he might have crushed both the Papal and Venetian contingents, because Doria and the Spanish fleet had not yet arrived; but apparently he felt uncertain as to just how far off these reënforcements were and therefore did not attempt the stroke. Instead, he took up a defensive position in the Gulf of Arta, exactly where Antony had collected his fleet before the battle of Actium.

In September (1538) the Christian fleet under Doria left Corfu and crossed to the Gulf. Barbarossa had drawn up his force in battle array inside the entrance, under the guns of the Turkish fortress at Prevesa. Since this entrance is obstructed by a bar with too little water for Doria's heavier ships, he lay outside. Thus the two fleets faced each other, each waiting for the other to make the next move. For the first time in their careers the greatest admiral on the Christian side was face to face with the greatest on the Moslem side. Both were old men, Doria over

seventy and Barbarossa eighty-two. The stage was set for another decisive battle on the scene of Actium. The town of Prevesa stood on the site of Octavius's camp, and again East and West faced each other for the mastery of the sea. With the vastly greater strength of the Christian fleet, and the known skill of its leader, everything pointed to an overwhelming victory for the Cross. What followed is one of the most amazing stories in history.

Having the interior lines and the smooth anchorage, Barbarossa had only to watch his enemy go to pieces in the open roadstead in trying to maintain a blockade. His officers, however, scorned such a policy, and, being appointees of the Sultan and far from subordinate in spirit to their chief, they were finally able to force his hand and compel him to offer battle to the Christians by leaving the security of the gulf and the fortress and going out into the open, exactly where Doria wanted him. Accordingly on the 27th of September, the Turkish fleet sailed out to offer battle. It happened that Doria had gone ten miles away to Sessola for anchorage, and the *Galleon of Venice* lay becalmed right in the path of the advancing fleet. Condalmiero sent word for help, and Doria ordered him to begin fighting, assuring him that he would soon be reënforced.

The Turkish galleys, advancing in a crescent formation, soon enveloped the lonely ship. Her captain ordered his crew to lie down on her deck while he alone stood, in full armor, a target to the host of Moslems who pushed forward in their galleys anxious for the honor of capturing this great ship. Condalmiero ordered his gunners to hold their fire until the enemy were within arquebus range. Then the broadsides of the galleon blazed and the

surrounding galleys crumpled and sank. A single shot weighing 120 pounds sank a galley with practically all on board. The signal to retreat was given and speedily obeyed.

Thereafter there were to be no more rushing tactics. Barbarossa organized his galleys in squadrons of twenty, which advanced, one after the other, delivered their fire, and retired. All the rest of the day, from about noon till sunset, this strange conflict between the single galleon and the Turkish fleet went on. The ship was cumbered with her fallen spars; she had lost thirteen men killed and forty wounded. The losses would have been far greater but for the extraordinarily thick sides of the galleon. After sundown the Turkish fleet appeared to be drawing up in line for the last assault. On the *Galleon of Venice* there was no thought of surrender; the ammunition was almost spent and the men were exhausted with their tremendous efforts, but they stood at their posts determined to defend their ship to the last man.

Then, to their astonishment Barbarossa drew off, sending some of his galleys to pursue and cut off certain isolated Christian units, but leaving the field to the Venetian galleon. Meanwhile, during all that long, hot afternoon the great fleet of Andrea Doria, instead of pressing forward to the relief of the *Galleon of Venice* and crushing Barbarossa with its great superiority in numbers, was going through strange parade maneuvers about ten miles away. Doria's explanation was that he was trying to decoy Barbarossa out into deeper water where the guns of the nefs could be used, but there is no other conclusion to be reached than that Doria did not want to fight. Fortune that day offered him

everything for an overwhelming victory, one that might have ranked with the decisive actions of the world's history, and he threw it away under circumstances peculiarly disgraceful and humiliating. Never did commander in chief so richly deserve to be shot on his own deck. The following day as a fair wind blew for Corfu, Doria spread sail and retired from the gulf, while Barbarossa, roaring with laughter, called on his men to witness the cowardice of this Christian admiral.

The victory lay with Barbarossa. With a greatly inferior force he had challenged Doria and attacked. Doria had not only declined the challenge but fled back to Corfu. No wonder the Sultan ordered the cities of his domain to be illuminated. Barbarossa's prizes included two galleys and five nefs, but he, too, had failed in an inexplicable fashion in drawing off from the assault on the *Galleon of Venice* at the end of the day's fighting. It is with her, with the gallant Condalmiero and his men, that all the honor of the day belongs. Nothing in the adventurous 16th century surpasses their splendid, disciplined valor on this occasion.

The astonishing powers of resistance and the deadly effect of the broadsides of the *Galleon of Venice* displayed in a long and successful fight against an entire fleet of galleys should have had the effect of making a revolution in naval architecture fifty years before that change actually occurred. But men of war of those days were built after the models of Venetian architects, and the latter clung doggedly to the galley. They overlooked the great defensive and offensive powers of the galleon displayed in this story and saw only the fact that she was becalmed and unable to move.

Doria's failure left conditions in the Mediterranean as bad as ever. Barbarossa died at the age of ninety, but one of the last acts of his life was to ransom a follower of his, Dragut, Pasha of Tripoli, who had served under him at Prevesa and, having been captured two years later, served four years as a galley slave on the ship of Gian Andrea Doria, the grandnephew and heir of Andrea Doria. Dragut soon assumed the leadership laid down by Barbarossa, his master, fighting first the elder Doria and then his namesake with great skill and audacity. For years the Knights of Malta had been a thorn in the side of the Moslems who roamed the sea, and in 1565 a gigantic effort was made by the Sultan, together with his tributaries from the Barbary states, to wipe out this naval stronghold. The siege that followed was distinguished by the most reckless courage and the most desperate fighting on both sides. It extended from May 18 to September 8, costing the Christians 8000 and the Moslems 30,000 lives. In the midst of the siege Dragut himself was slain, and the conduct of the siege fell into less capable hands. Finally the Turks withdrew.

The death of Soliman the Magnificent, in 1566, brought to the head of the Turkish state a ruler known by the significant name, Selim the Drunkard. Weak and debauched as he was, nevertheless he aspired to add to the Turkish dominions as his father had done. Accordingly, he informed Venice that she must evacuate Cyprus. Previous to this time Venice had succeeded, by means of heavy bribes to the Sultan's ministers, in keeping her hold on this important island, but this policy only tempted further arrogance on the part of the Turk. Further, the time was propitious for such a stroke because

Venice was impoverished by bad harvests and the loss of her naval arsenal by fire, Spain was occupied in troubles with the Moors, and France, torn with civil war, wanted to keep peace with the Sultan at any price. During the terrible siege of Malta Venice had remained neutral; now that the danger came home to her she cried for help, and not unnaturally there were those who sneered at her in this crisis and bade her save herself.

The Pope, however, had long been anxious to organize a league of Christian peoples to win back the Mediterranean to the Cross and draw a line beyond which the Crescent should never pass. In this plight of Venice he saw an opportunity, because hitherto the persistent neutrality or the unwillingness of the Venetians to fight the Turk to the finish had been one of the chief obstacles to concerted action. He therefore pledged his own resources to Venice and attempted to collect allies by the appeal to the Cross. The results were discouraging, but a force of Spanish, Papal, and Venetian galleys was finally collected and after endless delays dispatched to the scene in the summer of 1570.

Meanwhile the Turks had been pressing their attack on Cyprus and were besieging the city of Nicosia. If the Christians had been moved by any united spirit they could have relieved Nicosia and struck a heavy blow at the Turkish fleet, which lay unready and stripped of its men in the harbor. But Gian Doria, who inherited from his great uncle his great dislike of Venetians, and who probably had secret instructions from his master, Philip II, to help as little as possible, succeeded in blocking any vigorous move on the part of the other commanders. Finally, after a heated quarrel, he sailed back to

Sicily with his entire fleet, and the rest followed. The allies had gone no nearer Cyprus than the port of Suda in Crete. The whole expedition, therefore, came to nothing.

In September Nicosia fell to the Turk, who then turned to the conquest of Famagusta, the last stronghold of the Venetians on the island. Bragadino, the commander of the besieged forces, fought against desperate odds with a courage and skill worthy of the best traditions of his native city, hoping to repulse the Turks until help could arrive. But Doria's defection in 1570 decided the fate of the city the following year. After fifty-five days of siege, with no resources left, Bragadino was compelled, on August 4, 1571, to accept an offer of surrender on honorable terms. The Turkish commander, enraged at the loss of 50,000 men, which Bragadino's stubborn defense had cost, no sooner had the Venetians in his power than he massacred officers and men and flayed their commander alive. This news did not reach the Christians, however, until their second expedition was almost at grips with the Turks at Lepanto.

The Campaign of Lepanto

Undismayed by the failure of his first attempt, Pope Pius had immediately gone to work to reorganize his Holy League. He had to overcome the mutual hatred and mistrust that lay between Spain and Venice, aggravated by the recent conduct of Doria, but neither the Pope nor Venice could do without the help of Spain. There was much bickering between the envoys in the Papal chambers, and it was not till February, 1571, that the terms of the new enterprise were agreed upon. By this contract no one of the powers represented was to make a

separate peace with the Porte. The costs were divided into six parts, of which Spain undertook three, Venice, two, and the Pope, one. Don Juan, the illegitimate brother of Philip II, was to be commander in chief. Although only twenty-four, this prince had won a military reputation in suppressing the Moorish rebellion in Spain, and, having been recognized by Philip as a half brother, he had a princely rank that would subordinate the claims of all the rival admirals. Finally, the rendezvous was appointed at Messina.

The aged Venetian admiral, Veniero, had been compelled by the situation in the east to divide his force into two parts, one at Crete, and the other under himself at Corfu. By the time he received orders to proceed to the rendezvous, he learned that Ali, the corsair king of Algiers, known better by his nickname of "Uluch" Ali, was operating at the mouth of the Adriatic with a large force. To reach Messina with his divided fleet, Veniero ran the risk of being caught by Ali and destroyed in detail, but the situation was so critical that he took the risk and succeeded in slipping past the corsair undiscovered. In permitting this escape, and in fact in allowing all the other units of the Christian fleet to assemble at Messina, Ali missed a golden opportunity to destroy the whole force before it ever collected. Instead, he continued his ravages on the coasts of the Adriatic, bent only on plunder. He carried his raids almost to the lagoons of Venice itself, and indeed might have attacked the city had he not been hampered by a shortage of men.

Although the Turks were having their own way, unopposed, and the situation was growing daily more critical, the Christian fleet was slow in

assembling. For a whole month Veniero waited in Messina for the arrival of Don Juan and the Spanish squadrons. Philip, apparently, used one pretext after another to delay the prince, and once on his way Don Juan had to tarry at every stage of the journey to witness ceremonial fêtes held in his honor. Philip acted in good faith as far as his preparations went, but he wanted to save his galleys for use against the Moors of the Barbary coast, which was nearer the ports of Spain, and was indifferent to the outcome of the quarrel between Venice and the Porte. Undoubtedly Doria and the other Spanish officers were fully informed of their royal master's desires in this expedition as in the one of the year before. They were to avoid battle if they could.

On August 25 Don Juan arrived at Messina and was joyously received by the city and the fleet. Nevertheless, it was the 12th of September before the decision was finally reached to seek out the Turkish fleet and offer battle. Fortunately Don Juan was a high-spirited youth who shared none of his brother's half-heartedness; he went to work to organize the discordant elements under his command into as much of a unit as he could, and to imbue them with the idea of aggressive action. In this spirit he was seconded by thousands of young nobles and soldiers of fortune from Spain and Italy, who had flocked to his standard like the knight errants of the age of chivalry, burning to distinguish themselves against the infidel. Among these, oddly enough, was a young Spaniard, Cervantes, who was destined in later years to laugh chivalry out of Europe by his immortal "Don Quixote."

In order to knit together the three elements, Spanish, Venetian, and Papal, Don Juan so

distributed their forces that no single squadron could claim to belong to any one nation. As the Venetian galleys lacked men, he put aboard them Spanish and Italian infantry. Before leaving Messina, he had given every commander written instructions as to his cruising station and his place in the battle line. The fighting formation was to consist of three squadrons of the line and one of reserve. The left wing was to be commanded by the Venetian Barbarigo; the center, by Don Juan himself, in the flagship *Real*, with Colonna, the Papal commander on his right and Veniero, the Venetian commander, on his left, in their respective flagships. The right wing was intrusted to Doria, and the reserve, amounting to about thirty galleys, was under the Spaniard, Santa Cruz. In front of each squadron of the line two Venetian galleasses were to take station in order to break up the formation of the Turkish advance. The total fighting force consisted of 202 galleys, six galleasses, and 28,000 infantrymen besides sailors and oarsmen.

The Venetian galleasses deserve special mention because they attracted considerable attention by the part they subsequently played in the action. Sometimes the word was applied to any specially large galley, but these represented something different from anything in either Christian or Turkish fleets. They were an attempt to reach a combination of galleon and galley, possessing the bulk, strength, and heavy armament of the former, together with the oar propulsion of the latter to render them independent of the wind. But like most, if not all, compromise types, the galleass was short-lived. It was clumsy and slow, being neither one thing nor the other. Most of the time on the cruise these

galleasses had to be towed in order to keep up with the rest of the fleet. It is interesting to note that, despite the example of the *Galleon of Venice* at Prevesa, there was not a single galleon in the whole force.

On September 16 the start from Messina was made. The fleet crossed to the opposite shore of the Adriatic, creeping along the coast and in the lee of the islands after the manner of oar driven vessels that were unable to face a fresh breeze or a moderate sea. Delayed by unfavorable winds, it was not till October 6 that it arrived at the group of rocky islets lying just north of the opening of the Gulf of Corinth, or Lepanto[1] where the Turkish fleet was known to be mobilized. Meanwhile trouble had broken out among the Christians. Serious fighting had taken place between Venetians and Spaniards, and Veniero, without referring the case to Don Juan, had hanged a Spanish soldier who had been impudent to him, thus enraging the commander in chief. In a word, the various elements were nearly at the point of fighting each other before the object of their crusade was even sighted.

[Footnote 1: Lepanto is the modern name of Naupaktis, the naval base of Athens in the gulf. It had been a Venetian stronghold, but fell to the Turks in 1499. The name Lepanto is given to both the town and the gulf.]

At dawn of the 7th the lookout on the *Real* sighted the van of the Turkish fleet coming out to the attack, and this news had a salutary effect. Don Juan called a council of war, silenced those like Doria who still counseled avoiding battle, and then in a swift sailing vessel went through the fleet exhorting officers and men to do their utmost. The sacrament was then

administered to all, the galley slaves freed from their chains, and the standard of the Holy League, the figure of the Crucified Savior, was raised to the truck of the flagship.

As the Christians streamed down from the straits to meet their enemy, they faced a serious peril. The Turks were advancing in full array aided by a wind at their backs; the same wind naturally was against the Christians, who had to toil at their oars with great labor to make headway. If the wind held there was every prospect that the Turks would be able to fall upon their enemy before Don Juan could form his line of battle. Fortunately, toward noon the wind shifted so as to help the Christians and retard the Turks. This shift just enabled most of the squadrons to fall into their appointed stations before the collision. Two of the galleasses, however, were not able to reach their posts in advance of the right wing before the mêlée began, and the right wing itself, though it had ample time to take position, kept on its course to the south, leaving the rest of the fleet behind. To Turk and Christian alike this move on the part of Doria meant treachery, for which Doria's previous conduct gave ample color, but there was no time to draw back or reorganize the line.

The Turkish force, numbering 222 galleys, swept on to the attack, also in three divisions, stretched out in a wide crescent. The commander in chief, Ali Pasha, led the center, his right was commanded by Sirocco, the Viceroy of Egypt, and his left by "Uluch" Ali. This arrangement should have brought Ali, the greatest of the Moslem seafighters of his day, face to face with Doria, the most celebrated admiral in Christendom. The two opposing lines swung together with a furious plying of oars and a tumult of

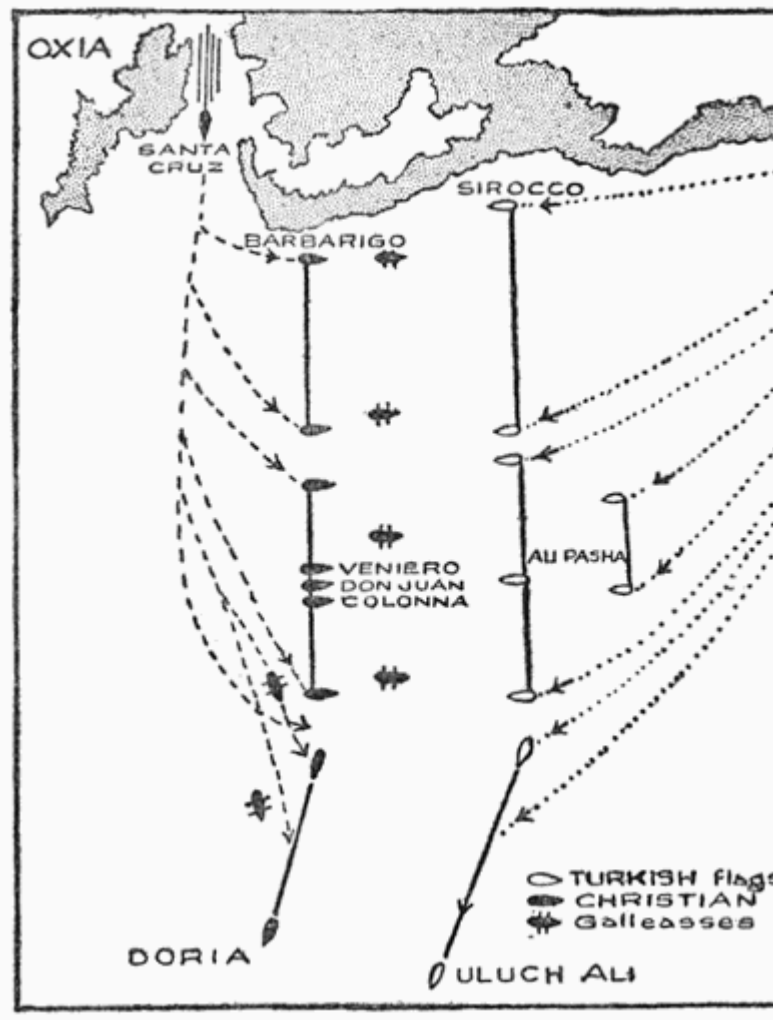
shouting. The four galleasses stationed well in front of the Christian battle line opened an effective fire at close quarters on the foremost Turkish galleys as they swept past. In trying to avoid the heavy artillery of these floating fortresses, the Turks fell into confusion, losing their battle array almost at the very moment of contact, and masking the fire of many of their ships. This was an important service to the credit of the galleasses, but as they were too unwieldy to maneuver readily they seem to have taken no further part in the action.

The first contact took place about noon between Barbarigo's and Sirocco's squadrons. The Venetian had planned to rest his left flank so close to the shore as to prevent the Turks from enveloping it, but Sirocco, who knew the depth of water better, was able to pour a stream of galleys between the end of Barbarigo's line and the coast so that the Christians at this point found themselves attacked in front and rear. For a while it looked as if the Turks would win, but the Christians fought with the courage of despair. There was no semblance of line left; only a mêlée of ships laid so close to each other as to form almost a continuous platform over which the fighting raged hand to hand. Both the leaders fell. Barbarigo was mortally wounded, and Sirocco was killed when his flagship was stormed. The loss of the Egyptian flagship and commander seemed to decide the struggle at this point. The Christian slaves, freed from the rowers' benches, were supplied with arms and joined in the fighting with the fury of vengeance on their masters. A backward movement set in among the Turkish ships; then many headed for the shore to escape.

Meanwhile, shortly after the Christian left had

been engaged the two centers crashed together. Such was the force of the impact that the beak of Ali Pasha's galley drove as far as the fourth rowing bench of the *Real*. Instantly a fury of battle burst forth around the opposing flagships. Attack and counter attack between Spanish infantry and Turkish Janissaries swayed back and forth across from one galley to another amid a terrific uproar. Once the *Real* was nearly taken, but Colonna jammed the bows of his galley alongside and saved the situation by a counter attack. On the other side of the flagship Veniero was also at one time in grave peril but was saved by the timely assistance of his comrades. Though wounded in the leg, this veteran of seventy fought throughout the action as stoutly as the youngest soldier.

The prompt action of Colonna turned the tide in the center, for after clearing the Turks from the deck of the *Real*, the Christians, now reënforced, made a supreme effort that swept the length of Ali Pasha's galley and left the Turkish commander in chief among the slain. In fighting of this character no quarter was given; of the 400 men on the Turkish flagship not one was spared. Don Juan immediately hoisted the banner of the League to the masthead of the captured ship. This sign of victory broke the spirit of the Turks and nerved the Christians to redoubled efforts. As on the left wing so in the center the offensive now passed to the allies. Thus after two hours' fighting the Turks were already beaten on left and center, though fighting still went on hotly in tangled and scattered groups of ships.



BATTLE OF LEPANTO, OCT. 7. 1571

Formation of the two fleets just before contact, al

On the Christian right, however, the situation was different. Doria had from the beginning left the right center "in the air" by sailing away to the south. He explained this singular conduct afterwards by saying

that he noticed Ali moving seaward as if to try an enveloping movement round the Christians' southern flank, and therefore moved to head him off. However plausible this may be, the explanation did not satisfy Doria's captains, who obeyed his signals with indignant rage. At all events Ali had a considerably larger force than Doria, and after the latter had drawn away so far as to create a wide gap between his own squadron and the center, Ali suddenly swung his galleys about in line and fell upon the exposed flank, leaving Doria too far away to interfere. The Algerian singled out a detached group of about fifteen galleys, among which was the flagship of the Knights of Malta. No Christian flag was so hated as the banner of this Order, and the Turks fell upon these ships with shouts of triumph. One after another was taken and it began to look as if Ali would soon roll up the entire flank and pluck victory from defeat.

But Santa Cruz, who was still laboring through the straits when the battle began, was now in a position to help. After an hour's fighting with all the advantage on Ali's side, Santa Cruz arrived with his reserve squadron and turned the scale. By this time, too, Doria managed to reach the scene with a part of his squadron. Thus Ali found himself outnumbered and in danger of capture. Signaling retreat, he collected a number of his galleys and, boldly steering through the field of battle, escaped to lay at the feet of the Sultan the captured flag of the Knights of Malta. Some thirty-five others of his force made their way safely back to Lepanto.

The fighting did not end till evening. By that time the Christians had taken 117 galleys and 20 galliots, and sunk or burnt some fifty other ships of various

sorts. Ten thousand Turks were captured and many thousands of Christian slaves rescued. The Christians lost 7500 men; the Turks, about 30,000. It was an overwhelming victory.

As far as the tactics go, Lepanto was, like Salamis, an infantry battle on floating platforms. It was fought and won by the picked infantrymen of Spain and Italy; the day of seamanship had not yet arrived. For the conduct of the most distinguished admiral on the Christian side, Gian Andrea Doria, little justification can be found. Even if we accept his excuse at its face value, the event proved his folly. It is strange that in this, the supreme victory of the Cross over the Crescent on the sea, a Doria should have tarnished his reputation so foully, even as his great-uncle Andrea had tarnished his in the battle of Prevesa. It seems as if in both, as Genoese, the hatred of Venice extinguished every other consideration of loyalty to Christendom.

What were the consequences of Lepanto, and in what sense can it be called a decisive battle? The question at first seems baffling. Overwhelming as was the defeat of the Turks, Ali had another fleet ready the next spring and was soon ravaging the seas again. Twice there came an opportunity for the two fleets to meet for another battle, but Ali declined the challenge. After Lepanto he seemed unwilling, without a great superiority, to risk another close action and contented himself with a "fleet in being." In this new attitude toward the Christians lies the hint to the answer. The significance of Lepanto lies in its moral effect. Never before had the Turkish fleet been so decisively beaten in a pitched battle. The fame of Lepanto rang through Europe and broke the legend of Turkish invincibility on the sea.

The material results, it must be admitted, were worse than nothing at the time. In 1573 Don Juan was amazed and infuriated to learn that Venice, contrary to the terms of the Holy League, had secretly arranged a separate peace with the Sultan. The terms she accepted were those of a beaten combatant. Venice agreed to the loss of Cyprus, paid an indemnity of 300,000 ducats, trebled her tribute for the use of Zante as a trading post, and restored to the Turk all captures made on the Albanian and Dalmatian coast. Apparently the Venetian had to have his trade at any price, including honor. At this news Don Juan tore down the standard of the allies and raised the flag of Castile and Aragon. In two years and after a brilliant victory, the eternal Holy League, which was pledged to last forever, fell in pieces.

As for Venice, her ignoble policy brought her little benefit. She steadily declined thereafter as a commercial and naval power. Her old markets were in the grip of the Turk, and the new discoveries of ocean routes to the east—beyond the reach of the Moslem,—diverted the course of trade away from the Mediterranean, which became, more and more, a mere backwater of the world's commerce. In fact, it was not until the cutting of the Suez Canal that the inland sea regained its old time importance.

In the long unsuccessful struggle of Christian against the Turk Venice must bear the chief blame, for she had the means and the opportunity to conquer if she had chosen the better part. And yet the story of this chapter shows also that the rest of Christendom was not blameless. If Christians in the much extolled Age of Faith had shown as much unity of spirit as the Infidels, the rule of the Turk would

not have paralyzed Greece, the Balkans, the islands of the Ægean, and the coasts of Asia Minor for nearly five centuries.

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CHAPTER VI

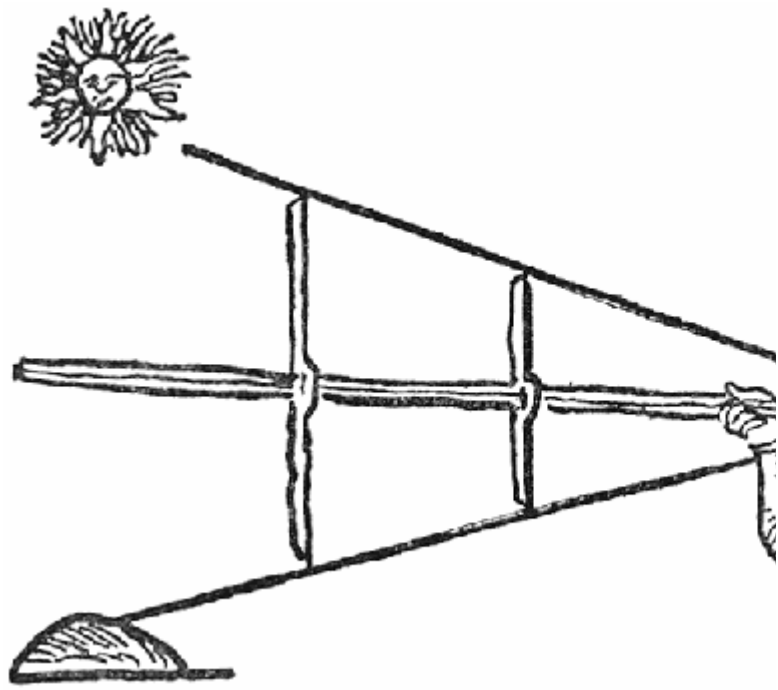
OPENING THE OCEAN ROUTES

1. PORTUGAL AND THE NEW ROUTE TO INDIA

From the days of the Phœnicians to the close of the 15th century, all trade between Europe and Asia crossed the land barrier east of the Mediterranean. Delivered by Mohammedan vessels at the head of the Persian Gulf or the ports of the Red Sea, merchandise followed thence the caravan routes across Arabia or Egypt to the Mediterranean, quadrupling in value in the transit. Intercourse between East and West, active under the Romans, was again stimulated by the crusades and by Venetian traders, until in the 14th and the 15th centuries the dyes, spices, perfumes, cottons, muslins, silks, and jewels of the Orient were in demand throughout the western world. This assurance of a ready market and large profits, combined with the capture of Constantinople by the Turks (1453), their piratical attacks in the Mediterranean which continued unchecked until Lepanto, and their final barring of all trade routes through the Levant, revived among nations of western Europe the old legends of all-water routes to Asia, either around Africa or directly westward across the unknown sea.

With the opening of ocean routes and the discovery of America, a rivalry in world trade and

colonial expansion set in which has continued increasingly down to the present time, forming a dominant element in the foreign policies of maritime nations and a primary motive for the possession and use of navies. The development of overseas trade, involving the factors of merchant shipping, navies, and control of the seas, is thus an integral part of the history of sea power. The great voyages of discovery are also not to be disregarded, supplying as they did the basis for colonial claims, and illustrating at the same time the progress of nautical science and geographical knowledge.



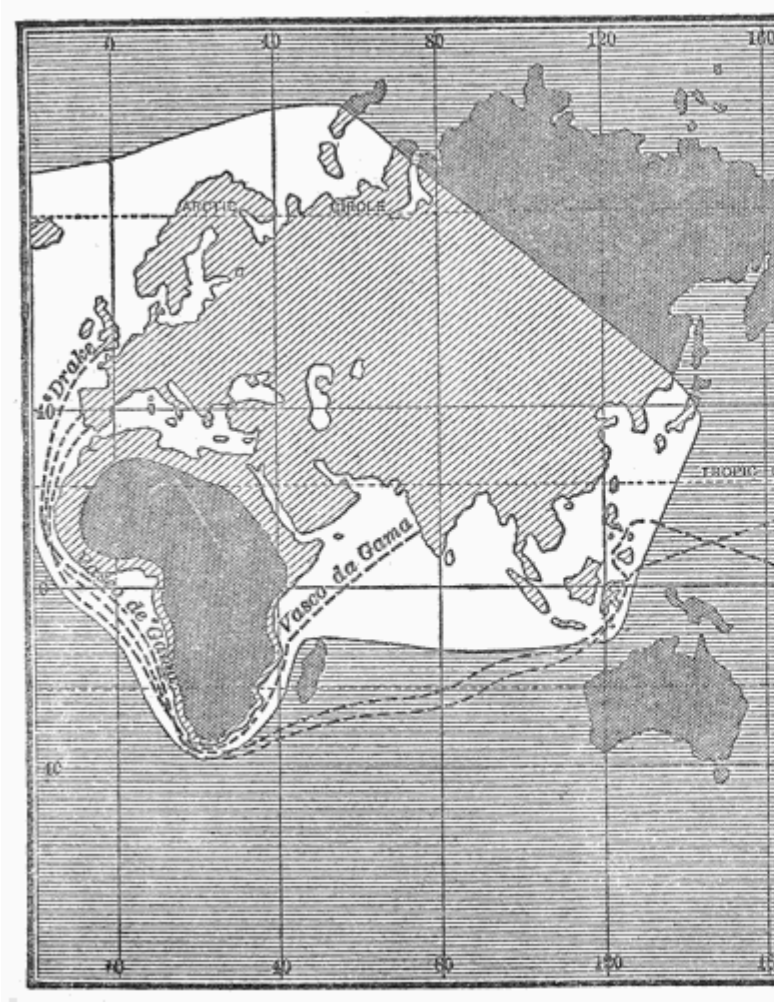
CROSS-STAFF

The art of navigation, though still crude, had by

the 15th century so advanced that the sailor was no longer compelled to skirt the shore, with only rare ventures across open stretches of sea. The use of the compass, originating in China, had been learned from the Arabs by the crusaders, and is first mentioned in Europe towards the close of the 12th century. An Italian in England, describing a visit to the philosopher Roger Bacon in 1258, writes as follows: "Among other things he showed me an ugly black stone called a magnet ... upon which, if a needle be rubbed and afterward fastened to a straw so that it shall float upon the water, the needle will instantly turn toward the pole-star; though the night be never so dark, yet shall the mariner be able by the help of this needle to steer his course aright. But no master-mariner," he adds, "dares to use it lest he should fall under the imputation of being a magician."[1] By the end of the 13th century the compass was coming into general use; and when Columbus sailed he had an instrument divided as in later times into 360 degrees and 32 points, as well as a quadrant, sea-astrolabe, and other nautical devices. The astrolabe, an instrument for determining latitude by measuring the altitude of the sun or other heavenly body, was suspended from the finger by a ring and held upright at noon till the shadow of the sun passed the sights. The cross-staff, more frequently used for the same purpose by sailors of the time, was a simpler affair less affected by the ship's roll; it was held with the lower end of the cross-piece level with the horizon and the upper adjusted to a point on a line between the eye of the observer and the sun at the zenith. By these various means the sailor could steer a fixed course and determine latitude. He had, however, as yet no trustworthy means of reckoning longitude and no

accurate gauge of distance traveled. The log-line was not invented until the 17th century, and accurate chronometers for determining longitude did not come into use until still later. A common practice of navigators, adopted by Columbus, was to steer first north or south along the coast and then due west on the parallel thought to lead to the destination sought.

[Footnote 1: Dante's tutor Brunetto Latini, quoted in THE DISCOVERY OF AMERICA, Fiske, Vol. I, p. 314.]



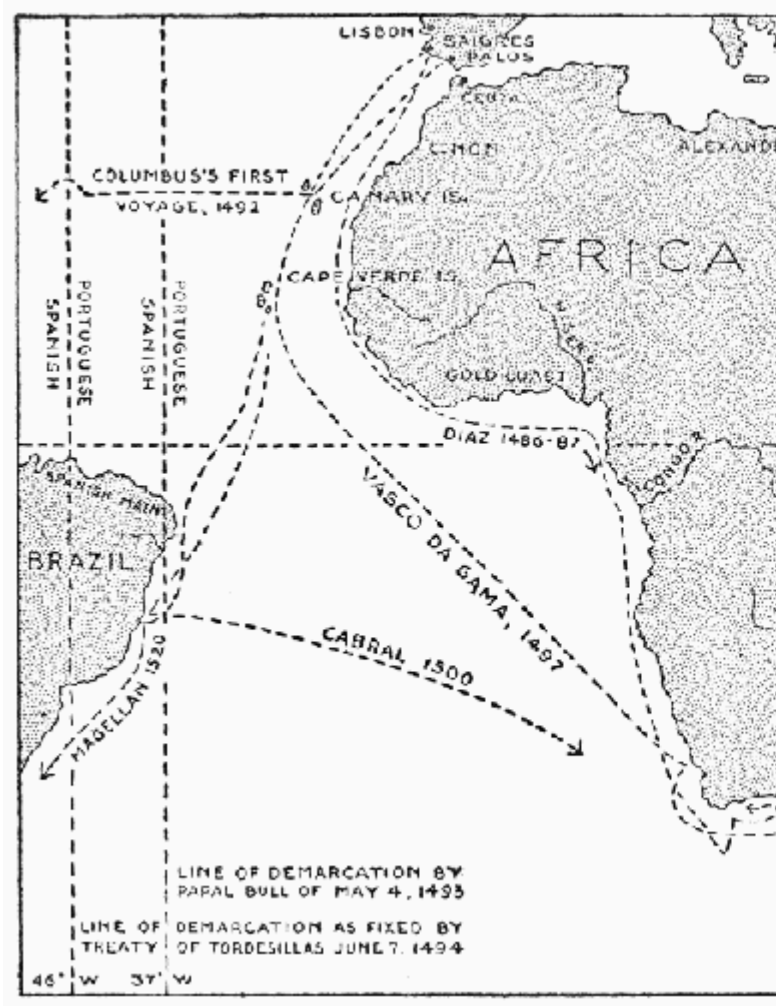
THE KNOWN AND UNKNOWN WORLD IN

With the revival of classical learning in the Renaissance, geographical theories also became less wildly imaginative than in the medieval period, the charts of which, though beautifully colored and highly decorated with fauna and flora, show no such

accurate knowledge even of the old world as do those of the great geographer Ptolemy, who lived a thousand years before. Ptolemy (200 A.D.), in company with the majority of learned men since Aristotle, had declared the earth to be round and had even estimated its circumference with substantial accuracy, though he had misled later students by picturing the Indian Ocean as completely surrounded by Africa, which he conceived to extend indefinitely southward and join Asia on the southeast, leaving no sea-route open from the Atlantic. There was another body of opinion of long standing, however, which outlined Africa much as it actually is. Friar Roger Bacon, whose interest in the compass has already been mentioned, collected statements of classical authorities and other evidence to show that Asia could be reached by sailing directly westward, and that the distance was not great; and this material was published in Paris in a popular *Imago Mundi* of 1410. In general, the best geographical knowledge of the period, though it underestimated the distance from Europe westward to Asia and was completely ignorant of the vast continents lying between, gave support to the theories which the voyages of Diaz, Vasco da Gama, and Columbus magnificently proved true.

When the best sailors of the time were Italians, and when astronomical and other scientific knowledge of use in navigation was largely monopolized by Arabs and Jews, it seems strange that the isolated and hitherto insignificant country of Portugal should have taken, and for a century or more maintained primacy in the great epoch of geographical discovery. The fact is explained, not so much by her proximity to the African coast and the

outlying islands in the Atlantic, as by the energetic and well-directed patronage which Prince Henry the Navigator (1394-1460) extended to voyages of exploration and to the development of every branch of nautical art. The third son of John the Great of Portugal, and a nephew on his mother's side of Henry IV of England, the prince in 1415 led an armada to the capture of Ceuta from the Moors, and thereafter, as governor of the conquered territory and of the southern province of Portugal, settled at Saigres near Cape St. Vincent. On this promontory, almost at the western verge of the known world, Henry founded a city, Villa do Iffante, erected an observatory on the cliff, and gathered round him the best sailors, geographers and astronomers of his age.



Under this intelligent stimulus, Portuguese navigators within a century rounded the Cape of Good Hope, opened the sea route to the Indies, discovered Brazil, circumnavigated the globe, and made Portugal the richest nation in Europe, with a

great colonial empire and claims to dominion over half the seas of the world. Portuguese ships carried her flag from Labrador (which reveals its discoverers in its name) and Nova Zembla to the Malay Archipelago and Japan.

It is characteristic of the crusading spirit of the age that Prince Henry's first ventures down the African coast were in pursuance of a vague plan to ascend one of the African rivers and unite with the legendary Christian monarch Prester John (Presbyter or Bishop John, whose realm was then supposed to be located in Abyssinia) in a campaign against the Turk. But crusading zeal changed to dreams of wealth when his ships returned from the Senegal coast between 1440 and 1445 with elephants' tusks, gold, and negro slaves. The Gold Coast was already reached; the fabled dangers of equatorial waters—serpent rocks, whirlpools, liquid sun's rays and boiling rivers—were soon proved unreal; and before 1480 the coast well beyond the Congo was known.

The continental limits of Africa to southward, long clearly surmised, were verified by the voyage of Bartolomeo Diaz, in 1487. Diaz rounded the cape, sailed northward some 200 miles, and then, troubled by food shortage and heavy weather, turned backward. But he had blazed the trail. The cape he called *Tormentoso* (tempestuous) was renamed by his sovereign, João II, Cape *Bon Esperanto*—the Cape of Goad Hope. The Florentine professor Politian wrote to congratulate the king upon opening to Christianity "new lands, new seas, new worlds, dragged from secular darkness into the light of day."

It was not until ten years later that Vasco da Gama set out to complete the work of Diaz and establish

contact between east and west. The contour of the African coast was now so well understood and the art of navigation so advanced that Vasco could steer a direct course across the open sea from the Cape Verde Islands to the southern extremity of Africa, a distance of 3770 miles (more than a thousand miles greater than that of Columbus' voyage from the Canaries to the Bahamas), which he covered in one hundred days. After touching at Mozambique, he caught the steady monsoon winds for Calicut, on the western coast of the peninsula of India, then a great *entrepôt* where Mohammedan and Chinese fleets met each year to exchange wares. Thwarted here by the intrigues of Mohammedan traders, who were quick to realize the danger threatening their commercial monopoly, he moved on to Cannanore, a port further north along the coast, took cargo, and set sail for home, reaching the Azores in August of 1499, with 55 of his original complement of 148 men. They came back, in the picturesque words of the Admiral, "With the pumps in their hands and the Virgin Mary in their mouths," completing a total voyage of 13,000 miles. The profits are said to have been sixty-fold.

The ease with which in the next two decades Portugal extended and consolidated her conquest of eastern trade is readily accounted for. She was dependent indeed solely upon sea communications, over a distance so great as to make the task seem almost impossible. But the craft of the east were frail in construction and built for commerce rather than for warfare. The Chinese junks that came to India are described as immense in size, with large cabins for the officers and their families, vegetable gardens growing on board, and crews of as many as a thousand men; but they had sails of matted reed that

could not be lowered, and their timbers were loosely fastened together with pegs and withes. The Arab ships, according to Marco Polo, were also built without the use of nails. Like the Portuguese themselves, the Arab or Mohammedan merchants belonged to a race of alien invaders, little liked by the native princes who retained petty sovereignties along the coast. But the real secret of Portuguese success lay in the fact that their rivals were traders rather than fighters, who had enjoyed a peaceful monopoly for centuries, and who could expect little aid from their own countries harassed by the Turk. The Portuguese on the other hand inherited the traditions of Mediterranean seamanship and warfare, and, above all, were engaged in a great national enterprise, led by the best men in the land, with enthusiastic government support.

After Vasco's return, fleets were sent out each year, to open the Indian ports by either force or diplomacy, destroy Moslem merchant vessels, and establish factories and garrisons. In 1505 Francisco de Almeida set sail with the largest fleet as yet fitted out (sixteen ships and sixteen caravels), an appointment as Viceroy of Cochin, Cannanore, and Quilon, and supreme authority from the Cape to the Malay Peninsula. Almeida in the next four years defeated the Mohammedan traders, who with the aid of Egypt had by this time organized to protect themselves, in a series of naval engagements, culminating on February 3, 1509, in the decisive battle of Diu.

Mir Hussain, Admiral of the Gran Soldan of Egypt and commander in chief of the Mohammedan fleet in this battle, anchored his main force of more than a hundred ships in the mouth of the channel between

the island of Diu and the mainland, designing to fall back before the Portuguese attack towards the island, where he could secure the aid of shore batteries and a swarm of 300 or more foists and other small craft in the harbor. Almeida had only 19 ships and 1300 men, but against his vigorous attack the flimsy vessels of the east were of little value. The battle was fought at close quarters in the old Mediterranean style, with saber, cutlass, and culverin; ramming, grappling, and boarding. Before nightfall Almeida had won. This victory ensured Portugal's commercial control in the eastern seas.

Alfonso d'Albuquerque, greatest of the Portuguese conquistadores, succeeded Almeida in 1509. Establishing headquarters in a central position at Goa, he sent a fleet eastward to Malacca, where he set up a fort and factory, and later fitted out expeditions against Ormuz and Aden, the two strongholds protecting respectively the entrances to the Persian Gulf and the Red Sea. The attack on Aden failed, but Ormuz fell in 1515. Albuquerque died in the same year and was buried in his capital at Goa. His successor opened trade and founded factories in Ceylon. In 1526 a trading post was established at Hugli, near the mouth of the Ganges. Ormuz became a center for the Persian trade, Malacca for trade with Java, Sumatra, and the Spice Islands. A Portuguese envoy, Fernam de Andrada, reached Canton in 1517 —in the first European ship to enter Chinese waters —and Pekin three years later. Another adventurer named Mendez Pinto spent years in China and in 1548 established a factory near Yokohama, Japan. Brazil, where a squadron under Cabral had touched as early as 1502, was by 1550 a prosperous colony, and in later centuries a chief source of wealth.

Mozambique, Mombassa, and Malindi, on the southeastern coast of Africa, were taken and fortified as intermediate bases to protect the route to Asia. The muslins of Bengal, the calicoes of Calicut, the spices from the islands, the pepper of Malabar, the teas and silks of China and Japan, now found their way by direct ocean passage to the Lisbon quays.

A few strips along the African coast, tenuously held by sufferance of the great powers, and bits of territory at Goa, Daman, and Diu in India, are the twentieth century remnants of Portugal's colonial empire. The greater part of it fell away between 1580 and 1640, when Portugal was under Spanish rule. But her own system of colonial administration, or rather exploitation, was if possible worse than Spain's. Her scanty resources of man power were exhausted in colonial warfare. The expulsion of Protestants and Jews deprived her of elements in her population that might have known how to utilize wealth from the colonies to build up home trade and industries. Her situation was too distant from the European markets; and the raw materials landed at Lisbon were transshipped in Dutch bottoms for Amsterdam and Antwerp, which became the true centers of manufacturing and exchange. Cervantes, in 1607, could still speak of Lisbon as the greatest city in Europe,[1] but her greatness was already decaying; and her fate was sealed when Philip of Spain closed her ports to Dutch shipping, and Dutch ships themselves set sail for the east.

[Footnote 1: PERSILES AND SIGISMUDA, III, i.]

But the period of Portugal's maritime ascendancy cannot be left without recording, even if in barest outline, the circumnavigation of the globe by Fernão

da Magalhães, or Magellan, who, though he made this last voyage of his under the Spanish flag, was Portuguese by birth and had proved his courage and iron resolution under Almeida and Albuquerque in Portugal's eastern campaigns. Seeking a westward passage to the Spice Islands, the five vessels of 75 to 100 tons composing his squadron cleared the mouth of the Guadalquivir on September 20, 1519. They established winter quarters in the last of March at Port St. Julian on the coast of Patagonia. Here, on Easter Sunday, three of his Spanish captains mutinied. Magellan promptly threw a boat's crew armed with cutlasses aboard one of the mutinous ships, killed the leader, and overcame the unruly element in the crew. The two other ships he forced to surrender within 24 hours. One of the guilty captains was beheaded and the other marooned on the coast when the expedition left in September. Five weeks were now spent in the labyrinths of the strait which has since borne the leader's name. "When the capitayne Magalianes," so runs the contemporary English translation of the story of the voyage, "was past the strayght and sawe the way open to the other mayne sea, he was so gladde thereof that for joy the teares fell from his eyes."

He had sworn he would go on if he had to eat the leather from the ships' yards. With three vessels—one had been shipwrecked in the preceding winter and the other deserted in the straits—they set out across the vast unknown expanse of the Pacific. "In three monethes and xx dayes they sailed foure thousande leagues in one goulfe by the sayde sea called Pacificum.... And havying in this tyme consumed all their bysket and other vyttayles, they fell into such necessitie that they were in forced to eate the pouder

that remayned thereof being now full of woormes.... Theyre freshe water was also putryfyed and become yellow. They dyd eate skynnes and pieces of lether which were foulded about certeyne great ropes of the shyps." On March 6, 1521, they reached the Ladrones, and ten days later, the Philippines, even these islands having never before been visited by Europeans. Here the leader was killed in a conflict with the natives. One ship was now abandoned, and another was later captured by the Portuguese. Of the five ships that had left Spain with 280 men, a single vessel, "with tackle worn and weather-beaten yards," and 18 gaunt survivors reached home. "It has not," writes the historian John Fiske of this voyage, "the unique historic position of the first voyage of Columbus, which brought together two streams of human life that had been disjoined since the glacial period. But as an achievement in ocean navigation that voyage of Columbus sinks into insignificance beside it.... When we consider the frailness of the ships, the immeasurable extent of the unknown, the mutinies that were prevented or quelled, and the hardships that were endured, we can have no hesitation in speaking of Magellan as the prince of navigators."[1]

[Footnote 1: THE DISCOVERY OF AMERICA, Vol. II, p. 210.]

2. SPAIN AND THE NEW WORLD

It is generally taken for granted that the great movement of the Renaissance, which spread through western Europe in the 15th and the 16th centuries, quickening men's interest in the world about them rather than the world to come, and inspiring them with an eagerness and a confident belief in their own power to explore its hidden secrets, was among the

forces which brought about the great geographical discoveries of the period. Its influence in this direction is evident enough in England and elsewhere later on; but, judging by the difficulties of Columbus in securing support, it was not in his time potent with those in control of government policy and government funds. The Italian navigator John Cabot and his son Sebastian made their voyages from England in 1498 and 1500 with very feeble support from Henry VII, though it was upon their discoveries that England later based her American claims. Even in Spain there seems to have been little eagerness to emulate the methods by which her neighbor Portugal had so rapidly risen to wealth and power.

But the influence of revived classical information on geographical matters was keenly felt; and the idea of a direct westerly passage to India was suggested, not only by Portugal's monopoly of the Cape route, but by classical authority, generally accepted by the best geographers of the time. The *Imago Mundi* of 1410, already mentioned, embodying Roger Bacon's arguments that the Atlantic washed the shores of Asia and that the voyage thither was not long, was a book carefully studied by Columbus. Paul Toscanelli, a Florentine physicist and astronomer, adopting and developing this theory, sent in 1474 to Alfonso V of Portugal a map of the world in which he demonstrated the possibilities of the western route. The distance round the earth at the equator he estimated almost exactly to be 24,780 statute miles, and in the latitude of Lisbon 19,500 miles; but he so exaggerated the extent of Europe and Asia as to reduce the distance between them by an Atlantic voyage to about 6500 miles, putting the east coast of China in about the longitude of Oregon. This

distance he still further shortened by locating Cipango (Japan) far to the eastward of Asia, in about the latitude of the Canary Islands and distant from them only 3250 miles.

With all these opinions Columbus was familiar, for the list of his library and the annotations still preserved in his own handwriting, show that he was not an ignorant sailor, nor yet a wild visionary, but prepared by closest study for the task to which he gave his later years. His earlier career, on the other hand, had supplied him with abundant practical knowledge. Born in Genoa, a mother city of great seamen, probably in the year 1436, he had received a fair education in Latin, geography, astronomy, drafting, and other subjects useful to the master-mariner of those days. He had sailed the Mediterranean, and prior to his great adventure, had been as far north as Iceland, and on many voyages down the African coast. Following his brother Bartholomew, who was a map-maker in the Portuguese service, he came about 1470 to Lisbon, even then a center of geographical knowledge and maritime activity. Probably as early as this time the idea of a western voyage was in his mind.

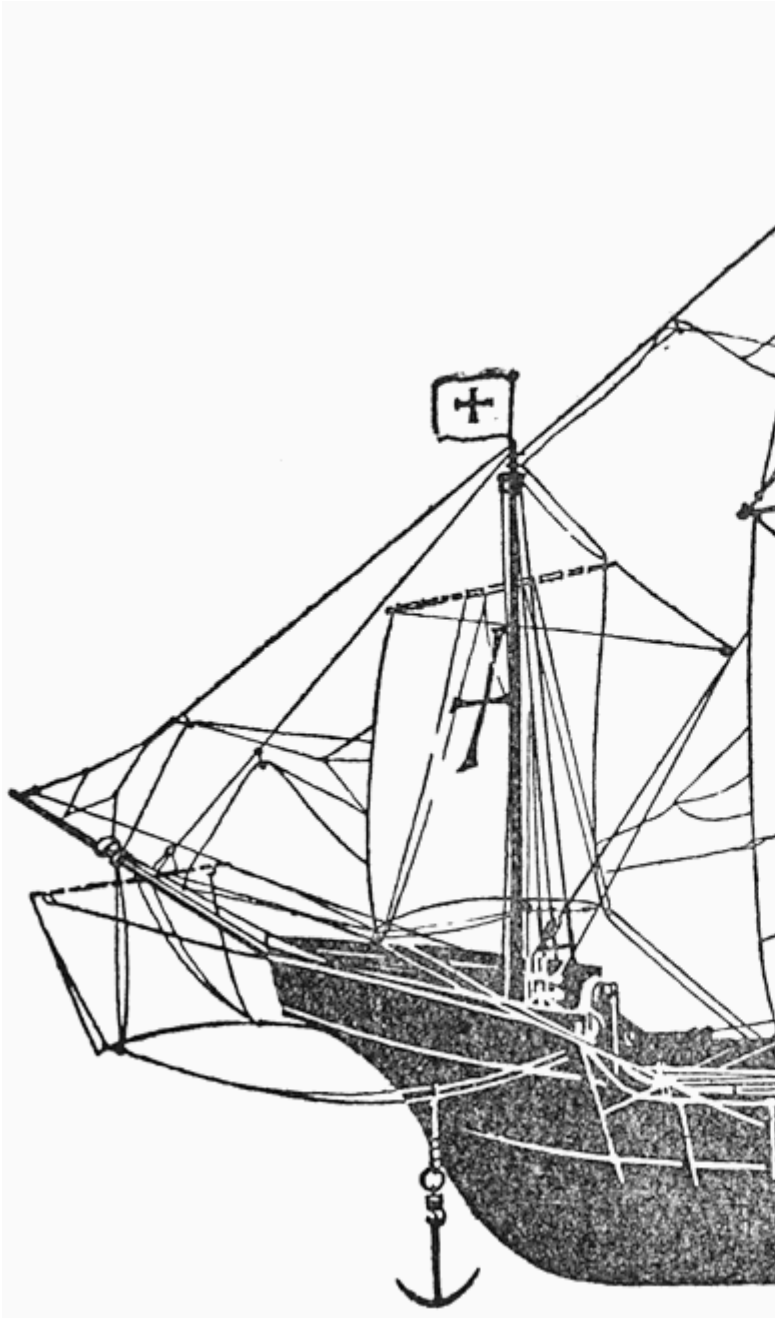
Skepticism may account for Portugal's failure to listen to his proposals; and her interest was already centered in the route around Africa under her exclusive control. The tale of his years of search for assistance is well known. Indeed, while the fame of Columbus rests rightly enough upon his discovery of a new world, of whose existence he had never dreamed and which he never admitted in his lifetime, his greatness is best shown by his faith in his vision, and the steadfast energy and fortitude with which he pushed towards its practical

accomplishment, during years of vain supplication, and amid the trials of the voyage itself. He had actually left Granada, when Isabella of Spain at last agreed to support his venture. In the contract later drawn up he drove a good bargain, contingent always upon success; he was to be admiral and viceroy of islands and continents discovered and their surrounding waters, with control of trading privileges and a tenth part of the wealth of all kinds derived.

With the explorations of Columbus on his first and his three later voyages (in 1496, 1498, and 1502) we are less concerned than with the first voyage itself as an illustration of the problems and dangers faced by the navigator of the time, and with the effect of the discovery of the new world upon Spain's rise as a sea power. The three caravels in which he sailed were typical craft of the period. The *Santa Maria*, the largest, was like the other two, a single-decked, lateen-rigged, three-masted vessel, with a length of about 90 feet, beam of about 20 feet, and a maximum speed of perhaps 6-1/2 knots. She was of 100 tons burden and carried 52 men. The *Pinta* was somewhat smaller. The *Niña* (Baby) was a tiny, half-decked vessel of 40 tons. Heavily timbered and seaworthy enough, the three caravels were short provisioned and manned in part from the rakings of the Palos jail.

Leaving Palos August 3, 1492, Columbus went first to the Canaries, and thence turned his prow directly westward, believing that he was on the parallel that touched the northern end of Japan. By a reckoning even more optimistic than Toscanelli's, he estimated the distance thither to be only 2500 miles. Thence he would sail to Quinsay (Hang Chow), the ancient

capital of China, and deliver the letter he carried to the Khan of Cathay. The northeast trade winds bore them steadily westward, raising in the minds of the already fear-stricken sailors the certainty that against these head winds they could never beat back. At last they entered the vast expanse of the Sargasso Sea, six times as large as France, where they lay for a week almost becalmed, amid tangled masses of floating seaweeds. To add to their perplexities, they had passed the line of no variation, and the needle now swung to the left of the pole-star instead of the right. On the last day of the outward voyage they were 2300 miles to the westward according to the information Columbus shared with his officers and men; according to his secret log they were 2700 miles from the Canaries, and well beyond the paint where he had expected to strike the islands of the Asiatic coast. The mutinous and panic-stricken spirit of his subordinates, the uncertainty of Columbus himself, turned to rejoicing when at 2:00 A.M. of Friday, October 12, a sailor on the *Pinta* sighted the little island of the Bahamas, which, since the time of the Vikings, was the first land sighted by white men in the new world.



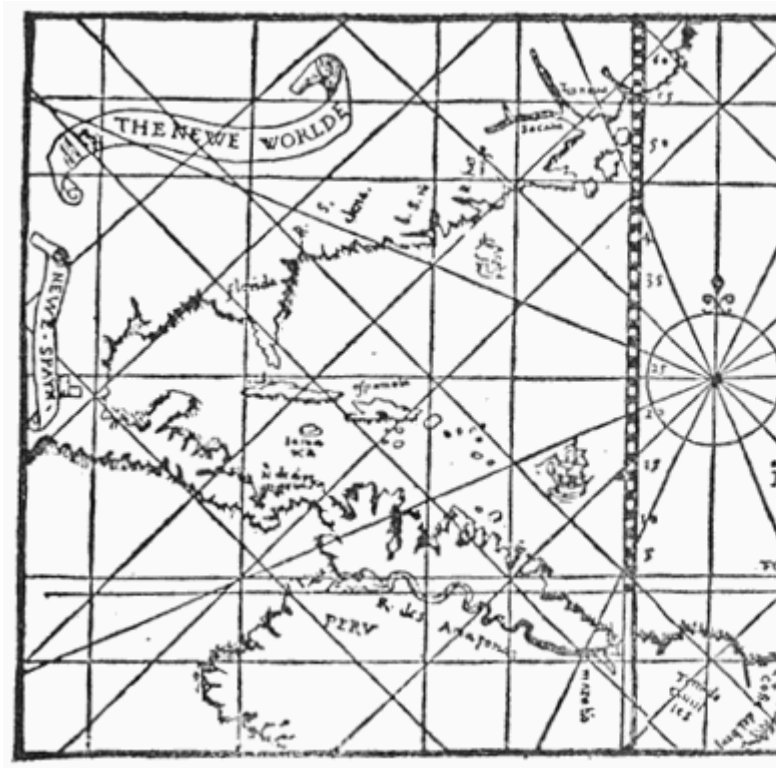


The three vessels cruised southward, in the belief, expressed by the name Indian which they gave the natives, that they were in the archipelago east of Asia. Skirting the northern coast of Cuba and Hayti, they sought for traces of gold, and information as to the way to the mainland. The *Santa Maria* was wrecked on Christmas Day; the *Pinta* became separated; Columbus returned in the little *Ninã*, putting in first at the Tagus, and reaching Palos on March 15, 1493.

Though his voyage gave no immediate prospect of immense profits, yet it was the general belief that he had reached Asia, and by a route three times as short as that by the Cape of Good Hope. The Spanish court celebrated his return with rejoicing. Appealing to the Pope, at this time the Spaniard Rodrigo Bargia, King Ferdinand lost no time in securing holy sanction for his gains. A Papal bull of May 3, 1493, conferred upon Spain title to all lands discovered or yet to be discovered in the western ocean. Another on the day following divided the claims of Spain and Portugal by a line running north and south "100 leagues west of the Azores and the Cape Verde Islands" (an obscure statement in view of the fact that the Cape Verdes lie considerably to the westward of the other group), and granted to Spain a monopoly of commerce in the waters "west and south" (again an obscure phrase) of this line, so that no other nation could trade without license from the power in control. This was the extraordinary Papal decree dividing the waters of the world. Small wander that the French king, Francis I, remarked that he refused to recognize the title of the claimants till they could

produce the will of Father Adam, making them universal heirs; or that Elizabeth, when a century later England became interested in world trade, disputed a division contrary not only to common sense and treaties but to "the law of nations." The Papal decree, intended merely to settle the differences of the two Catholic states, gave rise to endless disputes and preposterous claims.

The treaty of Tordesillas (1494) between Spain and Portugal fixed the line of demarcation more definitely, 370 miles west of the Cape Verde Islands, giving Portugal the Brazilian coast, and by an additional clause it made illegitimate trade a crime punishable by death. Another agreement in 1529 extended the line around to the Eastern Hemisphere, 17 degrees east of the Moluccas, which, if Spain had abided by it, would have excluded her from the Philippines. After Portugal fell under Spanish rule in 1580, Spain could claim dominion over all the southern seas.



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The enthusiasm and confident expectation with which Spain set out to exploit the discoveries of Columbus's first voyage changed to disappointment when subsequent explorations revealed lands of continental dimensions to be sure, but populated by ignorant savages, with no thoroughfare to the ancient civilization and wealth of the East, and no promise of a solid, lucrative commerce such as Portugal had gained. Mines were opened in the West Indies, but it was not until the conquest of Mexico by Cortez (1519-1521) laid open the accumulated

wealth of seven centuries that Spain had definite assurance of the treasure which was to pour out of America in a steadily increasing stream. The first two vessels laden with Mexican treasure returned in 1523. Ten years later the exploration and conquest of Peru by Pizarro trebled the influx of silver and gold. The silver mines of Europe were abandoned. The Emperor Charles, as Francis I said, could fight his European campaigns on the wealth of the Indies alone.

But between Spain and her "sinews of war" lay 3000 miles of ocean. To hold the colonies themselves, to guard the plate fleets against French, Dutch, and English raiders, to protect her own coastline and maintain communications with her possessions in Italy and the Low Countries, to wage war against the Turk in the Mediterranean, Spain felt the need of a navy. Indeed, in view of these varied motives for maritime strength, it is surprising that Spain depended so largely on impressed merchant vessels, and had made only the beginnings of a royal navy at the time of the Grand Armada.[1] Not primarily a nation of traders or sailors, she had, by grudging assistance to the greatest of sea explorers, fallen into a rich colonial empire, to secure and make the most of which called for sea power.

[Footnote 1: "For the kings of England have for many years been at the charge to build and furnish a navy of powerful ships for their own defense, and for the wars only; whereas the French, the Spaniards, the Portugals, and the Hollanders (till of late) have had no proper fleet belonging to their princes or state." Sir Walter Raleigh, A DISCOURSE OF THE INVENTION OF SHIPS.]

It is possible, however, to lay undue stress on the factor just mentioned in accounting for both the rise

and the decay of Spain. Her ascendancy in Europe in the 16th century was due chiefly to the immense territories united with her under Charles the Fifth (1500-1558), who inherited Spain, Burgundy, and the Low Countries, and added Austria with her German and Italian provinces by his accession to the imperial throne. Under Charles's powerful leadership Spain became the greatest nation in Europe; but at the same time her resources in men and wealth were exhausted in the almost constant warfare of his long reign. The treasures of America flowed through the land like water, in the expressive figure of a German historian, "not fertilizing it but laying it waste, and leaving sharper dearth behind."[2] The revenues of the plate fleet were pledged to German or Genoese bankers even before they reached the country, and were expended in the purchase of foreign luxuries or in waging imperial wars, rather than in the encouragement of home agriculture, trade, and industry. While the vast possessions of church and nobility escaped taxation, the people were burdened with levies on the movement and sale of commodities and on the common necessities of life. Prohibition of imports to keep gold in the country was ineffectual, for without the supplies brought in by Dutch merchantmen Spain would have starved, and Philip II often had to connive in violations of his own restrictions. Prohibition of exports to keep prices down was an equally Quixotic measure, the chief effect of which was to kill trade. Spain could not supply the needs of her own colonies, and in fact illustrates the truth that a nation cannot, in the end, profit greatly by colonies unless it develops industries to utilize their raw materials and supply their demands.

[Footnote 2: DAS ZEITALTER DER FUGGER, Vol. II, p. 150.]

For some time before the Armada Spain was on the downward path, as a result of the conditions mentioned. On the other hand, while the Armada relieved England of a terrible danger and dashed Spain's hope of domination in the north, it was not of itself a fatal blow. The war still continued, with other Spanish expeditions organized on a grand scale, and ended in 1604, so far as England was concerned, with that country's renunciation of trade to the Indies and aid to the Dutch.

But even if Spain's rise and decline were not primarily a result of sea power, still, taking the term to include the extension of shipping and maritime trade as well as the employment of naval forces in strictly military operations, there are lessons to be drawn from the use or neglect of sea power by both sides in Spain's long drawn-out struggle with Holland and England.

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CHAPTER VII

SEA POWER IN THE NORTH: HOLLAND'S STRUGGLE FOR INDEPENDENCE

The first sea-farers in the storm-swept waters of the north, at least in historic times, were the Teutonic tribes along the North Sea and the Baltic. On land the Teutons held the Rhine and the Danube against the legions of Rome, spread later southward and westward, and founded modern European states out of the wreckage of the Roman Empire. On the sea, Angles, Saxons, and Jutes in the 5th century began plundering the coasts of what is now England, and, after driving the Celts into mountain fastnesses,

established themselves in permanent control.

The Vikings

These Teutonic voyagers were followed toward the close of the 8th century by their Scandinavian kindred to the northward, the Vikings—superb fighting men and daring sea-rovers who harried the coasts of western Europe for the next 200 years. There were no navies to stop them. "These sea dragons," exclaimed Charlemagne, "will tear my kingdom asunder!" In England no king before Alfred had a navy; and Alfred was compelled to organize a strong sea force to bring the invaders to terms.

Elsewhere the Vikings met little opposition. Wherever they found lands that attracted them, they conquered and settled dawn. Thus Normandy came into being. They swept up the rivers, burning and looting where they pleased, from the Elbe to the Rhone. They carried their raids as far south as Sicily and the Mediterranean coast of Africa, and as far north and west as Iceland, Greenland, and the American continent. In the east, by establishing a Viking colony at Nishni Novgorod, they laid the foundations of the Russian empire, and their leader, Rus, gave it his name. Following river courses, others penetrated inland as far as Constantinople, where, being bought off by the emperor, they took service as imperial guards.

Their extraordinary voyages were made in boats that resemble so closely Greek and Roman models—even Phœnician, for that matter—as to suggest that the Vikings learned their ship-building from Mediterranean traders who forced their way into the Baltic in very early times. For example, the Viking

method of making a rib in three parts is identical with the method of the Greeks and Romans. The chief points of difference are that Viking ships were sharp at both ends—like a canoe, were round-bottomed instead of flat, and had one steering oar instead of two. The typical Viking ship was only about 75 feet in length; but a royal vessel—the *Dragon* of the chief—sometimes attained a length of 300 feet, with sixty pairs of oars.

If the Vikings had had national organization under one head, they might well have laid the rest of Europe under tribute. In the 11th century, Cnut, a descendant of the Vikings, ruled in person over England, Denmark, and Norway. But their ocean folk-wanderings seem to have ended as suddenly as they began, and the effects were social rather than political. Where they settled, they brought a strain of the hardiest racial stock in Europe to blend with that of the conquered peoples.

The Hanseatic League

During the Middle Ages, peaceful trading gradually gained the upper hand over piracy and conquest. From the Italian cities the wares of the south and the Orient came over the passes of the Alps and down the German rivers, where trading cities grew up to act as carriers of merchandise and civilization among the nations of the north. The merchant guilds of these cities, banded together in the Hanseatic League, for at least three centuries dominated the northern seas.

Perhaps the most extensive commercial combination ever formed for the control of sea trade, the Hanseatic League began with a treaty between

Lübeck and Hamburg in 1174, and at the height of its power in the 14th and 15th centuries it included from 60 to 80 cities, of which Lübeck, Cologne, Brunswick, and Danzig were among the chief. The league cleared northern waters of pirates, and used embargo and naval power to subdue rivals and promote trade. It established factories or trading stations from Nishni Novgorod to Bergen, London, and Bruges. From Russia it took cargoes of fats, tallows, wax, and wares brought into Russian markets from the east; from Scandinavia, iron and copper; from England, hides and wool; from Germany, fish, grain, beer, and manufactured goods of all kinds. The British pound sterling (Österling) and pound avoirdupois, in fact the whole British system of weights and coinage, are legacies from the German merchants who once had their headquarters in the Steelyard, London.

In the early 15th century the league attempted to shut Dutch ships from the Baltic trade by restricting their cargoes to wares produced in their own country, and by coercing Denmark into granting the league special privileges on the route through the Sound. This policy, culminating in the destruction of the Dutch grain fleet in 1437, led to a naval struggle which extended over four years and ended in a truce by which the Dutch secured the freedom of the Baltic. It was a typical naval war for sea control and commercial advantage, in which the Dutch as a rule seem to have got the better, and in which the legend first made its appearance of a Dutch admiral sweeping the seas with a broom nailed to his mast.

From this time the power of the Hansa declined. This was partly because the free cities came more and more under the rule of German princes with no

interest in, or knowledge of, commerce; partly because of rivalry arising from the union of the Scandinavian states (1397) and the growth of England, France, and the Low Countries to national strength and commercial independence; and partly also because of the decline of German fisheries when the herring suddenly shifted from the Baltic to the North Sea. Underlying these varied causes, however, and significant of the far-reaching effect of changing trade-routes upon the progress and prosperity of nations, was the fact that, when the Mediterranean trade route was closed by the Turks, and also the route through Russia by Ivan III, the German cities were side-tracked. Antwerp and Amsterdam were not only more centrally located for the distribution of trade, but also much nearer for Atlantic traffic—an advantage which Germany has ever since keenly envied.

Long before the rise of the Low Countries as a maritime power, Ghent and Bruges had enjoyed an early preëminence owing to their development of cloth manufacture, and the latter city as a terminus for the galleys of Venice and Genoa. After the silting up of the port of Bruges (1432), Antwerp grew in importance, and in the 16th century became the chief market and money center of Europe. Its inhabitants numbered about 100,000, with a floating population of upwards of 50,000 more. It contained the counting-houses of the great bankers of Europe—the Fuggers of Germany, the Pazzi of Florence, the Dorias of Genoa. Five thousand merchants were registered on the Bourse, as many as 500 ships often left the city in a single day, and two or three thousand more might be seen anchored in the Scheldt or lying along the quays.[1] Amsterdam by

1560 was second to Antwerp with a population of 40,000, and forged ahead after the sack of Antwerp by Spanish soldiers in 1576 and the Dutch blockade of the Scheldt during the struggle with Spain.

[Footnote 1: Blok, HISTORY OF THE PEOPLE OF THE NETHERLANDS, Part II, Ch. XII.]

This early prosperity of the Netherland cities may be attributed less to aggressive maritime activity than to their flourishing industries, their natural advantages as trading centers at the mouths of the Rhine, Scheldt, and Meuse, and the privileges of self-government enjoyed by the middle classes under the House of Burgundy and even under Charles the Fifth. Charles taxed them heavily—his revenues from the Low Countries in reality far exceeded the treasure he drew from America; but he was a Fleming born, spoke their language, and accorded them a large measure of political and religious freedom. The grievances which after his death led to the Dutch War of Independence, are almost personified in the son who succeeded him in 1555—Philip II, a Spaniard born and bred, who spoke no Flemish and left Brussels for the last time in 1573, dour, treacherous, distrustful, fanatical in religion; a tragic character, who, no doubt with great injustice to the Spanish, has somehow come to represent the character of Spain in his time.

The Dutch Struggle for Freedom

The causes of the long war in the Netherlands, which began in 1566 and ended with their independence 43 years later, is best explained in terms of general principles rather than specific grievances. "A conflict in which the principle of

Catholicism with unlimited royal autocracy as Spain recognized it, was opposed to toleration in the realm of religion, with a national government according to ancient principles and based on ancient privileges,"—so the Dutch historian Blok sums up the issues at stake. The Prince of Orange, just before he was cut down by an assassin, asserted in his famous *Defense* three fundamental principles: freedom to worship God; withdrawal of foreigners; and restoration of the charters, privileges, and liberties of the land. The Dutch fought for political, religious, and also for economic independence. England gave aid, not so much for religious motives as because she saw that her political safety and commercial prosperity hinged on the weakening of Spain.

Resembling our American Revolution in the character of the struggle as well as the issues at stake —though it was far more bloody and desperate—the Dutch War of Independence was fought mainly within the country itself, with the population divided, and the Spanish depending on land forces to maintain their rule; but, as in the American war, control of the sea was a vital factor. For munitions, supplies, gold, for the transport of the troops themselves, Spain had to depend primarily on the sea. It is true one could continue on Spanish territory from Genoa, which was Spain's watergate into Italy, across the Mont Cenis Pass, and through Savoy, Burgundy, Lorraine, and Luxembourg to Brussels, and it was by this route that Parma's splendid army of 10,000 "Blackbeards" came in 1577. But this was an arduous three months' march for troops and still more difficult for supplies. To cross France was as a rule impossible; when Don Juan of Austria went to Flanders for the brief period of leadership ended by

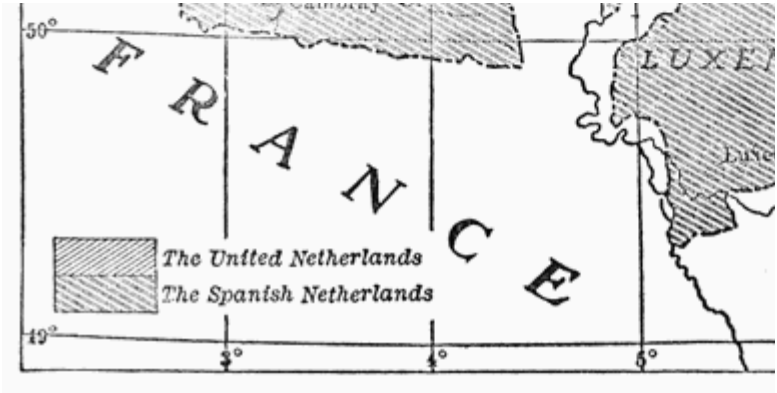
his death of camp fever in 1578, he passed through French territory disguised as a Moorish slave. By the sea route, upon which Spain was after all largely dependent, and the complete control of which would have made her task infinitely easier, she was constantly exposed to Huguenot, Dutch, and English privateers. These gentry cared little whether or not their country was actually at war with Spain, but took their letters of marque, if they carried them, from any prince or ruler who would serve their turn.

With this opportunity to strike at Spanish communications, it will appear strange that the Dutch should not have immediately seized their advantage and made it decisive. One curious difficulty lay in the fact that throughout the war Dutch shipping actually carried the bulk of Spanish trade and drew from it immense profits. Even at the close of the century, while the war was still continuing, nine-tenths of Spain's foreign trade and five-sixths of her home trade was in foreign—and most of it in Dutch—hands. Hence any form of sea warfare was sure to injure Dutch trade. The Revolution, moreover, began slowly and feebly, with no well-thought-out plan of campaign, and could not at once fit out fully organized forces to cope with those of Spain. The Dutch early took to commerce warfare, but it was at first semi-piratical, and involved the destruction of ships of their own countrymen.

The Sea Beggars—*Zee Geuzen* or *Gueux der Mer*—made their appearance shortly after the outbreak of rebellion. "*Vyve les geus par mer et par terre,*" wrote the patriot Count van Brederode as early as 1566. The term "beggar" is said to have arisen from a contemptuous remark by a Spanish courtier to

Margaret of Parma, when the Dutch nobles presented their grievances in Brussels. Willingly accepting the name, the patriots applied it to their forces both by land and by sea. Letters of marque were first issued by Louis of Nassau, brother of William of Orange, and in 1569 there were 18 ships engaged, increased in the next year to 84. The bloody and licentious De la Marek, who wore his hair and beard unshorn till he had avenged the execution of his relative, Egmont, was a typical leader of still more wild and reckless crews. It was no uncommon practice to go over the rail of a merchant ship with pike and ax and kill every Spaniard on board. In 1569 William of Orange appointed the Seigneur de Lumbres as admiral of the beggar fleet, and issued strict instructions to him to secure better order, avoid attacks on vessels of friendly and neutral states, enforce the articles of war, and carry a preacher on each ship. The booty was to be divided one-third to the Prince for the maintenance of the war, one-third to the captains to supply their vessels, and one-third to the crews, one-tenth of this last share going to the admiral in general command.


NORTH SEA
Terschelling I.
Texel I.
The Texel
Helder
Alkmaar
ZUYDER ZEE
Zaandam
Haarlem
Amsterdam
MOUTH OF THE RHINE
The Hague
Leyden
Utrecht
Delft
Gouda
Rotterdam
HOLLAND
Dordrecht
Brill
MOUTH OF THE MEUSE
Breda
Bergen-op-Zoom
Middelburg
Flushing
LINE OF DIVISION BETWEEN UNITED PROVINCES AND SPANISH PROVINCES
Tilburg
MOUTH OF THE SCHELDT
Antwerp
Ostend
Bruges
Dunkirk
Ghent
Malines
Gravelines
Louvain
Ypres
Courtray
Brussels
Tournay
Mons
Namur
R. Maas
Valenciennes
Arras
Cambray
FRANCE
LUXEMBURG
5°
4°
3°
53°
52°
51°
50°



THE NETHERLANDS IN THE

The events of commerce warfare, though they often involve desperate adventures and hard fighting, are not individually impressive, and the effectiveness of this warfare is best measured by collective results. On one occasion, when a fleet of transports fell into the hands of patriot forces off Flushing in 1572, not only were 1000 troops taken, but also 500,000 crowns of gold and a rich cargo, the proceeds of which, it is stated, were sufficient to carry on the whole war for a period of two years. Again it was fear of pirates (Huguenot in this case) that in December of 1568 drove a squadron of Spanish transports into Plymouth, England, with 450,000 ducats ($960,000) aboard for the pay of Spanish troops. Elizabeth seized the money (on the ground that it was still the property of the Genoese bankers who had lent it and that she might as well borrow it as Philip), and minted it into English coin at a profit of £3000. But Alva at Antwerp, with no money at all, was forced to the obnoxious "Hundreds" tax—requiring a payment of one per cent on all possessions, five per cent on all real estate transfers, and 10 per cent every time a piece of merchandise was sold—a typical tax after the Spanish recipe, which, though not finally enforced to

its full extent, aroused every Netherlander as a fatal blow at national prosperity. To return to the general effect of commerce destruction, it is estimated that Spain thus lost annually 3,000,000 ducats ($6,400,000), a sum which of course meant vastly more then than now. When the Duke of Alva retired from command in 1578, the pay of Spanish troops was 6,500,000 ducats in arrears.

Among the exploits of organized naval forces, the earliest was the capture of Brill, by which, according to Motley, "the foundations of the Dutch republic were laid." Driven out of England by Elizabeth, who upon the representations of the Spanish ambassador ordered her subjects not to supply the Beggars with "meat, bread or beer," a fleet of 25 vessels and 300 or 400 men left Dover towards the end of March, 1572, with the project of seizing a base on their own coast. On the afternoon of April 1, they appeared off the town of Brill, located on an island at the mouth of the Meuse. The magistrates and most of the inhabitants fled; and the Beggars battered down the gates, occupied the town, and put to death 13 monks and priests. When Spanish forces attempted to recapture the city, the defenders opened sluice gates to cut off the northern approach, and at the same time set fire to the boats which had carried the Spanish to the island. The Spanish, terrorized by both fire and water, waded through mud and slime to the northern shore. During the same week Flushing was taken, and before the end of June the Dutch were masters of nearly the entire Zealand coast.

In the north the Spanish at first found an able naval leader in Admiral Bossu, himself a Hollander, who for a time kept the coast clear of Beggars. In

October, 1573, however, 30 of his ships were beaten in the Zuyder Zee by 25 under Dirkzoon, who captured five of the Spanish vessels and scattered the rest with the exception of the flagship. The latter, a 32-gun ship terrifyingly named the *Inquisition* and much stronger than any of the others on either side, held out from three o'clock in the afternoon until the next morning. Three patriot vessels closed in on her, attacking with the vicious weapons of the period—pitch, boiling oil, and molten lead. By morning the four combatants had drifted ashore in a tangled mass. When Bossu at last surrendered, 300 men, out of 382 in his ship's complement, were dead or disabled.

Though not yet able to stand up against Spanish infantry, the Dutch in naval battles were usually successful. In the Scheldt, January 29, 1574, 75 Spanish vessels were attacked by 64 Dutch under Admiral Boisot. After a single broadside, the two fleets grappled, and in a two-hour fight at close quarters eight of the Spanish ships were captured, seven destroyed, and 1200 Spaniards killed. The Spanish commander, Julian Romero, escaped through a port-hole, is said to have remarked afterwards, "I told you I was a land fighter and no sailor; give me a hundred fleets and I would fare no better."

In September following, Admiral Boisot brought some of his victorious ships and sailors to the relief of Leyden, whose inhabitants and garrison had been reduced by siege to the very last extremities. The campaign that followed was typical of this amphibious war. Boisot's force, with those already an the scene, numbered about 2500, equipped with some 200 shallow-draft boats and row-barges

mounting an average of ten guns each. Among them was the curious *Ark of Delft*, with shot-proof bulwarks and paddle-wheels turned by a crank. As a result of ruthless flooding of the country, ten of the fifteen miles between Leyden and the outer dyke were easily passed; but five miles from the city ran the Landscheidung or inner dyke, which was above water, and beyond this an intricate system of canals and flooded polders, with forts and villages held by a Spanish force four times as strong. The most savage fighting on decks, dykes, and bridges marked every step forward; the Dutch in their native element attacking with cutlass, boathook and harpoon, while the superior military discipline of the Spanish could not come in play. But at least 20 inches of water were necessary to float the Dutch vessels, and it was not until October 3 that a spring tide and a heavy northwest gale made it possible to reach the city walls. In storm and darkness, terrified by the rising waters, the Spanish fled. The relief of the city marked a turning-point in the history of the revolt.

During the six terrible years of Alva's rule in the Netherlands (1567-1573) the Dutch sea forces contributed heavily toward the maintenance of the war, assured control of the Holland and Zealand coasts, and more than once, as at Brill and Leyden, proved the salvation of the patriot cause. Holland and Zealand, the storm-centers of rebellion, were not again so devastated, though the war dragged on for many years, maintained by the indomitable spirit of William of Orange until his assassination in 1584, and afterward by the military skill of Maurice of Nassau and the aid of foreign powers. The seven provinces north of the Scheldt, separating from the Catholic states of the south, prospered in trade and

industry as they shook themselves free from the stifling rule of Spain. By a twelve-year truce, finally ratified in 1609, they became "free states over which Spain makes no pretensions," though their independence was not fully recognized until the Peace of Westphalia in 1648. The war, while it ruined Antwerp, increased the prosperity of Holland and Zealand, which for at least twenty years before the truce were busily extending their trade to every part of the world.

Growth of Dutch Commerce

The story of this expansion of commerce is a striking record. The grain and timber of the Baltic, the wines of France and Spain, the salt of the Cape Verde Islands, the costly wares of the east, came to the ports of the Meuse and Zuyder Zee. In 1590 the first Dutch traders entered the Mediterranean, securing, eight years later, the permission of the Sultan to engage in Constantinople trade. In 1594 their ships reached the Gold Coast, and a year later four vessels visited Madagascar, Goa, Java, and the Moluccas or Spice Islands. A rich Zealand merchant had a factory at Archangel and a regular trade into the White Sea. Seeking a reward of 25,000 florins offered by the States for the discovery of a northeast passage, Jacob van Heimskirck sailed into the Arctic and wintered in Nova Zembla; Henry Hudson, in quest of a route northwestward, explored the river and the bay that bear his name and died in the Polar Seas.

Statistics, while not very trustworthy and not enlightening unless compared with those for other nations, may give some idea of the preponderance of Dutch shipping. At the time of the truce she is said to

have had 16,300 ships, about 10,000 of which were small vessels in the coasting trade. Of the larger, 3000 were in the Baltic trade, 2000 in the Spanish, 600 sailed to Italy, and the remainder to the Mediterranean, South America, the Far East, and Archangel. The significance of these figures may be made clearer by citing Colbert's estimate that at a later period (1664) there were 20,000 ships in general European carrying trade, 16,000 of which were Dutch. Throughout the 17th century Dutch commerce continued to prosper, and did not reach its zenith until early in the century following.

In the closing years of the 16th century several private companies were founded in Amsterdam, Rotterdam and Zealand to engage in eastern trade. These were combined in 1602 into the United East Indies Company, which sent large fleets to the Orient each year, easily ousted the Portuguese from their bases on the coast and islands, and soon established almost a monopoly, leaving to England only a small share of trade with Persia and northwest India. The relative resources invested by English and Dutch in Eastern ventures is suggested by the fact that the British East Indies Company founded in 1600 had a capital of £80,000, while the Dutch Company had £316,000. By 1620 the shares of the Dutch company had increased to three times their original value, and they paid average dividends of 18 per cent for the next 200 years.

In this Dutch conquest of eastern trade, like that of the Portuguese a century earlier, we have an illustration of what has since been a guiding principle in the history of sea power—a national policy of commercial expansion sturdily backed by foreign policy and whenever necessary by naval

force. The element of national policy is evident in the fact that Holland—and England until the accession of James I in 1603—preferred war rather than acceptance of Spanish pretensions to exclusive rights in the southern seas. The Dutch, like the Portuguese, saw clearly the need of political control. They made strongholds of their trading bases, and gave their companies power to oust competitors by force. As a concession to Spanish pride, the commerce clause in the Truce of 1609 was made intentionally unintelligible—but the Dutch interpreted it to suit themselves. As for the element of force, every squadron that sailed to the east was a semi-military expedition. The Dutch seaman was sailor, fighter, and trader combined. The merchant was truly, in the phrase of the age, a "merchant adventurer," lucky indeed and enriched if, after facing the perils of navigation in strange waters, the possible hostility of native rulers, and the still greater danger from European rivals, half his ships returned. The last statement is no hyperbole; of 9 ships sent to the East from Amsterdam in 1598, four came back, and just half of the 22 sent out from the entire Netherlands.

From time to time, either to maintain the blockade of the Scheldt and assist in operations on the Flanders coast, or to protect their trade and strike a direct blow at Spain, the Dutch fitted out purely naval expeditions. One of the most effective, from the standpoint of actual fighting, was that led by van Heimskirck, already famous for Arctic exploration and exploits in the Far East. In 1607 he took 21 converted merchantmen and 4 transports to the Spanish coast to protect Dutch vessels from the east and the Mediterranean. Encountering off Gibraltar an

enemy force of 11 large galleons and as many galleys under Alvarez d'Avila, a veteran of Lepanto, he destroyed half the Spanish force and drove the rest into port, killing about 2000 Spanish and coming out of the fight with the loss of only 100 men. Heimskirck concentrated upon the galleons and came to close action after the fashion which seems to have been characteristic of the Dutch in naval engagements throughout the war. "Hold your fire till you hear the crash," he cried, as he drove his prow into the enemy flagship; and the battle was won after a struggle yard-arm to yard-arm. Bath admirals were killed.

Portugal, broken by the Spanish yoke, could offer little resistance in the Far East. In 1606 a Dutch fleet of 12 ships under Matelieff de Jonge laid siege to Malacca, and gave up the attempt only after destroying 10 galleons sent to relieve the town. Matelieff then sailed to the neighboring islands, and established the authority of the company at Bantam, Amboyna, Ternate, and other centers of trade.

Other fleets earlier and later promoted the interests of the company by the same means. English traders, with scanty government encouragement from the Stuart kings, were not as yet dangerous rivals. A conflict occurred with them in 1611 off Surat; and at Amboyna in 1623 the Dutch seized the English Company's men, tortured ten of them, and broke up the English base. For more than a century Holland remained supreme in the east; she has retained her colonial empire down to the 20th century; and she did not surrender her commercial primacy until exhausted by the combined attacks of England and France. Less successful than England in the development of colonies, she has stood out as the

greatest of trading nations.

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CHAPTER VIII

ENGLAND AND THE ARMADA

By reason of England's insularity, it is an easy matter to find instances from even her early history of the salutary or fatal influence of sea power. Romans, Saxons, Danes swept down upon England from the sea. By building a fleet, King Alfred, said to have been the true father of the British navy, kept back the Danes. It was the dispersion of the English fleet by reason of the lateness of the season that enabled William the Conqueror, in the small open vessels interestingly pictured in the Bayeux tapestry, to win a footing on the English shore.

But during the next three centuries, with little shipping and little trade save that carried on by the Hansa, with no enemy that dangerously threatened her by sea, England had neither the motives nor the national strength and unity to develop naval power. She claimed, it is true, dominion over the narrow waters between her and her possessions in France, and also over the "four seas" surrounding her; and as early as 1201 an ordinance was passed requiring vessels in these waters to lower sails ("vail the bonnet") and also to "lie by the lee" when so ordered by King's ships. But though these claims were revived in the 17th century against the Dutch, and though the requirement that foreign vessels strike their topsails to the British flag remained in the Admiralty Instructions until after Trafalgar, they were at this time enforced chiefly to rid the seas of pirates—the common enemies of nations. During this period there were a few "king's ships," the sovereign's personal property, forming a nucleus around which a naval force of fishing and merchant vessels could be assembled in time of war. The Cinque Ports, originally Dover, Sandwich, Hastings, Romney and Hythe, long enjoyed certain trading privileges in

return for the agreement that when the king passed overseas they would "rigge up fiftie and seven ships" (according to a charter of Edward I) with 20 armed soldiers each, and maintain them for 15 days.

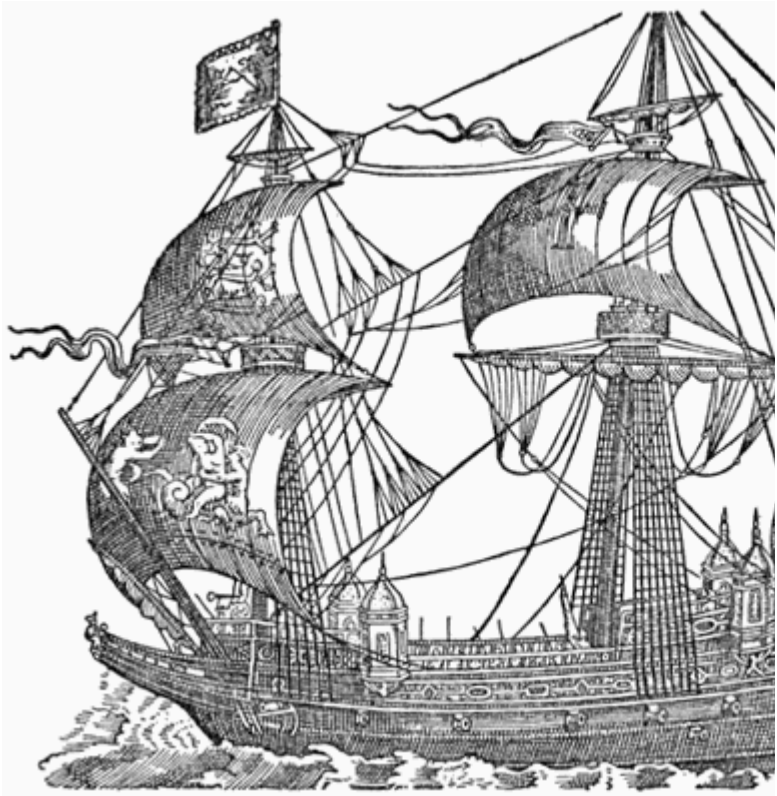
An attack in 1217 by such a fleet, under the Governor of Dover Castle, affords perhaps the earliest instance of maneuvering for the weather-gage. The English came down from the windward and, as they scrambled aboard the enemy, threw quicklime into the Frenchmen's eyes. At Sluis, in 1340, to take another instance of early English naval warfare, Edward III defeated a large French fleet and a number of hired Genoese galleys lashed side by side in the little river Eede in Flanders. Edward came in with a fair wind and tide and fell upon the enemy as they lay aground at the stem and unmanageable. This victory gave control of the Channel for the transport of troops in the following campaign. But like most early naval combats, it was practically a land battle over decks, and, although sanguinary enough, it is from a naval stand paint interesting chiefly for such novelties as a scouting force of knights on horseback along the shore.

The beginnings of a permanent and strong naval establishment, as distinct from merchant vessels owned by the king or in his service, must be dated, however, from the Tudors and the period of national rehabilitation following the Hundred Years' War (1337-1453) and the War of the Roses (1455-1485). One reason for this was that the employment of artillery on shipboard and the introduction of port-holes made it increasingly difficult to convert merchant craft into dependable men-of-war. Henry VIII took a keen interest in his navy, devoted the revenues of forfeited church property to its

expansion, established the first Navy Board (1546), and is even credited with the adoption of sailing vessels as the major units of his fleet.

From Oar to Sail

The use of heavy ordnance, already mentioned, as well as the increasing size and efficiency of sail-craft that came with the spread of ocean commerce and navigation, naturally pointed the way to this transition in warfare from oar to sail. The galley was at best a frail affair, cumbered with oars, benches and rowers, unable to carry heavy guns or withstand their fire. Once sailing vessels had attained reasonable maneuvering qualities, their superior strength and size, reduced number of non-combatant personnel, and increased seaworthiness and cruising radius gave them a tremendous superiority. That the change should have begun in the north rather than in the Mediterranean, where naval and military science had reached its highest development, must be attributed not only to the rougher weather conditions of the northern seas, and the difficulty of obtaining slaves as rowers, but also to the fact that the southern nations were more completely shackled by the traditions of galley warfare.



GALLEON

Yet for the new type it was the splendid trading vessels of Venice that supplied the design. For the Antwerp and London trade, and in protection against the increasing danger from pirates, the Venetians had developed a compromise between the war-galley and the round-ship of commerce, a type with three masts and propelled at least primarily by sails, with a length about three times its beam and thus shorter and more seaworthy than the galley, but longer, lower and swifter than the clumsy round-ship. To this new type the names *galleass* and *galleon* were

bath given, but in English and later usage *galleass* came to be applied to war vessels combining oar and sail, and *galleon* to either war or trading vessels of medium size and length and propelled by sail alone.

The Spanish found the galleon useful in the Atlantic carrying trade, but, as shown at Lepanto, they retained the galley in warfare; whereas Henry VIII of England was probably the first definitely to favor sail for his men-of-war. An English navy list of 1545 shows four clumsy old-fashioned "great-ships" of upwards of 1000 tons, but second to these a dozen newer vessels of distinctly galleon lines, lower than the great-ships, flush-decked, and sail-driven. Though in engagements with French galleys during the campaign of 1545 these were handicapped by calm weather, they seem to have held their own both in battle and in naval opinion. Of the royal ships at the opening of Elizabeth's reign (1558), there were 11 large sailing vessels of 200 tans and upwards, and 10 smaller ones, but only two galleys, and these "of no continuance and not worth repair."[1] In comment on these figures, it should be added that there were half a hundred large ships available from the merchant service, and also that pinnaces and other small craft still combined oar and sail.

[Footnote 1: DRAKE AND THE TUDOR NAVY, Corbett, Vol. I, p. 133.]

In England the superiority of sail propulsion was soon definitely recognized, and discussion later centered on the relative merits of the medium-sized galleon and the big "great-ship." The characteristics of each are well set forth in a contemporary naval treatise by Sir William Monson: the former with "flush deck fore and aft, sunk and low in the water;

the other lofty and high-charged, with a half-deck, forecastle, and copperidge-heads [athwortship bulkheads where light guns were mounted to command the space between decks]." The advantages of the first were that she was speedy and "a fast ship by the wind" so as to avoid boarding by the enemy, and could run in close and fire effective broadsides between wind and water without being touched; whereas the big ship was more terrifying, more commodious, stronger, and could carry more and heavier guns. Monson, like many a later expert, suspended judgment regarding the two types; but Sir Walter Raleigh came out strongly for the smaller design. "The greatest ships," he writes, "are the least serviceable...., less nimble, less maniable; 'Grande navi grande fatiga,' saith the Spaniard. A ship of 600 tons will carry as good ordnance as a ship of 1200 tons; and though the greater have double her number, the lesser will turn her broadsides twice before the greater can wind once." And elsewhere: "The high charging of ships makes them extreme leeward, makes them sink deep in the water, makes them labor, and makes them overset. Men may not expect the ease of many cabins and safety at once in sea-service."[1]

[Footnote 1: WORKS, Oxford ed. 1829, Vol. VIII, p. 338.]

These statements were made after the Armada; but the trend of English naval construction away from unwieldy ships such as used by the Spanish in the Armada, is clearly seen in vessels dating from 1570-1580—the *Foresight, Bull,* and *Tiger* (rebuilt from galleasses), the *Swiftsure, Dreadnought, Revenge,* and others of names renowned in naval annals. These were all of about the dimensions of the *Revenge,* which was of 440 tons, 92 feet over all, 32 feet

beam, and 15 feet from deck to keel. That is to say, their length was not more than three times their beam, and their beam was about twice their depth in the hold—the characteristic proportions of the galleon type.

The progressiveness of English ship construction is highly significant, for to it may be attributed in large measure the Armada victory. Spain had made no such advances; in fact, until the decade of the Armada, she hardly had such a thing as a royal navy. The superiority of the English ships was generally recognized. An English naval writer in 1570 declared the ships of his nation so fine "none of any other region may seem comparable to them"; and a Spaniard some years later testified that his people regarded "one English ship worth four of theirs."

Though not larger than frigates of Nelson's time, these ships were crowded with an even heavier armament, comprising guns of all sizes and of picturesque but bewildering nomenclature. According to Corbett,[1] the ordnance may be divided into four main classes based on caliber, the first two of the "long gun" and the other two of the carronade or mortar type.

[Footnote 1: DRAKE AND THE TUDOR NAVY, Vol. I, p. 384.]

I. Cannon proper, from 16 to 28 caliber, of 8.5-inch bore and 12 feet in length, firing 65-pound shot. The demi-cannon, which was the largest gun carried on ships of the time, was 6.5 inches by 9 feet and fired 30-pound shot.

II. Culverins, 28 to 34 caliber long guns, 5 inches by 12 feet, firing 17-pound shot. Demi-culverins

were 9-pounders. Slings, bases, sakers, port-pieces, and fowlers belonged to this class.

III. Perriers, from 6 to 8 caliber, firing stone-balls, shells, fire-balls, etc.

IV. Mortars, of 1.5 caliber, including petards and murderers.

The "great ordnance," or cannon, were muzzle-loading. The secondary armament, mounted in tops, cageworks, bulkheads, etc., were breech-loading; but these smaller pieces fell out of favor as time went on owing to reliance on long-range fire and rareness of boarding actions. Down to the middle of the 19th century there was no great improvement in ordnance, save in the way of better powder and boring. Even in Elizabeth's day the heaviest cannon had a range of three miles.

These advances in ship design and armament were accompanied by some changes in naval administration. In 1546 the Navy Board was created, which continued to handle matters of what may be termed civil administration until its functions were taken over by the Board of Admiralty in the reorganization of 1832. The chief members of the Navy Board, the Treasurer, Comptroller, Surveyor of Ships, Surveyor of Ordnance, and Clerk of Ships, were in Elizabethan times usually experienced in sea affairs. To John Hawkins, Treasurer from 1578 to 1595, belongs chief credit for the excellent condition of ships in his day. The Lord High Admiral, a member of the nobility, exercised at least nominal command of the fleet in peace and war. For vice admiral under him a man of practical experience was ordinarily chosen. On shipboard, the only

"gentleman" officers were the captains; the rest—masters, master's mates, pilots, carpenters, boatswains, coxswains, and gunners—were, to quote a contemporary description, "mechanick men that had been bred up from swabbers." But owing to the small proportion of soldiers on board, the English ships were not like those of Spain, which were organized like a camp, with the soldier element supreme and the sailors "slaves to the rest."

The Political Situation

The steps taken to build up the navy in the decade or more preceding the Armada were well justified by the political and religious strife in western Europe and the dangers which on all sides threatened the English realm. France, the Netherlands, and Scotland were torn by religious warfare. In England the party with open or secret Catholic sympathies was large, amounting to perhaps half the population, the strength of whose loyalty to Elizabeth it was difficult to gage. Since 1568 Elizabeth had held captive Mary Queen of Scots, driven out of her own country by the Presbyterian hierarchy, and a Catholic with hereditary claims to the English throne. Before her death, Philip of Spain had conspired with her to assassinate the heretic Elizabeth; after Mary's execution in 1587 he became heir to her claims and entered the more willingly upon the task of conquering England and restoring it to the faith. For years, in fact, there had been a state of undeclared hostility between England and Spain, and acts which, with sovereigns less cautious and astute than both Elizabeth and Philip, would have meant war. In 1585 Elizabeth formed an alliance with the Netherlands, and sent her favorite, Leicester, there as governor-general, and Sir Philip Sidney as Governor of

Flushing, which with two other "cautionary towns" she took as pledges of Dutch loyalty. The motives for this action are well stated in a paper drawn up by the English Privy Council in 1584, presenting a situation interesting in its analogy to that which faced the United States when it entered the World War:

"The conclusion of the whole was this: Although her Majesty should thereby enter into the war presently, yet were she better to do it now, while she may make the same out of her realm, having the help of the people of Holland, and before the King of Spain shall have consummated his conquest of those countries, whereby he shall be so provoked by pride, solicited by the Pope, and tempted by the Queen's own subjects, and shall be so strong by sea; and so free from all other actions and quarrels—yea, shall be so formidable to all the rest of Christendom, as that her Majesty shall no wise be able, with her own power, nor with the aid of any other, neither by land nor sea, to withstand his attempts, but shall be forced to give place to his insatiable malice, which is most terrible to be thought of, but miserable to suffer."

These were the compelling reasons for England's entry into the war. The aid to Holland and the execution of Mary, on the other hand, were sufficient to explain Philip's attempted invasion. The grievance of Spain owing to the incursions of Hawkins and Drake into her American possessions, and England's desire to break Spain's commercial monopoly, were at the time relatively subordinate, though from a naval standpoint the voyages are interesting in themselves and important in the history of sea control and sea trade.

Hawkins and Drake

John Hawkins was a well-to-do ship-owner of Plymouth, and as already stated, Treasurer of the Royal Navy, with a contract for the upkeep of ships. His first venture to the Spanish Main was in 1562, when he kidnapped 300 negroes on the Portuguese coast of Africa and exchanged them at Hispanola (Haiti), for West Indian products, chartering two additional vessels to take his cargo home. Though he might have been put to death if caught by either Portugal or Spain, his profits were so handsome by the double exchange that he tried it again in 1565, this time taking his "choice negroes at £160 each" to Terra Firme, or the Spanish Main, including the coasts of Venezuela, Colombia, and the Isthmus. When the Spanish authorities, warned by their home government, made some show of resistance, Hawkins threatened bombardment, landed his men, and did business by force, the inhabitants conniving in a contraband trade very profitable to them.

On his third voyage he had six vessels, two of which, the *Jesus of Lubeck* and the *Minion*, were Queen's ships hired out for the voyage. The skipper of one of the smaller vessels, the *Judith*, was Francis Drake, a relative and protégé of the Hawkins family, and then a youth of twenty-two. On September 16, 1567, after a series of encounters stormier than ever in the Spanish settlements, the squadron homeward bound was driven by bad weather into the port of Mexico City in San Juan de Ulua Bay. Here, having a decided superiority over the vessels in the harbor, Hawkins secured the privilege of mooring and refitting his ships inside the island that formed a natural breakwater, and mounted guns on the island itself. To his surprise next morning, he beheld in the

offing 13 ships of Spain led by an armed galleon and having on board the newly appointed Mexican viceroy. Hawkins, though his guns commanded the entrance, took hostages and made some sort of agreement by which the Spanish ships were allowed to come in and moor alongside. But the situation was too tense to carry off without an explosion. Three days later the English were suddenly attacked on sea and shore. They at once leaped into their ships and cut their cables, but though they hammered the Spanish severely in the fight that followed, only two English vessels, the *Minion* and the *Judith*, escaped, the *Minion* so overcrowded that Hawkins had to drop 100 of his crew on the Mexican coast. Drake made straight for Plymouth, nursing a bitter grievance at the alleged breach of faith, and vowing vengeance on the whole Spanish race. "The case," as Drake's biographer, Thomas Fuller, says, "was clear in sea-divinity, and few are such infidels as not to believe doctrines which make for their own profit."[1]

[Footnote 1: THE HOLY STATE, Bk. II, Ch. XXII.]

In the next three years, following the example of many a French Huguenot privateersman before him, and forsaking trade for semi-private reprisal (in that epoch a few degrees short of piracy), he made three voyages to the Spanish Indies. On the third, in 1572, he raided Nombre de Dios with fire and sword. Then, leaguing himself with the mixed-breed natives or cameroons, he waylaid a guarded mule-train bearing treasure across the Isthmus, securing 15 tons of silver which he buried, and as much gold as his men could stagger away under. It was on this foray that he first saw the Pacific from a height of the Cordilleras, and resolved to steer an English squadron into this hitherto unmolested Spanish sea.

The tale of Drake's voyage into the Pacific and circumnavigation of the globe is a piratical epic, the episodes of which, however, find some justification in the state of virtual though undeclared hostilities between England and Spain, in the Queen's secret sanction, and in Spain's own policy of ruthless spoliation in America. Starting at the close of 1577 with five small vessels, the squadron was reduced by shipwreck and desertion until only the flagship remained when Drake at last, on September 6 of the next year, achieved his midwinter passage of the Straits of Magellan and bore down, "like a visitation of God" as a Spaniard said, upon the weakly defended ports of the west coast. After ballasting his ship with silver from the rich Potosi mines, and rifling even the churches, he hastened onward in pursuit of a richly laden galleon nicknamed *Cacafuego*—a name discreetly translated *Spitfire*, but which, to repeat a joke that greatly amused Drake's men at the time, it was proposed to change to *Spitsilver*, for when overtaken and captured the vessel yielded 26 tons of silver, 13 chests of pieces of eight, and gold and jewels sufficient to swell the booty to half a million pounds sterling.

For 20 years the voyage across the northern Pacific had been familiar to the Spanish, who had studied winds and currents, laid down routes, and made regular crossings. Having picked up charts and China pilots, and left the whole coast in panic fear, Drake sailed far to the northward, overhauled his ship in a bay above San Francisco, then struck across the Pacific, and at last rounded Good Hope and put into Plymouth in September of the third year. It suited Elizabeth's policy to countenance the voyage. She put the major part of the treasure into the Tower, took

some trinkets herself, knighted Drake aboard the *Golden Hind*, and when the Spanish ambassador talked war she told him, in a quiet tone of voice, that she would throw him into a dungeon.

This red-bearded, short and thickset Devon skipper, bold of speech as of action, was now the most renowned sailor of England, with a name that inspired terror on every coast of Spain. It was inevitable, therefore, that when Elizabeth resolved upon open reprisals in 1585, Drake should be chosen to lead another, and this time fully authorized, raid on the Spanish Indies. Here he sacked the cities of San Domingo and Carthagena, and, though he narrowly missed the plate fleet, brought home sufficient spoils for the individuals who backed the venture. In the year 1587 with 23 ships and orders permitting him to operate freely on Spain's home coasts, he first boldly entered Cadiz, in almost complete disregard of the puny galleys guarding the harbor, and destroyed some 37 vessels and their cargoes. Despite the horrified protests of his Vice Admiral Borough (an officer "of the old school" to be found in every epoch) at these violations of traditional methods, he then took up a position off Saigres where he could harry coastwise commerce, picked up the East Indiaman *San Felipe* with a cargo worth a million pounds in modern money, and even appeared off Lisbon to defy the Spanish Admiral Santa Cruz. Thus he "singed the King of Spain's beard," and set, in the words of a recent biographer, "what to this day may serve as the finest example of how a small, well-handled fleet, acting on a nicely timed offensive, may paralyze the mobilization of an overwhelming force."[1]

[Footnote 1: DRAKE AND THE TUDOR NAVY, Corbett, Vol. II, p.

108.]

The Grand Armada

At the time of this Cadiz expedition Spanish preparations for the invasion of England were already well under way, Philip being now convinced that by a blow at England all his aims might be secured—the subjugation of the Netherlands, the safety of Spanish America, the overthrow of Protestantism, possibly even his accession to the English throne. As the secret instructions to Medina Sidonia more modestly stated, it was at least believed that by a vigorous offensive and occupation of English territory England could be forced to cease her opposition to Spain. For this purpose every province of the empire was pressed for funds. Pope Sixtus VI contributed a million gold crowns, which he shrewdly made payable only when troops actually landed on English soil. Church and nobility were squeezed as never before. The Cortes on the eve of the voyage voted 8,000,000 ducats, secured by a tax on wine, meat, and oil, the common necessities of life, which was not lifted for more than two hundred years.

To gain control of the Channel long enough to throw 40,000 troops ashore at Margate, and thereafter to meet and conquer the army of defense —such was the highly difficult objective, to assure the success of which Philip had been led to hope for a wholesale defection of English Catholics to the Spanish cause. Twenty thousand troops were to sail with the Armada; Alexander Farnese, Duke of Parma, was to add 17,000 veterans from Flanders and assume supreme command. With the Spanish infantry once landed, under the best general in

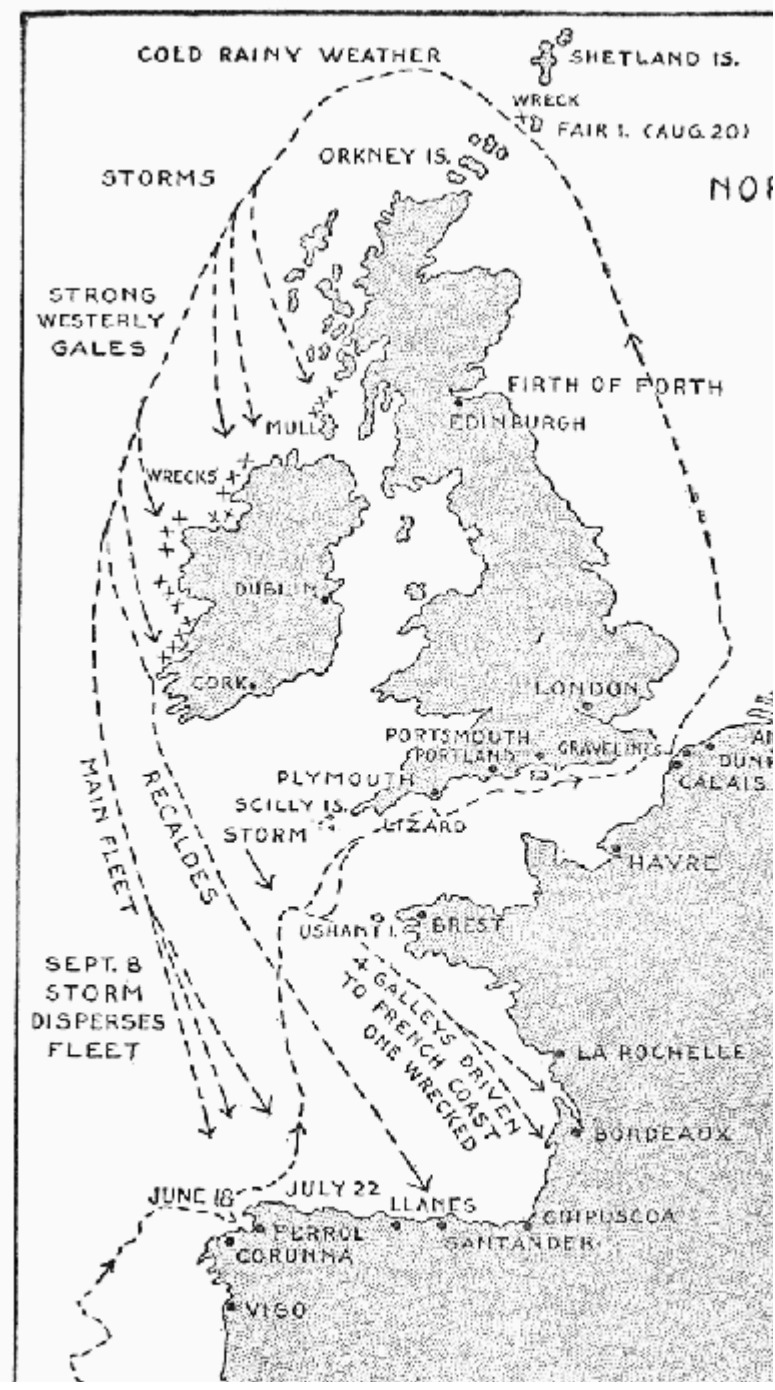
Europe, it was not beyond reason that England might become a province of Spain.

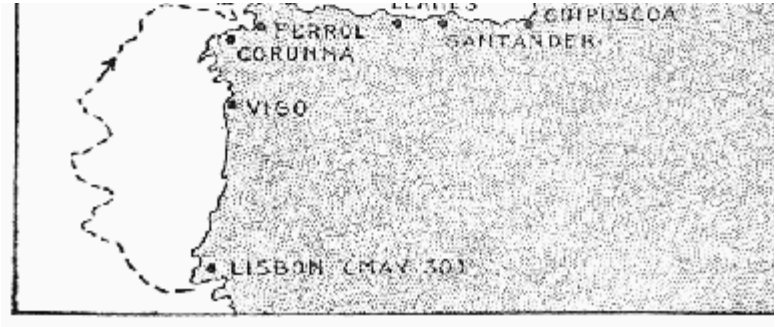
What Philip did not see clearly, what indeed could scarcely be foreseen from past experience, was that no movement of troops should be undertaken without first definitely accounting for the enemy fleet. The Spanish had not even an open base to sail to. With English vessels thronging the northern ports of the Channel, with 90 Dutch ships blockading the Scheldt and the shallows of the Flanders coast, it would be necessary to clear the Channel by a naval victory, and maintain control until it was assured by victory on land. The leader first selected, Santa Cruz —a veteran of Lepanto—at least put naval considerations uppermost and laid plans on a grand scale, calling for 150 major ships and 100,000 men, 30,000 of them sailors. But with his death in 1587 the campaign was again thought of primarily from the army standpoint. The ships were conceived as so many transports, whose duty at most was to hold the English fleet at bay. Parma was to be supreme. To succeed Santa Cruz as naval leader, and in order, it is said, that the gray-haired autocrat Philip might still control from his cell in the Escorial, the Duke of Medina Sidonia was chosen—an amiable gentleman of high rank, but consciously ignorant of naval warfare, uncertain of purpose, and despondent almost from the start. Medina had an experienced Vice Admiral in Diego Flores de Valdes, whose professional advice he usually followed, and he had able squadron commanders in Recalde, Pedro de Valdes, Oquendo, and others; but such a commander-in-chief, unless a very genius in self-effacement, was enough to ruin a far more auspicious campaign.

Delayed by the uncertain political situation in

France, even more than by Drake's exploits off Cadiz, the Armada was at last, in May of 1588, ready to depart. The success of the Catholic party under the leadership of the Duke of Guise gave assurance of support rather than hostility on the French flank. There were altogether some 130 ships, the best of which were 10 war galleons of Portugal and 10 of the "Indian Guard" of Spain. These were supported by the Biscayan, Andalusian, Guipuscoan, and Levantine squadrons of about 10 armed merchantmen each, four splendid Neapolitan galleasses that gave a good account of themselves in action, and four galleys that were driven upon the French coast by storms and took no part in the battle —making a total (without the galleys) of about 64 fighting ships. Then there were 35 or more pinnaces and small craft, and 23 *urcas* or storeships of little or no fighting value. The backbone of the force was the 60 galleons, large, top-lofty vessels, all but 20 of them from the merchant service, with towering poops and forecastles that made them terrible to look upon but hard to handle. On board were 8,000 sailors and 19,000 troops.

Dispersed by a storm on their departure from Lisbon, the fleet again assembled at Corunna, their victuals already rotten, and their water foul and short. Medina Sidonia even now counseled abandonment; but religious faith, the fatalistic pride of Spain, and Philip's dogged fixity of purpose drove them on. Putting out of Corunna on July 22, and again buffeted by Biscay gales, they were sighted off the Lizard at daybreak of July 30, and a pinnace scudded into Plymouth with the alarm.

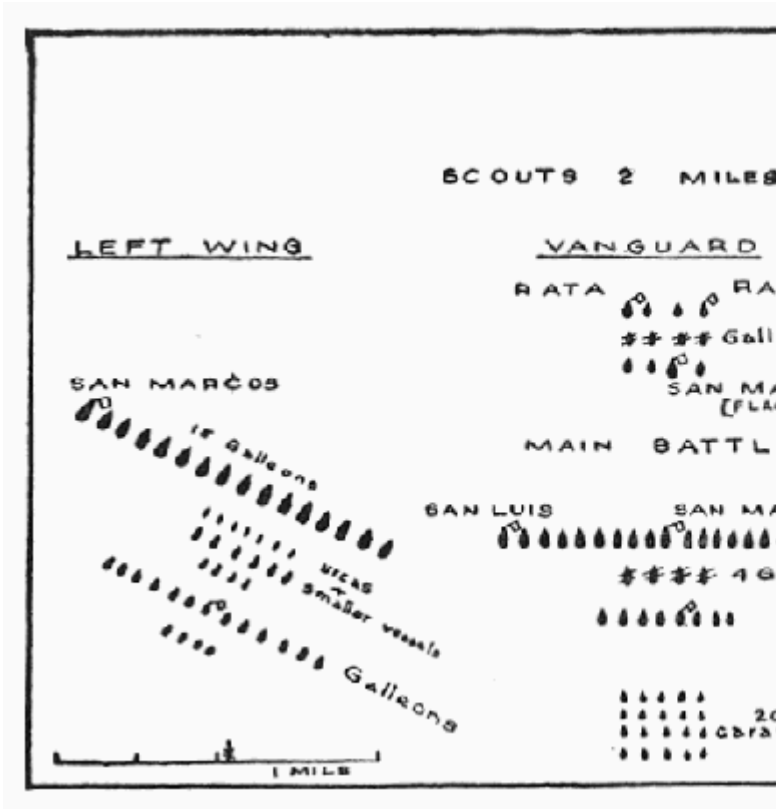

COLD RAINY WEATHER
SHETLAND IS.
WRECK
FAIR I. (AUG. 20)
STORMS
ORKNEY IS.
NOR
STRONG WESTERLY GALES
FIRTH OF FORTH
MULL
EDINBURGH
WRECKS
DUBLIN
CORK
LONDON
PORTSMOUTH
PORTLAND
GRAVELINES
CALAIS
PLYMOUTH
SCILLY IS.
LIZARD
STORM
HAVRE
MAIN FLEET
RECALLED
USHANT I.
BREST
SEPT. 8 STORM DISPERSES FLEET
GALLEYS DRIVEN TO FRENCH COAST ONE WRECKED
LA ROCHELLE
BORDEAUX
JUNE 18
JULY 22
LLANES
GUIPUSCOA
FERROL
CORUNNA
SANTANDER
VIGO



CRUISE OF THE SPANISH ARMADA

For England the moment of supreme crisis had come, Elizabeth's policy of paying for nothing that she might expect her subjects to contribute had left the royal navy short of what the situation called for, and the government seems also, even throughout the campaign, to have tied the admirals to the coast and kept them from distant adventures by limited supplies of munitions and food. But in the imminent danger, the nobility, both Catholic and Protestant, and every coastwise city, responded to the call for ships and men. Their loyalty was fatal to Philip's plan. The royal fleet of 25 ships and a dozen pinnaces was reënforced until the total craft of all descriptions numbered 197, not more than 140 of which, however, may be said to have had a real share in the campaign. For a month or more a hundred sail had been mobilized at Plymouth, of which 69 were greatships and galleons. These were smaller in average tonnage than the Spanish ships, but more heavily armed, and manned by 10,000 capable seamen. Lord Henry Seymour, with Palmer and Sir William Winter under him, watched Parma at the Strait of Dover, with 20 ships and an equal number of galleys, barks and pinnaces. The Lord High Admiral, Thomas Howard of Effingham, a nobleman of 50 with some naval experience and of a family that had long held the office, commanded the

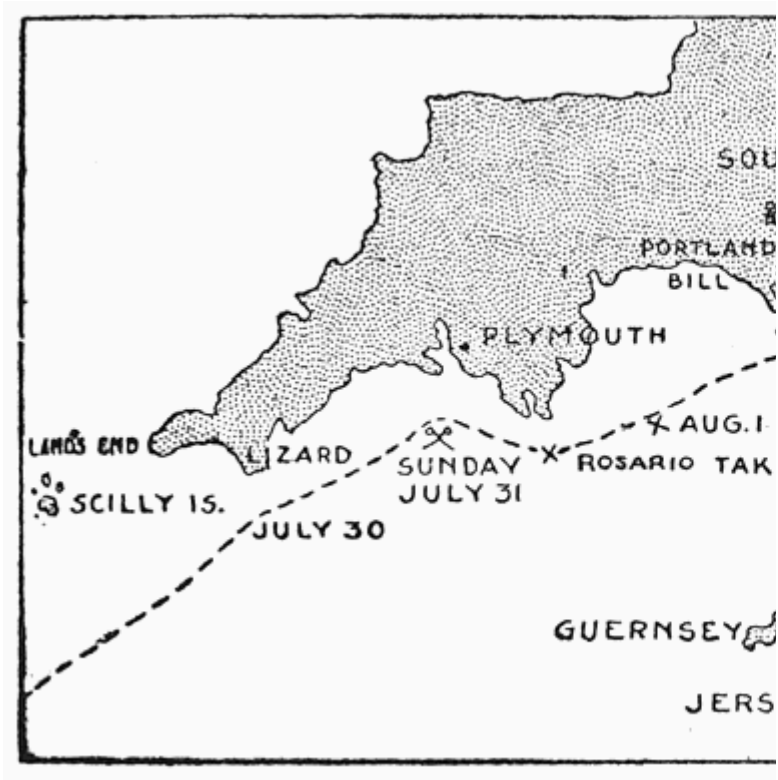
western squadron, with Drake as Vice Admiral and John Hawkins as Rear Admiral. The *Ark* (800 tons), *Revenge* (500), and *Victory* (800) were their respective flagships. Martin Frobisher in the big 1100-ton *Triumph*, Lord Sheffield in the *White Bear* (1000), and Thomas Fenner in the *Nonpareil* (500) were included with the Admirals in Howard's inner council of war. "Howard," says Thomas Fuller, "was no deep-seaman, but he had skill enough to know those who had more skill than himself and to follow their instructions." As far as as possible for a commoner, Drake exercised command.



From Pigafetta's *Discorso sopra l'Ordinan*

ORIGINAL "EAGLE" FORMATION OF THE ARMADA, PROBABLY AD

On the morning of the 31st the Armada swept slowly past Plymouth in what has been described as a broad crescent, but which, from a contemporary Italian description, seems to have been the "eagle" formation familiar to galley warfare, in line abreast with wide extended wings bent slightly forward, the main strength in center and guards in van and rear. Howard was just completing the arduous task of warping his ships out of the harbor. Had Medina attacked at once, as some of his subordinates advised, he might have compelled Howard to close action and won by superior numbers. But his orders suggested the advisability of avoiding battle till he had joined with Parma; and for the Duke this was enough. As the Armada continued its course, Howard fell in astern and to windward, inflicting serious injuries to two ships of the enemy rear.



A week of desultory running battle ensued as the fleets moved slowly through the Channel; the English fighting "loose and large," and seeking to pick off stragglers, still fearful of a general action, but taking advantage of Channel flaws to close with the enemy and sheer as swiftly away; the Spanish on the defensive but able to avoid disaster by better concerted action and fleet control. Only two Spanish ships were actually lost, one of them Pedro de Valdes' flagship *Neustra Señora del Rosario*, which had been injured in collision and surrendered to

Drake without a struggle on the night of August 1, the other the big *San Salvador* of the Guipuscoan squadron, the whole after part of which had been torn up by an explosion after the fighting on the first day. But the Spanish inferiority had been clearly demonstrated and they had suffered far more in morale than in material injuries when on Sunday, August 7, they dropped anchor in Calais roads. The English, on their part, though flushed with confidence, had seen their weakness in organized tactics, and now divided their fleet into four squadrons, with the flag officers and Frobisher in command.

It betrays the fatuity of the Spanish leader, if not of the whole plan of campaign, that when thus practically driven to refuge in a neutral port, Medina Sidonia thought his share of the task accomplished, and wrote urgent appeals to Parma to join or send aid, though the great general had not enough flat-boats and barges to float his army had he been so foolhardy as to embark, or the Dutch so benevolent as to let him go. But the English, now reënforced by Seymour's squadron, gave the Duke little time to ponder his next move. At midnight eight fire hulks, "spurting flames and their ordnance exploding," were borne by wind and tide full upon the crowded Spanish fleet. Fearful of *maquinas de minas* such as had wrought destruction a year before at the siege of Antwerp, the Spanish made no effort to grapple the peril but slipped or cut cables and in complete confusion beat off shore.

At dawn the Spanish galleons, attempting with a veering wind from the southward and westward to form in order off Gravelines, were set upon in the closest approach to a general engagement that

occurred in the campaign. While Howard and several of his ships were busy effecting the capture of a beached galleass, Drake led the attack in the *Revenge*, seeking to force the enemy to leeward and throw the whole body upon the shallows of the Flanders coast. With splendid discipline, the Spanish weather ships, the flagship *San Martin* among them, fought valiantly to cover the retreat. But it was an unequal struggle, the heavier and more rapid fire of the English doing fearful execution on decks crowded with men-at-arms. Such artillery combat was hitherto unheard of. Though warned of the new northern methods, the Spanish were obsessed by tradition; they were prepared for grappling and boarding, and could they have closed, their numbers and discipline would have told. Both sides suffered from short ammunition; but the Armada, with no fresh supplies, was undoubtedly in the worse case. "They fighting with their great ordnance," writes Medina Sidonia, "and we with harquebus fire and musketry, the distance being very small." Six-inch guns against bows and muskets tells the tale.

A slackening of the English pursuit at nightfall after eight hours' fighting, and an off-shore slant of wind at daybreak, prevented complete disaster. One large galleon sank and two more stranded and were captured by the Dutch. These losses were not indeed fatal, but the remaining ships staggering away to leeward were little more than blood-drenched wrecks. Fifteen hundred had been killed and wounded in the day's action, and eleven ships and some eight thousand men sacrificed thus far in the campaign. The English, on the other hand, had suffered no serious ship injuries and the loss of not above 100 men. In the council held next day beyond

the Straits of Dover, only a few of the Spanish leaders had stomach for further fighting; the rest preferred to brave the perils of a return around the Orkneys rather than face again these defenders of the narrow seas. Before a fair wind they stood northward, Drake still at their heels, though by reason of short supplies he left them at the Firth of Forth.

In October, fifty ships, with 10,000 starved and fever-stricken men, trailed into the Biscay ports of Spain. Torn by September gales, the rest of the Armada had been sunk or stranded on the rough coasts of Scotland and Ireland. "The wreckers of the Orkneys and the Faroes, the clansmen of the Scottish isles, the kernes of Donegal and Galway, all had their part in the work of murder and robbery. Eight thousand Spaniards perished between the Giant's Causeway and the Blaskets. On a strand near Sligo an English captain numbered eleven hundred corpses which had been cast up by the sea."[1]

[Footnote 1: HISTORY OF THE ENGLISH PEOPLE, Green, Vol. II, p. 448.]

"Flavit Deus, et dissipati sunt"—"The Lord sent His wind, and scattered them." So ran the motto on the English medal of victory. But storms completed the destruction of a fleet already thoroughly defeated. Religious faith, courage, and discipline had availed little against superior ships, weapons, leadership, and nautical skill. "Till the King of Spain had war with us," an Englishman remarked, "he never knew what war by sea meant."[2] It might be said more accurately that the battle gave a new meaning to war by sea.

[Footnote 2: Sir Wm. Monson, NAVAL TRACTS, Purchas, Vol. III, p. 121.]

From the standpoint of naval progress, the campaign demonstrated definitely the ascendancy of sail and artillery. For the old galley tactics a new system now had to be developed. Since between sailing vessels head-on conflict was practically eliminated, and since guns mounted to fire ahead and astern were of little value save in flight or pursuit, the arrangement of guns in broadside soon became universal, and fleets fought in column, or "line ahead," usually close-hauled on the same or opposite tacks. While these were lessons for the next generation, there is more permanent value in the truth, again illustrated, that fortune favors the belligerent quicker to forsake outworn methods and to develop skill in the use of new weapons. The Spanish defeat illustrates also the necessity of expert planning and guidance of a naval campaign, with naval counsels and requirements duly regarded; and the fatal effect of failure to concentrate attention on the enemy fleet. It is doubtful, however, whether it would have been better, as Drake urged, and as was actually attempted in the month before the Armada's arrival, if the English had shifted the war to the coast of Spain. The objections arise chiefly from the difficulties, in that age, of maintaining a large naval force far from its base, all of which the Spanish encountered in their northward cruise. It is noteworthy that, even after the brief Channel operations, an epidemic caused heavy mortality in the English fleet. Finally, the Armada is a classic example of the value of naval defense to an insular nation. In the often quoted words of Raleigh, "To entertain the enemy with their own beef in their bellies, before they eat of our Kentish capons, I take

it to be the wisest way, to do which his Majesty after God will employ his good ships at sea."

Upon Spain, already tottering from inherent weakness, the Armada defeat had the effect of casting down her pride and confidence as leader of the Catholic world. Though it was not until three centuries later that she lost her last colonies, her hold on her vast empire was at once shaken by this blow at her sea control. While she maintained large fleets until after the Napoleonic Wars, she was never again truly formidable as a naval power. But the victory lifted England more than it crushed Spain, inspiring an intenser patriotism, an eagerness for colonial and commercial adventure, an exaltation of spirit manifested in the men of genius who crowned the Elizabethan age.

The Last Years of the War

The war was not ended; and though Philip was restrained by the rise of Protestant power in France under Henry of Navarre, he was still able to gather his sea forces on almost as grand a scale. In the latter stages of the war the naval expeditions on both sides were either, like the Armada, for the purpose of landing armies on foreign soil, or raids on enemy ports, colonies and commerce. Thus Drake in 1589 set out with a force of 18,000 men, which attacked Corunna, moved thence upon Lisbon, and lost a third or more of its number in a fruitless campaign on land. Both Drake and the aged Hawkins, now his vice admiral, died in the winter of 1595-96 during a last and this time ineffective foray upon the Spanish Main. Drake was buried off Puerto Bello, where legend has it his spirit still awaits England's call—

"Take my drum to England, hang et by the shore,
Strike et when your powder's running low.
If the Dons sight Devon, I'll leave the port of Heaven,
An' drum them up the Channel as we drummed them long ago."[1]

[Footnote 1: DRAKE'S DRUM, Sir Henry Newbolt.]

We are still far from the period when sea control was thought of as important in itself, apart from land operations, or when fleets were kept in permanent readiness to take the sea. It is owing to this latter fact that we hear of large flotillas dispatched by each side even in the same year, yet not meeting in naval action. Thus in June of 1596 the Essex expedition, with 17 English and 18 Dutch men-of-war and numerous auxiliaries, seized Cadiz and burned shipping to the value of 11,000,000 ducats. There was no naval opposition, though Philip in October of the same year had ready a hundred ships and 16,000 men, which were dispersed with the loss of a quarter of their strength in a gale off Finisterre. Storms also scattered Philip's fleet in the next year; in 1598, Spanish transports landed 5,000 men at Calais; and England's fears were renewed in the year after that by news of over 100 vessels fitting out for the Channel, which, however, merely protected the plate fleet by a cruise to the Azores. As late as 1601, Spain landed 3500 troops in Ireland.

But if these major operations seem to have missed contact, there were many lively actions on a minor scale, the well-armed trading vessels of the north easily beating off the galley squadrons guarding Gibraltar and the routes past Spain. Among these

lesser encounters, the famous "Last Fight of the Revenge," which occurred during operations of a small English squadron off the Azores in 1591, well illustrates the fighting spirit of the Elizabethan Englishman and the ineptitude which since the Armada seems to have marked the Spaniard at sea. In Drake's old flagship, attacked by 15 ships and surrounded by a Spanish fleet of 50 sail, a bellicose old sea-warrior named Sir Richard Grenville held out from nightfall until eleven the next day, and surrendered only after he had sunk three of the enemy, when his powder was gone, half his crew dead, the rest disabled, and his ship a sinking wreck. "Here die I, Richard Grenville," so we are given his last words, "with a joyful and a quiet mind, for that I have ended my life as a good soldier ought to do, who has fought for his country and his queen, his honor and his religion."

The naval activities mentioned in the immediately preceding paragraphs had no decisive effect upon the war, which ended, for England at least, with the death of Elizabeth in 1603 and the accession of James Stuart of Scotland to the English throne. James at once adopted a policy of *rapprochement* with Spain, which while it guaranteed peace during the 22 years of his reign, was by its renunciation of trade with the Indies, aid to the Dutch, and leadership of Protestant Europe, a sorry sequel to the victory of fifteen years before.

The Armada nevertheless marks the decadence of Spanish sea power. With the next century begins a new epoch in naval warfare, an age of sail and artillery, in which Dutch, English, and later French fleets contested for the sea mastery deemed essential to colonial empire and commercial prosperity.

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CHAPTER IX

RISE OF ENGLISH SEA POWER: WARS WITH THE DUTCH.

In the Dutch Wars of the 17th century the British navy may be said to have caught its stride in the march that made Britannia the unrivaled mistress of the seas. The defeat of the Armada was caused by other things besides the skill of the English, and the steady decline of Spain from that point was not due

to that battle or to any energetic naval campaign undertaken by the English thereafter. In fact, save for the Cadiz expedition of 1596, in which the Dutch coöperated, England had a rather barren record after the Armada campaign down to the middle of the 17th century. During that period the Dutch seized the control of the seas for trade and war. They appropriated what was left of the Levantine trade in the Mediterranean, and contested the Portuguese monopoly in the East Indies and the Spanish in the West. Indeed the Dutch were at this time freely acknowledged to be the greatest sea-faring people of Europe.[1]

[Footnote 1: "Dutch exports reached a figure in the 17th century, which was not attained by the English until 1740. Even the Dutch fisheries, which employed over 2000 boats, were said to be more valuable than the manufactures of France and England combined." A HISTORY OF COMMERCE, Clive Day, p. 194.]

When the Commonwealth came into power in England the new government turned its attention to the navy, which had languished under the Stuarts. A great reform was accomplished in the bettering of the living conditions for the seamen. Their pay was increased, their share of prize money enlarged, and their food improved. At the same time, during the years 1648-51, the number of ships of the fleet was practically doubled, and the new vessels were the product of the highest skill in design and honest work in construction. The turmoil between Roundhead and Royalist had naturally disorganized the officer personnel of the fleet. Prince Rupert, nephew of Charles I, had taken a squadron of seven Royalist ships to sea, hoping to organize, at the Scilly Islands or at Kinsdale in Ireland, bases for piratical raids on the commerce of England, and it was

necessary to bring him up short. Moreover, Ireland was still rebellious, Barbados, the only British possession in the West Indies, was held for the King, and Virginia also was Royalist. To establish the rule of the Commonwealth Cromwell needed an efficient fleet and an energetic admiral.

For the latter he turned to a man who had won a military reputation in the Civil War second only to that of the great Oliver himself, Robert Blake, colonel of militia. Blake was chosen as one of three "generals at sea" in 1649. As far as is known he had never before set foot on a man of war; he was a scholarly man, who had spent ten years at Oxford, where he had cherished the ambition of becoming a professor of Greek. At the time of his appointment he was fifty years old, and his entire naval career was comprised in the seven or eight remaining years of his life, and yet he so bore himself in those years as to win a reputation that stands second only to that of Nelson among the sea-fighters of the English race.

Blake made short work of Rupert's cruising and destroyed the Royalist pretensions to Jersey and the Scillies. One of his rewards for the excellent service rendered was a position in the Council of State, in which capacity he did much toward the bettering of the condition of the sailors, which was one of the striking reforms of the Commonwealth. His test, however, came in the first Dutch War, in which he was pitted against Martin Tromp, then the leading naval figure of Europe.

In the wars with Spain, English and Dutch had been allies, but the shift of circumstances brought the two Protestant nations into a series of fierce conflicts lasting throughout the latter half of the 17th

century. The outcome of these was that England won the scepter of the sea which she has ever since held. The main cause of the war was the rivalry of the two nations on the sea. There were various other specific reasons for bad feeling on both sides, as for instance a massacre by the Dutch of English traders at Amboyna in the East Indies, during the reign of James I, which still rankled because it had never been avenged. The English on their side insisted on a salute to their men of war from every ship that passed through the Channel, and claimed the rights to a tribute, of all herrings taken within 30 miles off the English coast.

Cromwell formulated the English demands in the Navigation Act of 1651. The chief of these required that none but English ships should bring cargoes to England, save vessels of the country whence the cargoes came. This was frankly a direct blow at the Dutch carrying trade, one to which the Dutch could not yield without a struggle.

For this struggle the Netherlanders were ill prepared. The Dutch Republic was a federation of seven sovereign states, lacking a strong executive and torn by rival factions. Moreover, her geographical position was most vulnerable. Pressed by enemies on her land frontiers, she was compelled to maintain an army of 57,000 men in addition to her navy. As the resources of the country were wholly inadequate to support the population, her very life depended on the sea. For the Holland of the 17th century, as for the England of the 20th, the fleets of merchantmen were the life blood of the nation. Unfortunately for the Dutch, this life blood had to course either through the Channel or else round the north of Scotland. Either way was open to

attacks by the British, who held the interior position. Further, the shallows of the coasts and bays made necessary a flat bottomed ship of war, lighter built than the English and less weatherly in deep water.

In contrast the British had a unity of government under the iron hand of Cromwell, they had the enormous advantage of position, they were self-sustaining, and their ships were larger, stouter and better in every respect than those of their enemies. Hence, although the Dutch entered the conflict with the naval prestige on their side, it is clear that the odds were decidedly against them.

The First Dutch War



SCENE OF THE PRINCIPAL NAVAL ACTIONS OF THE 17TH CENT
ENGLAND AND FRAN

The fighting did not wait for a declaration of war. Blake met Tromp, who was convoying a fleet of merchantmen, off Dover on May 19, 1652. On coming up with him Blake fired guns demanding the required salute. Tromp replied with a broadside. Blake attacked with his flagship, well ahead of his own line, and fought for five hours with Tromp's flagship and several others. The English were outnumbered about three to one, and Blake might

have been annihilated had not the English admiral, Bourne, brought his squadron out from Dover at the sound of the firing and fallen upon Tromp's flank. As the Dutch Admiral's main business was to get his convoy home, he fell back slowly toward the coast of France, both sides maintaining a cannonade until they lost each other in the darkness. Apparently there was little attempt at formation after the first onset; it was close quarters fighting, and only the wild gunnery of the day saved both fleets from enormous losses. As it was, Blake's flagship was very severely hammered.

Following this action, Tromp reappeared with 100 ships, but failed to keep Blake from attacking and ruining the Dutch herring fisheries for that year. This mistake temporarily cost Tromp his command. He was superseded by DeWith, an able man and brave, but no match for Blake. On September 28, 1652, Blake met him off the "Kentish Knock" shoal at the mouth of the Thames. In order to keep the weather gage, which would enable him to attack at close quarters, Blake took the risk of grounding on the shoal. His own ship and a few others did ground for a time, but they served as a guide to the rest. In the ensuing action Blake succeeded in putting the Dutch between two fires and inflicting a severe defeat. Only darkness saved the Dutch from utter destruction.

The effect of this victory was to give the English Council of State a false impression of security. In vain Blake urged the upkeep of the fleet. Two months later, November 30, 1652, Tromp, now restored to command, suddenly appeared in the Channel with 80 ships and a convoy behind him. Blake had only 45 and these only partly manned, but he was no man to refuse a challenge and boldly

sailed out to meet him. It is said that during the desperate struggle—the "battle of Dungeness"—Blake's flagship, supported by two others, fought for some time with twenty of the Dutch. As Blake had the weather gage and retained it, he was able to draw off finally and save his fleet from destruction. All the ships were badly knocked about and two fell into the hands of the enemy. Blake came back so depressed by his defeat that he offered to resign his command, but the Council of State would not hear of such a thing, handsomely admitted their responsibility for the weakness of the fleet, and set at work to refit. Meanwhile for the next three months the Channel was in Tromp's hands. This is the period when the legend describes him as hoisting a broom to his masthead.

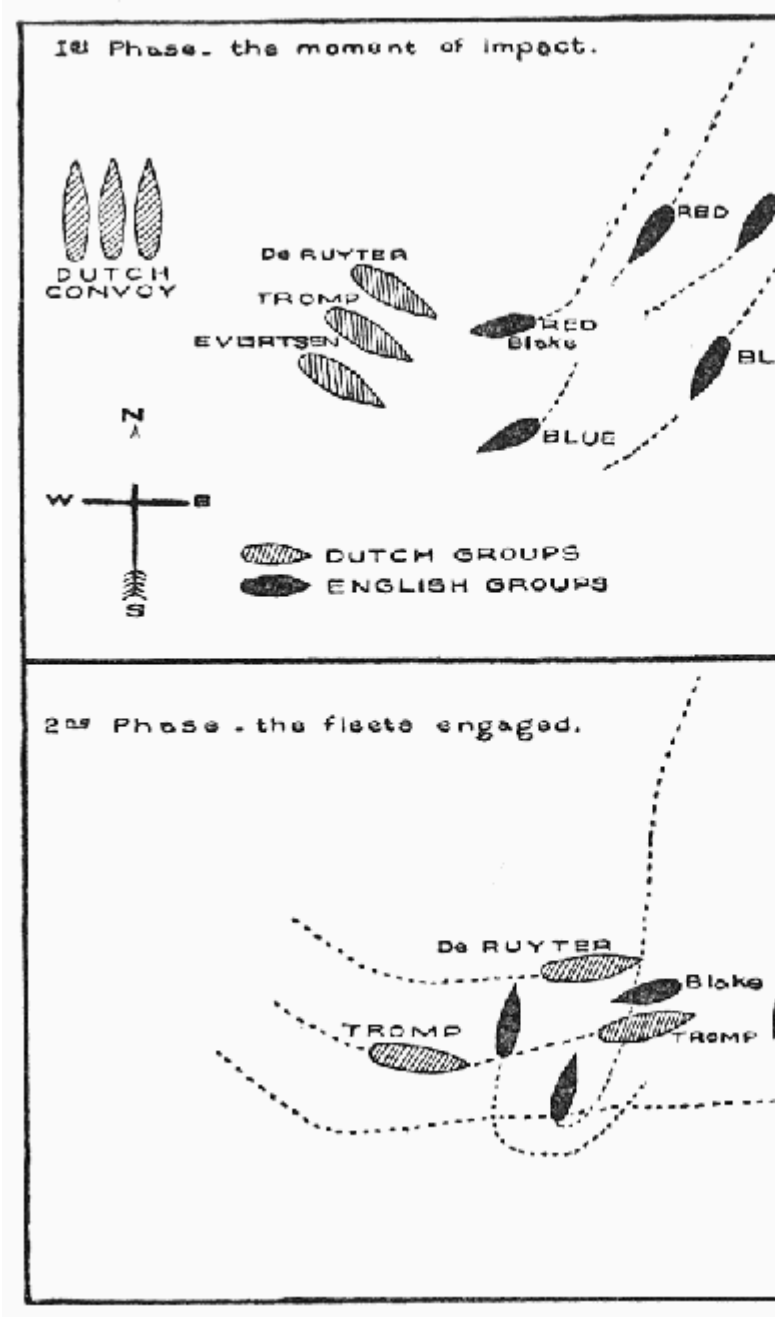
By the middle of February the English had reorganized their fleet and Blake took the sea with another famous Roundhead soldier, Monk, as one of his divisional commanders. At this time Tromp lay off Land's End waiting for the Dutch merchant fleet which he expected to convoy to Holland. On the 18th the two forces sighted each other about 15 miles off Portland. Then followed the "Three Days' Battle," or the battle of Portland, one of the most stubbornly contested fights in the war and its turning point.

In order to be sure to catch Tromp, Blake had extended his force of 70 or 80 ships in a cross Channel position. Under cover of a fog Tromp suddenly appeared and caught the English fleet divided. Less than half were collected under the immediate command of Blake, only about ten were in the actual vicinity of his flagship, and the rest were to eastward, especially Monk's division which

he had carelessly permitted to drift to leeward four or five miles. As the wind was from the west and very light, Monk's position made it impossible for him to support his chief for some time. Tromp saw his opportunity to concentrate on the part of the English fleet nearest him, the handful of ships with Blake. The latter had the choice of either bearing up to make a junction with Monk and the others before accepting battle or of grappling with Tromp at once, trusting to his admirals to arrive in time to win a victory. It was characteristic of Blake that he chose the bolder course.

The fighting began early in the afternoon and was close and furious from the outset. Again Blake's ship was compelled to engage several Dutch, including Tromp's flagship. De Ruyter, the brilliant lieutenant of Tromp, attempted to cut Blake off from his supports on the north, and Evertsen steered between Blake and Penn's squadron on the south. (See diagram 1.) Blake's dozen ships might well have been surrounded and taken if his admirals had not known their business. Penn tacked right through Evertsen's squadron to come to the side of Blake, and Lawson foiled de Ruyter by bearing away till he had enough southing to tack in the wake of Penn and fall upon Tromp's rear (diagram 2). Evertsen then attempted to get between Monk and the rest of the fleet and two hours after the fight in the center began Monk also was engaged. When the lee vessels of the "red" or center squadron came on the scene about four o'clock, they threatened to weather the Dutch and put them between two fires. To avoid this and to protect his convoy, Tromp tacked his whole fleet together—an exceedingly difficult maneuver under the circumstances—and drew off to windward.

Darkness stopped the fighting for that day. All night the two fleets sailed eastward watching each other's lights, and hastily patching up damages.


1st Phase. the moment of impact.
DUTCH CONVOY
De RUYTER
TROMP
EVERTSEN
RED
Blake
RED
BL
BLUE
N
W
E
S
DUTCH GROUPS
ENGLISH GROUPS
2ns Phase. the fleets engaged.
De RUYTER
Blake
TROMP
TROMP



Based on diagram of Mahan's in Clowes,

THE BATTLE OF PORTLA

Morning discovered them off the Isle of Wight, with the English on the north side of the Channel. As Tromp's chief business was to save his convoy and as the English force was now united, he took a defensive position. He formed his own ships in a long crescent, with the outward curve toward his enemy, and in the lee of this line he placed his convoy. The wind was so light that the English were unable to attack until late. The fighting, though energetic, had not proved decisive when darkness fell.

The following day, the 20th, brought a fresh wind that enabled the English to overhaul the Dutch, who could not move faster than the heavily laden merchantmen, and force a close action. Blake tried to cut off Tromp from the north so as to block his road home. Vice Admiral Penn, leading the van, broke through the Dutch battle line and fell upon the convoy, but Blake was unable to reach far enough to head off his adversary before he rounded Cape Gris Nez under cover of darkness and found anchorage in Calais roads. That night, favored by the tide and thick weather, Tromp succeeded in carrying off the greater part of his convoy unobserved. Nevertheless he had left in Blake's hand some fifty merchantmen and a number of men of war variously estimated from five to eighteen. At the same time the English had suffered heavily in men and ships. On Blake's flagship alone it is said that 100 men had been killed and Blake and his second in command, Deane, were both wounded, the former seriously.

The result of this three days' action was to

encourage the English to press the war with energy and take the offensive to the enemy's own coast. English crews had shown that they could fight with a spirit fully equal to that of the Dutch, and English ships and weight of broadside, as de Ruyter frankly declared to his government, were decidedly superior. The fact that the shallow waters of the Dutch coast made necessary a lighter draft man of war than that of the English proved a serious handicap to the Dutch in all their conflicts with the British. Both fleets were so badly shot up by this prolonged battle that there was a lull in operations until May.

In that month Tromp suddenly arrived off Dover and bombarded the defenses. The English quickly took the sea to hunt him down. As Blake was still incapacitated by his wound, the command was given to Monk. The latter, with a fleet of over a hundred ships, brought Tromp to action on June 2 (1653) in what is known as the "Battle of the Gabbard" after a shoal near the mouth of the Thames, where the action began. Tromp was this time not burdened with a convoy but his fleet was smaller in numbers than Monk's and, as he well knew, inferior in other elements of force. Accordingly, he adapted defensive tactics of a sort that was copied afterwards by the French as a fixed policy. He accepted battle to leeward, drawing off in a slanting line from his enemy with the idea of catching the English van as it advanced to the attack unsupported by the rest of the fleet, and crippling it so severely that the attack would not be pressed. As it turned out, a shift of the wind gave him the chance to fall heavily upon the English van, but a second shift gave back the weather gage to the English and the two fleets became fiercely engaged at close quarters. Blake,

hearing the guns, left his sick bed and with his own available force of 18 ships sailed out to join battle. The sight of this fresh squadron flying Blake's flag, turned the fortune of battle decisively. The Dutch escaped destruction only by finding safety in the shallows of the Flemish coast, where the English ships could not follow.

After this defeat the Dutch were almost at the end of their resources and sued far peace, but Cromwell's ruthless demands amounted to a practical loss of independence, which even a bankrupt nation could not accept. Accordingly, every nerve was strained to build a fleet that might yet beat the English. The latter, for their part, were equally determined not to lose the fruits of their hard won victories. Since Blake's active share in the battle of the Gabbard aggravated his wound so severely that he was carried ashore more nearly dead than alive, Monk retained actual command.

Monk attempted to maintain a close blockade of the Dutch coast and to prevent a junction between Tromp's main fleet at Flushing and a force of thirty ships at Amsterdam. In this, however, he was outgeneraled by Tromp, who succeeded in taking the sea with the greatest of all Dutch fleets, 120 men of war. The English and the Dutch speedily clashed in the last, and perhaps the most furiously contested, battle of the war, the "Battle of Scheveningen." The action began at six in the morning of July 30, 1653. Tromp had the weather gage, but Monk, instead of awaiting his onslaught, tacked towards him and actually cut through the Dutch line. Tromp countered by tacking also, in order to keep his windward position, and this maneuver was repeated three times by Tromp and Monk, and the two great

fleets sailed in great zigzag courses down the Dutch coast a distance of forty miles, with bitter fighting going on at close range between the two lines. Early in the action the renowned Tromp was killed, but his flag was kept flying and there was no flinching on the part of his admirals. About one o'clock a shift of the wind gave the weather gage to the English. Some of the Dutch captains then showed the white feather and tried to escape. This compelled the retirement of DeWith, who had succeeded to the command, and who, as he retreated, fired on his own fugitives as well as on the English. As usual in those battles with the Dutch, the English had been forced to pay a high price for their victory. Their fleet was so shattered that they were obliged to lift the blockade and return home to refit. But for the Dutch it was the last effort. Again they sued for peace. Cromwell drove a hard bargain; he insisted on every claim England had ever made against the Netherlands before the war, but on this occasion he agreed to leave Holland her independence.

Thus in less than two years the First Dutch War came to an end. In the words of Mr. Hannay,[1] the English historian, its "importance as an epoch in the history of the English Navy can hardly be exaggerated. Though short, for it lasted barely twenty-two months, it was singularly fierce and full of battles. Yet its interest is not derived mainly from the mere amount of fighting but from the character of it. This was the first of our naval wars conducted by steady, continuous, coherent campaigns. Hitherto our operations on the sea had been of the nature of adventures by single ships and small squadrons, with here and there a great expedition sent out to capture some particular port or island."

[Footnote 1: A SHORT HISTORY OF THE ROYAL NAVY, Vol. I, p. 217.]

As to the intensity of the fighting, it is worth noting that in this short period six great battles took place between fleets numbering as a rule from 70 to 120 ships on a side. By comparison it may be remarked that at Trafalgar the total British force numbered 27 ships of the line and the Allies, 33. Nor were the men of war of Blake and Tromp the small types of an earlier day. In 1652 the ship of the line had become the unit of the fleet as truly as it was in 1805. It is true that Blake's ships were not the equal of Nelson's huge "first rates," because the "two-decker" was then the most powerful type. The first three-decker in the English navy was launched in the year of Blake's death, 1657. The fact remains, however, that these fleet actions of the Dutch Wars took place on a scale unmatched by any of the far better known engagements of the 18th or early 19th century.

A curious naval weapon survived from the day when Howard drove Medina Sidonia from Calais roads, the fireship, or "brander." This was used by both English and Dutch. Its usefulness, of course, was confined to the side that held the windward position, and even an opponent to leeward could usually, if he kept his head, send out boats to grapple and tow the brander out of harm's way. In the battle of Scheveningen, however, Dutch fireships cost the English two fine ships, together with a Dutch prize, and very nearly destroyed the old flagship of Blake, the *Triumph*. She was saved only by the extraordinary exertions of her captain, who received mortal injury from the flames he fought so courageously.

This First Dutch War is interesting in what it reveals of the advance in tactics. Tromp well deserves his title as the "Father of Naval Tactics," and he undoubtedly taught Blake and Monk a good deal by the rough schooling of battle, but they proved apt pupils. From even the brief summary of these great battles just given, it is evident that Dutch and English did not fight each other in helter skelter fashion. In fact, there is revealed a great advance in coördination over the work of the English in the campaign of the Armada. These fleets worked as units. This does not mean that they were not divided into squadrons. A force of 100 ships of the line required division and subdivision, and considerable freedom of movement was left to division and squadron commanders under the general direction of the commander in chief, but they were all working consciously together. Just as at Trafalgar Nelson formed his fleet in two lines (originally planned as three) and allowed his second in command a free hand in carrying out the task assigned him, so Tromp and Blake operated their fleets in squadrons—Tromp usually had five—and expected of their subordinates responsibility and initiative. All this is in striking contrast with the practice that paralyzed tactics in the latter 17th and 18th centuries, which sacrificed everything to a rigid line of battle in column ahead, and required every movement to emanate from the commander in chief.

Although details about the great battles of the First Dutch War are scanty, there is enough recorded to show that both sides used the line ahead as the normal battle line. It is equally clear, however, that they repeatedly broke through each other's lines and aimed at concentration, or destroying in detail. These

two related principles, which had to be rediscovered toward the end of the 18th century, were practiced by Tromp, de Ruyter, and Blake. Their work has not the advantage of being as near our day as the easy, one-sided victories over the demoralized French navy in the Revolutionary and Napoleonic era, but the day may come when the British will regard the age of Blake as the naval epoch of which they have the most reason to be proud. Then England met the greatest seamen of the day led by one of the greatest admirals of history and won a bitterly fought contest by virtue of better ships and the spirit of Cromwell's "Ironsides."

Porto Farina and Santa Cruz

Nor did the age of Blake end with the First Dutch War. As soon as the admiral was able to go aboard ship, Cromwell sent him with a squadron into the Mediterranean to enforce respect for the Commonwealth from the Italian governments and the Barbary states. He conducted his mission with eminent success. Although the Barbary pirates did not course the sea in great fleets as in the palmy days of Barbarossa, they were still a source of peril to Christian traders. Blake was received civilly by the Dey of Algiers but negotiations did not result satisfactorily. At Tunis he was openly flouted. The Pasha drew up his nine cruisers inside Porto Farina and defied the English admiral to do his worst. Blake left for a few days to gain the effect of surprise and replenish provisions. On April 4, 1655, he suddenly reappeared and stood in to the attack.

The harbor of Porto Farina was regarded as impregnable. The entrance was narrow and the shores lined with castles and batteries. As Blake

foresaw, the wind that took him in would roll the battle smoke upon the enemy. In a short time he had silenced the fire of the forts and then sent boarding parties against the Tunisian ships, which were speedily taken and burnt. Then he took his squadron out again, having destroyed the entire Tunisian navy, shattered the forts, and suffered only a trifling loss. This exploit resounded throughout the Mediterranean. Algiers was quick to follow Tunis in yielding to Blake's demands. It is characteristic of this officer that he should have made the attack on Tunis entirely without orders from Cromwell, and it is equally characteristic of the latter that he was heartily pleased with the initiative of his admiral in carrying out the spirit rather than the letter of his instructions.

Meanwhile Cromwell had been wavering between a war against France or Spain. The need of a capture of money perhaps influenced him to turn against Spain, for this country still drew from her western colonies a tribute of gold and silver, which naturally would fall a prey to the power that controlled the sea. One month after Blake's exploit at Tunis, another English naval expedition set out to the West Indies to take Santo Domingo. Although Jamaica was seized and thereafter became an English possession, the expedition as a whole was a disgraceful failure, and the leaders, Penn and Venables, were promptly clapped by Cromwell into the Tower on their return. This stroke against Spain amounted to a declaration of war, and on Blake's return to England he was ordered to blockade Cadiz. One detachment of the plate fleet fell into the hands of his blockading ships and the silver ingots were dispatched to London. Blake continued his blockade in an open roadstead

for six months, through autumn and winter, an unheard of thing in those days and exceedingly difficult. Blake was himself ill, his ships were not the copper-bottomed ones of a hundred years later, and there was not, as in later days, an English base at Gibraltar. But he never relaxed his vigilance.

In April (1657) he learned that another large plate fleet had arrived at Santa Cruz, Teneriffe. Immediately he sailed thither to take or destroy it. If Porto Farina had been regarded as safe from naval attack, Santa Cruz was far more so. A deep harbor, with a narrow, funnel entrance, and backed by mountains, it is liable to dead calms or squally bursts of wind from the land. In addition to its natural defenses it was heavily fortified. Blake, however, reckoned on coming in with a flowing tide and a sea breeze that, as at Porto Farina, would blow his smoke upon the defenses. He rightly guessed that if he sailed close enough under the castles at the harbor entrance their guns could not be sufficiently depressed to hit his ships, and as he saw the galleons and their escorts lined up along the shore he perceived also that they were masking the fire of their own shore batteries. For the most difficult part of his undertaking, the exit from the harbor, he trusted to the ebbing tide with the chance of a shift in the wind in his favor.

Early on the morning of April 20th (1657) he sailed in. As he had judged, the fire of the forts did little damage. By eight o'clock the English ships were all at their appointed stations and fighting. During the entire day Blake continued his work of destruction till it was complete, and at dusk drifted out on the ebb. Some writers mention a favoring land breeze that helped to extricate the English, but

according to Blake's own words, "the wind blew right into the bay." In spite of this head wind the ships that were crippled were warped or towed out and not one was lost. The English suffered in the entire action only 50 killed and 120 wounded, and repairs were so easily made that Blake returned to his blockading station at once.

This was the greatest of Blake's feats as it also was his last. All who heard of it—friend or enemy—pronounced it as without parallel in the history of ships. A few months later Blake was given leave to return home. He had long been a sick man, but his name alone was worth a fleet and Cromwell had not been able to spare him. As it happened, he did not live long enough to see England again. Cromwell, who knew the worth of his faithful admiral, gave him a funeral of royal dignity and interment in Westminster Abbey.

Blake never showed, perhaps, great strategic insight—Tromp and de Ruyter were his superiors there, as was also Nelson—but he, more than any other, won for England her mastery of the sea, and no other can boast his record of great victories. These he won partly by skill and forethought but chiefly by intrepidity. We can do no better than leave his fame in the words of the Royalist historian, Clarendon—a political enemy—who says: "He quickly made himself signal there (on the sea) and was the first man who declined the old track ... and disproved those rules that had long been in practice, to keep his ships and men out of danger, which had been held in former times a point of great ability and circumspection, as if the principal requisite in the captain of a ship had been to come home safe again. He was the first man who brought ships to contemn

castles on shore, which had been thought ever very formidable.... He was the first that infused that proportion of courage into the seamen by making them see what mighty things they could do if they were resolved, and taught them to fight in fire as well as on water. And though he hath been very well imitated and followed, he was the first that drew the copy of naval courage and bold resolute achievement."

The chaos that followed the death of the Protector resulted in Monk's bringing over the exiled Stuart king—Charles II. Thereafter Round Head and Royalist served together in the British navy. An important effect of the Restoration was organization of a means of training the future officers of the fleet. The Navy as a profession may be said to date from this time, in contrast with the practice of using merchant skippers and army officers, which had prevailed to so great a degree hitherto. Under the new system "young gentlemen" were sent to sea as "King's Letter Boys"—midshipmen—to learn the ways of the navy and to grow up in it as a preparation for command. This was an excellent reform but it resulted in making the navy the property of a social caste from that day to this, and it made promotion, for a century and more, largely subject to family influence.

Another effect of the Restoration was to break down the fighting efficiency of the fleet as it had been in the days of Blake. The veterans of the First Dutch War fought with their old time courage and discipline, but the newer elements did not show the same devotion and initiative. The effect on the material was still worse, for the fleet became a prey to the cynical dishonesty that Charles II inspired in

every department of his government.

The Second Dutch War

Five years after Charles II became king, England was involved in another war with the Netherlands. There was still bad feeling between the two peoples, and trading companies in the far east or west kept up a guerilla warfare which flooded both governments with complaints. The chief cause seems to have been the desire of the English Guinea Company to get rid of their Dutch competitors who persistently undersold them in the slave markets of the West Indies. Before there was any declaration of war an English squadron was sent out to attack the Dutch company's settlement on the West African coast. After this it crossed the Atlantic and took New Amsterdam, which thereafter became New York. The Dutch retaliated by sending out one of their squadrons to retake their African post and threaten the Atlantic colonies. In March, 1665, war was declared.

In this conflict the relative strengths of the two navies were about the same as in the previous war. The Dutch had made improvements in their ships, but they still suffered from the lack of unity in organization and spirit. The first engagement was the battle of Lowestoft, on June 3, 1665. The English fleet was under the personal command of the Duke of York, later James II; the Dutch were led by de Ruyter. The two forces numbered from 80 to 100 ships each, and strung out as they were, must have extended over nearly ten miles of sea. The Duke of York formed his fleet in the pattern that he set by his own "Fighting Instructions," which governed the tactics of all navies thereafter for a hundred years,

namely, the entire force drawn up in single line. This line bore down abreast toward the enemy until it reached gunshot, then swung into line ahead and sailed on a course parallel to that of the enemy. De Ruyter arranged his fleet accordingly, and the two long lines passed each other on opposite tacks three times, cannonading furiously at close range. This meant that the force was distributed evenly along the enemy's line and as against an evenly matched force these tactics could result, as a rule, only in mere inconclusive artillery duels which each side would claim as victories. In the battle of Lowestoft, however, several of the captains in the Dutch center flinched at the third passing and bore up to leeward, leaving a wide gap in de Ruyter's line. The English broke through at this point and hammered the weakened Dutch line in the center with a superior force. This was the decisive point in the battle and de Ruyter was forced to retreat. The Dutch would have suffered even greater loss than they did had it not been for the masterly fashion in which Cornelius Tromp—son of the famous Martin Tromp—covered the retreat.

The defeat of the Dutch was due to the bad conduct of the captains in the center, four of whom were shot by order of de Ruyter and others dismissed from the service. It is interesting to note that while the first half of the battle was fought on the formal lines that were soon to be the cast iron rule of conduct for the British navy, and led to nothing conclusive; the second half was characterized by the breaking of the enemy's line, in the older style of Blake, and led to a pronounced victory.

At this time Louis XIV had pledged himself to give aid to the Netherlands in case of attack by a third

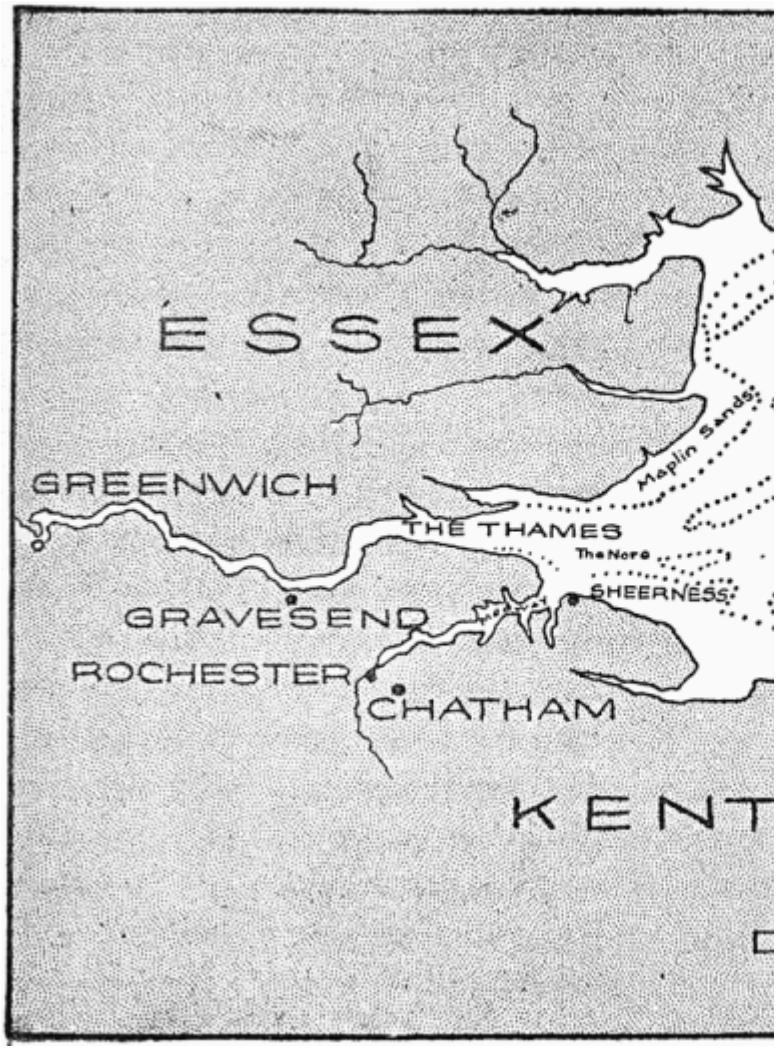
Power. But when the Dutch and his own ministers called on him to make good his promise he offered more promises and no fulfillment. The rumor of an approaching French squadron which was to make junction with de Ruyter, who had now been placed in command of the Dutch fleet, caused the English government to make the grave mistake of detaching Prince Rupert with 20 ships to look for the mythical French force. This division left Monk, who was again in command of the fleet, with only 57 ships. Hearing that de Ruyter was anchored on the Flanders coast, Monk went out to find him. De Ruyter left his anchorage to meet the English, and on June 1, 1666, the two forces met in mid-Channel, between Dunkirk and the Downs. As the Dutch force heavily outnumbered him—nearly two to one—Monk might have been expected to avoid fighting, but he acted in the spirit of Blake. Having the windward position he decided that he could strike the advanced division under Tromp and maul it severely before the rest of the Dutch could succor it. Accordingly he boldly headed for the enemy's van. When Monk attacked he had only about 35 ships in hand, for the rest were straggling behind too far to help. Thus began the famous "Four Days' Battle," characterized by Mahan as "the most remarkable, in some of its aspects that has ever been fought upon the ocean."[1]

[Footnote 1: THE INFLUENCE OF SEA POWER UPON HISTORY, p. 125.]

The fighting was close and furious and in its unparalleled duration numbers were bound to tell. On the third day Monk retreated to the Thames, but on being joined by Rupert's squadron immediately sallied forth to do battle again. On this day, June 4, the Dutch succeeded in cutting through his formation

and putting him between two fires. Indeed Monk escaped destruction only by breaking through his ring of enemies and finding refuge in the Thames. The Dutch had won a great victory, for the English had lost some twenty ships and 5000 in killed and wounded. But Monk was right in feeling a sense of pride in the fight that he had made against great odds. The losses that he had inflicted were out of all proportion to the relative strength of the two forces. Unfortunately the new spirit that was coming into the navy of the Restoration was evidenced by the fact that a number of English captains, finding the action too hot for them, deserted their commander in chief. On the Dutch side de Ruyter's handling of his fleet was complicated by the conduct of Cornelius Tromp. This officer believed that he, not de Ruyter, should have been made commander of the Dutch fleet and in this action as in the next, acted with no regard for his chief's orders.

As a consequence of the Four Days' Battle, Dutchmen again controlled the Channel and closed the mouth of the Thames to trade. The English strained every nerve to create a fleet that should put an end to this humiliating and disastrous situation. The preparations were carried out with such speed that on July 22 (1666), Monk and Rupert anchored off the end of the Gunfleet shoal with a fleet of about 80 ships of the line and frigates. On the 25th the English sighted de Ruyter, with a fleet slightly larger in numbers, in the broad part of the Thames estuary. Monk, forming his fleet in the long line ahead, sailed to the attack. The action that followed is called the "Battle of St. James's Day" or the "Gunfleet."



THE THAM

Whether or not Monk was influenced by his princely colleague it is impossible to say, but the tactics of this engagement do not suggest the Monk of earlier battles. He followed the "Fighting

Instructions" and in spite of them won a victory, but it might have been far more decisive. The English bore down in line abreast, then formed line ahead on reaching gunshot, the van, center, and rear, engaging respectively the Dutch van, center, and rear. In these line ahead attacks the rear usually straggled. Tromp, commanding the Dutch rear, saw his chance to attack Smith, commanding the English rear, before his squadron was in proper formation. Smith retreated, and Tromp, eager to win a victory all by himself, abandoned the rest of the Dutch fleet and pursued Smith. Thus the action broke into two widely separated parts. The English van and center succeeded in forcing the corresponding Dutch divisions to retreat, and if Monk had turned to the help of Smith he might have taken or destroyed all of the 39 ships in Tromp's division. Instead, he and Rupert went careering on in pursuit of the enemy directly ahead of them. Eventually de Ruyter's ships found refuge in shallow water and then Monk turned to catch Tromp. But the latter proved too clever for his adversaries and slipped between them to an anchorage alongside of de Ruyter.

Although the victory was not nearly so decisive as it should have been with the opportunity offered, nevertheless it served the need of the hour. De Ruyter was no longer able to blockade the Thames and the Straits of Dover. And Monk, following up his success, carried the war to the enemy's coast, where he burned a merchant fleet of 160 vessels in the roadstead of the island of Terschelling, and destroyed one of the towns. Early in 1666 active operations on both sides dwindled down, and Charles, anxious to use naval appropriations for other purposes, allowed the fleet to fall into a condition of unreadiness for

service. One of the least scandals in this corrupt age was the unwillingness or inability of the officials to pay the seamen their wages. In consequence large numbers of English prisoners in Holland actually preferred taking service in the Dutch navy rather than accepting exchange, on the ground that the Dutch government paid its men while their own did not.

Early in June, 1667, de Ruyter took advantage of the condition of the English fleet by inflicting perhaps the greatest humiliation on England that she has ever suffered. Entering the Thames unopposed, he was prevented from attacking London only by unfavorable wind and tide. He then turned his attention to the dockyards of Chatham and burnt or captured seven great ships of the line, besides numerous smaller craft, carried off the naval stores at Sheerness, and then for the next six weeks kept a blockade on the Thames and the eastern and southern coasts of England. This mortifying situation continued until the signing of the "Peace of Breda" concluded the war.

The Third Dutch War

Less than five years later Charles again made war on the Netherlands. For this there was not the shadow of excuse, but Louis XIV saw fit to attack the Dutch, and Charles was ever his willing vassal. The English began hostilities without any declaration of war by a piratical attack on a Dutch convoy.

At this juncture Holland was reduced to the last extremity. Attacked on her land frontiers by France, then the dominating military power, and on her sea frontiers by England, the strongest naval power, she

seemed to have small chance to survive. But her people responded with a heroism worthy of her splendid history. They opened their dykes to check the armies of invasion and strained every nerve to equip a fleet large enough to cope with the combined navies of France and England. In this Third Dutch War four great naval battles were fought: that of Solebay, May 28, 1672, the two engagements off Schooneveldt, May 28 and June 4, 1673, and that of the Texel, August 11, 1673.

In all of these the honors go to the Dutch and their great admiral, de Ruyter. Since these actions did not restore the Netherlands to their old-time position or check the ascendancy of England, they need not be discussed individually here. The outstanding feature of the whole story is the surpassing skill and courage of de Ruyter in the face of overwhelming odds. In this war he showed the full stature of his genius as never before, and won his title as the greatest seaman of the 17th century. After his death one must wait till the day of Suffren and Nelson to find men worthy to rank with him.

In this campaign de Ruyter showed his powers not only as a tactician but as a strategist. In the words of Mahan, the Dutch "made a strategic use of their dangerous coast and shoals, upon which were based their sea operations. To this they were forced by the desperate odds under which they were fighting; but they did not use their shoals as a mere shelter,—the warfare they waged was the defensive-offensive. When the wind was fair for the allies to attack, de Ruyter kept under cover of his islands, or at least on ground where the enemy dared not follow; but when the wind served so that he might attack in his own way he turned and fell upon them."[1] That is,

instead of accepting the tame rôle of a "fleet in being" and hiding in a safe harbor, de Ruyter took and held the sea, always on the aggressive, always alert to catch his enemy in a position of divided forces or exposed flank and strike hard. His master, Martin Tromp, is regarded as the father of the line ahead formation for battle, but he undoubtedly taught de Ruyter its limitations as well as its advantages, and there is no trace of the stupid formalism of the Duke of York's regulations in de Ruyter's brilliant work.

[Footnote 1: INFLUENCE OF SEA POWER UPON HISTORY, p. 144.]

At this time he had no worthy opponent. As Monk was dead, the Duke of York had again assumed active command with Rupert as his lieutenant. Although the Duke was honestly devoted to the navy he was dull-witted, and in spite of the advantage of numbers and the dogged courage of officers and men which so often in English history has made up for stupid leadership, he was wholly unable to cope with de Ruyter's genius. As for the French navy, their ships were superb, the best in Europe, but their officers had no experience and apparently small desire for close fighting. At all events, despite the odds against him, de Ruyter defeated the allies in all four battles, prevented their landing an army of invasion, and broke up their attempt to blockade the coast.

The war was unpopular in England and as it met with ill success it became more so. After the battle of the Texel, in 1673, active operations died down to practically nothing, and at the beginning of the year England made peace. By this time Holland had managed to find other allies on the Continent—Spain

and certain German states—and while she had to continue her struggle against Louis XIV by land she was relieved of the menace of her great enemy on the sea. Fifteen years later, by a curious freak of history, a Dutch prince became King William III of England, and the two old enemies became united in alliance. But the Netherlands had exhausted themselves by their protracted struggle. They had saved their independence, but after the close of the 17th century they ceased to be a world power of any consequence.

The persistent enmity of the French king for the Dutch gained nothing for France but everything for England. Unwittingly he poured out his resources in money and men to the end that England should become the great colonial and maritime rival of France. As a part of her spoils England had gained New York and New Jersey, thus linking her northern and southern American colonies, and she had taken St. Helena as a base for her East Indies merchantmen. She had tightened her hold in India, and by repeatedly chastising the Barbary pirates had won immunity for her traders in the Mediterranean. At the beginning of the Second Dutch War Monk had said with brutal frankness, "What matters this or that reason? What we want is more of the trade which the Dutch have." This, the richest prize of all, fell from the hands of the Dutch into those of the English. During the long drawn war which went on after the English peace of 1674, while Holland with her allies fought against Louis XIV, the great bulk of the Dutch carrying trade passed from the Dutch to the English flag. The close of the 17th century, therefore, found England fairly started on her career as an ocean empire, unified by sea power. Her navy,

despite the vices it had caught from the Stuart régime, had become firmly established as a permanent institution with a definite organization. By this time every party recognized its essential importance to England's future.

Nevertheless, whatever satisfaction may be felt by men of English speech in this rapid growth of England's power and prestige as a result of the three wars with the Dutch, one cannot avoid the other side of the picture. A people small in numbers but great in energy and genius was hounded to the point of extinction by the greed of its powerful neighbors. Peace-loving, asking merely to be let alone, the only crime of the Dutch was to excite the envy of the English and the French.

REFERENCES

See next chapter, page 221.

CHAPTER X

RISE OF ENGLISH SEA POWER [*Continued*]. WARS WITH FRANCE TO THE FRENCH REVOLUTION

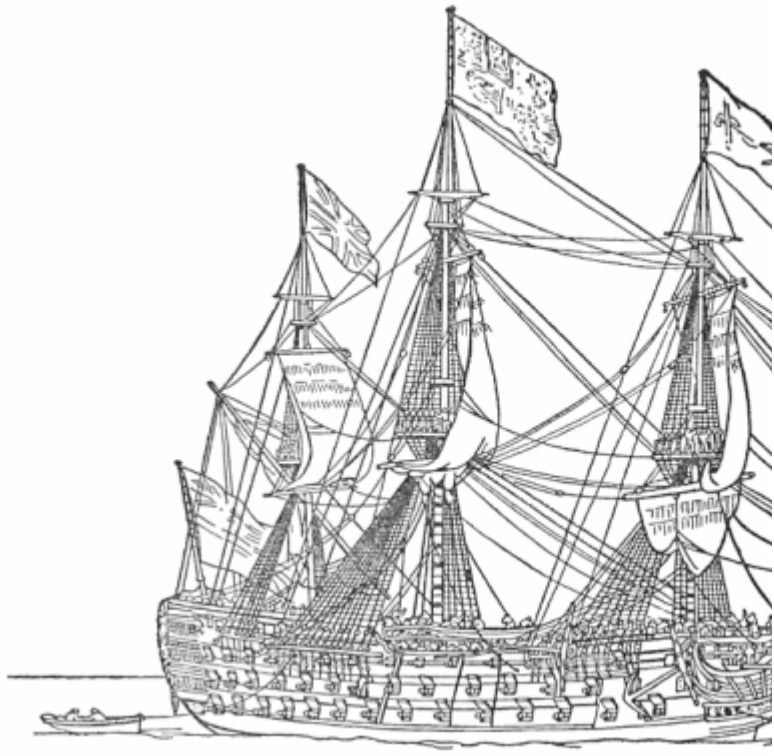
The effect of the expulsion of James II from the throne of England coupled with the accession of the Dutch prince, William of Orange, was to make England change sides and take the leadership in the coalition opposed to Louis XIV. From this time on, for over 125 years, England was involved in a series

of wars with France. They began with the threat of Louis to dominate Europe and ended with the similar threat on the part of Napoleon. In all this conflict the sea power of England was a factor of paramount importance. Even when the fighting was continental rather than naval, the ability of Great Britain to cut France off from her overseas possessions resulted in the transfer of enormous tracts of territory to the British Empire. During the 18th century, the territorial extent of the expire grew by leaps and bounds, with the single important loss of the American colonies. And even this brought no positive advantage to France for it did not weaken her adversary's grip on the sea.

The War of the League of Augsburg

The accession of William III was the signal for England's entry into the war of the League of Augsburg (1688-1697) against France, and the effort of the French king to put James II back again upon the English throne. By this time the French navy had been so greatly strengthened that at the outset it outnumbered the combined fleets of the English and the Dutch. It boasted the only notable admiral of this period, Tourville, but it missed every opportunity to do something decisive. It failed to keep William from landing in England with an army; it failed also to keep the English from landing and supplying an army in Ireland, where they raised the siege of Londonderry and won the decisive victory of the Boyne. On the other hand the British navy was handled with equal irresolution and blindness in strategy. It accomplished what it did in keeping communications open with Ireland through the mistakes of the French, and its leaders seemed to be equally unaware of the importance of winning

definitely the control of the sea.



THREE-DECKED SHIP OF THE I

If the naval strategy on both sides was feeble the tactics were equally so. The contrast between the fighting of Blake, Monk, Tromp and de Ruyter and that of the admirals of this period is striking. For example, on May 1, 1689, the English admiral Herbert and the French admiral Châteaurenault fought an indecisive action in Bantry Bay, Ireland. After considerable powder had been shot away without the loss of a ship on either side, the French went back to protect their transports in the bay;

Herbert also withdrew, and was made Earl of Torrington for his "victory." This same officer commanding a Dutch and English fleet encountered the French under Tourville off Beachy Head on the south coast of England (July 10, 1690). It is true that Tourville's force was stronger, but Torrington acted with no enterprise and was thoroughly beaten. At the same time the French admiral showed lack of push in following up his victory, which might have been crushing. By this time the line ahead order of fighting had become a fetich on both sides. The most noted naval battle of this war is that of La Hogue (May 29, 1692), which has been celebrated as a great British victory. In this action an allied fleet of 99 were opposed to a French fleet of 44 under Tourville. Tourville offered battle under such odds only because he had imperative orders from his king to fight the enemy. During the action the French did not lose a single ship, but in the four days' retreat the vessels became separated in trying to find shelter and fifteen were destroyed or taken. This was a severe blow to the the French navy but by no means decisive. The subsequent inactivity of the fleet was due to the demands of the war on land.

As the war became more and more a continental affair, Louis was compelled to utilize all his resources for his military campaigns. For this reason the splendid fleet with which he had begun the war gradually disappeared from the sea. Some of these men of war were lent to great privateersmen like Jean Bart and Du Guay Trouin, who took out powerful squadrons of from five to ten ships of the line, strong enough to overcome the naval escorts of a British convoy, and ravaged English commerce. In this matter of protecting shipping the naval strategy

was as vacillating and blind as in everything else. Nevertheless no mere commerce destroying will serve to win the control of the sea, and despite the losses in trade and the low ebb to which English naval efficiency had sunk, the British flag still dominated the ocean routes while the greater part of the French fleet rotted in port.

In this war of the League of Augsburg, Louis XIV was fighting practically all Europe, and the strain was too great for a nation already weakened by a long series of wars. By the terms of peace which he found himself obliged to accept, he lost nearly everything that he had gained by conquest during his long reign.

Wars of the Spanish and the Austrian Succession

After a brief interval of peace war blazed out again over the question whether a French Bourbon should be king of Spain,—the War of the Spanish Succession, 1702-1713. England's aim in this war was to acquire some of the Spanish colonies in America and to prevent any loss of trading privileges hitherto enjoyed by the English and the Dutch. But as it turned out nothing of importance was accomplished in the western hemisphere except by the terms of peace. The French and Spanish attempted no major operations by sea. But the English navy captured Minorca, with its important harbor of Port Mahon, and Rooke, with more initiative than he had ever shown before in his career, took Gibraltar (August 4, 1704). These two prizes made Great Britain for the first time a Mediterranean power, and the fact that she held the gateway to the inland sea was of great importance in subsequent naval history.

In addition to these captures the terms of peace (the Treaty of Utrecht) yielded to England from the French Newfoundland, the Hudson Bay territory, and Nova Scotia. All that the French had left on the eastern coast of Canada was Cape Breton Island, with Louisburg, which was the key to the St. Lawrence. As for commercial privileges, England had gained from the Portuguese, who had been allies in the war, a practical monopoly of their carrying trade; and from France she had taken the entire monopoly of the slave trade to the Spanish American colonies which had been formerly granted by Spain to France. Holland got nothing out of the war as affecting her interests at sea,—not even a trading post. Her alliance with Great Britain had become as some one has called it, that of "the giant and the dwarf." At the conclusion of the War of the Spanish Succession, to quote the words of Mahan, "England was *the* sea power; there was no second."

In this war as in the preceding, French privateersmen made great inroads on British commerce, and some of these privateering operations were conducted on a grand scale. For example, Du Guay Trouin took a squadron of six ships of the line and two frigates, together with 2000 troops, across the Atlantic and attacked Rio Janeiro. He had little difficulty in forcing its submission and extorting a ransom of $400,000. The activities of the privateers led to a clause in the treaty of peace requiring the French to destroy the fortifications of the port of Dunkirk, which was notorious as the nest of these corsairs.

The War of the Austrian Succession, 1740-1748, was another of the dynastic quarrels of this age, with France and Spain arrayed against England. It has no

naval interest for our purposes here. The peace of 1748, however, leaving things exactly as they were when the war began, settled none of the existing grudge between Great Britain and France. Eight years later, hostilities began again in the Seven Years' War, 1756-1763, in which Great Britain entered on the side of Prussia against a great coalition of Continental powers headed by France.

The Seven Years' War

The naval interest of this war is centered in the year 1759, when France, having lost Louisburg on account of England's control of the sea, decided to concentrate naval and military forces on an invasion of England. Before the plans for this projected thrust were completed, Quebec also had fallen to the British. The attempted invasion of 1759 is not so well known as that of Napoleon in 1805, but it furnished the pattern that Napoleon copied and had a better chance of success than his. In brief, a small squadron under the famous privateer Thurot was to threaten the Scotch and Irish coasts, acting as a diversion to draw off the British fleet. Meanwhile the squadron at Toulon was to dodge the British off that port, pass the Straits and join Conflans, who had the main French fleet at Brest. The united forces were then to cover the crossing of the troops in transports and flatboats to the English coast.

This plan was smashed by Admiral Hawke in one of the most daring feats in British naval annals. Thurot got away but did not divert any of the main force guarding the Channel. The Toulon fleet also eluded the English for a time but went to pieces outside the Straits largely on account of mismanagement on the part of its commander. The

remnants were either captured or driven to shelter in neutral ports by the English squadron under Boscawen. On November 9, a heavy gale and the necessities of the fleet compelled Hawke to lift his blockade of Brest and take shelter in Torbay, after leaving four frigates to watch the port. On the 14th, Conflans, discovering that his enemy was gone, came out, with the absurd idea of covering the transportation of the French army before Hawke should appear again. That very day Hawke returned to renew the blockade, and learning that Conflans had been seen heading southeast, decided rightly that the French admiral was bound for Quiberon Bay to make an easy capture of a small British squadron there under Duff before beginning the transportation of the invading army.

For five days pursuer and pursued drifted in calms. On the 19th a stiff westerly gale enabled Hawke to overtake Conflans, who was obliged to shorten sail for fear of arriving at his destination in the darkness. The morning of the 20th found the fleets in sight of each other but scattered. All the forenoon the rival admirals made efforts to gather their units for battle. A frigate leading the British pursuit fired signal guns to warn Duff of the enemy's presence, and the latter, cutting his cables, was barely able to get out in time to escape the French fleet and join Hawke. Conflans then decided that the English were too strong for him, and abandoning his idea of offering battle, signaled a general retreat and led the way into Quiberon Bay.

Hawke instantly ordered pursuit. The importance of this signal can be realized only by taking into account the tremendous gale blowing and the exceedingly dangerous character of the approach to

Quiberon Bay, lined as it was with sunken rocks. Hawke had little knowledge of the channels but he reasoned that where a French ship could go an English one could follow, and the perils of the entry could not outweigh in his mind the importance of crushing the navy of France then and there. The small British superiority of numbers which Conflans feared was greatly aggravated by the conditions of his flight. The slower ships in his rear were crushed by the British in superior force and the English coming alongside the French on their lee side were able to use their heaviest batteries while the French, heeled over by the gale, had to keep their lowest tier of ports closed for fear of being sunk. One of their ships tried the experiment of opening this broadside and promptly foundered.

Darkness fell on a scene of wild confusion. Two of the British vessels were lost on a reef, but daylight revealed the fact that the French had scattered in all directions. Only five of their ships had been destroyed and one taken, but the organization and the morale were completely shattered. The idea of invasion thus came to a sudden end in Quiberon Bay. The daring and initiative of Hawke in defying weather and rocks in his pursuit of Conflans is the admirable and significant fact of this story, for the actual fighting amounted to little. It is the sort of thing that marked the spirit of the Dutch Wars and of Blake at Santa Cruz, and is strikingly different from the tame and stupid work of other admirals, English or French, in his own day.

The Seven Years' War ended in terms of the deepest humiliation for France—a "Carthaginian peace." She was compelled to renounce to England all of Canada with the islands of the St. Lawrence,

the Ohio valley and the entire area east of the Mississippi except New Orleans. Spain, which had entered the war on the side of France in 1761, gave up Florida in exchange for Havana, captured by the English, and in the West Indies several of the Lesser Antilles came under the British flag. It is hardly necessary to point out that the loss of these overseas possessions on such a tremendous scale was due to the ability of the British navy to cut the communications between them and the mother country.

Naval administration in England at this time was corrupt, and the admirals, with the notable exception of Hawke, were lacking in enterprise; they were still slaves to the "Fighting Instructions." But in all these respects the French were far worse, and the British government never lost sight of the immense importance of sea power. Its strategy was sound.

The War of American Independence

The peace of 1763 was so humiliating that every patriotic Frenchman longed for the opportunity of revenge. This offered itself in the revolt of the American colonies against the North Ministry in 1775. From the outset French neutrality as regards the American rebels was most benevolent; nothing could be more pleasing to France than to see her old enemy involved in difficulties with the richest and most populous of her colonies. For the first two or three years France gave aid surreptitiously, but after the capture of Burgoyne in 1777, she decided to enter the war openly and draw in allies as well. She succeeded in enlisting Spain in 1779 and Holland the year following. The entrance of the latter was of small military value, perhaps, but at all events

France so manipulated the rebellion in the colonies as to bring on another great European war. In this conflict for the first time she had no enemies to fight on the Continent; hence she was free to throw her full force upon the sea, attacking British possessions in every quarter of the world. The War of the American Revolution became therefore a maritime war, the first since the conflicts with the Dutch in the 17th century.

While Paul Jones was in Paris waiting for his promised command, he forwarded to the Minister of Marine a plan for a rapid descent in force on the American coast. If his plan had been followed and properly executed the war might have been ended in America at one blow. But this project died in the procrastination and red tape of the Ministry of Marine, and a subsequent proposal for an attack on Liverpool dwindled into the mere commerce-destroying cruise which is memorable only for Jones's unparalleled fight with the *Serapis*. Eventually the navy of France was thrown into the balance to offset that of Great Britain, and it is largely to this fact that the United States owes its independence; men and munitions came freely from overseas and on one momentous occasion, the Battle of the Virginia Capes, the French navy performed its part decisively in action. But on a score of other occasions it failed pitiably on account of the lack of a comprehensive strategic plan and the want of energy and experience on the part of the commanding officers.

It is true that the French navy had made progress since the Seven Years' War. In 1778, it possessed 80 good line of battle ships. To this force, a year later, Spain was able to contribute nearly sixty. But

England began the war with 150. Thus even if the French and Spanish personnel had been as well trained and as energetic as the British they would have had a superior force to contend with, particularly as the allied fleet was divided between the ports of Spain and France, and under dual command. But in efficiency the French and Spanish navies were vastly inferior to the British. Spanish efficiency may be dismissed at the outset as worthless. For the French officer the chief requisite was nobility of birth. The aristocracy of England furnished the officers for its service also, but in the French navy, considerations of social grade outweighed those of naval rank, a condition that never obtained in the British. In consequence, discipline—the principle of subordination animated by the spirit of team work—was conspicuously wanting in the French fleets. Individual captains were more concerned about their own prerogatives than about the success of the whole. This condition is illustrated by the conduct of the captains under Suffren in the Bay of Bengal, where the genius of the commander was always frustrated by the wilfulness of his subordinates. Finally in the matter of tactics the French were brought up on a fatally wrong theory, that of acting on the defensive, of avoiding decisive action, of saving a fleet rather than risking it for the sake of victory. Hence, though they were skilled in maneuvering, and ahead of the British in signaling, though their ships were as fine as any in the world, this fatal error of principle prevented their taking advantage of great opportunities and sent them to certain defeat in the end.

Thus it is clear that the sea power of France and Spain was not formidable if the English had taken

the proper course of strategy. This should have been to bottle up French and Spanish fleets in their own ports from Brest to Cadiz. Such a policy would have left enough ships to attend to the necessities of the army in America and the pursuit of French and American privateers, and accomplished the primary duty of preventing the arrival of French squadrons and French troops on the scene of war. Here the British government made its fatal mistake. Instead of concentrating on the coast of France and Spain, it tried to defend every outlying post where the flag might be threatened. Thus the superior English fleet was scattered all over the world, from Calcutta to Jamaica, while the French fleets came and went at will, sending troops and supplies to America and challenging the British control of the sea. Had the French navy been more efficient and energetic in its leadership France might have made her ancient enemy pay far more dearly for her strategic blunder. As it was, England lost her colonies in America.

Instead of the swift stroke on the American coast which Paul Jones had contemplated, a French fleet under d'Estaing arrived in the Delaware about five months after France had entered the war and after inexcusable delays on the way. In spite of the loss of precious time he had an opportunity to beat an inferior force under Howe at New York and seize that important British base, but his characteristic timidity kept him from doing anything there. From the American coast he went to the West Indies, where he bungled every opportunity of doing his duty. He allowed St. Lucia to fall into British hands and failed to capture Grenada. Turning north again, he made a futile attempt to retake Savannah, which had fallen to the English. Then at the end of 1779, at

about the darkest hour of the American cause, he returned to France, leaving the colonists in the lurch. D'Estaing was by training an infantry officer, and his appointment to such an important naval command is eloquent of the effect of court influence in demoralizing the navy. "S'il avait été aussi marin que brave," was the generous remark of Suffren on this man. It is true that on shore, where he was at home, d'Estaing was personally fearless, but as commander of a fleet, where he was conscious of inexperience, he showed timidity that should have brought him to court martial.

In March, 1780, the French fleet in the West Indies was put under the command of de Guichen, a far abler man than d'Estaing, but similarly indoctrinated with the policy of staying on the defensive. His rival on the station was Rodney, a British officer of the old school, weakened by years and illness, but destined to make a name for himself by his great victory two years later. In many respects Rodney was a conservative, and in respect to an appetite for prize money he belonged to the 16th century, but his example went a long way to cure the British navy of the paralysis of the Fighting Instructions and bring back the close, decisive fighting methods of Blake and de Ruyter.

In this same year in which Rodney took command of the West Indies station, a Scotch gentleman named Clerk published a pamphlet on naval tactics which attracted much attention. It is a striking commentary on the lack of interest in the theory of the profession that no British naval officer had ever written on the subject. This civilian, who had no military training or experience, worked out an analysis of the Fighting Instructions and came to the conclusion that the

whole conception of naval tactics therein contained was wrong, that decisive actions could be fought only by concentrating superior forces on inferior. One can imagine the derision heaped on the landlubber who presumed to teach admirals their business, but there was no dodging the force of his point. Of course the mathematical precision of his paper victories depended on the enemy's being passive while the attack was carried out, but fundamentally he was right. The history of the past hundred years showed the futility of an unbroken line ahead, with van, center, and rear attempting to engage the corresponding divisions of the enemy. Decisive victories could be won only by close, concentrated fighting. It may be true, as the British naval officers asserted, that they were not influenced by Clerk's ideas, but the year in which his book appeared marks the beginning of the practice of his theory in naval warfare.

At the time of the American Revolution the West Indies represented a debatable ground where British interests clashed with those of her enemies, France, Spain, and Holland. It was very rich in trade importance; in fact, about one fourth of all British commerce was concerned with the Caribbean. Moreover, it contained the rival bases for operations on the American coast. Hence it became the chief theater of naval activity. Rodney's business was to make the area definitely British in control, to protect British possessions and trade and to capture as much as possible of enemy possessions and trade. On arriving at his station in the spring of 1780, he sought de Guichen. The latter had shown small enterprise, having missed one opportunity to capture British transports and another to prevent the junction

of Rodney's fleet with that of Parker who was awaiting him. Even when the junction was effected, the British total amounted to only 20 ships of the line to de Guichen's 22, and the French admiral might still have offered battle. Instead he followed the French strategy of his day, by lying at anchor at Fort Royal, Martinique, waiting for the British to sail away and give him an opportunity to capture an island without having to fight for it.

Rodney promptly sought him out and set a watch of frigates off the port. When de Guichen came out on April 15 (1780) to attend to the convoying of troops, Rodney was immediately in pursuit, and on the 17th the two fleets were in contact. Early that morning the British admiral signaled his plan "to attack the enemy's rear," because de Guichen's ships were strung out in extended order with a wide gap between rear and center. De Guichen, seeing his danger, wore together and closed the gap. This done, he again turned northward and the two fleets sailed on parallel courses but out of gunshot.



About eleven 0' clock, some four hours after his first signal, Rodney again signaled his intention to engage the enemy, and shortly before twelve he sent up the order, "for every ship to bear down and steer for her opposite in the enemy's line, agreeable to the 21st article of the Additional Fighting Instructions."

Rodney had intended to concentrate his ships against their *actual* opposites at the time,—the rear of the French line, which was still considerably drawn out; but the captain of the leading ship interpreted the order to mean the *numerical* opposites in the enemy's line, after the style of fighting provided for by the Instructions from time immemorial. Rodney's first signal informing the fleet that he intended to attack the enemy's rear meant nothing to his captain at this time. Accordingly he sailed away to engage the first ship in the French van, followed by the vessels immediately astern of him, and thus wrecked the plan of his commander in chief.

Nothing could illustrate better the hold of the traditional style of fighting on the minds of naval officers than this blunder, though it is only fair to add that there was some excuse in the ambiguity Of the order. Rodney was infuriated and expressed himself with corresponding bitterness. He always regarded this battle as the one on which his fame should rest because of what it might have been if his subordinates had given him proper support. The interesting point lies in the fact that he designed to throw his whole force on an inferior part of the enemy's force—the principle of concentration. In a later and much more famous battle, as we shall see, Rodney departed still further from the traditional tactics by "breaking the line," his own as well as that of the French, and won a great victory.

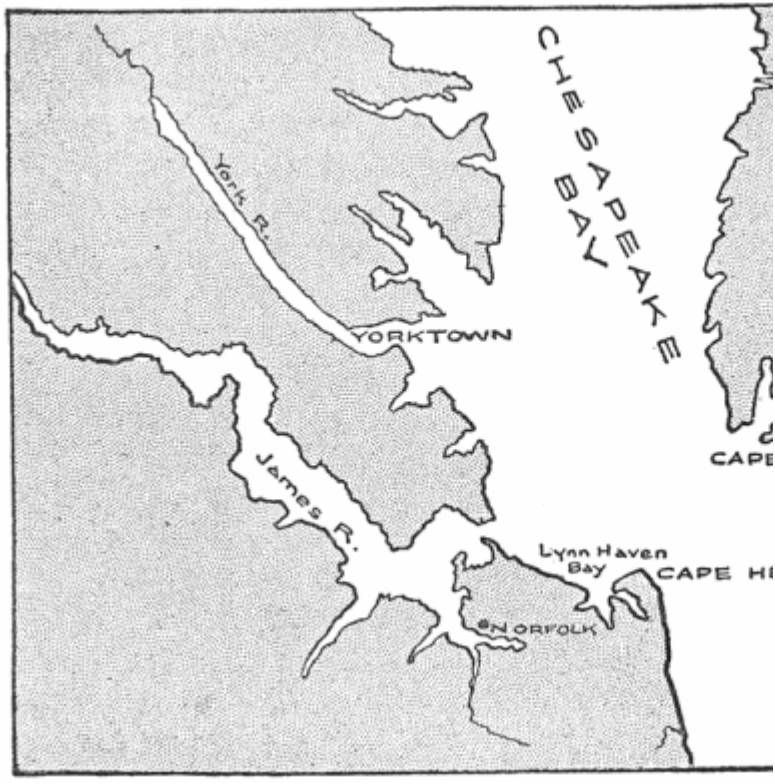
Meanwhile there occurred another operation not so creditable. Rodney had spent a large part of his life dodging creditors, and it was due to the generous loan of a French gentleman in Paris that he did not drag out the years of this war in the Bastille for debt. When Holland entered the war he saw an

opportunity to make a fortune by seizing the island of St. Eustatius, which had been the chief depot in the West Indies for smuggling contraband into America. To this purpose he subordinated every other consideration. The island was an easy prize, but the quarrels and lawsuits over the distribution of the booty broke him down and sent him back to England at just the time when he was most needed in American waters, leaving Hood in acting command.

In March, 1781, de Grasse sailed from Brest with a fleet of 26 ships of the line and a large convoy. Five of his battleships were detached for service in the East, under Suffren, of whom we shall hear more later. The rest proceeded to the Caribbean. On arriving at Martinique de Grasse had an excellent opportunity to beat Hood, who had an inferior force; but like his predecessors, d'Estaing and de Guichen, he was content to follow a defensive policy, excusing himself on the ground of not exposing his convoy. While at Cape Haitien he received messages from Rochambeau and Washington urging his coöperation with the campaign in America. To his credit be it said that on this occasion he acted promptly and skillfully, and the results were of great moment.

At this time the British had subdued Georgia and South Carolina, and Cornwallis was attempting to carry the conquest through North Carolina. In order to keep in touch with his source of supplies the sea, however, he was compelled to fall back to Wilmington. From there, under orders from General Clinton, he marched north to Yorktown, Virginia, where he was joined by a small force of infantry. Washington and Rochambeau had agreed on the necessity of getting the coöperation of the West Indies fleet in an offensive directed either at Clinton

in New York or at Cornwallis at Yorktown. Rochambeau preferred the latter alternative, because it involved fewer difficulties, and the message to de Grasse was accompanied by a private memorandum from him to the effect that he preferred the Chesapeake as the scene of operations. Accordingly de Grasse sent the messenger frigate back with word of his intention to go to Chesapeake Bay. He then made skillful arrangements for the transport of all available troops, and set sail with every ship he could muster, steering by the less frequented Old Bahama Channel in order to screen his movement.



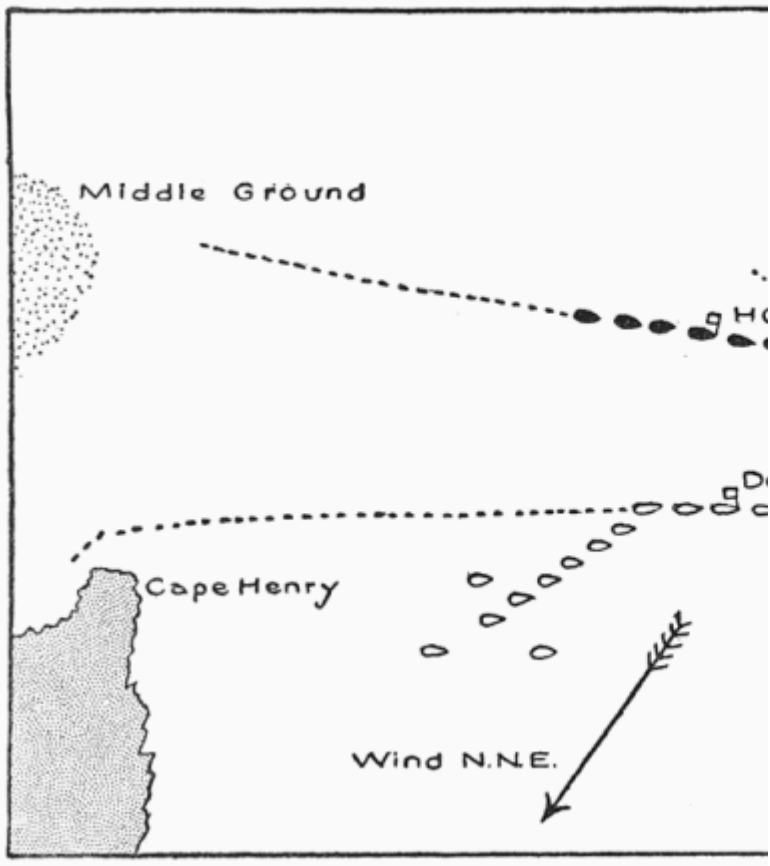
SCENE OF THE YORKTOWN

On August 30 (1781) de Grasse anchored in Lynnhaven Bay, just inside the Chesapeake Capes, with 28 ships of the line. The two British guard frigates were found stupidly at anchor inside the bay; one was taken and the other chased up the York river. De Grasse then landed the troops he had brought with him, and these made a welcome reënforcement to Lafayette, who was then opposing Cornwallis. At the same time Washington was marching south to join Lafayette, and word had been sent to the commander of a small French squadron at Newport to make junction with de Grasse, bringing the siege artillery necessary to the operations before Yorktown. Thus the available farces were converging on Cornwallis in superior strength, and his only route for supplies and reënforcements lay by sea. All depended on whether the British could succeed in forcing the entrance to Chesapeake Bay.

Hood, with 14 ships of the line, had followed on the trail of de Grasse, and as it happened looked into Chesapeake Bay just three days before the French admiral arrived. Finding no sign of the French, Hood sailed on to New York and joined Admiral Graves, who being senior, took command of the combined squadrons. As it was an open secret at that time that the allied operations would be directed at Cornwallis, Graves immediately sailed for the Capes, hoping on the way to intercept the Newport squadron which was known to be bound far the same destination. On reaching the Capes, September 5, he found de Grasse guarding the entrance to the bay with 24 ships of the line, the remaining four having been detailed to block the mouths of the James and York rivers. To oppose this force Graves had only 19 ships of the line, but he did not hesitate to offer

battle.

In de Grasse's mind there were two things to accomplish: first, to hold the bay, and secondly, to keep the British occupied far enough at sea to allow the Newport squadron to slip in. Of course he could have made sure of both objects and a great deal more by defeating the British fleet in a decisive action, but that was not the French naval doctrine. The entrance to the Chesapeake is ten miles wide but the main channel lies between the southern promontory and a shoal called the Middle Ground three miles north of it. The British stood for the channel during the morning and the French, taking advantage of the ebbing tide at noon, cleared the bay, forming line of battle as they went. As they had to make several tacks to clear Cape Henry, the ships issued in straggling order, offering an opportunity for attack which Graves did not appreciate. Instead he went about, heading east an a course parallel to that of de Grasse, and holding the windward position. When the two lines were nearly opposite each other the British admiral ware down to attack.



BATTLE OF THE VIRGI

(After diagram in Mahan's *Major Operation*

Graves's method followed the orthodox tradition exactly, and with the unvarying result. As the attacking fleet bore down in line ahead at an angle, the van of course came into action first, unsupported for some time by the rest. As the signal for close action was repeated, this angle was made sharper, and in attempting to close up the line several ships got bunched in such a way as to mask their fire.

Meanwhile the rear, the seven ships under Hood, still trailing along in line ahead, never got into the action at all. Graves had signaled for "close action," but Hood chose to believe that the order for line ahead still held until the signal was repeated, whereupon he bore down. As the French turned away at the same time, to keep their distance, Hood contributed nothing to the fighting of the day. At sunset the battle ended. The British had lost 90 killed and 246 wounded; the French, a total of 200. Several of the British ships were badly damaged, one of which was in a sinking condition and had to be burned. The two fleets continued on an easterly course about three miles apart, and for five days more the two maneuvered without fighting. Graves was too much injured by the first day's encounter to attack again and de Grasse was content to let him alone. Graves still had an opportunity to cut back and enter the bay, taking a position from which it would have been hard to dislodge him and effecting the main object of the expedition by holding the mouth of the Chesapeake. But this apparently did not occur to him. De Grasse, who had imperiled Washington's campaign by cruising so far from the entrance, finally returned on the 11th, and found that the Newport squadron had arrived safely the day before. When Graves saw that the French fleet was now increased to 36 line-of-battle ships, he gave up hope of winning the bay and returned to New York, leaving Cornwallis to his fate. A little over a month later, October 19, the latter surrendered, and with his sword passed the last hope of subduing the American revolution.

This battle of the Capes, or Lynnhaven, has never until recent times been given its true historical

perspective, largely because in itself it was a rather tame affair. But as the historian Reich[1] observes, "battles, like men, are important not for their dramatic splendor but for their efficiency and consequences.... The battle off Cape Henry had ultimate effects infinitely more important than Waterloo." Certainly there never was a more striking example of the "influence of sea power" on a campaign. Just at the crisis of the American Revolution the French navy, by denying to the British their communications by sea, struck the decisive blow of the war. This was the French *revanche* for the humiliation of 1763.

[Footnote 1: FOUNDATIONS OF MODERN EUROPE, p. 24.]

The British failure in this action was due to a dull commander in chief carrying out a blundering attack based on the Fighting Instructions. Blame must fall also on his second in command, Hood, who, though a brilliant officer, certainly failed to support his chief properly when there was an obvious thing to do. Perhaps if the personal relations between the two had been more cordial Hood would have taken the initiative. But in those days the initiative of a subordinate was not encouraged, and Hood chose to stand on his dignity.

Although the war was practically settled by the fall of Yorktown, it required another year or so to die out. In this final year a famous naval battle was fought which went far toward establishing British predominance in the West Indies, and which revealed something radically different in naval tactics from the practice of the time.

In the spring of 1782, Rodney was back in

command of the West Indian station, succeeding Hood, who continued to serve as commander of a division. The British base was Gros Islet Bay in Santa Lucia. De Grasse was at Fort Royal, Martinique, waiting to transport troops to Santo Domingo, where other troops and ships were collected. There, joining with a force of Spaniards from Cuba, he was to conduct a campaign against Jamaica. It was Rodney's business to break up this plan. During a period of preparation on both sides, reënforcements joined the rival fleets, that of the British amounting to enough to give Rodney a marked superiority in numbers. Moreover his ships were heavier, as he had five 3-deckers to the French one, and about 200 more guns. The superiority of speed, as well, lay with Rodney because more of his ships had copper sheathing. A still further advantage lay in the fact that he was not burdened with the problem of protecting convoys and transports as was de Grasse. Thus, in the event of conflict, the advantages lay heavily with the British.

On the morning of April 8, the English sentry frigate off Fort Royal noted that the French were coming out, and hastened with the news to Rodney at Santa Lucia. The latter put to sea at once. He judged rightly that de Grasse would steer for Santo Domingo, in order to get rid of his transports at their destination as soon as possible, and on the morning of the 9th he sighted the French off the west coast of the island of Dominica. On the approach of the English fleet, de Grasse signaled his transports to run to the northwest, while he took his fleet on a course for the channel between the islands of Dominica and Guadeloupe. As the British would be sure to pursue the fleet, this move would enable the convoy to

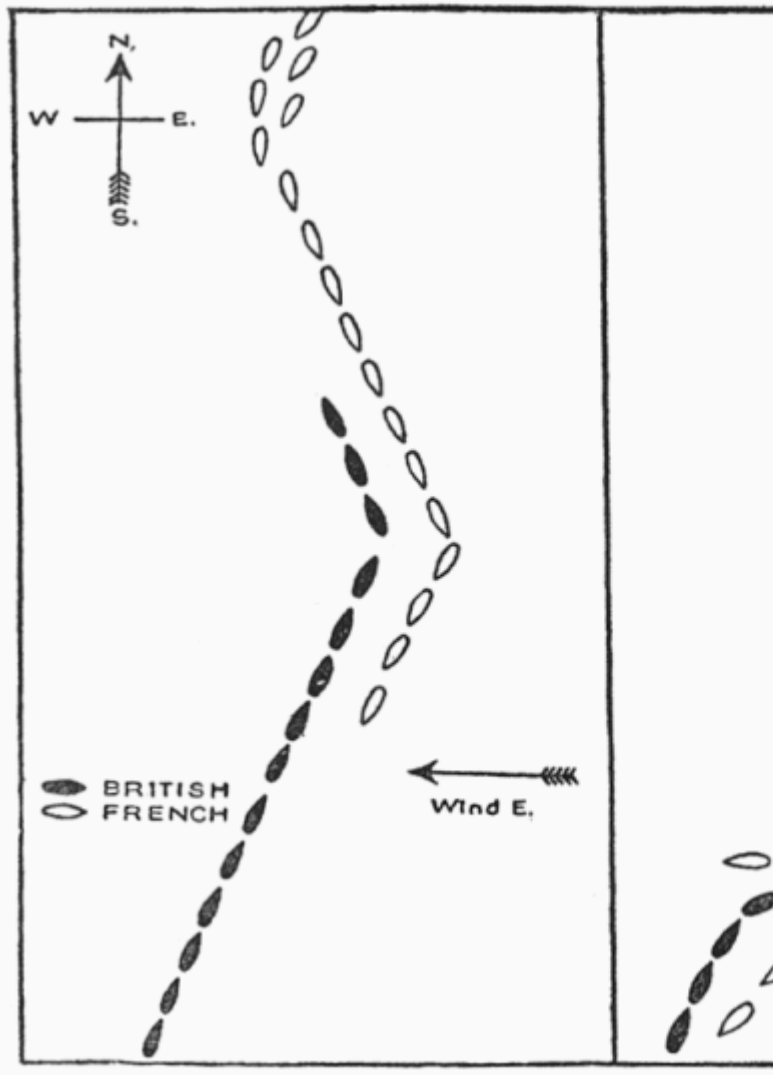
escape.

The channel toward which de Grasse turned his fleet is known as the Saints' Passage from a little group of islands, "les isles des Saintes," lying to the north of it. In the course of the pursuit, Hood, with the British van division of nine ships, had got ahead of the rest and offered a tempting opening for attack in superior force. If de Grasse had grasped his opportunity he might have inflicted a crushing blow on Rodney and upset the balance of superiority. But the lack of aggressiveness in the French doctrine was again fatal to French success. De Grasse merely sent his second in command to conduct a skirmish at long range—and thus threw his chance away.

The light winds and baffling calms kept both fleets idle for a day. On the 11th de Grasse tried to work his fleet through the channel on short tacks. Just as he had almost accomplished his purpose he discovered several of his vessels still so far to westward as to be in danger of capture. In order to rescue these he gave up the fruits of laborious beating against the head wind and returned. The following morning, April 12 (1782), discovered the two fleets to the west of the strait and so near that the French could no longer evade battle. The French came down on the port tack and the British stood toward them, with their admiral's signal flying to "engage to leeward." When the two lines converged to close range, the leading British ship shifted her course slightly so as to run parallel with that of the French, and the two fleets sailed past each other firing broadsides. So far the battle had followed traditional line-ahead pattern.

Just as the leading ship of the British came abreast

of the rearmost of the French, the wind suddenly veered to the southward, checking the speed of the French ships and swinging their bows over toward the English line. At best a line of battle in the sailing ship days was an uneven straggling formation, and the effect of this flaw of wind, dead ahead, was to break up the French line into irregular groups separated by wide gaps. One of these opened up ahead as Rodney's flagship, the *Formidable*, forged past the French line. His fleet captain, Douglas, saw the opportunity and pleaded with Rodney to cut through the gap. "No," he replied, "I will not break my line." Douglas insisted. A moment later, as the *Formidable* came abreast of the opening, the opportunity proved too tempting and Rodney gave his consent. His battle signal, "engage the enemy to leeward," was still flying, but the *Formidable* luffed up and swung through the French line followed by five others. The ship immediately ahead of the *Formidable* also cut through a gap, and the sixth astern of the flagship went through as well, followed by the entire British rear. As each vessel pierced the broken line she delivered a terrible fire with both broadsides at close range.



BATTLE OF THE SAINTS

After diagram in Mahan's *Influen*

The result of this maneuver was that the British fleet found itself to windward of the French in three

groups, while the French ships were scattered to leeward and trying to escape before the wind, leaving three dismasted hulks between the lines. An isolated group of six ships in the center, including de Grasse's *Ville de Paris*, offered a target for attack, but the wind was light and Rodney indolent in pursuit. Of these, one small vessel was overhauled and the French flagship was taken after a heroic defense, that lasted until sunset, against overwhelming odds. De Grasse's efforts to reform his fleet after his line was broken had met with failure, for the van fled to the southwest and the rear to the northwest, apparently making little effort to succor their commander in chief or retrieve the fortunes of the day.

Rodney received a peerage for this day's work but he certainly did not make the most of his victory. Apparently content with the five prizes he had taken, together with the person of de Grasse, he allowed the bulk of the French fleet to escape when he had it in his power to capture practically all. On this point his subordinate, Hood, expressed himself with great emphasis:

"Why he (Rodney) should bring the fleet to because the *Ville de Paris* was taken, I cannot reconcile. He did not pursue under easy sail, so as never to have lost sight of the enemy, in the night, which would clearly and most undoubtedly have enabled him to have taken almost every ship the next day.... Had I had the honor of commanding his Majesty's noble fleet on the 12th, I may, without much imputation of vanity, say the flag of England should now have graced the sterns of *upwards* of twenty sail of the enemy's ships of the line."[1]

[Footnote 1: Quoted by Mahan, THE ROYAL NAVY (Clowes),

Vol. III, p. 535.]

Sir Charles Douglas, who had been responsible for Rodney's breaking the line, warmly agreed with Hood's opinion on this point. Nevertheless, although the victory was not half of what it might have been in younger hands, it proved decisive enough to shatter the naval organization of the French in the West Indies. It stopped the projected campaign against Jamaica and served to write better terms for England in the peace treaty of January 20, 1783.

Tactically this battle has become famous for the maneuver of "breaking the line," contrary to the express stipulations of the Fighting Instructions. Certainly the move was not premeditated. Rodney may well be said to have been pushed into making it, and two of his captains made the same move on their own initiative. Indeed it is quite likely that, after the event, too much has been made of this as a piece of deliberate tactics, for the sudden shift of wind had paid off the bows of the French ships so that they were probably heading athwart the course of the British line, and the British move was obviously the only thing to do. But the lesson of the battle was clear,—the decisive effect of close fighting and concentrated fire. In the words of Hannay, "It marked the beginning of that fierce and headlong yet well calculated style of sea fighting which led to Trafalgar and made England undisputed mistress of the sea."[1] It marked, therefore, the end of the Fighting Instructions, which had deadened the spirit as well as the tactics of the British navy for over a hundred years.

[Footnote 1: Rodney (ENGLISH MEN OF ACTION SERIES), p. 213.]

The tactical value of "breaking the line" is well summarized by Mahan in the following passage:

"The effect of breaking an enemy's line, or order-of-battle, depends upon several conditions. The essential idea is to divide the opposing force by penetrating through an interval found, or made, in it, and then to concentrate upon that one of the fractions which can be least easily helped by the other. In a column of ships this will usually be the rear. The compactness of the order attacked, the number of the ships cut off, the length of time during which they can be isolated and outnumbered, will all affect the results. A very great factor in the issue will be the moral effect, the confusion introduced into a line thus broken. Ships coming up toward the break are stopped, the rear doubles up, while the ships ahead continue their course. Such a moment is critical, and calls for instant action; but the men are rare who in an unforeseen emergency can see, and at once take the right course, especially if, being subordinates, they incur responsibility. In such a scene of confusion the English, without presumption, hoped to profit by their better seamanship; for it is not only 'courage and devotion,' but skill, which then tells. All these effects of 'breaking the line' received illustration in Rodney's great battle in 1782."[1]

[Footnote 1: THE INFLUENCE OF SEA POWER UPON HISTORY, pp. 380-381.]

Before we leave the War of American Independence mention should be made of Commodore Suffren who, as we have seen, left de Grasse with five ships of the line to conduct a campaign in the Indian Ocean in the spring of 1781. His purpose was to shake the British hold on India,

which had been fastened by the genius of Clive in the Seven Years' War. But the task given to Suffren was exceedingly difficult. His squadron was inadequate—for instance, he had only two frigates for scout and messenger duty—and he had no port that he could use as a base in Indian waters. To conduct any campaign at all he was compelled to live off his enemy and capture a base. These were risky prospects for naval operations several thousand miles from home, and for the faintest hope of success required an energy and initiative which had never before appeared in a French naval commander. In addition to these handicaps of circumstance Suffren soon discovered that he had to deal with incorrigible slackness and insubordination in his captains.

In spite of everything, however, Suffren achieved an amazing degree of success. He succeeded in living off the prizes taken from the British, and he took from them the port of Trincomalee for a base. He fought five battles off the coast of India against the British Vice Admiral Hughes, in only one of which was the latter the assailant, and in all of which Suffren bore off the honors. He was constantly hampered, however, by the inefficiency and insubordination of his captains. On four or five occasions, including an engagement at the Cape Verde Islands on his way to India, it was only this misconduct that saved the British from the crushing attack that Suffren had planned. Unfortunately for him his victories were barren of result, for the terms of peace gave nothing in India to the French which they had not possessed before. As Trincomalee had belonged to the Dutch before the British captured it, this port was turned back to Holland.

Nevertheless Suffren deserves to be remembered

both for what he actually accomplished under grave difficulties and what he might have done had he been served by loyal and efficient subordinates. Among all the commanders of this war he stands preeminent for naval genius, and this eminence is all the more extraordinary when one realizes that his resourcefulness, tenacity, aggressiveness, his contempt of the formal, parade tactics of his day, were notoriously absent in the rest of the French service. Such was the admiration felt for him by his adversaries that after the end of the war, when the French squadron arrived at Cape Town on its way home and found the British squadron anchored there, all the British officers, from Hughes down, went aboard the French flagship to tender their homage.[1]

[Footnote 1: "If ever a man lived who justified Napoleon's maxim that war is an affair not of men but of a man, it was he. It was by his personal merit that his squadron came to the very verge of winning a triumphant success. That he failed was due to the fact that the French Navy... was honeycombed by the intellectual and moral vices which were bringing France to the great Revolution—corruption, self-seeking, acrid class insolence, and skinless, morbid vanity."—THE ROYAL NAVY, David Hannay, II, 287.]

Although the War of American Independence was unsuccessfully fought by Great Britain and she was compelled to recognize the independence of her rebellious colonies, she lost comparatively little else by the terms of peace. As we have seen, her hold in India was unchanged. The stubborn defense of Gibraltar throughout the war, aided by occasional timely relief by a British fleet, saved that stronghold for the English flag. To Spain England was forced to surrender Florida and Minorca. France got back all the West Indian islands she had lost, with the

exception of Tobago, but gained nothing besides. The war therefore did not restore to France her colonial empire of former days or make any change in the relative overseas strength of the two nations. Despite the blunders of the war no rival sea power challenged that of Great Britain at the conclusion of peace.

Meanwhile, just before the war and during its early years, an English naval officer was laying the foundation for an enormous expansion of the British empire in the east. This was James Cook, a man who owed his commission in the navy and his subsequent fame to nothing in family or political influence, but to sheer genius. Of humble birth, he passed from the merchant service into the navy and rose by his extraordinary abilities to the rank of master. Later he was commissioned lieutenant and finally attained the rank of post captain.[1] Such rank was hardly adequate recognition of his great powers, but it was unusually high for a man who was not born a "gentleman."

[Footnote 1: Full captain's rank, held only by a captain in command of a vessel of at least 20 guns.]

At the end of the Seven Years' War he distinguished himself, by his work in surveying and sounding an the coasts of Labrador and Newfoundland, as a man of science. In consequence, he was detailed to undertake expeditions for observing the transit of Venus and for discovering the southern continent which was supposed to exist in the neighborhood of the Antarctic circle. In the course of this work Cook practically established the geography of the southern half of the globe as we know it to-day. And by his skill and study of the

subject he conquered the great enemy of exploring expeditions, scurvy. Thirty years before, another British naval officer, Anson, had taken a squadron into the Pacific and lost about three-fourths of his men from this disease. When the war of the American Revolution broke out, Cook was abroad on one of his expeditions, but the French and American governments issued orders to their captains not to molest him on account of his great service to the cause of scientific knowledge. Unfortunately he was killed by savages at the Sandwich Islands in 1779.

The bearing of his work on the British empire lies chiefly in his careful survey of the east coast of Australia, which he laid claim to in the name of King George, and the circumnavigation of New Zealand, which later gave title to the British claim on those islands. Thus, while the American colonies in the west were winning their independence, another territory in the east, far more extensive, was being brought under British sway, destined in another century to become important dominions of the empire. The Dutch had a claim of priority in discovery through the early voyages of Tasman, but they attempted no colonization and Dutch sea power was too weak to make good a technical claim in the face of England's navy.

Finally, when the results of a century of wars between France and England are summarized, we find that France had lost all her great domain in America except a few small islands in the West Indies. In brief, it is due to British control of the sea during the 18th century that practically all of the continent north of the Rio Grande is English in speech, laws, and tradition.

This control of the sea exercised by England was not the gift of fortune. It was a prize gained, in the main, by wise policy in peace and hard fighting in war. France had the opportunity to wrest from England the control of the sea as England had won it from Holland, for France at the close of the 17th century dominated Europe. In population and in wealth she was superior to her rival. But the arrogance of her king kept her embroiled in futile wars on the Continent, with little energy left for the major issue, the conquest of the sea. Finally, when the war of American Independence left her a free hand to concentrate on her navy as against that of England, France lost through the fatal weakness of policy which corrupted all her officers with the single brilliant exception of Suffren. The French naval officer avoided battle on principle, and when he could not avoid it he accepted the defensive. To the credit of the English officer be it said that, as a rule, he sought the enemy and took the aggressive; he had the "fighting spirit." This difference between French and British commanders had as much to do with the ultimate triumph of England on the sea as anything else. It retrieved many a blunder in strategy and tactics by sheer hard hitting.

The history of the French navy points a moral applicable to any service and any time. When a navy encourages the idea that ships must not be risked, that a decisive battle must be avoided because of what might happen in case of defeat, it is headed for the same fate that overwhelmed the French.

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CHAPTER XI

THE NAPOLEONIC WARS: THE FIRST OF JUNE AND CAMPERDOWN

Ten years after the War of American Independence, British sea power was drawn into a more prolonged and desperate conflict with France. This time it was with a France whose navy, demoralized by revolution, was less able to dispute sea control, but whose armies, organized into an aggressive, empire-building force by the genius of Napoleon, threatened to dominate Europe, shaking the old monarchies with dangerous radical doctrines, and bringing all Continental nations into the conflict either as enemies or as allies. The dismissal of the French envoy from England immediately after the execution of Louis XVI (Jan. 21, 1793) led the French Republic a week later to a declaration of war, which continued with but a single intermission—from October, 1801, to May, 1803—through the next 22 years.

The magnitude of events on land in this period, during which French armies fought a hundred bloody campaigns, overthrew kingdoms, and remade the map of Europe, obscures the importance of the warfare on the sea. Yet it was Great Britain by virtue of her navy and insular position that remained Napoleon's least vulnerable and most obstinate opponent, forcing him to ever renewed and

exhausting campaigns, reviving continental opposition, and supporting it with subsidies made possible by control of sea trade. In Napoleon's own words the effect of this pressure is well summarized: "To live without ships, without trade, without colonies, is to live as no Frenchman can consent to do." The Egyptian campaign, conceived as a thrust at British sources of wealth in the East, and defeated at the Nile; the organization of the northern neutrals against England, overthrown at Copenhagen; the direct invasion of the British Isles, repeatedly planned and thwarted at St. Vincent, Camperdown, and Trafalgar; the final and most nearly successful effort to ruin England by closing her continental markets and thus, in Napoleon's phrase, "defeating the sea by the land"—these were the successive measures by which he sought to shake the grip of sea power.

The following narrative of these events is in three divisions: the first dealing with the earlier engagements of the First of June and Camperdown, fought by squadrons based on home ports; the second with the war in the Mediterranean and the rise of Nelson as seen in the campaigns of St. Vincent, the Nile, and Copenhagen; the third with the Trafalgar campaign and the commercial struggle to which the naval side of the war was later confined. The career of Nelson is given an emphasis justified by his primacy among naval leaders and the value of his example for later times.

The effect of land events in obscuring the naval side of the war, already mentioned, is explained not merely by their magnitude, but by the fact that, though Great Britain was more than once brought to the verge of ruin, this was a consequence not of the

enemy's power on the sea, but of his victories on land. Furthermore, the slow process which ended in the downfall of Napoleon and the reduction of France to her old frontiers was accomplished, not so conspicuously by the economic pressure of sea power, as by the efforts of armies on battlefields from Russia to Spain. On the sea British supremacy was more firmly established, and the capacities of France and her allies were far less, than in preceding conflicts of the century.

The French Navy Demoralized

The explanation of this weakness of the French navy involves an interesting but somewhat perplexing study of the influences which make for naval growth or decay. That its ineffectiveness was due largely to an inferior national instinct or genius for sea warfare, as compared with England, is discredited by the fact that the disparity was less obvious in previous wars; for, as Lord Clowes has insisted, England won no decisive naval victory against superior forces from the second Dutch War to the time of Nelson. The familiar theory that democracy ruined the French navy will be accepted nowadays only with some qualifications, especially when it is remembered that French troops equally affected by the downfall of caste rule were steadily defeating the armies of monarchical powers. It is true, however, that navies, as compared with armies, are more complicated and more easily disorganized machines, and that it would have taxed even Napoleonic genius to reorganize the French navy after the neglect, mutiny, and wholesale sweeping out of trained personnel to which it was subjected in the first furies of revolution. Whatever the merits of the officers of the old régime, selected as they were

wholly from the aristocracy and dominated by the defensive policy of the French service, three-fourths of them were driven out by 1791, and replaced by officers from the merchant service, from subordinate ratings, and from the crews. Suspicion of aristocracy was accompanied in the navy by a more fatal suspicion of skill. In January, 1794, the regiments of marine infantry and artillery, as well as the corps of seamen-gunners, were abolished on the ground that no body of men should have "the exclusive privilege of fighting the enemy at sea," and their places were filled by battalions of the national guard. Figures show that as a result, French gunnery was far less efficient than in the preceding war.

The strong forces that restored discipline in the army had more difficulty in reaching the navy; and Napoleon's gift for discovering ability and lifting it to command was marked by its absence in his choice of leaders for the fleets. Usually he fell back on pessimistic veterans of the old régime like Brueys, Missiessy, and Villeneuve. An exception, Allemand, showed by his cruise out of Rochefort in 1805 what youth, energy, and daring could accomplish even with inferior means. Considering the importance of leadership as a factor in success, we may well believe that, had a French Nelson, or even a Suffren, been discovered in this epoch, history would tell a different tale. If further reasons for the decadence of the navy are needed, they may be found in the extreme difficulty of securing naval stores and timber from the Baltic, and in the fact that, though France had nearly three times the population of the British Isles, her wealth, man-power, and genius were absorbed in the war on land.

Aside from repulsion at the violence of the French

revolution and fear of its contagion, England had a concrete motive for war in the French occupation of the Austrian Netherlands and the Scheldt, the possession of which by an ambitious maritime nation England has always regarded as a menace to her safety and commercial prosperity. "This government," declared the British Ministry in December, 1792, "will never view with indifference that France shall make herself, directly or indirectly, sovereign of the Low Countries or general arbitress of the rights and liberties of Europe."

In prosecuting the war, Great Britain fought chiefly with her main weapon, the navy, leaving the land war to her allies. A contemporary critic remarked that she "worked with her navy and played with her army"; though the latter did useful service in colonial conquests and in Egypt, the two expeditionary forces to the Low Countries in 1793 and 1799 were ill-managed and ineffective. The tasks of the fleet were to guard the British Isles from raids and invasion, to protect British commerce in all parts of the world, and, on the offensive, to seize enemy colonies, cut off enemy trade, and coöperate in the Mediterranean with allied armies. To accomplish these aims, which called for a wide dispersion of forces, the British naval superiority over France was barely adequate. According to the contemporary naval historian James, the strength of the two fleets at the outbreak of war was as follows:

	Ships of the line	Guns	Aggregate broadsides
British	115	8,718	88,957
French	76	6,002	73,057

Of her main fighting units, the ships-of-the-line, England could put into commission about 85, which as soon as possible were distributed in three main spheres of operation: in the Mediterranean and its western approaches, from 20 to 25; in the West Indies, from 10 to 12; in home waters, from the North Sea to Cape Finisterre, from 20 to 25, with a reserve of some 25 more in the home bases on the Channel. Though this distribution was naturally altered from time to time to meet changes in the situation, it gives at least an idea of the general disposition of the British forces throughout the war. France, with no suitable bases in the Channel, divided her fleet between the two main arsenals at Brest and Toulon, with minor squadrons at Rochefort and, during the Spanish alliance, in the ports of Spain.

Distant Operations

In the West Indies and other distant waters, France could offer but little effective resistance, and operations there may hence be dismissed briefly, but with emphasis on the benefit which naval control conferred upon British trade, the main guaranty of England's financial stability and power to keep up the war. Fully one-fifth of this trade was with the West Indies. Consequently, both to swell the volume of British commerce and protect it from privateering, the seizure of the French West Indian colonies —"filching the sugar islands," as Sheridan called it— was a very justifiable war measure, in spite of the scattering of forces involved. Hayti was lost to France as a result of the negro uprising under Toussaint l'Ouverture. Practically all the French Antilles changed hands twice in 1794, the failure of the British to hold them arising from a combination

of yellow fever, inadequate forces of occupation, and lax blockade methods on the French coast, which permitted heavy reënforcements to leave France. General Abercromby, with 17,000 men, finally took all but Guadaloupe in the next year. As Holland, Spain, and other nations came under French control, England seized their colonies likewise—the Dutch settlements at the Cape of Good Hope and Ceylon in 1795; the Moluccas and other Dutch islands in the East Indies in 1796; Trinidad (Spanish) in 1797; Curaçao (Dutch) in 1800; and the Swedish and Danish West Indies in 1801. By the Treaty of Amiens in 1802 all these except Trinidad and Ceylon were given back, and had to be retaken in the later period of the war, Guadaloupe remaining a privateers' nest until its final capture in 1810. Though French trade was ruined, it was impossible to stamp out privateering, which grew with the growth of British commerce which it preyed upon, and the extent of which is indicated by the estimate that in 1807 there were from 200 to 300 privateers on the coasts of Cuba and Hayti alone. As for the captured islands, Great Britain in 1815 retained only Malta, Heligoland, and the Ionian Islands in European waters; Cape Colony, Mauritius, and Ceylon on the route to the East; and in the Caribbean, Demerara on the coast, Santa Lucia, Trinidad, and Tobago—some of them of little intrinsic value, but all useful outposts for an empire of the seas.

In the Channel and Bay of Biscay, the first year of war passed quietly. Lord Howe, commanding the British Channel fleet, had behind him a long, fine record as a disciplinarian and tactician; he had fought with Hawke at Quiberon Bay, protected New York and Rhode Island against d'Estaing in 1778, and

later thrown relief into Gibraltar in the face of superior force. Now 68 years of age, he inclined to cautious, old-school methods, such as indeed marked activities on both land and sea at this time, before Napoleon had injected a new desperateness into war. Both before and after the "Glorious First of June" the watch on the French coast was merely nominal; small detachments were kept off Brest, but the main fleet rested in Portsmouth throughout the winter and took only occasional cruises during the remainder of the year.

The Battle of the First of June

Though there had been no real blockade, the interruption of her commerce, the closure of her land frontiers, and the bad harvest of 1793, combined to bring France in the spring following to the verge of famine, and forced her to risk her fleet in an effort to import supplies from overseas. On April 11 an immense flotilla of 120 grain vessels sailed from the Chesapeake under the escort of two ships-of-the-line, which were to be strengthened by the entire Brest fleet at a rendezvous 300 miles west of Belleisle. Foodstuffs having already been declared subject to seizure by both belligerents, Howe was out on May 2 to intercept the convoy. A big British merchant fleet also put to sea with him, to protect which he had to detach 8 of his 34 ships, but with orders to 6 of these that they should rejoin his force on the 20th off Ushant. Looking into Brest on the 19th, Howe found the French battle fleet already at sea. Not waiting for the detachment, and thus losing its help in the battle that was to follow, he at once turned westward and began sweeping with his entire fleet the waters in which the convoy was expected to appear.

The French with 26 ships-of-the-line—and thus precisely equal to Howe in numbers—had left Brest two days before. The crews were largely landsmen; of the flag officers and captains, not one had been above the grade of lieutenant three years before, and nine of them had been merchant skippers with no naval experience whatever. On board were two delegates of the National Convention, whose double duties seem to have been to watch the officers and help them command. To take the place of experience there was revolutionary fervor, evidenced in the change of ship-names to such resounding appellations as *La Montagne, Patriote, Vengeur du Peuple, Tyrannicide*, and *Revolutionnaire*. There was also more confidence than was ever felt again by French sailors during the war. "Intentionally disregarding subtle evolutions," said the delegate Jean Bon Saint Andree, "perhaps our sailors will think it more appropriate and effective to resort to the boarding tactics in which the French were always victorious, and thus astonish the world by new prodigies of valor." "If they had added to their courage a little training," said the same commissioner after the battle, "the day might have been ours."

The commander in chief, Villaret de Joyeuse, who had won his lieutenancy and the esteem of Suffren in the American war, was no such scorner of wary tactics. Thus when the two fleets, more by accident than calculation on either side, came in contact on the morning of May 28, 1794, about 400 miles west of Ushant, it would have been quite possible for him to have closed with the British, who were 10 miles to leeward in a fresh southerly wind. But his orders were not to fight unless it were essential to protect the convoy, and since this was thought to be close at

hand, he first drew away to the eastward, with the British in pursuit.

The chase continued during the remainder of this day and the day following, with partial engagements and complicated maneuvering, the net result of which was that in the end Howe, in spite of the superior sailing qualities of the French ships, had kept in touch with them, driven his own vessels through their line to a windward position, and forced the withdrawal of four units, with the loss of but one of his own. Two days of thick weather followed, during which both fleets stood to the northwest in the same relative positions, the French, very fortunately indeed, securing a reënforcement of four fresh ships from detachments earlier at sea.

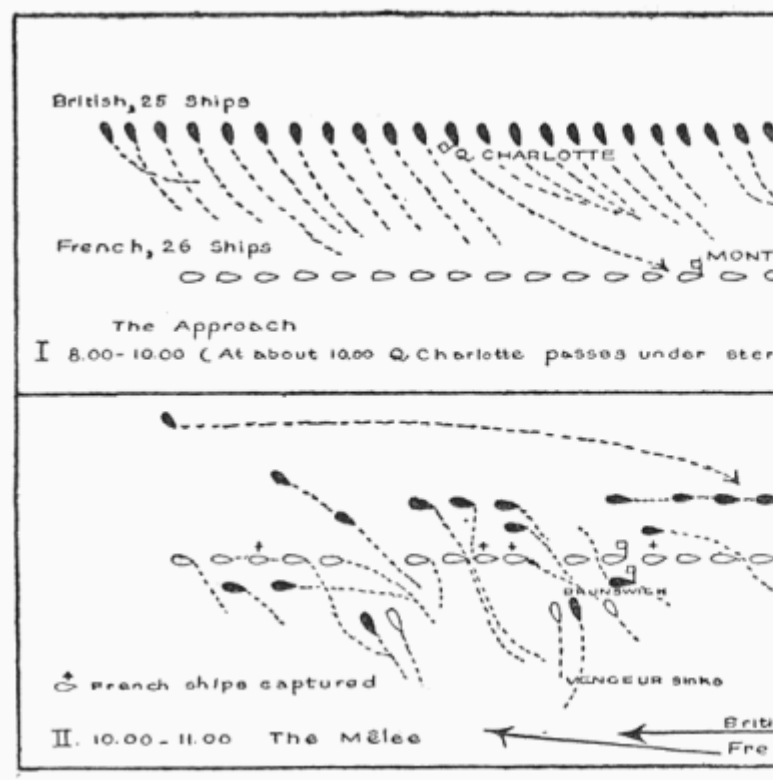
Now 26 French to 25 British, the two fleets on the morning of the final engagement were moving to westward on the still southerly wind, in two long, roughly parallel lines. Confident of the individual superiority of his ships, the British admiral had no wish for further maneuvering, in which his own captains had shown themselves none too reliable and the enemy commander not unskilled. Possibly also he feared the confusion of a complicated plan, for it was notorious (as may be verified by looking over his correspondence) that Howe had the greatest difficulty in making himself intelligible with tongue or pen. His orders were therefore to bear up together toward the enemy and attack ship to ship, without effort at concentration, and with but one noteworthy departure from the time-honored tactics in which he had been schooled. This was that the battle should be close and decisive. The instructions were that each ship should if possible break through the line astern of her chosen opponent, raking the ships on

each side as she went through, and continue the action to leeward, in position to cut off retreat. "I don't want the ships to be bilge to bilge," said Howe to the officers of his flagship, the *Queen Charlotte*, "but if you can lock the yardarms, so much the better; the battle will be the quicker decided." The approach was leisurely, nearly in line abreast, on a course slightly diagonal to that of the enemy. At 10 A. M. the *Queen Charlotte*, in the center of the British line, shoved past just under the stern of Villaret's flagship, the *Montagne*, raking her with a terrible broadside which is said to have struck down 300 of her men. As was likely to result from the plan of attack, the ships in the van of the attacking force were more closely and promptly engaged than those of the rear; only six ships actually broke through, but there was hot fighting all along the line.

Famous among the struggles in the mêlée was the epic three-hour combat of the *Brunswick*, next astern of Howe, and the *Vengeur*, both 74's. With the British vessel's anchors hooked in her opponent's port forechannels, the two drifted away to leeward, the *Brunswick* by virtue of flexible rammers alone able to use her lower deck guns, which were given alternately extreme elevation and depression and sent shot tearing through the *Vengeur's* deck and hull; whereas the *Vengeur*, with a superior fire of carronades and musketry, swept the enemy's upper deck. When the antagonists wrenched apart, the *Brunswick* had lost 158 of her complement of 600 men. The *Vengeur* was slowly sinking and went down at 6 P. M., with a loss of 250 killed and wounded and 100 more drowned. "As we drew away," wrote a survivor, "we heard some of our comrades still offering prayers for the welfare of their country; the

last cries of these unfortunates were, 'Vive la République!' They died uttering them."

Out of the confusion, an hour after the battle had begun, Villaret was able to form a column of 16 ships to leeward, and though ten of his vessels lay helpless between the lines, three drifted or were towed down to him and escaped. Howe has been sharply criticized for letting these cripples get away; but the battered condition of his fleet and his own complete physical exhaustion led him to rest content with six prizes aside from the sunken *Vengeur*. The criticism has also been made that he should have further exerted himself to secure a junction with the detachment on convoy duty, which on May 19 was returning and not far away. If he had at that time held his 32 ships between Brest and Rochefort, with scouts well distributed to westward, he would have been much more certain to intercept both Villaret's fleet and the convoy, which would have approached in company, and both of which, with the British searching in a body at sea, stood a good chance of escape. Howe's hope, no doubt, was to meet the convoy unguarded. The latter, protected by fog, actually crossed on May 30 the waters fought over on the 29th, and twelve days later safely reached the French coast. Robespierre had told Villaret that if the convoy were captured he should answer for it with his life. Hence the French admiral declared years later that the loss of his battleships troubled him relatively little. "While Howe amused himself refitting them, I saved the convoy, and I saved my head."



BATTLE OF THE

Based on diagram in Mahan's *Influence of Sea*

Though the escape of the convoy enabled the French to boast a "strategic victory," the First of June in reality established British prestige and proved a crushing blow to French morale. A British defeat, on the other hand, might have brought serious consequences, for within a year's time the Allied armies, including the British under the Duke of York, were driven out of Holland, the Batavian Republic was established in league with France (February, 1795), and both Spain and Prussia backed out of the war. Austria remained England's only active ally.

During the remainder of 1794 and the year following only minor or indecisive encounters occurred in the northern theater of war, lack of funds and naval supplies hampering the recovery of the French fleet from the injuries inflicted by Howe. Ill health forcing the latter's retirement from sea duty, he was succeeded in the Channel by Lord Bridport, who continued his predecessor's easy-going methods until the advent of Jervis in 1798, instituted a more rigorous régime. It was not yet recognized that the wear and tear on ships and crews during sea duty was less serious than the injurious effect of long stays in port upon sea spirit and morale.

French Projects of Invasion

With their fleets passive, the French resorted vigorously to commerce warfare, and at the same time kept England constantly perturbed by rumors, grandiose plans, and actual undertakings of invasion. That these earlier efforts failed was due as much to ill luck and bad management as to the work of Bridport's fleet. Intended, moreover, primarily as diversions to keep England occupied at home and sicken her of the war, they did not altogether fail of their aim. Some of these projects verged on the ludicrous, as that of corraling a band of the criminals and royalist outlaws that infested France and dropping them on the English coast for a wild campaign of murder and pillage. Fifteen hundred of these *Chouans* were actually landed at Fishguard in February of 1798, but promptly surrendered, and France had to give good English prisoners in exchange for them on the threat that they would be turned loose again on French soil.

Much more serious was General Hoche's

expedition to Ireland of the winter before. Though Hoche wished to use for the purpose the army of over 100,000 with which he had subdued revolt in the Vendée, the Government was willing to venture a force of only 15,000, which set sail from Brest, December 15, 1796, in 17 ships-of-the-line, together with a large number of smaller war-vessels and transports. Heavy weather and bad leadership, helped along by British frigates with false signals, scattered the fleet on the first night out. It never again got together; and though a squadron with 6,000 soldiers on board was actually for a week or more in the destination, Bantry Bay, not a man was landed, and by the middle of January nearly all of the flotilla was back in France. The British squadron under Colport, which had been on the French coast at the time of the departure, had in the meanwhile been obliged to make port for supplies. Bridport with the main fleet left Portsmouth, 250 miles from the scene of operations, four days after news of the French departure. During the whole affair neither he nor Colport took a single prize.

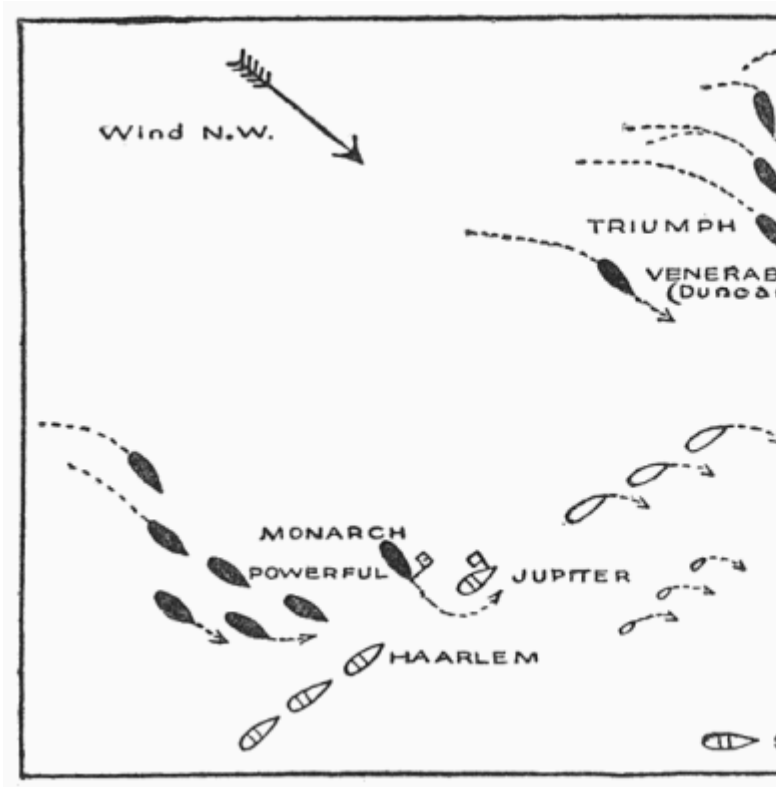
Even so small a force cöoperating with rebellion in Ireland might have proved a serious annoyance, though not a grave danger. Invasion on a grand scale, which Napoleon's victorious campaign in Italy and the peace with Austria (preliminaries at Loeben, April, 1797) now made possible, was effectually forestalled by two decisive victories at sea. Bonaparte, who was to lead the invasion, did not minimize its difficulties. "To make a descent upon England without being master of the sea," he wrote at this time, "is the boldest and most difficult operation ever attempted." Yet the flotilla of small craft necessary was collected, army forces were

designated, and in February of 1798 Bonaparte was at Dunkirk. All this served no doubt to screen the Egyptian preparations, which amid profound secrecy were already under way. The Egyptian campaign was an indirect blow at England; but the direct blow would certainly have been struck had not the naval engagements of Cape St. Vincent (February, 1797) and Camperdown (October, 1797) settled the question of mastery of the sea by removing the naval support of Spain and Holland on the right and left wings.

The Battle of Camperdown

Admiral Duncan's victory of Camperdown, here taken first as part of the events in northern waters, is noteworthy in that it was achieved not only against ever-dangerous opponents, but with a squadron which during the preceding May and June had been in the very midst of the most serious mutiny in the history of the British navy. In Bridport's fleet at Portsmouth this was not so much a mutiny as a well organized strike, the sailors it is true taking full control of the ships, and forcing the Admiralty and Parliament to grant their well justified demands for better treatment and better pay. Possibly a secret sympathy with their grievances explains the apparent helplessness of the officers. The men on their part went about the business quietly, and even rated some of their former officers as midshipmen, in special token of esteem. At the Nore, however, and in Duncan's squadron at Yarmouth, the mutiny was marked by bloodshed and taint of disloyalty, little surprising in view of the disaffected Irish, ex-criminals, impressed merchant sailors, and other unruly elements in the crews. In the end 18 men were put to death and many others sentenced.

Duncan faced the trouble with the courage but not the mingling of fair treatment and sharp justice which marked its suppression by that great master of discipline, Jervis, in the fleet off Spain. On his own ship and another, Duncan drew up the loyal marines under arms, spoke to the sailors, and won their allegiance, picking one troublesome spirit up bodily and shaking him over the side. But the rest of the squadron suddenly sailed off two days later to join the mutineers at the Nore, where all the ships were then in the hands of the crews. With his two faithful ships, Duncan made for the Texel, swearing that if the Dutch came out he would go down with colors flying. Fortunately he was rejoined before that event by the rest of his squadron, the mutinous ships having been either retaken by the officers or voluntarily surrendered by the men.



BATTLE OF CAMPERDOWN, OC
British, 16 of the lin

The whole affair, among the ships in Thames mouth, was over in a month's time, from mid-May to mid-June, so quickly that the enemy had little chance to seize the advantage. The Dutch, driven willy-nilly into alliance with France and not too eager to embark upon desperate adventures in the new cause, were nevertheless not restrained from action by any kind feeling for England, who had seized their ships and colonies and ruined their trade. When at last, during a brief withdrawal of

Duncan, their fleet under Admiral de Winter attempted a cruise, it was in a run-down condition. Aside from small units, it consisted of 15 ships (4 of 74 guns, 5 of 68, 2 of 64, and 4 under 60), against Duncan's stronger force of 16 (7 of 74, 7 of 64 and 2 of 50). The Dutch ships were flat-bottomed and light-draft for navigation in their shallow coastal waters, and generally inferior to British vessels of similar rating, even though the latter were left-overs from the Channel Fleet.

On the morning of the Battle of Camperdown, October 11, 1797, the Dutch were streaming along their coast on a northwest wind bent on return into the Texel. Pressing forward in pursuit, Duncan when in striking distance determined to prevent the enemy's escape into shallow water by breaking through their line and attacking to leeward. The signal to this effect, however, was soon changed to "Close action," and only the two leading ships eventually broke through. The two British divisions —for they were still in cruising formation and strung out by the pursuit—came down before the wind. Onslow, the second in command, in the *Monarch*, struck the line first at 12:30 and engaged the Dutch *Jupiter*, fourth from the rear. Eighteen minutes later Duncan in the *Venerable* closed similarly to leeward of the *Staten Generaal*, and afterward the *Vrijheid*, in the Dutch van.

The two leaders were soon supported—though there was straggling on both sides; and the battle that ensued was the bloodiest and fiercest of this period of the war. The British lost 825 out of a total of 8221 officers and men,[1] more than half the loss occurring in the first four ships in action. The British ships were also severely injured by the gruelling

broadsides during the onset, but finally took 11 prizes, all of them injured beyond repair. Though less carefully thought out and executed, the plan of the attack closely resembles that of Nelson at Trafalgar. The head-on approach seems not to have involved fatal risks against even such redoubtable opponents as the Dutch, and it insured decisive results.

[Footnote 1: As compared with this loss of 10%, the casualties in Nelson's three chief battles were as follows: Nile, 896 out of 7401, or 12.1%; Copenhagen, 941 out of 6892, or 13.75%; Trafalgar, 1690 out of 17,256, or 9.73%.]

Duncan's otherwise undistinguished career, and the somewhat unstudied methods of his one victory, may explain why he has not attained the fame which the energy displayed and results achieved would seem to deserve. "He was a valiant officer," writes his contemporary Jervis, "little versed in subtleties of tactics, by which he would have been quickly confused. When he saw the enemy, he ran down upon them, without thinking of a fixed order of battle. To conquer, he counted on the bold example he gave his captains, and the event completely justified his hopes."

Whatever its tactical merits, the battle had the important strategic effect of putting the Dutch out of the war. The remnants of their fleet were destroyed in harbor during an otherwise profitless expedition into Holland led by the Duke of York in 1799. By this time, when naval requirements and expanding trade had exhausted England's supply of seamen, and forced her to relax her navigation laws, it is estimated that no less than 20,000 Dutch sailors had left their own idle ships and were serving on British traders and men-of-war.[1]

[Footnote 1: For references, see end of Chapter XIII, page 285.]

CHAPTER XII

THE NAPOLEONIC WARS [*Continued*]: THE RISE OF NELSON

In the Mediterranean, where the protection of commerce, the fate of Italy and all southern Europe, and the exposed interests of France gave abundant motives for the presence of a British fleet, the course of naval events may be sufficiently indicated by following the work of Nelson, who came thither in 1793 in command of the *Agamemnon* (64) and remained until the withdrawal of the fleet at the close of 1796. Already marked within the service, in the words of his senior, Hood, as "an officer to be consulted on questions relative to naval tactics," Nelson was no doubt also marked as possessed of an uncomfortable activity and independence of mind. Singled out nevertheless for responsible detached service, he took a prominent part in the occupation of Corsica, where at the siege of Calvi he lost the sight of his right eye, and later commanded a small squadron supporting the left flank of the Austrian army on the Riviera.

In these latter operations, during 1795 and 1796, Nelson felt that much more might have been done. The Corniche coast route into Italy, the only one at first open to the French, was exposed at many points to fire from ships at sea, and much of the French army supplies as well as their heavy artillery had to

be transported in boats along the coast. "The British fleet could have prevented the invasion of Italy," wrote Nelson five years later, "if our friend Hotham [who had succeeded Hood as commander in chief in the Mediterranean] had kept his fleet on that coast."[1] Hotham felt, perhaps rightly, that the necessity of watching the French ships at Toulon made this impossible. But had the Toulon fleet been destroyed or effectually crippled at either of the two opportunities which offered in 1795, no such need would have existed; the British fleet would have dominated the Mediterranean, and exercised a controlling influence on the wavering sympathies of the Italian states and Spain. At the first of these opportunities, on the 13th and 14th of March, Hotham said they had done well enough in capturing two French ships-of-the-line. "Now," remarked Nelson, whose aggressive pursuit had led to the capture, "had we taken 10 sail and allowed the 11th to escape, when it had been possible to have got at her, I should not have called it well done." And again of the second encounter: "To say how much we wanted Lord Hood on the 13th of July, is to say, 'Will you have all the French fleet, or no action?'" History, and especially naval history, is full of might-have-beens. Aggressive action establishing naval predominance might have prevented Napoleon's brilliant invasion and conquest of Italy; Spain would then have steered clear of the French alliance; and the Egyptian campaign would have been impossible.

[Footnote 1: DISPATCHES, June 6, 1800.]

The succession of Sir John Jervis to the Mediterranean command in November, 1795, instituted at once a new order of things, in which inspiring leadership, strict discipline, and closest

attention to the health of crews, up-keep vessels, and every detail of ship and fleet organization soon brought the naval forces under him to what has been judged the highest efficiency attained by any fleet during the war. Jervis had able subordinates—Nelson, Collingwood and Troubridge, to carry the list no further; but he may claim a kind of paternal share in molding the military character of these men.

Between Jervis and Nelson in particular there existed ever the warmest mutual confidence and admiration. Yet the contrast between them well illustrates the difference between all-round professional and administrative ability, possessed in high degree by the older leader, and supreme fighting genius, which, in spite of mental and moral qualities far inferior, has rightly won Nelson a more lasting fame. As a member of parliament before the war, as First Lord of the Admiralty from 1801 to 1803, and indeed in his sea commands, Jervis displayed a breadth of judgment, a knowledge of the world, a mastery of details of administration, to which Nelson could not pretend. In the organization of the Toulon and the Brest blockades, and in the suppression of mutiny in 1797, Jervis better than Nelson illustrates conventional ideals of military discipline. When appointed to the Channel command in 1799 he at once adopted the system of keeping the bulk of the fleet constantly on the enemy coast "well within Ushant with an easterly wind." Captains were to be on deck when ships came about at whatever hour. In port there were no night boats and no night leave for officers. To one officer who ventured a protest Jervis wrote that he "ought not to delay one day his intention to retire." "May the discipline of the Mediterranean never be introduced in the Channel,"

was a toast on Jervis's appointment to the latter squadron. "May his next glass of wine choke the wretch," was the wish of an indignant officer's wife. Jervis may have been a martinet, but it was he, more than any other officer, who instilled into the British navy the spirit of war.

In the Mediterranean, however, he arrived too late. There, as in the Atlantic, the French Directory after the experiments of 1794 and 1795 had now abandoned the idea of risking their battleships; and while these still served effectively in port as a fleet in being, their crews were turned to commerce warfare or transport flotilla work for the army. Bonaparte's ragged heroes were driving the Austrians out of Italy. Sardinia made peace in May of 1796. Spain closed an offensive and defensive alliance with the French Republic in August, putting a fleet of 50 of the line (at least on paper) on Jervis's communications and making further tenure of the Mediterranean a dangerous business. By October, 26 Spanish ships had joined the 12 French then at Toulon. Even so, Jervis with his force of 22 might have hazarded action, if his subordinate Mann, with a detached squadron of 7 of these, had not fled to England. Assigning to Nelson the task of evacuating Corsica and later Elba, Jervis now took station outside the straits, where on February 13, 1797, Nelson rejoined his chief, whose strength still consisted of 15 of the line.

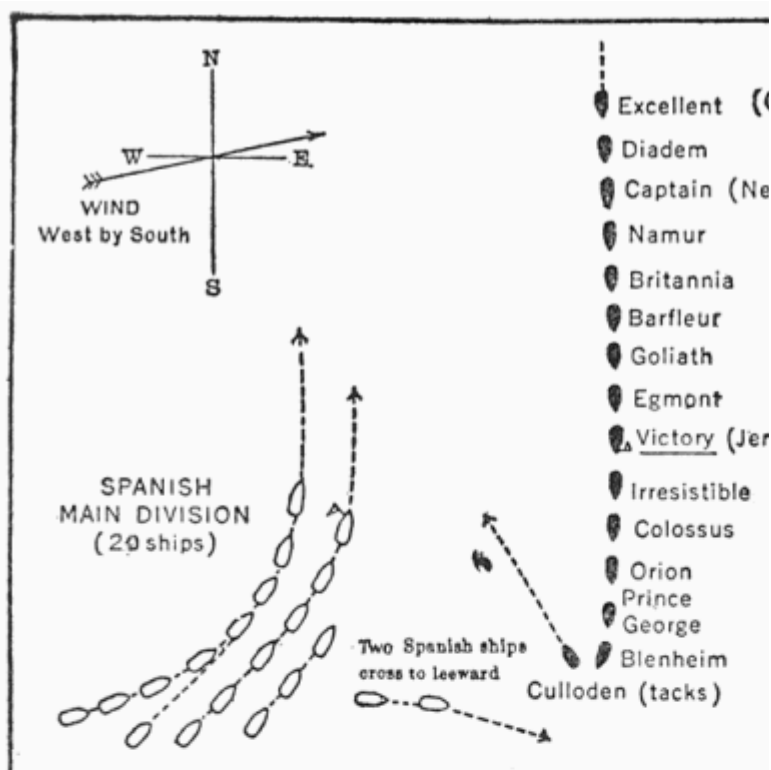
The Battle of Cape St. Vincent

The Spanish fleet, now 27, was at this time returning to Cadiz, as a first step toward a grand naval concentration in the north. A stiff Levanter having thrown the Spanish far beyond their

destination, they were returning eastward when on February 14, 1797, the two fleets came in contact within sight of Cape St. Vincent. In view of the existing political situation, and the known inefficiency of the Spanish in sea fighting, Jervis decided to attack. "A victory," he is said to have remarked, "is very essential to England at this hour."

As a fresh westerly wind blew away the morning fog, the Spanish were fully revealed to southward, running before the wind, badly scattered, with 7 ships far in advance and thus to leeward of the rest. After some preliminary pursuit, the British formed in a single column (Troubridge in the *Culloden* first, the flagship *Victory* seventh, and Nelson in the *Captain* third from the rear), and took a southerly course which would carry them between the two enemy groups. As soon as they found themselves thus separated, the Spanish weather division hauled their wind, opened fire, and ran to northward along the weather side of the British line; while the lee division at first also turned northward and made some effort to unite with the rest of their company by breaking through the enemy formation, but were thrown back by a heavy broadside from the *Victory*. Having accomplished his first purpose, Jervis had already, at about noon, hoisted the signal to "tack in succession," which meant that each ship should continue her course to the point where the *Culloden* came about and then follow her in pursuit of the enemy weather division. This critical and much discussed maneuver appears entirely justified. The British by tacking in succession kept their column still between the parts of the enemy, its rear covering the enemy lee division, and the whole formation still in perfect order and control, as it would not have been had the

ships tacked simultaneously. Again, if the attack had been made on the small group to leeward, the Spanish weather division could easily have run down into the action and thus brought their full strength to bear.



1ST. PHASE: Having cut off Spanish leeward ships, Jervis tacks to e





BATTLE OF CAPE ST. VINCENT, F
BRITISH: 15 ships, 1232 guns. SPANIS

But against an enemy so superior in numbers more was needed to keep the situation in hand. Shortly before one o'clock, when several British vessels had already filled away on the new course, Nelson from his position well back in the column saw that the leading ships of the main enemy division were swinging off to eastward as if to escape around the British rear. Eager to get into the fighting, of which his present course gave little promise, and without waiting for orders, he wore out of the column, passed between the two ships next astern, and threw himself directly upon the three big three-deckers, including the flagship *Santisima Trindad* (130 guns), which headed the enemy line. Before the fighting was over, his ship was badly battered, "her foretopmast and wheel shot away, and not a sail, shroud or rope left"; [1] but the *Culloden* and other van ships soon came up, and also Collingwood in the *Excellent* from the rear, after orders from Jervis for which Nelson had not waited. Out of the mêlée the British emerged with four prizes, Nelson himself having boarded the *San Nicolas* (80), cleared her decks, and with reënforcements from his own ship passed across her to receive the surrender of the *San Josef* (112). The

swords of the vanquished Spanish, Nelson says, "I gave to William Fearney, one of my bargemen, who placed them with the greatest *sangfroid* under his arm."

[Footnote 1: Nelson's DISPATCHES, Vol. II, p. 345.]

For Nelson's initiative (which is the word for such actions when they end well) Jervis had only the warmest praise, and when his fleet captain, Calder, ventured a comment on the breach of orders, Jervis gave the tart answer, "Ay, and if ever you offend in the same way I promise you a forgiveness beforehand." Jervis was made Earl St. Vincent, and Nelson, who never hid his light under a bushel, shared at least in popular acclaim. It was not indeed a sweeping victory, and there is little doubt that had the British admiral so chosen, he might have done much more. But enough had been accomplished to discourage Spanish naval activities in the French cause for a long time to come. They were hopelessly outclassed; but in their favor it should be borne in mind that their ships were miserably manned, the crews consisting of ignorant peasants of whom it is reported that they said prayers before going aloft, and with whom their best admiral, Mazzaredo, had refused to sail. Moreover, they were fighting half-heartedly, lacking the inspiration of a great national cause, without which victories are rarely won.

The defeat of the Spanish, as Jervis had foreseen, was timely. Mantua had just capitulated; British efforts to secure an honorable peace had failed; consols were at 51, and specie payments stopped by the Bank of England; Austria was on the verge of separate negotiations, the preliminaries of which were signed at Loeben on April 18; France, in the

words of Bonaparte, could now "turn all her forces against England and oblige her to a prompt peace."[1] The news of St. Vincent was thus a ray of light on a very dark horizon. Its strategic value, along with the Battle of Camperdown, has already been made clear.

[Footnote 1: CORRESPONDENCE, III, 346.]

The British fleet, after refitting at Lisbon, took up a blockade of the Spanish at Cadiz which continued through the next two years. Discontent and mutiny, which threatened with each fresh ship from home, was guarded against by strict discipline, careful attention to health and diet, and by minor enterprises which served as diversions, such as the bombardment of Cadiz and the unsuccessful attack on Santa Cruz in the Canary Islands, July 24-25, 1797, in which Nelson lost his right arm.



The Battle of the Nile

Nelson's return to the Cadiz blockade in May, 1798, after months of suffering in England, was coincident with the gathering of a fresh storm cloud in the Mediterranean, though the direction in which it threatened was still completely concealed. While Sicily, Greece, Portugal and even Ireland were mentioned by the British Admiralty as possible French objectives, Egypt was apparently not thought

of. Yet its strategic position between three continents remained as important as in centuries past, controlling the trade of the Levant and threatening India by land or sea. "The time is not far distant," Bonaparte had already written, "when we shall feel that truly to destroy England we must take possession of Egypt." In point of fact the strength of England rested not merely on the wealth of the Indies, but on her merchant fleets, naval control, home products and manufactures, in short her whole industrial and commercial development, too strong to be struck down by a blow in this remote field. Still, if the continued absence of a British fleet from the Mediterranean could be counted on, the Egyptian campaign was the most effective move against her that offered at the time. It was well that the British Admiralty rose to the danger. Jervis, though he pointed out the risks involved, was directed to send Nelson with an advance squadron of 3 ships, later strengthened to 14, to watch the concentration of land and naval forces at Toulon. "The appearance of a British fleet in the Mediterranean," wrote the First Lord, Spencer, in urging the move, "is a condition on which the fate of Europe may be stated to depend."

Before a strong northwest wind the French armada on May 19 left Toulon—13 of the line, 13 smaller vessels, and a fleet of transports which when joined by contingents from Genoa, Corsica, and Civita Vecchia brought the total to 400 sail, crowded with over 30,000 troops. Of the fighting fleet there is the usual tale of ships carelessly fitted out, one-third short-handed, and supplied with but two months' food—a tale which simply points the truth that the winning of naval campaigns begins months or years before.

The gale from which the French found shelter under Sardinia and Corsica fell later with full force on Nelson to the westward of the islands. His flagship the *Vanguard* lost her foremast and remaining topmasts, while at the same time his four frigates, so essential in the search that followed, were scattered and failed to rejoin. Having by extraordinary exertions refitted in Sardinia in the short space of four days, he was soon again off Toulon, but did not learn of the enemy's departure until May 31, and even then he got no clue as to where they had gone. Here he was joined on June 7 by the promised reënforcements, bringing his squadron to 13 74's and the *Leander* of 50 guns.

The ensuing search continued for two months, until August 1, the date of the Battle of the Nile. During this period, Nelson appears to best advantage; in the words of David Hannay, he was an "embodied flame of resolution, with none of the vulgar bluster that was to appear later."

Moving slowly southward, the French flotilla had spent ten days in the occupation of Malta—the surrender of which was chiefly due to French influence among the Knights of St. John who held the island—and departed on June 19 for their destination, following a circuitous route along the south side of Crete and thence to the African coast 70 miles west of Alexandria.

Learning off Cape Passaro on the 22d of the enemy's departure from Malta, Nelson made direct for Alexandria under fair wind and press of sail. He reached the port two days ahead of Bonaparte, and finding it empty, at once set out to retrace his course, his impetuous energy betraying him into what was

undoubtedly a hasty move. The two fleets had been but 60 miles apart on the night of the 25th. Had they met, though Bonaparte had done his utmost by organization and drill to prepare for such an emergency, a French disaster would have been almost inevitable, and Napoleon, in the amusingly partisan words of Nelson's biographer Southey, "would have escaped those later crimes that have incarnadined his soul." Nelson had planned in case of such an encounter to detach three of his ships to attack the transports.

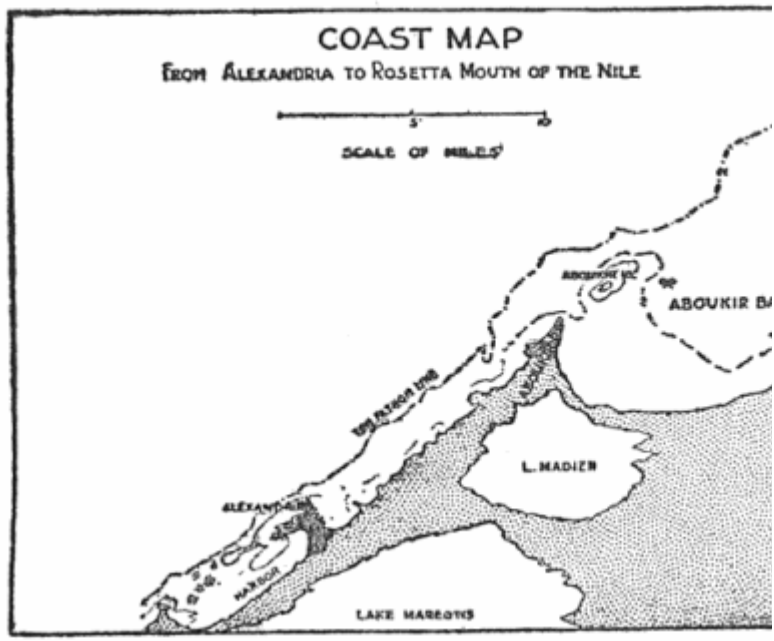
The trying month that now intervened, spent by the British fleet in a vain search along the northern coast of the Mediterranean, a brief stop at Syracuse for water and supplies, and return, was not wholly wasted, for during this time the commander in chief was in frequent consultation with his captains, securing their hearty support, and familiarizing them with his plans for action in whatever circumstances a meeting might occur. An interesting reference to this practice of Nelson's appears in a later characterization of him written by the French Admiral Décres to Napoleon. "His boastfulness," so the comment runs, "is only equalled by his ineptitude, but he has the saving quality of making no pretense to any other virtues than boldness and good nature, so that he is accessible to the counsels of those under him." As to who dominated these conferences and who profited by them we may form our own opinion. It was by such means that Nelson fostered a spirit of full coöperation and mutual confidence between himself and his subordinates which justified his affectionate phrase, "a band of brothers."

The result was seen at the Nile. If rapid action lost

the chance of battle a month before, it did much to insure victory when the opportunity came, and it was made possible by each captain's full grasp of what was to be done. "Time is everything," to quote a familiar phrase of Nelson; "five minutes may spell the difference between victory and defeat." It was two in the afternoon when the British, after looking into Alexandria, first sighted the French fleet at anchor in Aboukir Bay, and it was just sundown when the leading ship *Goliath* rounded the *Guerrier's* bows. The battle was fought in darkness. In the face of a fleet protected by shoals and shore batteries, with no trustworthy charts or pilots, with ships still widely separated by their varying speeds, a less thoroughly drilled force under a less ardent leader would have felt the necessity of delaying action until the following day. Nelson never hesitated. His ships went into action in the order in which they reached the scene.

The almost decisive advantage thus gained is evident from the confusion which then reigned in Aboukir Bay. In spite of the repeated letters from Bonaparte urging him to secure his fleet in Alexandria harbor, in spite of repeated soundings which showed this course possible, the French Admiral Brueys with a kind of despondent inertia still lay in this exposed anchorage at the Rosetta mouth of the Nile. Mortars and cannon had been mounted on Aboukir point, but it was known that their range did not cover the head of the French line. The frigates and scout vessels that might have given more timely warning were at anchor in the bay. Numerous water parties were on shore and with them the ships' boats needed to stretch cables from one vessel to another and rig gear for winding ships,

as had been vaguely planned. At a hurried council it was proposed to put to sea, but this was given up for the sufficient reason that there was no time. The French were cleared for action only on the out-board side. Their admiral was chiefly fearful of attack in the rear, a fear reasonable enough if his ships had been sailing before the wind at sea; but at anchor, with the Aboukir batteries ineffective and the wind blowing directly down the line, attack upon the van would be far more dangerous, since support could less easily be brought up from the rear.



COAST M

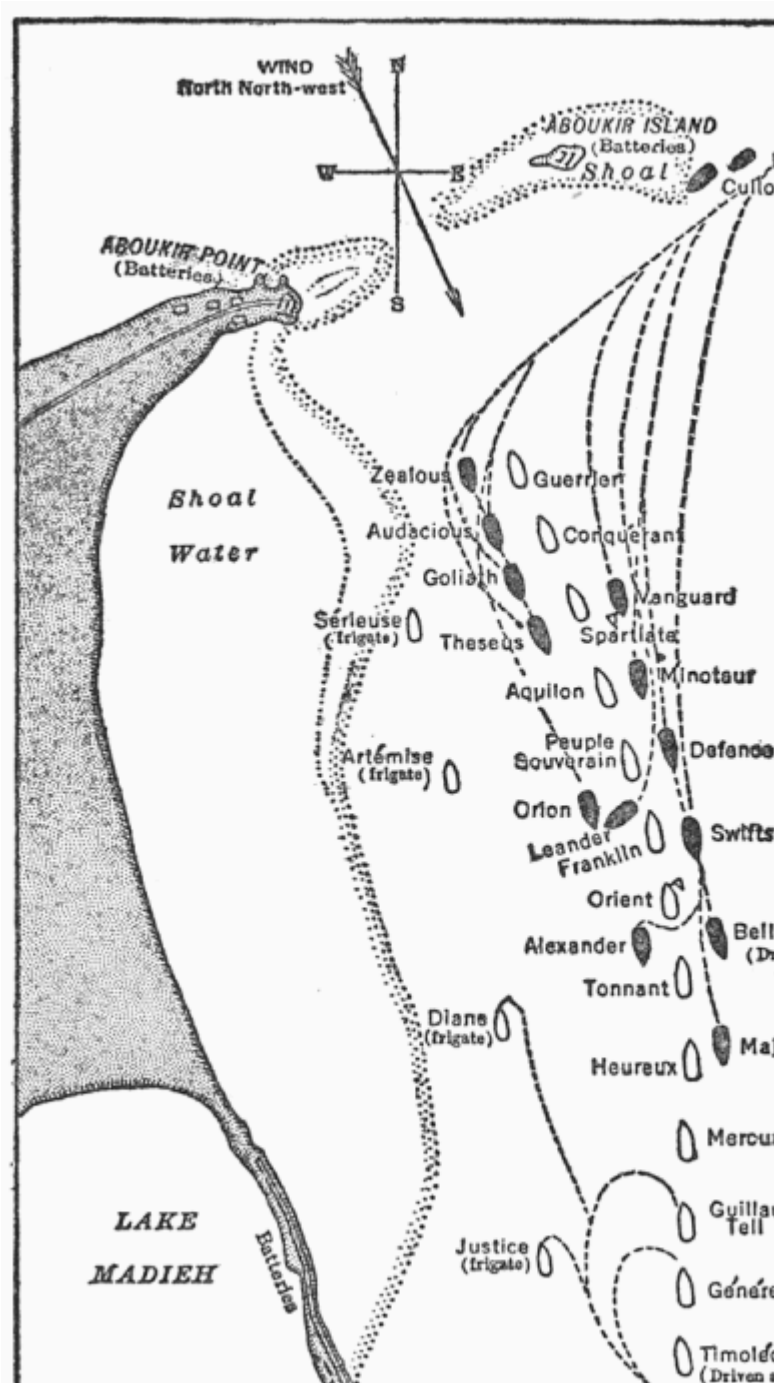
From Alexandria to Rosett

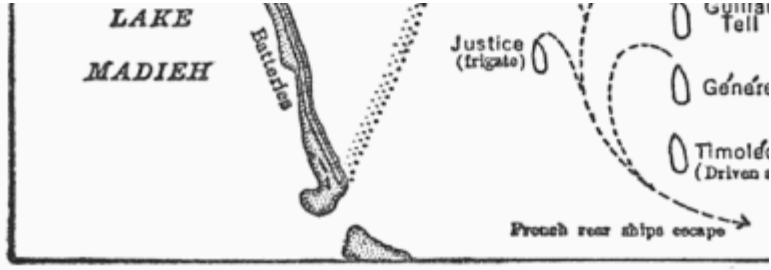
It was on the head of the line that the attack came. Nelson had given the one signal that "his intention was to attack the van and center as they lay at

anchor, according to the plan before developed." This plan called for doubling, two ships to the enemy's one. With a fair wind from the north-northwest Captain Foley in the *Goliath* at 6 p.m. reached the *Guerrier*, the headmost of the thirteen ships in the enemy line. Either by instant initiative, or more likely in accordance with previous plans in view of such an opportunity, he took his ship inside the line, his anchor dragging slightly so as to bring him up on the quarter of the second enemy vessel, the *Conquérant*. The *Zealous*, following closely, anchored on the bows of the *Guerrier*; the *Orion* engaged inside the fifth ship; the *Theseus* inside the third; and the *Audacious*, passing between the first two of the enemy, brought up on the *Conquérant's* bow. With these five engaged inside, Nelson in the *Vanguard* and the two ships following him engaged respectively outside the third, fourth and fifth of the enemy. Thus the concentration on the van was eight to five.

About a half hour later the *Bellerophon* and the *Majestic* attacked respectively the big flagship *Orient* (110) in the center and the *Tonnant* (80) next astern, and against these superior antagonists suffered severely, losing in killed and wounded 390 men divided about equally between them, which was nearly half the total loss of 896 and greater than the total at Cape St. Vincent. Both later drifted almost helpless down the line. The *Culloden* under Troubridge, a favorite of both Jervis and Nelson, had unfortunately grounded and stuck fast on Aboukir shoal; but the *Swiftsure* and the *Alexander* came up two hours after the battle had begun as a support to the ships in the centre, the *Swiftsure* engaging the *Orient*, and the *Alexander* the *Franklin* next ahead,

while the smaller *Leander* skillfully chose a position where she could rake the two. By this time all five of the French van had surrendered; the *Orient* was in flames and blew up about 10 o'clock with the loss of all but 70 men. Admiral Brueys, thrice wounded, died before the explosion. Of the four ships in the rear, only two, the *Guillaume Tell* under Admiral Villeneuve and the *Généreux*, were able to cut their cables next morning and get away. Nelson asserted that, had he not been incapacitated by a severe scalp wound in the action, even these would not have escaped. Of the rest, two were burned and nine captured. Among important naval victories, aside from such one-sided slaughters as those of our own Spanish war, it remains the most overwhelming in history.


WIND
North North-west
N
W
E
S
ABOUKIR ISLAND
(Batteries)
Shoal
ABOUKIR POINT
(Batteries)
Shoal
Water
Zealous
Guerrier
Audacious
Conquerant
Goliath
Vanguard
Sérieuse
(Frigate)
Theseus
Spartiate
Minotaur
Aquilon
Peuple
Souverain
Defence
Artémise
(Frigate)
Orion
Leander
Franklin
Swiftsure
Orient
Alexander
Tonnant
Diane
(Frigate)
Heureux
LAKE
MADIEH
Batteries
Justice
(Frigate)



BATTLE OF THE NILE

The effect was immediate throughout Europe, attesting dearly the contemporary importance attached to sea control. "It was this battle," writes Admiral de la Gravière, "which for two years delivered over the Mediterranean to the British and called thither the squadrons of Russia, which shut up our army in the midst of a hostile people and led the Porte to declare against us, which put India beyond our reach and thrust France to the brink of ruin, for it rekindled the hardly extinct war with Austria and brought Suvaroff and the Austro-Russians to our very frontiers."[1]

[Footnote 1: GUERRES MARITIMES, II, 129.]

The whole campaign affords an instance of an overseas expedition daringly undertaken in the face of a hostile fleet (though it should be remembered that the British were not in the Mediterranean when it was planned), reaching its destination by extraordinary good luck, and its possibilities then completely negatived by the reëstablishment of enemy naval control. The efforts of the French army to extricate itself northward through Palestine were later thwarted partly by the squadron under Commodore Sidney Smith, which captured the siege guns sent to Acre by sea and aided the Turks in the defense of the fortress. In October of 1799 Bonaparte escaped to France in a frigate. French fleets

afterwards made various futile efforts to succor the forces left in Egypt, which finally surrendered to an army under Abercromby, just too late to strengthen the British in the peace negotiations of October, 1801.

Nelson's subsequent activities in command of naval forces in Italian waters need not detain us. Physically and nervously weakened from the effects of his wound and arduous campaign, he fell under the influence of Lady Hamilton and the wretched court of Naples, lent naval assistance to schemes of doubtful advantage to his country, and in June of 1800 incurred the displeasure of the Admiralty by direct disobedience of orders to send support to Minorca. He returned to England at the close of 1800 with the glory of his victory somewhat tarnished, and with blemishes on his private character which unfortunately, as will be seen, affected also his professional reputation.

The Copenhagen Campaign

Under the rapid scene-shifting of Napoleon, the political stage had by this time undergone another complete change from that which followed the battle of the Nile. Partly at least as a consequence of that battle, the so-called Second Coalition had been formed by Great Britain, Russia, and Austria, the armies of the two latter powers, as already stated, carrying the war again to the French frontiers. It required only the presence of Bonaparte, in supreme control after the *coup d'état* of the Eighteenth *Brumaire* (9 Nov., 1799), to turn the tide, rehabilitate the internal administration of France, and by the victories of Marengo in June and Hohenlinden in December of 1800 to force Austria once more to a

separate peace. Paul I of Russia had already fallen out with his allies and withdrawn his armies and his great general, Suvaroff, a year before. Now, taken with a romantic admiration for Napoleon, and angry when the British, after retaking Malta, refused to turn it over to him as Grand Master of the Knights of St. John, he was easily manipulated by Napoleon into active support of the latter's next move against England.

This was the Armed Neutrality of 1800, the object of which, from the French standpoint, was to close to England the markets of the North, and combine against her the naval forces of the Baltic. Under French and Russian pressure, and in spite of the fact that all these northern nations stood to suffer in one way or another from rupture of trade relations with England, the coalition was accomplished in December, 1800; Russia, Prussia, Sweden, and Denmark pledging themselves to resist infringements of neutral rights, whether by extension of contraband lists, seizure of enemy goods under neutral flag, search of vessels guaranteed innocent by their naval escort, or by other methods familiar then as in later times. These were measures which England, aiming both to ruin the trade of France and to cut off her naval supplies, felt bound to insist upon as the belligerent privileges of sea power.

To overcome this new danger called for a mixture of force and diplomacy, which England supplied by sending to Denmark an envoy with a 48-hour ultimatum, and along with him 20 ships-of-the-line, which according to Nelson were "the best negotiators in Europe." The commander in chief of this squadron was Sir Hyde Parker, a hesitant and mediocre leader who could be trusted to do nothing (if that were

necessary), and Nelson was made second in command. Influence, seniority, a clean record, and what-not, often lead to such choices, bad enough at any time but indefensible in time of war. Fortunately for England, when the reply of the Danish court showed that force was required, the two admirals virtually changed places with less friction than might have been expected, and Nelson "Lifted and carried on his shoulders the dead weight of his superior,"[1] throughout the ensuing campaign.

[Footnote 1: Mahan, INFLUENCE OF SEA POWER UPON FRENCH REVOLUTION AND EMPIRE, II, 52.]

When the envoy on March 23 returned to the fleet, then anchored in the Cattegat, he brought an alarming tale of Danish preparations, and an air of gloom pervaded the flagship when Nelson came aboard for a council of war. Copenhagen, it will be recalled, is situated on the eastern coast of Zealand, on the waterway called the Sound leading southward from the Cattegat to the Baltic. Directly in front of the city, a long shoal named the Middle Ground separates the Sound into two navigable channels, the one nearer Copenhagen known as the King's Deep (*Kongedyb*). The defenses of the Danish capital, so the envoy reported, were planned against attack from the northward. At this end of the line the formidable Trekroner Battery (68 guns), together with two ships-of-the-line and some smaller vessels, defended the narrow entrance to the harbor; while protecting the city to the southward, along the flats at the edge of the King's Deep, was drawn up an array of about 37 craft ranging from ships-of-the-line to mere scows, mounting a total of 628 guns, and supported at some distance by batteries on land. Filled with patriotic ardor, half the male population of the city

had volunteered to support the forces manning these batteries afloat and ashore.

Nelson's plan for meeting these obstacles, as well as his view of the whole situation, as presented at the council, was embodied in a memorandum dated the following day, which well illustrates his grasp of a general strategic problem. The Government's instructions, as well as Parker's preference, were apparently to wait in the Cattegat until the combined enemy forces should choose to come out and fight. Instead, the second in command advocated immediate action. "Not a moment," he wrote, "should be lost in attacking the enemy; they will every day and hour be stronger." The best course, in his opinion, would be to take the whole fleet at once into the Baltic against Russia, as a "home stroke," which if successful would bring down the coalition like a house of cards. If the Danes must first be dealt with, he proposed, instead of a direct attack, which would be "taking the bull by the horns," an attack from the rear. In order to do so, the fleet could get beyond the city either by passing through the Great Belt south of Zealand, or directly through the Sound. Another resultant advantage, in case the five Swedish sail of the line or the 14 Russian ships at Revel should take the offensive, would be that of central position, between the enemy divisions.

"Supposing us through the Belt," the letter concludes, "with the wind northwesterly, would it not be possible to either go with the fleet or detach ten Ships of three and two decks, with one Bomb and two Fireships, to Revel, to destroy the Russian squadron at that place? I do not see the great risk of such a detachment, and with the remainder to attempt the business at Copenhagen. The measure

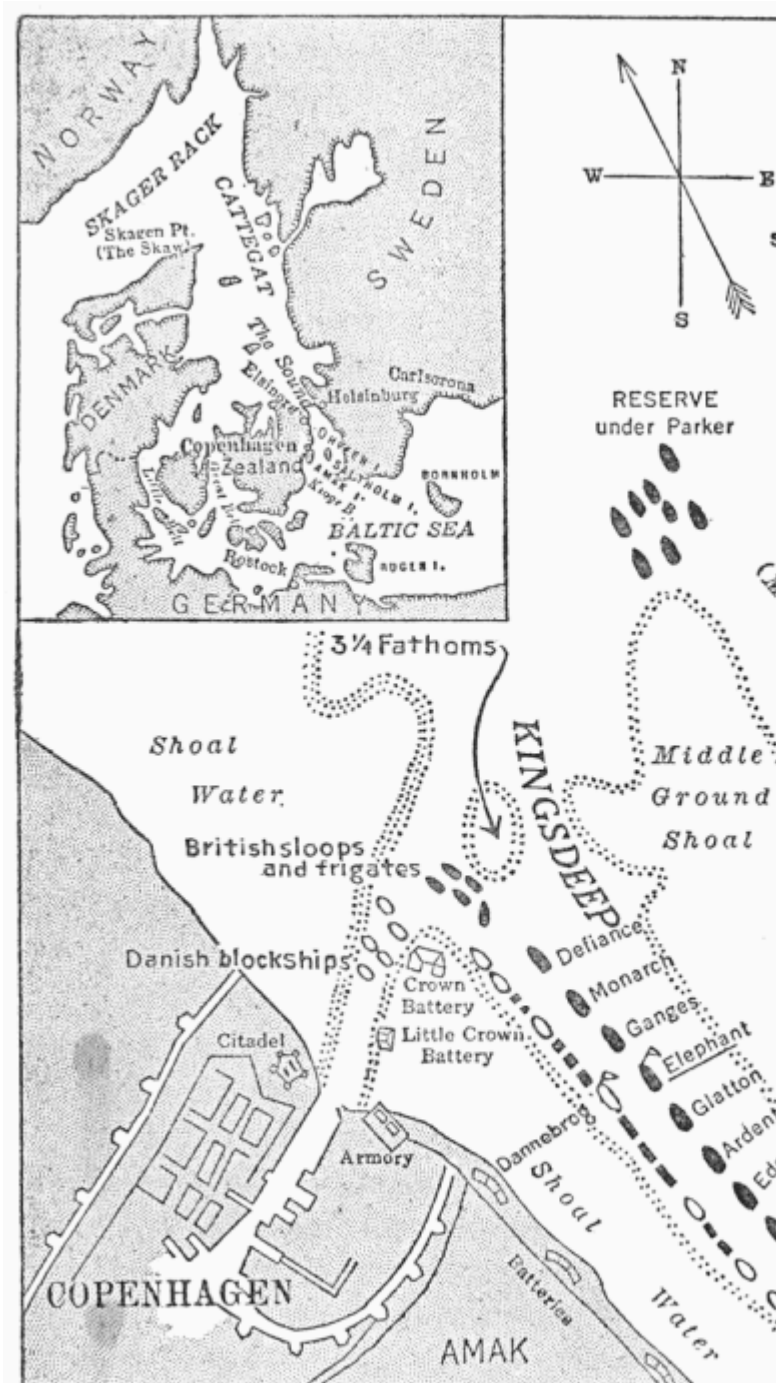
may be thought bold, but I am of the opinion that the boldest measures are the safest; and our Country demands a most vigorous assertion of her force, directed with judgment."

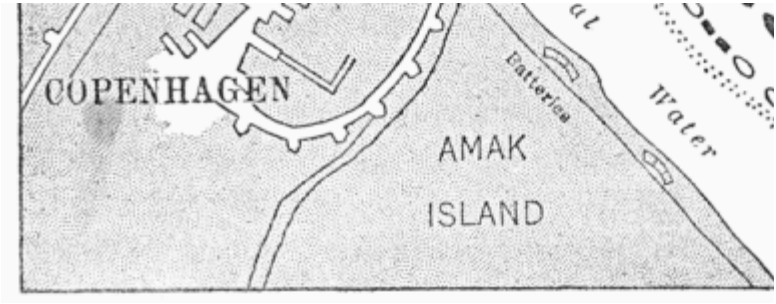
Here was a striking plan of aggressive warfare, aimed at the heart of the coalition. The proposal to leave part of the fleet at Copenhagen was indeed a dangerous compromise, involving divided forces and threatened communications, but was perhaps justified by the known inefficiency of the Russians and the fact that the Danes were actually fought and defeated with a force no greater than the plan provided. In the end the more conservative course was adopted of settling with Denmark first. Keeping well to the eastern shore, the fleet on March 30 passed into the Sound without injury from the fire of the Kronenburg forts at its entrance, and anchored that evening near Copenhagen.

Three days later, on April 2, 1801, the attack was made as planned, from the southward end of the Middle Ground. Nelson in the *Elephant* commanded the fighting squadron, which consisted of seven 74's, three 64's and two of 50 guns, with 18 bomb vessels, sloops, and fireships. The rest of the ships, under Parker, were anchored at the other end of the shoal and 5 miles north of the city; it seems they were to have coöperated, but the south wind which Nelson needed made attack impossible for them. Against the Danish total of 696 guns on the ships and Trekroner fortification, Nelson's squadron had 1014, but three of his main units grounded during the approach and were of little service. There was no effort at concentration, the British when in position engaging the whole southern part of the Danish line. "Here," in the words of Nelson's later description, "was no

maneuvering; it was downright fighting"—a hotly contested action against ships and shore batteries lasting from 10 a. m., when the *Elephant* led into position on the bow of Commodore Fischer's flagship *Dannebroge*, until about one.

In the midst of the engagement, as Nelson restlessly paced the quarterdeck, he caught sight of the signal "Leave off action" flown from Sir Hyde's flagship. Instead of transmitting the signal to the vessels under him, Nelson kept his own for "Close action" hoisted. Colonel Stewart, who was on board at the time, continues the story as follows: "He also observed, I believe to Captain Foley, 'You know, Foley, I have only one eye—I have a right to be blind sometimes'; and then with an archness peculiar to his character, putting the glass to his blind eye, he exclaimed, 'I really do not see the signal.'" It was obeyed, however, by the light vessels under Captain Riou attacking the Trekroner battery, which were suffering severely, and which could also more easily effect a retreat.


NORWAY
SWEDEN
SKAGER RACK
CATTEGAT
Skagen Pt.
(The Skaw)
DENMARK
The Sound
Elsinore
Carlscrona
Helsinburg
Copenhagen
Zealand
BORNHOLM
BALTIC SEA
Rostock
RUGEN I.
GERMANY
N
W
S
RESERVE
under Parker
3¼ Fathoms
Shoal
Water
British sloops
and frigates
KINGSDEEP
Middle
Ground
Shoal
Danish blockships
Crown
Battery
Little Crown
Battery
Citadel
Armory
Defiance
Monarch
Ganges
Elephant
Glatton
Dannebrog
Shoal
Water
Batteries
COPENHAGEN
AMAK



BATTLE OF COPENHAGEN, APRI

Shortly afterward the Danish fire began to slacken and several of the floating batteries surrendered, though before they could be taken they were frequently remanned by fresh forces from the shore. Enough had been accomplished; and to end a difficult situation—if not to extricate himself from it—Nelson sent the following summons addressed "To the brothers of Englishmen, the Danes": "Lord Nelson has orders to spare Denmark when no longer resisting; if the firing is continued on the part of Denmark, Lord Nelson will be obliged to set fire to the floating batteries he has taken, without having the power of saving the brave Danes who have defended them."

A truce followed, during which Nelson removed his ships. Next day he went ashore to open negotiations, while at the same time he brought bomb vessels into position to bombard the city. The cessation of hostilities was the more readily agreed to by the Danes owing to the fact that on the night before the battle they had received news, which they still kept concealed from the British, of the assassination of the Czar Paul. His successor, they knew, would be forced to adopt a policy more favorable to the true interests of Russian trade. The league in fact was on the verge of collapse. A fourteen weeks' armistice was signed with Denmark.

On April 12 the fleet moved into the Baltic, and on May 5, Nelson having succeeded Parker in command, it went on to Revel, whence the Russian squadron had escaped through the ice to Kronstadt ten days before. On June 17 a convention was signed with Russia and later accepted by the other northern states, by which Great Britain conceded that neutrals might engage in trade from one enemy port to another, with the important exception of *colonial* ports, and that naval stores should not be contraband; whereas Russia agreed that enemy goods under certain conditions might be seized in neutral ships, and that vessels under naval escort might be searched by ships-of-war. In the meantime, Nelson, realizing that active operations were over with, resigned his command.

In the opinion of the French naval critic Gravière, the campaign thus ended constitutes in the eyes of seamen Nelson's best title to fame—"*son plus beau titre gloire.*"[1] Certainly it called forth the most varied talents—grasp of the political and strategical situation; tact and force of personality in dealing with an inert commander in chief; energy in overcoming not only military obstacles but the doubts and scruples of fellow officers; aggressiveness in battle; and skill in negotiations. In view of the Czar's murder—of which the British Government would seem to have had an inkling beforehand—it may be thought that less strenuous methods would have served. On the contrary, however, hundreds of British merchant vessels had been seized in northern ports, trade had been stopped, and the nation was threatened with a dangerous increment to her foes. Furthermore, after a brief interval of peace, Great Britain had to face ten years more of desperate

warfare, during which nothing served her better than that at Copenhagen the northern neutrals had had a sharp taste of British naval power. Force was needed. That it was employed economically is shown by the fact that, when a renewal of peace between France and Russia in 1807 again threatened a northern confederation, Nelson's accomplishment with 12 ships was duplicated, but this time with 25 of the line, 40 frigates, 27,000 troops, the bombardment of Copenhagen, and a regular land campaign.

[Footnote 1: GUERRES MARITIMES, Vol. II, p. 43.]

Upon Nelson's return to England, popular clamor practically forced his appointment to command the Channel defense flotilla against the French armies which were now once more concentrated on the northern coast. This service lasted for only a brief period until the signing of peace preliminaries in October, 1801.

During the eight years of hostilities thus ended Great Britain, it is true, had been fighting largely on the defensive, but on a line of defense carried to the enemy's sea frontiers and comparable to siege lines about a city or fortress, which, when once established, thrust upon the enemy the problem of breaking through. The efforts of France to pierce this barrier, exerted in various directions and by various means, were, as we have seen, defeated by naval engagements, which insured to England the control of the sea. During this period, France lost altogether 55 ships-of-the-line, Holland 18, Spain 10, and Denmark 2, a total of 85, of which at least 50 were captured by the enemy. Great Britain lost 20, but only 5 by capture. The British battle fleet at the close of hostilities had increased to 189 capital ships; that

of France had shrunk to 45.

For purposes of commerce warfare the French navy had suffered the withdrawal of many of its smaller fighting vessels and large numbers of its best seamen, attracted into privateering by the better promise of profit and adventure. As a result of this warfare, about 3500 British merchantmen were destroyed, an average of 500 a year, representing an annual loss of 2-1/2 per cent of all the ships of British register. But in the meantime the French merchant marine and commerce had been literally swept off the seas. In 1799 the Directory admitted there was "not a single merchant ship on the seas carrying the French flag." French imports from Asia, Africa, and America in 1800 amounted to only $300,000, and exports to $56,000, whereas England's total export and import trade had nearly doubled, from 44-1/2 million pounds sterling in 1792 to nearly 78 million in 1800. It is true that, owing to the exigencies of war, the amount of British shipping employed in this trade actually fell off slightly, and that of neutrals increased from 13 to 34%. But the profits went chiefly to British merchants. England had become the great storehouse and carrier for the Continent, "Commerce," in the phrase engraved on the elder Pitt's monument, "being united with and made to flourish by war."[1]

[Footnote 1: Figures on naval losses from Gravière, GUERRES MARITIMES, Vol. II, ch. VII, and on commerce, from Mahan, FRENCH REVOLUTION AND EMPIRE, Vol. II, ch. XVII.]

REFERENCES

See end of Chapter XIII, page 285.

CHAPTER XIII

THE NAPOLEONIC WAR [*Concluded*]: TRAFALGAR AND AFTER

The peace finally ratified at Amiens in March, 1802, failed to accomplish any of the purposes for which England had entered the war. France not only maintained her frontiers on the Scheldt and the Rhine, but still exercised a predominant influence in Holland and western Italy, and excluded British trade from territories under her control. Until French troops were withdrawn from Holland, as called for by the treaty, England refused to evacuate Malta. Bonaparte, who wished further breathing space to build up the French navy, tried vainly to postpone hostilities by threatening to invade England and exclude her from all continental markets. "It will be England," he declared, "that forces us to conquer Europe." The war reopened in May of 1803.

With no immediate danger on the Continent and with all the resources of a regenerated France at his command, Bonaparte now undertook the project of a descent upon England on such a scale as never before. Hazardous as he always realized the operation to be—it was a thousand to one chance, he told the British envoys, that he and his army would end at the bottom of the sea—he was definitely committed to it by his own threats and by the expectation of France that he would now annihilate her hereditary foe.

Napoleon's Plan of Invasion

An army of 130,000 men, with 400 guns and 20

days' supplies, was to embark from four ports close to Boulogne as a center, and cross the 36 miles of Channel to a favorable stretch of coast between Dover and Hastings, distant from London some 70 miles. The transport flotilla, as finally planned, was to consist of 2000 or more small flat-bottomed sailing vessels with auxiliary oar propulsion-*chaloupes* and *bateaux canonnières*, from 60 to 80 feet over all, not over 8 feet in draft, with from two to four guns and a capacity for 100 to 150 men. Large open boats (*péniches*) were also to be used, and all available coast craft for transport of horses and supplies. Shipyards from the Scheldt to the Gironde were soon busy building the special flotilla, and as fast as they were finished they skirted the shores to the points of concentration under protection of coast batteries. Extensive harbor and defense works were undertaken at Boulogne and neighboring ports, and the 120 miles from the Scheldt to the Somme was soon bristling with artillery, in General Marmont's phrase, "a coast of iron and bronze."

The impression was spread abroad that the crossing was to be effected by stealth, in calm, fog, or the darkness of a long winter night, without the protection of a fleet. Almost from the first, however, Bonaparte seems to have had no such intention. The armament of the flotilla itself proved of slight value, and he was resolved to take no uncalled-for risks, on an unfamiliar element, with 100,000 men. An essential condition, which greatly complicated the whole undertaking, became the concentration of naval forces in the Channel sufficient to secure temporary control. "Let us be masters of the Strait for 6 hours," Napoleon wrote to Latouche-Treville in command of the Toulon fleet, "and we shall be

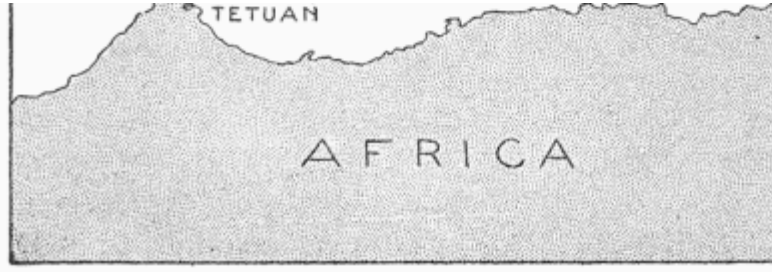
masters of the world." In less rhetorical moments he extended the necessary period to from two to fifteen days.

Up to the spring of 1804 neither army nor flotilla was fully ready, and thereafter the crossing was always definitely conditioned upon a naval concentration. But the whole plan called for swift execution. As time lapsed, difficulties multiplied. Harbors silted up, transports were wrecked by storms, British defense measures on land and sea grew more formidable, the Continental situation became more threatening. The Boulogne army thus became more and more—what Napoleon perhaps falsely declared later it had always been—an army concentrated against Austria. To get a fleet into the Channel without a battle was almost impossible, and once in, its position would be dangerous in the extreme. Towards the end, in the opinion of the French student Colonel Desbrière, Napoleon's chief motive in pressing for fleet coöperation was the belief that it would lead to a decisive naval action which, though a defeat, would shift from his own head the odium of failure.

Whether this theory is fully accepted or not, the fact remains that the only sure way of conquering England was by a naval contest. Her first and main defense was the British fleet, which, spread out to the limits of safety to watch French ships wherever harbored, guarded not only against a concentration in the Channel, but against incursions into other fields. The immediate defense of the coasts was intrusted to flotillas of armed boats, over 700 in all, distributed along the coast from Leith south-about to Glasgow, with 100 on the coast of Ireland. Naval men looked upon these as of slight value, a

concession, according to Earl St. Vincent, to "the old women in and out" (of both sexes) at home. The distribution of the main battle squadrons varied, but in March, 1805, at the opening of the Trafalgar campaign they were stationed as follows: Boulogne and the Dutch forces were watched by Admiral Keith with 11 of the line and 150 smaller units scattered from the Texel to the Channel Islands. The 21 French ships under Ganteaume at Brest, the strategic center, were closely blockaded by Cornwallis, whose force, by Admiralty orders, was not to fall below 18 of the line. A small squadron had been watching Missiessy's 5 ships at Rochefort and upon his escape in January had followed him to the West Indies. The 5 French and 10 Spanish at Ferrol and the 6 or more ready for sea at Cadiz were held in check by forces barely adequate. In the Gulf of Lyons Nelson with 13 ships had since May, 1803, stood outside the distant but dangerous station of Toulon. Owing to the remoteness from bases, a close and constant blockade was here impossible; moreover, it was the policy to let the enemy get out in the hope of bringing him to action at sea.


BANTRY BAY
BRITISH CRUISERS
ENGLAND
TEXEL
ABOUT
5 RESERVES
PORTSMOUTH
KEITH
11
PLYMOUTH
BLOCK SHIPS
BOULOGNE
FLOTILLA
CORNWALLIS
25
BREST
SOMME
GANTEAUME
21 READY FOR SEA
L'ORIENT
1 SHIP
FRANCE
MISSIESSY (5)
TO WEST INDIES
ROCHEFORT
2 SHIPS
CALDER 10
FERROL
C. FINISTERRE
CORUNNA
13 FRENCH
& SPANISH
GIRONDE R.
VIGO
VILLENEUVE
TOULON
SPAIN
LISBON
NELSON
MAGDA
MINO
PORT MAHON
MAJORCA
C. ST. VINCENT
CADIZ
7 FRENCH
& SPANISH
CARTHAGENA
5
ORDE 6
GIBRALTAR
TETUAN
AFRICA



POSITIONS OF BRITISH AND ENEMY SH

To effect a concentration in the Channel in the face of these obstacles was the final aim of all Napoleon's varied naval combinations of 1804 and 1805—combinations which impress one with the truth of Gravière's criticism that the Emperor lacked "*le sentiment exact des difficultes de la marine*," and especially, one should perhaps add, *de la marine française*. The first plan, the simplest and, therefore, most promising, was that Latouche Treville with the Toulon fleet should evade Nelson and, after releasing ships on the way, enter the Channel with 16 of the line, while Cornwallis was kept occupied by Ganteaume. This was upset by the death of Latouche, France's ablest and most energetic admiral, in August of 1804, and by the accession, two months later, of Spain and the Spanish navy to the French cause. After many misgivings Napoleon chose Villeneuve to succeed at Toulon. Skilled in his profession, honest, and devoted, he was fatally lacking in self-confidence and energy to conquer difficulties. "It is sad," wrote an officer in the fleet, "to see that force which under Latouche was full of activity, now without faith in either their leader or themselves."

The final plan, though still subject to modifications, was for a concentration on a larger scale in the West Indies. Villeneuve was to go thither, picking up the Cadiz ships on the way, join the Rochefort squadron if it were still there, and wait

40 days for the Brest fleet. Upon its arrival the entire force of 40 ships was to move swiftly back to the Channel. It was assumed that the British squadrons, in alarm for the colonies, would in the meantime be scattered in pursuit.

The Pursuit of Villeneuve

Villeneuve put to sea in a rising gale on January 17, 1805, but was soon back in port with damaged ships, the only effect being to send Nelson clear to Egypt in search of him. A successful start was made on March 30. Refusing to wait for 5 Spanish vessels at Carthagena, Villeneuve with 11 sail reached Cadiz on April 9, picked up one French vessel and two Spanish under Admiral Gravina, and leaving 4 more to follow was off safely on the same night for the West Indies.

From Gibraltar to the Admiralty in London, Villeneuve's appearance in the Atlantic created a profound stir. His departure from Cadiz was known, but not whither he had gone. The five ships on the Cadiz blockade fell back at once to the Channel. A fast frigate from Gibraltar carried the warning to Calder off Ferrol and to the Brest blockade, whence it reached London on April 25. A convoy for Malta and Sicily with 6000 troops under Gen. Craig—a pledge which Russia called for before sending her own forces to southern Italy—was already a week on its way and might fall an easy victim. In consequence of an upheaval at the Admiralty, Lord Barham, a former naval officer now nearly 80 years of age, had just begun his memorable 9 months' administration as First Lord of the Admiralty and director of the naval war. Immediately a whole series of orders went out to the fleets to insure the safety of the troop ships,

the maintenance of the Ferrol blockade, an eventual strengthening of forces outside the Channel, and the safety of the Antilles in case Villeneuve had gone there.

Where was Nelson? His scout frigates by bad judgment had lost Villeneuve on the night of March 31 east of Minorca, with no clue to his future course. Nelson took station between Sardinia and the African coast, resolved not to move till he "knew something positive." In the absence of information, the safety of Naples, Sicily, and Egypt was perhaps not merely an obsession on his part, but a proper professional concern; but it is strange that no inkling should have reached him from the Admiralty or elsewhere that a western movement from Toulon was the only one Napoleon now had in mind. It was April 18 before he received further news of the enemy, and not until May 5 was he able to get up to and through the Straits against steady head winds; even then he could not, as he said, "run to the West Indies without something beyond mere surmise." Definite reports from Cadiz that the enemy had gone thither reached him through an Admiral Campbell in the Portuguese service, and were confirmed by the fact that they had been seen nowhere to northward. On the 12th, leaving the *Royal Sovereign* (100) to strengthen the escort of Craig's convoy, which had now appeared, he set out westward with 10 ships in pursuit of the enemy's 18.

He reached Barbados on June 4, only 21 days after Villeneuve's arrival at Martinique. The latter had found that the Rochefort squadron—as a result of faulty transmission of Napoleon's innumerable orders—was already back in Europe, and that the Brest squadron had not come. In fact, held tight in the grip

of Cornwallis, it was destined never to leave port. But a reënforcement of 2 ships had reached Villeneuve with orders to wait 35 days longer and in the meantime to harry the British colonies. Disgruntled and despondent, he had scarcely got troops aboard and started north on this mission when he learned that Nelson was hot on his trail. The troops were hastily thrown into frigates to protect the French colonies. Without other provision for their safety, and in disregard of orders, Villeneuve at once turned back for Europe, hoping the Emperor's schemes would still be set forward by his joining the ships at Ferrol.

Nelson followed four days later, on June 13, steering for his old post in the Mediterranean, but at the same time despatching the fast brig *Curieux* to England with news of the French fleet's return. This vessel by great good fortune sighted Villeneuve in mid-ocean, inferred from his northerly position that he was bound for Ferrol, and reached Portsmouth on July 8. Barham at the Admiralty got the news the next morning, angry that he had not been routed out of bed on the arrival of the captain the night before. By 9 o'clock the same morning, orders were off to Calder on the Ferrol station in time so that on the 22d of July he encountered the enemy, still plowing slowly eastward, some 300 miles west of Cape Finisterre.

As a result of admirable communication work and swift administrative action the critic of Nelson at Cape St. Vincent now had a chance to rob the latter of his last victory and end the campaign then and there. His forces were adequate. Though he had only 14 ships to 20, his four three-deckers, according to the estimates of the time, were each worth two of the

enemy 74's, and on the other hand, the 6 Spanish ships with Villeneuve could hardly be counted for more than three. In the ensuing action, fought in foggy weather, two of the Spanish were captured and one of Calder's three-deckers was so injured that it had to be detached. The two fleets remained in contact for three days following, but neither took the aggressive. In a subsequent court martial Calder was reprimanded for "not having done his utmost to renew the said engagement and destroy every ship of the enemy."



NELSON'S F

On July 27 the Allied fleet staggered into Vigo, and a week later, after dropping three ships and 1200 sick men, it moved around to Corunna and Ferrol. Instead of being shaken down and strengthened by the long cruise, it was, according to the commander's plaintive letters, in worse plight than when it left Toulon. Nevertheless, ten days later he was ready to leave port, with 29 units, 14 of them

raw vessels from Ferrol, and 11 of them Spanish. If, as Napoleon said, France was not going to give up having a navy, something might still be done. His orders to Villeneuve were to proceed to Brest and thence to Boulogne. "I count," he ended, "on your zeal in my service, your love of your country, and your hatred of that nation which has oppressed us for 40 generations, and which a little preseverance on your part will now cause to rëenter forever the ranks of petty powers."[1]

[Footnote 1: Orders of 26 July, Desbrière, PROJETS, Vol. V, p. 672.]

Such were Villeneuve's instructions, the wisdom or sincerity of which it was scarcely his privilege to question (though it may be ours). In passing judgment on his failure to execute them it should be remembered that two months later, to avoid the personal disgrace of being superseded, he took his fleet out to more certain disaster than that which it now faced in striking northward from Corunna. "*Un poltron du tête et non de la cœur*"[2] the French Admiral was handicapped throughout by a paralyzing sense of the things he could not do.

[Footnote 2: Gravière II, 136.]

If he had sailer northward he would have found the British fleet divided. Nelson, it is true, after returning to Cadiz had fallen back from Gibraltar to the Channel, where he left his eleven ships with the Brest squadron in remarkable condition after more than two years at sea. Calder had also joined, bringing Cornwallis' total strength to 39. These stood between the 21 French at Brest and the 29 at Ferrol. But on August 16 Cornwallis divided his forces,

keeping 18 (including 10 three-deckers) and sending Calder back to the Spanish coast with the rest. Napoleon called this a disgraceful blunder (*insigne bêtise*), and Mahan adds, "This censure was just." Sir Julian Corbeh says it was a "master stroke... in all the campaign there is no movement—not even Nelson's chase of Villeneuve—that breathes more deeply the true spirit of war." According to Napoleon, Villeneuve might have "played prisoners' base with Calder's squadron and fallen upon Cornwallis, or with his 30 of the line have beaten Calder's 20 and obtained a decisive superiority."

So perhaps a Napoleonic admiral. Villeneuve left Ferrol on August 13 and sailed northwest on a heavy northeast wind till the 15th. Then, his fixed purpose merely strengthened by false news from a Danish merchantman of 25 British in the vicinity, he turned before the wind for Cadiz. As soon as he was safely inside, the British blockaders again closed around the port.

The Battle of Trafalgar

After twenty-five days in England, Nelson took command off Cadiz on September 28, eager for a final blow that would free England for aggressive war. There was talk of using bomb vessels, Congreve's rockets, and Francis's (Robert Fulton's) torpedoes to destroy the enemy in harbor, but it soon became known that Villeneuve would be forced to put to sea. On October 9, Nelson issued the famous Memorandum, or battle plan, embodying what he called "the Nelson touch," and received by his captains with an enthusiasm which the inspiration of the famous leader no doubt partly explains. This plan, which had been formulating itself in Nelson's

mind as far back as the pursuit of the French fleet to the West Indies, may be regarded as the product of his ripest experience and genius; the praise is perhaps not extravagant that "it seems to gather up and coördinate every tactical principle that has ever proved effective."[1]

[Footnote 1: Corbett. THE CAMPAIGN OF TRAFALGAR, p. 349.]



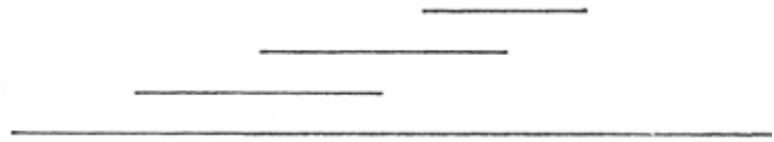
NELSON'S
Built in 176

Though the full text of the Memorandum will repay careful study, its leading principles may be sufficiently indicated by summary. Assuming 40 British ships to 46 of the enemy (the proportions though not the numbers of the actual engagement), it provides first that "the order of sailing is to be the order of battle, placing the fleet in two lines of 16 ships each, with an advanced squadron of 8 of the fastest sailing two-decked ships." This made for speed and ease in maneuvering, and was based on the expressed belief that so many units could not be formed and controlled in the old-fashioned single line without fatal loss of time. The ships would now come into action practically in cruising formation, which was commonly in two columns. The only noteworthy change contemplated was that the flagships of the first and second in command should shift from first to third place in their respective columns, and even this change was not carried out. Perhaps because the total force was smaller than anticipated, the advance squadron was merged with the two main divisions on the night before the battle, and need not be further regarded. Collingwood, the second in command, was given freedom of initiative by the provision that "after my intentions are made known to him he will have entire direction of his line."

The plan next provides, first for attack from to leeward, and second for attack from to windward. In either case, Collingwood's division was to bring a superior force to bear on 12 ships of the enemy rear, while Nelson would "cut two, three or four ships

ahead of their center so far as to ensure getting at their commander in chief." "Something must be left to chance... but I look with confidence to a victory before the van of the enemy can succor their rear." And further, "no captain can do very wrong if he places his ship alongside that of an enemy."

Of the attack from the windward a very rough diagram is given, thus:



But aside from this diagram, the lines of which are not precisely straight or parallel in the original, and which can hardly be reconciled with the instructions in the text, there is no clear indication that the attack from the windward (as in the actual battle) was to be delivered in line abreast. What the text says is: "The divisions of the British fleet will be brought nearly within gunshot of the enemy's center. The signal will most probably then be given for the lee line to bear up together, to set all their sails, even steering sails, in order to get as quickly as possible to the enemy's line and to cut through." Thus, if we assume a convergent approach in column, there was to be no slow deployment of the rear or leeward division into line abreast to make the attack of all its ships simultaneous; rather, in the words of a captain describing what really happened, they were simply to "scramble into action" at best speed. Nor is there any suggestion of a preliminary shift from line ahead in the case of Nelson's division. Though endless controversy has raged over the point, the prescribed

approach seems to have been followed fairly closely in the battle.

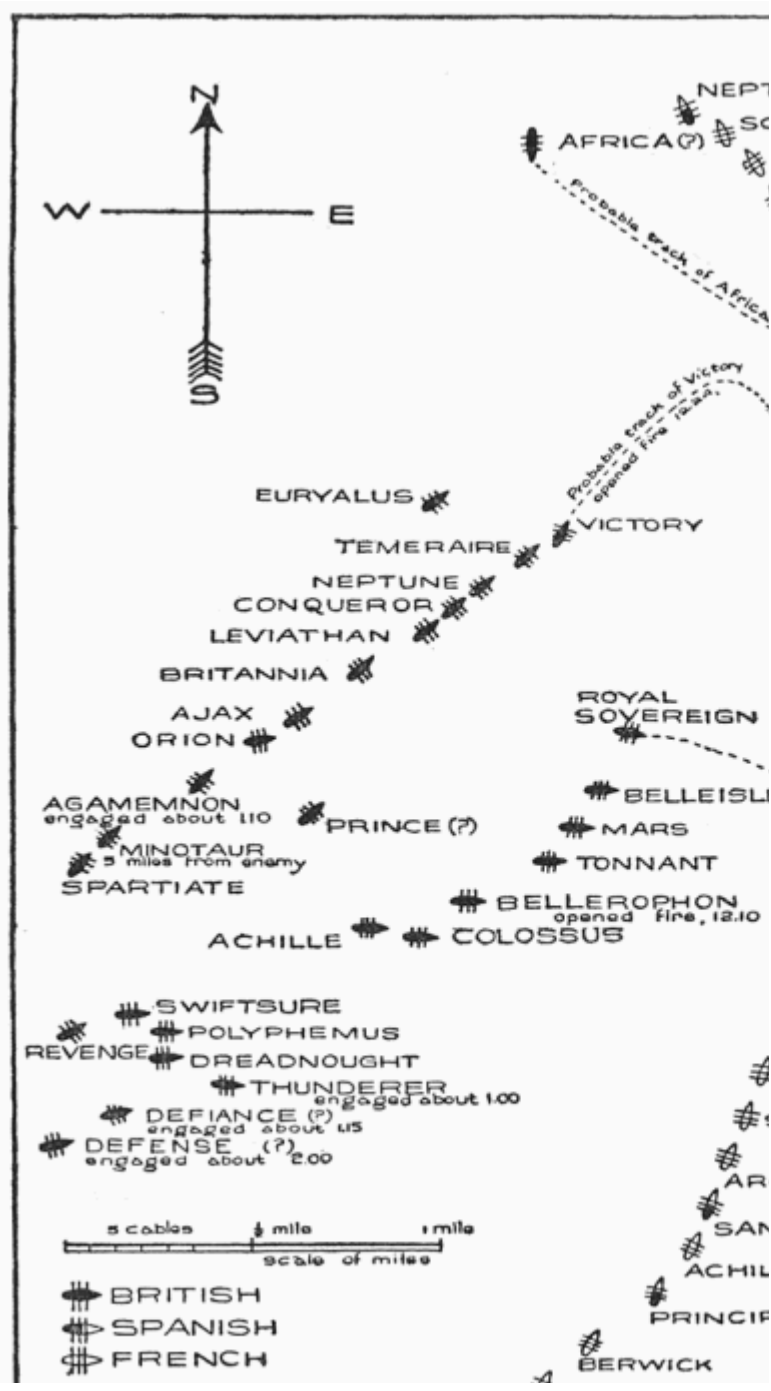
The concentration upon the rear was not new; in fact, it had become almost conventional, and was fully anticipated by the enemy. More originality lay in the manner of "containing" the center and van. For this purpose, in the first place, the approach was to be at utmost speed, not under "battle canvas" but with all sail spread. In the second place, the advance of Nelson's division in column, led by the flagship, left its precise objective not fully disclosed to the enemy until the last moment, and open to change as advantage offered. It could and did threaten the van, and was finally directed upon the center when Villeneuve's presence there was revealed. Finally, the very serious danger of enemy concentration upon the head of the column was mitigated not only by the speed of the approach, but by the concentration there of three heavy three-deckers. The plan in general had in view a particular enemy, superior in numbers but weak in gunnery, slow in maneuver, and likely to avoid decisive action. It aimed primarily at rapidity of movement, but combined also the merits of concentration, simplicity, flexibility, and surprise.

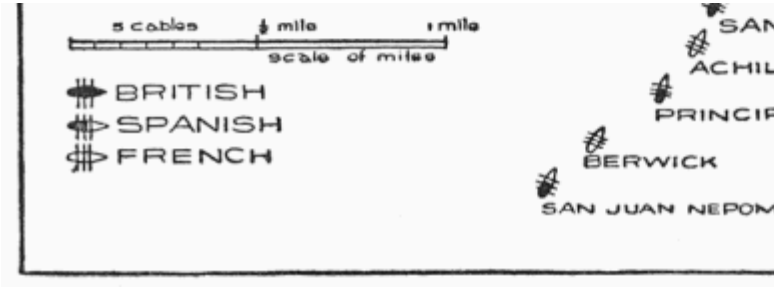
In this discussion of the scheme of the battle, around which interest chiefly centers, the actual events of the engagement have been in some measure anticipated, and may now be told more briefly. Driven to desperation by the goadings of Napoleon and the news that Admiral Rosily was approaching to supersede him, Villeneuve at last resolved to put to sea. "The intention of His Majesty," so the Minister of Marine had written, "is to seek in the ranks, wherever they may be found, officers best

suited for superior command, requiring above all a noble ambition, love of glory, decision of character, and unbounded courage. His Majesty wishes to destroy that circumspection which is the reproach of the navy; that defensive system which paralyzes our fleet and doubles the enemy's. He counts the loss of vessels nothing if lost with honor; he does not wish his fleet blockaded by an enemy inferior in strength; and if that is the situation at Cadiz he advises and orders you to attack."

The Allied fleet worked out of Cadiz on the 19th of October and on the 20th tacked southward under squally westerly winds. On the 21st, the day of the battle, the wind was still from the west, light and flawy, with a heavy swell and signs of approaching storm. At dawn the two fleets were visible to each other, Villeneuve about 9 miles northeast and to leeward of the British and standing southward from Cape Trafalgar. The French Admiral had formed his main battle line of 21 ships, French and Spanish intermingled, with the *Santisima Trinidad* (128) in the center and his flagship *Bucentaure* next; the remaining 12 under the Spanish Admiral Gravina constituted a separate squadron stationed to windward to counter an enemy concentration, which was especially expected upon the rear.

As the British advance already appeared to threaten this end of their line, the Allied fleet wore together about 9 o'clock, thus reversing their order, shifting their course northward, and opening Cadiz as a refuge. The maneuver, not completed until an hour later, left their line bowed in at the center, with a number of ships slightly to leeward, while Gravina's squadron mingled with and prolonged the rear in the new order.


N
W
E
S
AFRICA (?)
Probable track of Victory
Probable track of Victory opened fire 12.30
EURYALUS
VICTORY
TEMERAIRE
NEPTUNE
CONQUEROR
LEVIATHAN
BRITANNIA
AJAX
ORION
ROYAL SOVEREIGN
AGAMEMNON engaged about 1.10
PRINCE (?)
MARS
MINOTAUR 5 miles from enemy
TONNANT
SPARTIATE
BELLEROPHON opened fire, 12.10
ACHILLE
COLOSSUS
SWIFTSURE
POLYPHEMUS
REVENGE
DREADNOUGHT
THUNDERER engaged about 1.00
DEFIANCE (?) engaged about 1.15
DEFENSE (?) engaged about 2.00
5 cables
½ mile
1 mile
scale of miles
BRITISH
SPANISH
FRENCH
BERWICK



BATTLE OF TRAFALGAR
Position of ships about noon, when
(From plan by Capt. T. H. Tizard, R.N.,

The change, though it aroused Nelson's fear lest his quarry should escape, facilitated his attack as planned, by exposing the enemy rear to Collingwood's division. As rapidly as the light airs permitted, the two British columns bore down, Nelson in the *Victory* (100) leading the windward division of 12 ships, closely followed by the heavy *Neptune* and *Téméraire*, while Collingwood in the freshly coppered and refitted *Royal Sovereign* set a sharp pace for the 15 sail to leeward. Of the forty ships Nelson had once counted on, some had not come from England, and a half dozen others were inside the straits for water. While the enemy were changing course, Collingwood had signaled his division to shift into a line of bearing, an order which, though rendered almost ineffective by his failure to slow down, served to throw the column off slightly and bring it more nearly parallel to the enemy rear. (See plan.) Both commanders clung to the lead and pushed ahead as if racing into the fray, thus effectually preventing deployment and leaving trailers far behind. Nelson went so far as to try to jockey his old friend out of first place by ordering the *Mars* to pass him, but Collingwood set his studding sails and kept his lead. Possibly it was then he made the remark that he wished Nelson would make no

more signals, as they all knew what they had to do, rather than after Nelson's famous final message: "England expects that every man will do his duty."

Nelson, uncertain of Villeneuve's place in the line and anxious to prevent escape northward, steered for a gap ahead of the *Santisima Trinidad*, as if to threaten the van. But at 12:00 noon, as the first shots were fired at the *Royal Sovereign*, flags were broken from all ships, and Villeneuve's location revealed. Swinging to southward under heavy fire, the *Victory* passed under the stern of the *Bucentaure* and then crashed into the *Redoutable*, which had pushed close up to the flagship. The relative effectiveness of the gunnery in the two fleets is suggested by the fact that the *Victory* while coming in under the enemy's concentrated fire had only 50 killed and wounded, whereas the raking broadside she finally poured into the *Bucentaure's* stern is said to have swept down 400 men. Almost simultaneously with the leader, the *Téméraire* and *Neptune* plunged into the line, the former closing with the *Bucentaure* and the latter with the *Santisima Trinidad* ahead. Other ships soon thrust into the terrific artillery combat which centered around the leaders in a confused mingling of friend and foe.

At about 12:10, nearly half an hour before the *Victory* penetrated the Allied line, the *Royal Sovereign* brought up on the leeward side of the *Santa Ana*, flagship of the Spanish Admiral Alava, after raking both her and the *Fougueux* astern. The *Santa Ana* was thirteenth in the actual line, but, as Collingwood knew, there were 16, counting those to leeward, among the ships he had thus cut off for his division to subdue. As a combined effect of the light breeze and the manner of attack, it was an hour or more

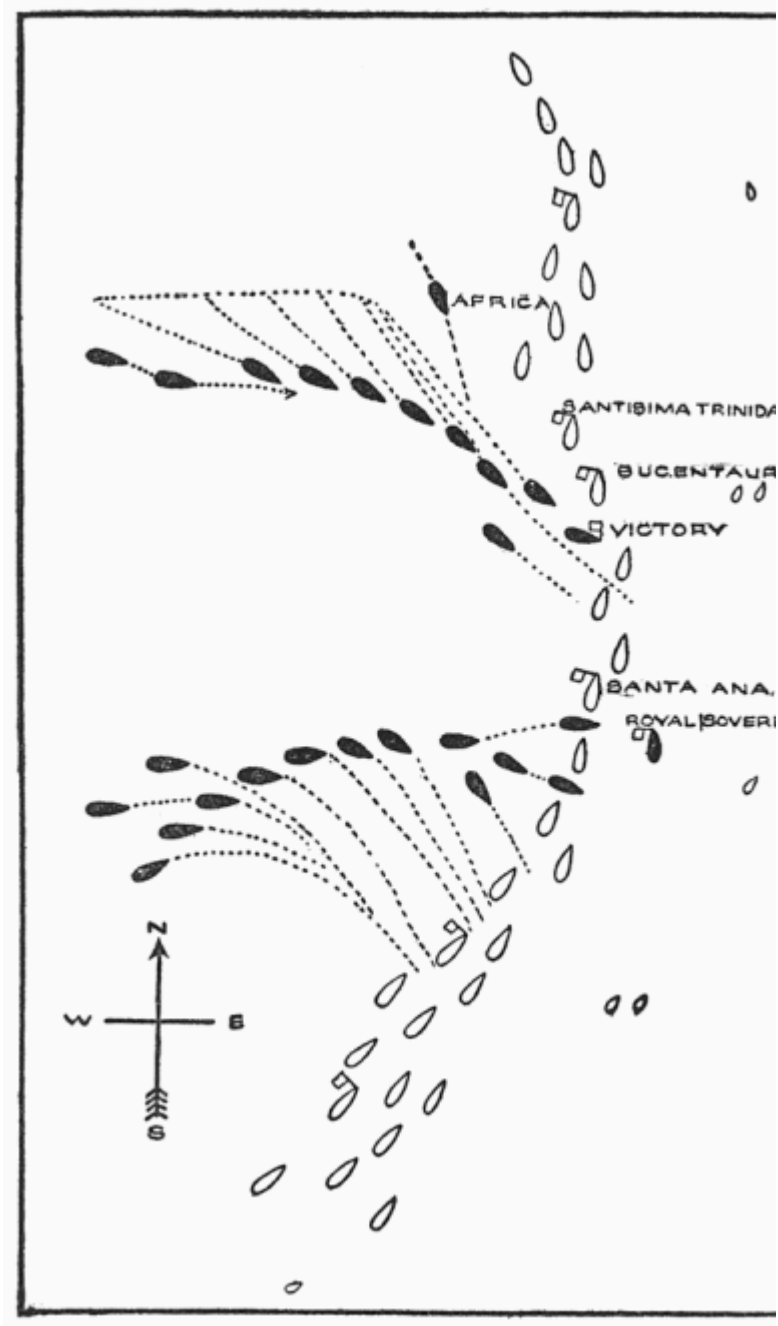
before the action was made general by the advent of British ships in the rear. All these suffered as they closed, but far less than those near the head of the line. Of the total British casualties fully a third fell upon the four leading ships—*Victory, Téméraire, Royal Sovereign* and *Belleisle*.

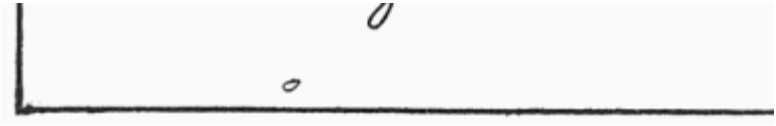
Not until about three o'clock were the shattered but victorious British in the center threatened by the return of the ten ships in the Allied van. Culpably slow, however hindered by lack of wind, several of these joined stragglers from Gravina's division to leeward; the *Intrépide*, under her brave skipper Infernet, set an example all might well have followed by steering straight for the *Bucentaure*, and surrendered only to overwhelming odds; five others under Rear Admiral Dumanoir skirted to windward and escaped with the loss of one of their number, cut off by two British late-comers, *Spartiate* and *Minotaur*.

"Partial firing continued until 4:30, when a victory having been reported to the Right Honorable Lord Viscount Nelson, he died of his wound." So reads the *Victory's* log. The flagship had been in deadly grapple with the *Redoutable*, whose complement, like that of many another French and Spanish ship in the action, showed that the decadence of their navies was not due to lack of fighting spirit in the rank and file. Nelson was mortally wounded by a musket shot from the mizzen-top soon after the ships closed. In his hour of supreme achievement death came not ungraciously, giving final assurance of the glory which no man ever faced death more eagerly to win.

Of the Allied fleet, four fled with Dumanoir, but were later engaged and captured by a British

squadron near Corunna. Eleven badly battered survivors escaped into Cadiz. Of the 18 captured, 11 were wrecked or destroyed in the gales that swept the coast for several days after the battle; three were recaptured or turned back to their crews by the prize-masters, and only four eventually reached Gibraltar.


AFRICA
SANTISIMA TRINIDA
VICTORY
SANTA ANA
N
W
E
S



TRAFALGAR, ABOUT 12:30

From plan attached to report of Capt. Prigny, Villeneuve's Chief of Staf
p. 128.)

The Trafalgar victory did not indeed reduce France to terms, and it thus illustrates the limitations of naval power against an enemy not primarily dependent upon the sea. But it freed England from further threat of invasion, clinched her naval predominance, and opened to her the prospect of taking a more aggressive part in the land war. Even this prospect was soon temporarily thrust into the background. On the very day of Trafalgar Napoleon's bulletins announced the surrender of 60,000 Austrians at Ulm, and the Battle of Austerlitz a month later crushed the Third Coalition. The small British contingents in Germany and southern Italy hastened back to their transports. It was only later, when France was approaching exhaustion, that British forces in the Spanish peninsula and elsewhere took a conspicuous part in the Continental war.

The Continental System

England's real offensive strength lay not in her armies but in her grip on Europe's intercourse with the rest of the world. And on the other hand, the only blow that Napoleon could still strike at his chief enemy was to shut her from the markets of Europe—to "defeat the sea by the land." This was the aim of his Continental System. It meant a test of endurance—whether he could force France and the rest of Europe to undergo the tremendous strain of commercial isolation for a sufficient period to reduce England to ruin.

The Continental System came into being with Napoleon's famous Berlin Decree of November, 1806, which, declaring a "paper" blockade of the British Isles, put all trade with England under the ban. Under this decree and later supplementary measures, goods of British origin, whatever their subsequent ownership, were confiscated or destroyed wherever French agents could lay hands on them; and neutral vessels were seized and condemned for entering British ports, accepting British convoy, or even submitting to British search.

England's chief retaliatory measure was the Orders in Council of November, 1807. Her object in these orders and later modifications was not to cut off trade with the Continent, but to control it to her own profit and the injury of the enemy—in short, "no trade except through England." The orders aimed to compel the aid of neutrals by excluding neutral ships from the Continent unless they should first enter British ports, pay British dues, and (as would be an inevitable consequence) give covert assistance in carrying on British trade.

The Continental System reached its greatest efficiency during the apogée of Napoleon's power in 1809 and 1810. To check forbidden traffic, which continued on an enormous scale, he annexed Holland to his empire, and threw a triple cordon of French troops along Germany's sea frontier. As a result, in the critical year of 1811 goods piled up in British warehouses, factories closed, bankruptcies doubled, and her financial system tottered.[1] But to bar the tide of commerce at every port from Trieste to Riga was like trying to stem the sea. At each leak in the barrier, sugar, coffee, and British manufactures poured in, and were paid for at triple or tenfold

prices, not in exports, but in coin. Malta, the Channel Islands, and Heligoland (seized by England from Denmark in 1807) became centers of smuggling. The beginning of the end came when the Czar, tired of French dictation and a policy ruinous to his country, opened his ports, first to colonial products (December, 1810), and a year later to all British wares. Six hundred vessels, brought under British convoy into the Baltic, docked at Libau, and caravans of wagons filled the roads leading east and south.

[Footnote 1: In spite of this crisis, British trade showed progressive increase in each half decade from 1800 to 1815, and did not fall off again until the five years after the war. The figures (in millions of pounds sterling) follow: 1801-05, 61 million; 1806-10, 67 million; 1811-15, 74 million; 1816-20, 60 million.—Day, HISTORY OF COMMERCE, p. 355.]

In June of 1812 Napoleon gathered his "army of twenty nations" for the fatal Russian campaign. Now that they had served their purpose, England on June 23 revoked her Orders in Council. The Continental System had failed.

The War of 1812

In the same month, on June 18, the United States declared war on Great Britain. Up to 1807 her commerce and shipping, in the words of President Monroe, had "flourished beyond example," as shown by the single fact that her re-export trade (in West Indies products) was greater in that year than ever again until 1915.[1] Later they had suffered from the coercion of both belligerents, and from her own futile countermeasures of embargo and non-intercourse. Her final declaration came tardily, if not indeed unwisely as a matter of practical policy, however abundantly justified by England's

commercial restrictions and her seizure of American as well as British seamen on American ships. An additional motive, which had decisive weight with the dominant western faction in Congress, was the hope of gaining Canada or at least extending the northern frontier.

[Footnote 1: United States exports rose from a value of 56 million dollars in 1803 to 108 million in 1807; then fell to 22 million in 1808, and after rising to about 50 million before the war, went down to 6 million in 1814.—*Ibid.*, p 480.]

A subordinate episode in the world conflict, the War of 1812 cannot be neglected in naval annals. The tiny American navy retrieved the failures of American land forces, and shook the British navy out of a notorious slackness in gunnery and discipline engendered by its easy victories against France and Spain.

In size the British Navy in 1812 was more formidable than at any earlier period of the general war. Transport work with expeditionary forces, blockade and patrol in European waters, and commerce protection from the China Sea to the Baltic had in September, 1812, increased the fleet to 686 vessels in active service, including 120 of the line and 145 frigates. There were 75 in all on American stations, against the total American Navy of 16, of which the best were the fine 44-gun frigates *Constitution, President* and *United States*. In the face of such odds, and especially as England's European preoccupations relaxed, the result was inevitable. After the first year of war, while a swarm of privateers and smaller war vessels still took heavy toll of British commerce, the frigates were blockaded in American ports and American commerce was

destroyed.

But before the blockade closed down, four frigate actions had been fought, three of them American victories. In each instance, as will be seen from the accompanying table, the advantage in weight of broadside was with the victor. The American frigates were in fact triumphs of American shipbuilding, finer in lines, more strongly timbered, and more heavily gunned than British ships of their class. But that good gunnery and seamanship figured in the results is borne out by the fact that of the eight sloop actions fought during the war, with a closer approach to equality of strength, seven were American victories. The British carronades that had pounded French ships at close range proved useless against opponents that knew how to choose and hold their distance and could shoot straight with long 24'S.

Ship[1]	Commander	Guns	Wt. of broadside	Crew	C
Constitution[2]	Hull	54	684	456	
Guerrière (Brit.)	Dacres	49	556	272	
United States[2]	Decatur	54	786	478	

Macedonian (Brit.)	Carden	49	547	301	
Constitution[2]	Bainbridge	52	654	475	

Java (Brit.)	Lambert	49	576	426	
Chesapeake	Broke	50	542	379	

Shannon (Brit.)[2]	Broke	52	550	330	

[Footnote 1: The figures are from Roosevelt's NAVAL WAR OF 1812, in which 7% is deducted for the short weight of American shot.

[Footnote 2: Victorious.]

"It seems," said a writer in the London *Times*, "that the Americans have some superior mode of firing." But when Broke with his crack crew in the *Shannon* beat the *Chesapeake* fresh out of port, he demonstrated, as had the Americans in other actions, that the superiority was primarily a matter of training and skill.

On the Great Lakes America's naval efforts should have centered, for here was her main objective and here she was on equal terms. Both sides were tremendously hampered in communications with their main sources of supply. But with an approach from the sea to Montreal, the British faced no more serious obstacle in the rapids of the St. Lawrence above than did the Americans on the long route up the Mohawk, over portages into Oneida Lake, and

thence down the Oswego to Ontario, or else from eastern Pennsylvania over the mountains to Lake Erie. The wilderness waterways on both sides soon saw the strange spectacle of immense anchors, cables, cannon, and ship tackle of all kinds, as well as armies of sailors, shipwrights, and riggers, making their way to the new rival bases at Sackett's Harbor and Kingston, both near the foot of Lake Ontario.

Of the whole lake and river frontier, Ontario was of the most vital importance. A decisive American victory here, including the capture of Kingston, would cut enemy communications and settle the control of all western Canada. Kingston as an objective had the advantage over Montreal that it was beyond the direct reach of the British navy. The British, fully realizing the situation, made every effort to build up their naval forces on this lake, and gave Commodore Yeo, who was in command, strict orders to avoid action unless certain of success. On the other hand, the American commander, Chauncey, though an energetic organizer, made the mistake of assuming that his mission was also defensive. Hence when one fleet was strengthened by a new ship it went out and chased the other off the lake, but there was little fighting, both sides engaging in a grand shipbuilding rivalry and playing for a sure thing. Naval control remained unsettled and shifting throughout the war. It was fortunate, indeed, says the British historian, James, that the war ended when it did, or there would not have been room on the lake to maneuver the two fleets. The *St. Lawrence*, a 112-gun three-decker completed at Kingston in 1814, was at the time the largest man-of-war in the world.

Possibly a growing lukewarmness about the war,

manifested on both sides, prevented more aggressive action. But it did not prevent two brilliant American victories in the lesser theaters of Lake Erie and Lake Champlain. Perry's achievement on Lake Erie in building a superior flotilla in the face of all manner of obstacles was even greater than that of the victory itself. The result of the latter, won on September 10, 1813, is summed up in his despatch: "We have met the enemy and they are ours—2 ships, 2 brigs, 1 schooner, and 1 sloop." It assured the safety of the northwestern frontier.

On Lake Champlain Macdonough's successful defense just a year later held up an invasion which, though it would not have been pushed very strenuously in any case, might have made our position less favorable for the peace negotiations then already under way. In this action, as in the one on Lake Erie, the total strength of each of the opposing flotillas, measured in weight of broadsides (1192 pounds for the British against 1194 far the Americans), was about that of a single ship-of-the-line. But the number of units employed raised all the problems of a squadron engagement. Macdonough's shrewd choice of position in Plattsburg Bay, imposing upon the enemy a difficult approach under a raking fire, and his excellent handling of his ships in action, justify his selection as the ablest American naval leader developed by the war.

At the outbreak of the American War, France and England had been engaged in a death grapple in which the rights of neutrals were trampled under foot. Napoleon, by his paper blockade and confiscations on any pretext, had been a more glaring offender. But America's quarrel was after all not with France, who needed American trade, but

with England, a commercial rival, who could back her restrictions by naval power. Once France was out of the war, the United States found it easy to come to terms with England, whose commerce was suffering severely from American privateers.[1] At the close of the war the questions at issue when it began had dropped into abeyance, and were not mentioned in the treaty terms.

[Footnote 1: According to figures cited in Mahan's WAR OF 1812, (Vol. II, p. 224), 22 American naval vessels took 165 British prizes, and 526 privateers took 1344 prizes. In the absence of adequate motives on either side for prolonging the war, these losses, though not more severe than those inflicted by French cruisers, were decisive factors for peace.]

The view taken of the aggressions of sea power in the Napoleonic Wars will depend largely on the view taken regarding the justice of the cause in which it fought. It saved the Continent from military conquest. It preserved the European balance of power, a balance which statesmen of that age deemed essential to the safety of Europe and the best interests of America and the rest of the world. On the other hand, but for the sacrifices of England's land allies, the Continental System would have forced her to make peace, though still undefeated at sea. Even if her territorial accessions were slight, England came out of the war undisputed "mistress of the seas" as she had never been before, and for nearly a century to come was without a dangerous rival in naval power and world commerce.

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CHAPTER XIV

REVOLUTION IN NAVAL WARFARE: HAMPTON ROADS AND LISSA.

During the 19th century, from 1815 to 1898, naval

power, though always an important factor in international relations, played in general a passive rôle. The wars which marked the unification of Germany and Italy and the thrusting back of Turkey from the Balkans were fought chiefly on land. The navy of England, though never more constantly busy in protecting her far-flung empire, was not challenged to a genuine contest for mastery of the seas. In the Greek struggle for independence there were two naval engagements of some consequence—Chios (1822), where the Greeks with fireships destroyed a Turkish squadron and gained temporary control of the Ægean, and Navarino (1827), in which a Turkish force consisting principally of frigates was wiped out by a fleet of the western powers. But both of these actions were one-sided, and showed nothing new in types or tactics. In the American Civil War control of the sea was important and even decisive, but was overwhelmingly in the hands of the North. Hence the chief naval interest of the period lies not so much in the fighting as in the revolutionary changes in ships, weapons, and tactics—changes which parallel the extraordinary scientific progress of the century; and the engagements may be studied now, as they were studied then, as testing and illustrating the new methods and materials of naval war.

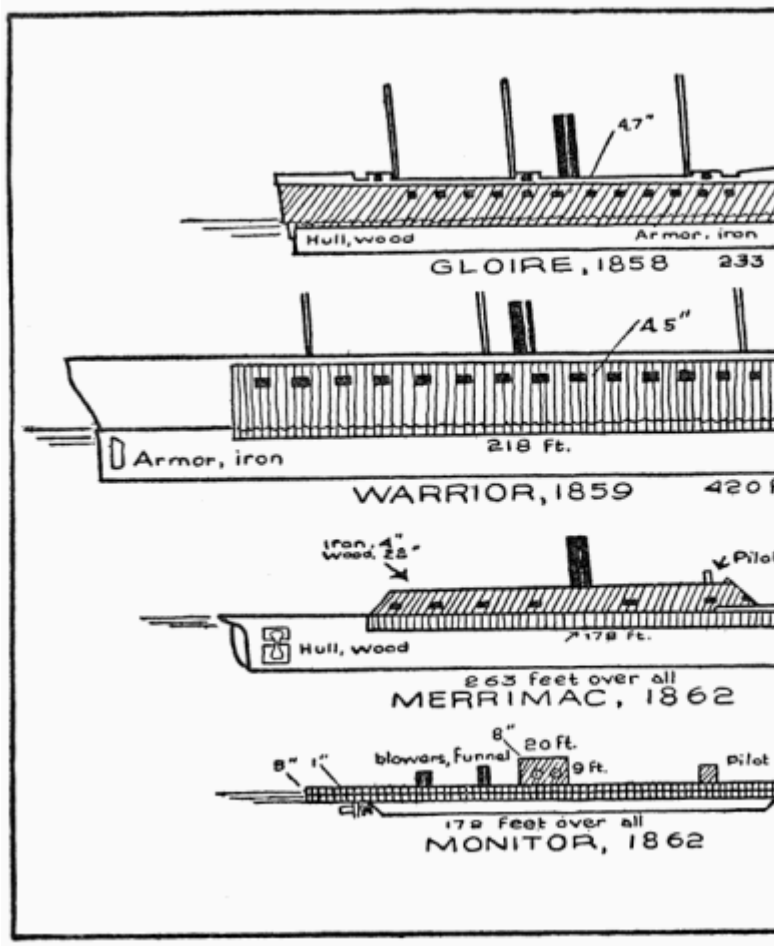
Changes in Ships and Weapons

Down to the middle of the 19th century there had been only a slow and slight development in ships and weapons for a period of nearly 300 years. A sailor of the Armada would soon have felt at home in a three-decker of 1815. But he would have been helpless as a child in the fire-driven iron monsters that fought at Hampton Roads. The shift from sail to steam, from

oak to iron, from shot to shell, and from muzzle-loading smoothbore to breech-loading rifle began about 1850; and progress thereafter was so swift that an up-to-date ship of each succeeding decade was capable of defeating a whole squadron of ten years before. Success came to depend on the adaptability and mechanical skill of personnel, as well as their courage and discipline, and also upon the progressive spirit of constructors and naval experts, faced with the most difficult problems, the wrong solution of which would mean the waste of millions of dollars and possible defeat in war. Every change had to overcome the spirit of conservatism inherent in military organizations, where seniority rules, errors are sanctified by age, and every innovation upsets cherished routine. Thus in the contract for Ericsson's *Monitor* it was stipulated that she should have masts, spars, and sails!

The first successful steamboat for commerce was, as is well known, Robert Fulton's flat-bottomed side-wheeler *Clermont*, which in August, 1807, made the 150 miles from New York to Albany in 32 hours. During the war of 1812 Fulton designed for coast defense a heavily timbered, double-ender floating battery, with a single paddle-wheel located inside amidships. On her trial trip in 1815 this first steam man-of-war, the U. S. S. *Fulton*, carried 26 guns and made over 6 knots, but she was then laid up and was destroyed a few years later by fire. Ericsson's successful application of the screw propeller in 1837 made steam propulsion more feasible for battleships by clearing the decks and eliminating the clumsy and exposed side-wheels. The first American screw warship was the U. S. S. *Princeton*, of 1843, but every ship in the American Navy at the outbreak of the

Civil War had at least auxiliary sail rig. Though by 1850 England had 30 vessels with auxiliary steam, the *Devastation* of 1869 was the first in the British service to use steam exclusively. Long after this time old "floating museums" with sail rig and smoothbores were retained in most navies for motives of economy, and even the first ships of the American "White Squadron" were encumbered with sails and spars.



EARLY IRONC

Progress in ordnance began about 1822, when explosive shells, hitherto used only in mortars, were first adopted for ordinary cannon with horizontal fire. At the time of the Crimean War shells were the usual ammunition for lower tier guns, and at Sinope in 1853 their smashing effect against wooden hulls was demonstrated when a Russian squadron

destroyed some Turkish vessels which fired only solid shot. The great professional cry of the time, we are told, became "For God's sake, keep out the shell."[1]

[Footnote 1: Custance, THE SHIP OF THE LINE IN BATTLE, p. 9.]

In 1851 Minié rifles supplanted in the British army the old smoothbore musket or "Brown Bess," with which at ranges above 200 yards it was difficult to hit a target 11 feet square. This change led quickly to the rifling of heavy ordnance as well. The first Armstrong rifles of 1858—named after their inventor, Sir William Armstrong, head of the Royal Gun Factory at Woolwich—included guns up to 7-inch diameter of bore. The American navy, however, depended chiefly on smoothbores throughout the Civil War.

Breech-loading, which had been used centuries earlier, came in again with these first rifles, but after 1865 the British navy went back to muzzle-loading and stuck to it persistently for the next 15 years. By that time the breech-loading mechanism had been simplified, and its adoption became necessary to secure greater length of gun barrel, increased rapidity of fire, and better protection for gun-crews. About 1880 quick-fire guns of from 3 to 6 inches, firing 12 or 15 shots a minute, were mounted in secondary batteries.

As already suggested, the necessity for armor arose from the smashing and splintering effect of shell against wooden targets and the penetrating power of rifled guns. To attack Russian forts in the Crimea, the French navy in 1855 built three steam-driven floating batteries, the *Tonnant, Lave*, and *Dévastation*,

each protected by 4.3-inch plates and mounting 8 56-lb. guns. In the reduction of the Kinburn batteries, in October of the same year, these boats suffered little, but were helped out by an overwhelming fire from wooden ships, 630 guns against 81 in the forts.

The French armored ship *Gloire* of 1859 caused England serious worry about her naval supremacy, and led at once to H. M. S. *Warrior*, like the *Gloire*, full rigged with auxiliary steam. The *Warrior's* 4.5-inch armor, extending from 6 feet below the waterline to 16 feet above and covering about 42 per cent of the visible target, was proof against the weapons of the time. At this initial stage in armored construction, naval experts turned with intense interest to watch the work of ironclads against ships and forts in the American Civil War.

The American Civil War

The naval activities of this war are too manifold to follow in detail. For four years the Union navy was kept constantly occupied with the tasks of blockading over 3000 miles of coast-line, running down enemy commerce destroyers, cooperating with the army in the capture of coast strongholds, and opening the Mississippi and other waterways leading into the heart of the Confederacy. To make the blockade effective and cut off the South from the rest of the world, the Federal Government unhesitatingly applied the doctrine of "continuous voyage," seizing and condemning neutral ships even when bound from England to Bermuda or the Bahamas, if their cargo was ultimately destined for Southern ports. The doctrine was declared inapplicable when the last leg of the journey was by land,[1] doubtless because there was little danger of heavy traffic across the

Mexican frontier. Blockade runners continued to pour goods into the South until the fall of Fort Fisher in 1865; but as the blockade became more stringent, it crippled the finances of the Confederacy, shut out foodstuffs and munitions, and shortened, if it did not even have a decisive effect in winning the war.

[Footnote 1: Peterhoff Case, 1866 (5 Wall, 28).]

To meet these measures the South was at first practically without naval resources, and had to turn at once to new methods of war. Its first move was to convert the steam frigate *Merrimac*, captured half-burned with the Norfolk Navy Yard, into an ironclad ram. A casemate of 4 inches of iron over 22 inches of wood, sloping 35 degrees from the vertical, was extended over 178 feet, or about two-thirds of her hull. Beyond this structure the decks were awash. The *Merrimac* had an armament of 6 smoothbores and 4 rifles, two of the latter being pivot-guns at bow and stern, and a 1500-lb. cast-iron beak or ram. With her heavy load of guns and armor she drew 22 feet aft and could work up a speed of barely 5 knots.

Faced with this danger, the North hurriedly adopted Ericsson's plan for the *Monitor*,[2] which was contracted for on October 4, 1861, and launched after 100 days. Old marlin-spike seamen pooh-poohed this "cheesebox on a raft." As a naval officer said, it might properly be worshiped by its designer, for it was an image of nothing in the heavens above, or the earth beneath, or the waters under the earth. It consisted of a revolving turret with 8-inch armor and two 11-inch smoothbore guns, set on a raft-like structure 142 feet in length by 41-1/2 feet in beam, projecting at bow, stern, and sides beyond a flat-bottomed lower hull. Though unseaworthy, the

Monitor maneuvered quickly and drew only 10-1/2 feet. She was first ordered to the Gulf, but on March 6 this destination was suddenly changed to the Chesapeake.

[Footnote 2: So called by Ericsson because it would "admonish" the South, and also suggest to England "doubts as to the propriety of completing four steel-clad ships at three and one-half millions apiece."]

The South in fact won the race in construction and got its ship first into action by a margin of just half a day. At noon on March 8, with the iron-workers still driving her last rivets, the *Merrimac* steamed out of Norfolk and advanced ponderously upon the three sail and two steam vessels then anchored in Hampton Roads.

In the Northern navy there had been much skepticism about the ironclad and no concerted plan to meet her attack. Under a rain of fire from the Union ships, and from share fortifications too distant to be effective, the *Merrimac* rammed and sank the sloop-of-war *Cumberland*, and then, after driving the frigate *Congress* aground, riddled her with shells. Towards nightfall the Confederate vessel moved dawn stream, to continue the slaughter next day.

About 12 o'clock that night, after two days of terrible buffeting on the voyage down the coast, the little *Monitor* anchored on the scene lighted up by the burning wreck of the *Congress*. The first battle of ironclads began next morning at 8:30 and continued with slight intermission till noon. It ended in a triumph, not for either ship, but for armor over guns. The *Monitor* fired 41 solid shot, 20 of which struck home, but merely cracked some of the *Merrimac's* outer plates. The *Monitor* was hit 22 times by enemy

shells. Neither craft was seriously harmed and not a man was killed on either side, though several were stunned or otherwise injured. Lieut. Worden, in command of the *Monitor*, was nearly blinded by a shell that smashed in the pilot house, a square iron structure then located not above the turret but on the forward deck.

The drawn battle was hailed as a Northern victory. Imagination had been drawing dire pictures of what the *Merrimac* might do. At a Cabinet meeting in Washington Sunday morning, March 9, Secretary of War Stanton declared: "The *Merrimac* will change the course of the war; she will destroy *seriatim* every naval vessel; she will lay all the cities on the seaboard under contribution. I have no doubt that the enemy is at this minute on the way to Washington, and that we shall have a shell from one of her guns in the White House before we leave this room." The menace was somewhat exaggerated. With her submerged decks, feeble engines, and general awkwardness, the *Merrimac* could scarcely navigate in Hampton Roads. In the first day's fighting her beak was wrenched off and a leak started, two guns were put out of action, and her funnel and all other top-hamper were riddled. As was shown by Farragut in Mobile Bay, and again by Tegetthoff at Lissa, even wooden vessels, if in superior numbers, might do something against an ironclad in an aggressive mêlée.

Both the antagonists at Hampton Roads ended their careers before the close of 1862; the *Merrimac* was burned by her crew at the evacuation of Norfolk, and the *Monitor* was sunk under tow in a gale off Hatteras. But turret ships, monitors, and armored gunboats soon multiplied in the Union navy and did

effective service against the defenses of Southern harbors and rivers. Under Farragut's energetic leadership, vessels both armored and unarmored passed with relatively slight injury the forts below New Orleans, at Vicksburg, and at the entrance to Mobile Bay. Even granting that the shore artillery was out of date and not very expertly served, it is well to realize that similar conditions may conceivably recur, and that the superiority of forts over ships is qualified by conditions of equipment and personnel.

Actually to destroy or capture shore batteries by naval force is another matter. As Ericsson said, "A single shot will sink a ship, while 100 rounds cannot silence a fort."[1] Attacks of this kind against Fort McAllister and Charleston failed. At Charleston, April 7, 1863, the ironclads faced a cross-fire from several forts, 47 smoothbores and 17 rifles against 29 smoothbores and 4 rifles in the ships, and in waters full of obstructions and mines.

[Footnote 1: Wilson, IRONCLADS IN ACTION, Vol. I, p. 91.]

The capture of Fort Fisher, commanding the main entrance to Wilmington, North Carolina, was accomplished in January, 1865, by the combined efforts of the army and navy. The fort, situated on a narrow neck of land between the Cape Fear River and the sea, had 20 guns on its land face and 24 on its sea face, 15 of them rifled. Against it were brought 5 ironclads with 18 guns, backed up by over 200 guns in the rest of the fleet. After a storm of shot and shell for three successive days, rising at times to "drum-fire," the barrage was lifted at a signal and troops and sailors dashed forward from their positions on shore. Even after this preparation the

capture cost 1000 men. As at Kinhurn in the Crimean War, the effectiveness of the naval forces was due less to protective armor than to volume of fire.

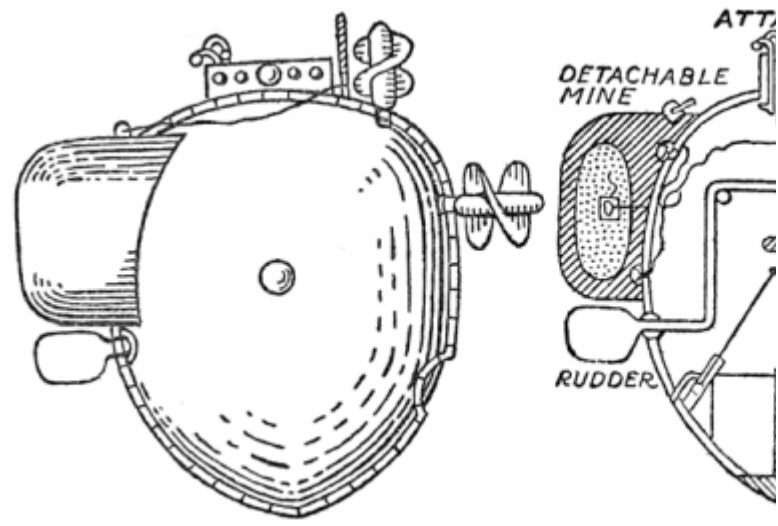
Submarines and Torpedoes

In the defense of Southern harbors, mines and torpedoes for the first time came into general use, and the submarine scored its first victim. Experiments with these devices had been going on for centuries, but were first brought close to practical success by David Bushnell, a Connecticut Yankee of the American Revolution. His tiny submarine, resembling a mud-turtle standing on its tail, embodied many features of modern underwater boats, including a primitive conning tower, screw propulsion (by foot power), a vertical screw to drive the craft down, and a detachable magazine with 150 pounds of gunpowder. The *Turtle* paddled around and even under British men-of-war off New York and New London, but could not drive a spike through their copper bottoms to attach its mine.

Robert Fulton, probably the greatest genius in nautical invention, carried the development of bath mines and submarines much further. His *Nautilus*, so-called because its collapsible sail resembled that of the familiar chambered nautilus, was surprisingly ahead of its time; it had a fish-like shape, screw propulsion (by a two-man hand winch), horizontal diving rudder, compressed air tank, water tank filled or emptied by a pump, and a torpedo[1] consisting of a detachable case of gunpowder. A lanyard ran from the torpedo through an eye in a spike, to be driven in the enemy hull, and thence to the submarine, which as it moved away brought the torpedo up taut against the spike and caused its

explosion. Fulton interested Napoleon in his project, submerged frequently for an hour or more, and blew up a hulk in Brest harbor. But the greybeards in the French navy frowned on these novel methods, declaring them "immoral" and "contrary to the laws of war."

[Footnote 1: This name, coined by Fulton, was from the *torpedo electricus*, or cramp fish, which kills its victim by electric shock.]

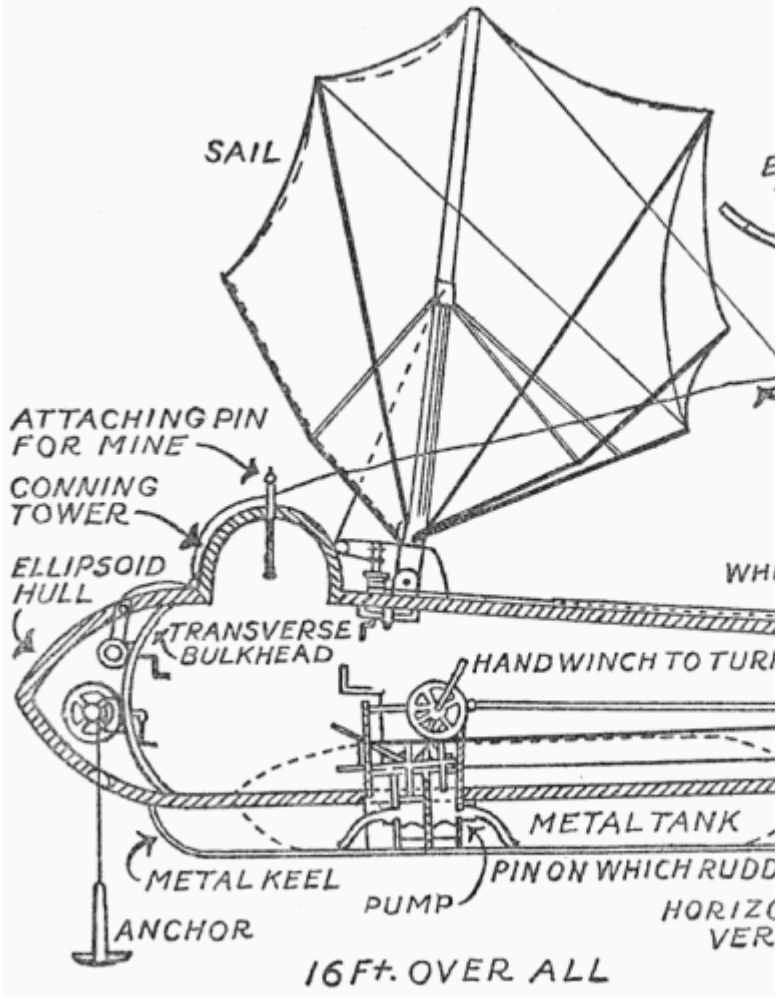


BUSHNELL'S TU

Later the British Government entered into negotiations with the inventor, and in October, 1804, used his mines in an unsuccessful attack an the French flotilla of invasion at Boulogne. Only one pinnace was sunk. Fulton still maintained that he could "sweep all military marines off the ocean."[2] But Trafalgar ended his chances. As the old Admiral Earl St. Vincent remarked, "Pitt [the Prime Minister] would be the greatest fool that ever existed to

encourage a mode of war which they who command the sea do not want and which if successful would deprive them of it." So Fulton took £15,000 and dropped his schemes.

[Footnote 2: Letter to Pitt, Jan. 6, 1806.]



FULTON'S NAU

Much cruder than the *Nautilus*, owing to their hurried construction, were the Confederate "Davids" of the Civil War. One of these launches, which ran only semi-submerged, drove a spar torpedo against the U. S. S. *New Ironsides* off Charleston, but it exploded on the rebound, too far away. The C. S. S. *Hunley* was a real submarine, and went down readily, but on five occasions it failed to emerge properly, and drowned in these experiments about 35 men. In August, 1864, running on the surface, it sank by torpedo the U. S. Corvette *Housatonic* off Charleston, but went down in the suction of the larger vessel, carrying to death its last heroic crew.

By the end of the century, chiefly owing to the genius and patient efforts of two American inventors, John P. Holland and Simon Lake, the submarine was passing from the experimental to the practical stage. Its possibilities were increased by the Whitehead torpedo (named after its inventor, a British engineer established in Fiume, Austria), which came out in 1868 and was soon adopted in European navies. With gyroscopic stabilizing devices and a "warmer" for the compressed air of its engine, the torpedo attained before 1900 a speed of 28 knots and a possible range of 1000 yards. Its first victim was the Chilean warship *Blanco*, sunk in 1891 at 50 yards after two misses. Thornycroft in England first achieved speed for small vessels, and in 1873 began turning out torpedo boats. Destroyers came in twenty years later, and by the end of the century were making over 30 knots.

Long before this time the lessons of the Civil War had hastened the adoption of armor, the new ships ranging from high-sided vessels with guns in broadside, as in the past, to low freeboard craft

influenced by the *Monitor* design, with a few large guns protected by revolving turrets or fixed barbettes, and with better provision for all-around fire. Ordnance improved in penetrating power, until the old wrought-iron armor had to be 20 inches thick and confined to waterline and batteries. Steel "facing" and the later plates of Krupp or Harveyized steel made it possible again to lighten and spread out the armor, and during the last decade of the century it steadily increased its ascendancy over the gun.

The Battle of Lissa

The adoption of armor meant sacrifice of armament, and a departure from Farragut's well-tried maxim, "The best protection against the enemy's fire is a well-sustained fire from your own guns." Thus the British *Dreadnought* of 1872 gave 35% of its displacement to armor and only 5% to armament. Invulnerability was secured at the expense of offensive power. That aggressive tactics and weapons retained all their old value in warfare was to receive timely illustration in the Battle of Lissa, fought in the year after the American war. The engagement illustrated also another of Farragut's pungent maxims to the effect that iron in the ships is less important than "iron in the men"—a saying especially true when, as with the Austrians at Lissa, the iron is in the chief in command.

In 1866 Italy and Prussia attacked Austria in concert, Italy having secured from Bismarck a pledge of Venetia in the event of victory. Though beaten at Custozza on June 24, the Italians did their part by keeping busy an Austrian army of 80,000. Moltke crushed the northern forces of the enemy at Sadowa on July 3, and within three weeks had reached the

environs of Vienna and practically won the war. Lissa was fought on July 20, just 6 days before the armistice. This general political and military situation should be borne in mind as throwing some light on the peculiar Italian strategy in the Lissa campaign.

Struggling Italy, her unification under the House of Piedmont as yet only partly achieved, had shown both foresight and energy in building up a fleet. Her available force on the day of Lissa consisted of 12 armored ships and 16 wooden steam vessels of same fighting value. The ironclads included 7 armored frigates, the best of which were the two "kings," *Re d'Italia* and *Re di Portogallo*, built the year before in New York (rather badly, it is said), each armed with about 30 heavy rifles. Then there was the new single-turret ram *Affondatore*, or "Sinker," with two 300-pounder 10-inch rifles, which came in from England only the day before the battle. Some of the small protected corvettes and gunboats were of much less value, the *Palestro*, for instance, which suffered severely in the fight, having a thin sheet of armor over only two-fifths of her exposed hull.

The Austrian fleet had the benefit of some war experience against Denmark in the North Sea two years before, but it was far inferior and less up-to-date, its armored ships consisting of 7 screw frigates armed chiefly with smoothbores. Of the wooden ships, there were 7 screw frigates and corvettes, 9 gunboats and schooners, and 3 little side-wheelers—a total of 19. The following table indicates the relative strength:

	Armored		Wooden		Small craft		Total		Ri	
	No.	Guns	No.	Guns	No.	Guns	No.	Guns	No.	
Austria	7	176	7	304	12	52	22	532	121	
Italy	12	243	11	382	5	16	28	641	276	

Thus in general terms the Italians were nearly twice as strong in main units, could fire twice as heavy a weight of metal from all their guns, and four times as heavy from their rifles. Even without the *Affondatore*, their advantage was practically as great as this from the beginning of the war.

With such a preponderance, it would seem as if Persano, the Italian commander in chief, could easily have executed his savage-sounding orders to "sweep the enemy from the Adriatic, and to attack and blockade them wherever found." He was dilatory, however, in assembling his fleet, negligent in practice and gun drill, and passive in his whole policy to a degree absolutely ruinous to morale. War was declared June 20, and had long been foreseen; yet it was June 25 before he moved the bulk of his fleet from Taranto to Ancona in the Adriatic. Here on the 27th they were challenged by 13 Austrian ships, which lay off the port cleared for action for two hours, while Persano made no real move to fight. It is said that the Italian defeat at Custozza three days before had taken the heart out of him. On July 8 he put to sea for a brief three days' cruise and went through some maneuvers and signaling but no firing, though many of the guns were newly mounted and had never been tried by their crews.

At this time Napoleon III of France had already

undertaken mediation between the hostile powers. In spite of the orders of June 8, quoted above, which seem sufficiently definite, and urgent orders to the same effect later, Persano was unwilling to take the offensive, and kept complaining of lack of clear instructions as to what he should do. He was later convicted of cowardice and negligence; but the campaign he finally undertook against Lissa was dangerous enough, and it seems possible that some secret political maneuvering was partly responsible for his earlier delay.[1]

[Footnote 1: In July Persano wrote to the Deputy Boggio: "Leave the care of my reputation to me; I would rather be wrongly dishonored than rightly condemned. Patience will bring peace; I shall be called a traitor, but nevertheless Italy will have her fleet intact, and that of Austria will be rendered useless." Quoted in Bernotti, IL POTERE MARITTIMO NELLA GRANDE GUERRA, p. 177.]

It is significant at least that the final proposal to make a descent upon the fortified island of Lissa came not from Persana but from the Minister of Marine. On July 15 the latter took up the project with the fleet chief of staff, d'Amico, and with Rear Admiral Vacca, but not until later with Persano. All agreed that the prospect of a truce allowed no time for a movement against Venice or the Austrian base at Pola, but that they should strike a swift stroke elsewhere. Lissa commanded the Dalmatian coast, was essential to naval control in the Adriatic, and was coveted by Italy then as in later times. It would be better than trying to crush the enemy fleet at the risk of her own if she could enter the peace conference with possession of Lissa a *fait accompli*.

Undertaken in the face of an undefeated enemy fleet, this move has been justly condemned by naval

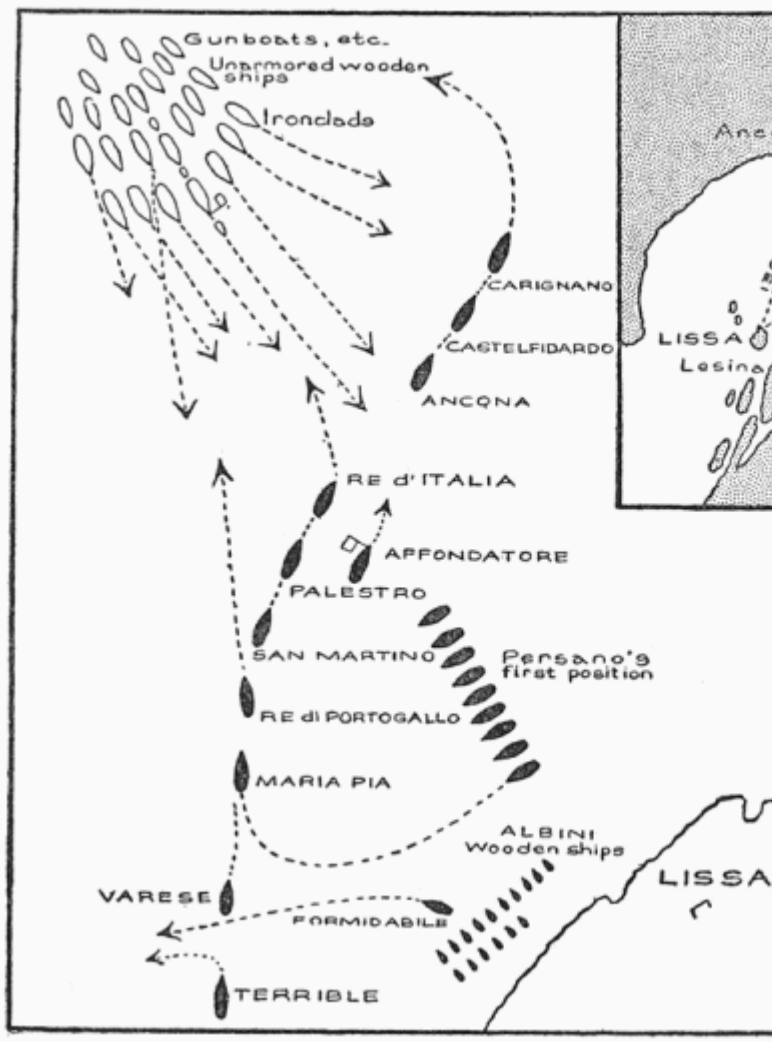
strategists. But with a less alert opponent the coup might have succeeded. Tegetthoff, the Austrian commander, was not yet 41 years of age, but had been in active naval service since he was 18, and had led a squadron bravely in a fight with the Danes two years before off Heligoland. He had his heterogeneous array of fighting craft assembled at Pola at the outbreak of war. "Give me everything you have," he told the Admiralty when they asked him what ships he wanted; "I'll find some use for them." His crews were partly men of Slav and Italian stock from the Adriatic coast, including 600 from Venice; there is no reason for supposing them better than those of Persano. The influence of their leader, however, inspired them with loyalty and fighting spirit, and their defiance of the Italians at Ancona on June 27 increased their confidence. When successive cable messages from Lissa satisfied him that the Italian fleet was not attempting a diversion but was actually committed to an attack on the island, Tegetthoff set out thither on July 19 with his entire fighting force. His order of sailing was the order of battle. "Every captain knew the admiral's intention as well as the admiral himself did; every officer knew what had to be done, and every man had some idea of it, and above all knew that he had to fight."[1]

[Footnote 1: Laughton, STUDIES IN NAVAL HISTORY, Tegetthoff, p. 164.]

In the meantime the Italian drive on Lissa had gone ahead slowly. The island batteries were on commanding heights and manned by marines and artillerymen resolved to fight to the last ditch. During the second day's bombardment the *Affondatore* appeared, and also some additional troops needed to complete the landing force. Two-

thirds of the guns on shore were silenced that day, and if the landing operations had been pushed, the island captured, and the fleet taken into the protected harbor of St. Giorgio, Tegetthoff would have had a harder problem to solve. But as the mist blew away with a southerly wind at 10 o'clock on the next day, July 20, the weary garrison on the heights of the island gave cheer after cheer as they saw the Austrian squadron plunging through the head seas at full speed from the northeastward, while the Italian ships hurriedly drew together north of the island to meet the blow.

The Austrians advanced in three successive divisions, ironclads, wooden frigates, and finally the smaller vessels, each in a wedge-shaped formation (shown by the diagram), with the apex toward the enemy. The object was to drive through the Italian line if possible near the van and bring on a close scrimmage in which all ships could take part, ramming tactics could be employed, and the enemy would profit less by their superiority in armor and guns. Like Nelson's at Trafalgar, Tegetthoff's formation was one not likely to be imitated, but it was at least simple and well understood, and against a passive resistance it gave the results planned.



BATTLE OF LISSA, JU

"*Ecco i pescatori!*" (Here come the fishermen), cried Persana, with a scorn he was far from actually feeling. The Italians were in fact caught at a disadvantage. One of their best ships, the

Formidabile, had been put *hors de combat* by the batteries on the day before. Another, coming in late from the west end of the island, took no part in the action. The wooden ships, owing to the cowardice of their commander, Albini, also kept out of the fight, though Persano signaled desperately to them to enter the engagement and "surround the enemy rear." With his remaining ironclads Persano formed three divisions of three ships each and swung across the enemy's bows in line ahead. Just at the critical moment, and for no very explicable motive, he shifted his flag from the *Re d'Italia* in the center to the *Affondatore*, which was steaming alone on the starboard side of the line. The change was not noted by all his ships, and thus caused confusion of orders. The delay involved also left a wider gap between van and center, and through this the Austrians plunged, Tegetthoff in his flagship *Erzherzog Ferdinand Max* leading the way.

Here orderly formation ended, and only the more striking episodes stand out in a desperate close combat, during which the black ships of Austria and the gray of Italy rammed or fired into each other amid a smother of smoke and spray. The Austrian left flank and rear held up the Italian van; the Austrian ironclads engaged the Italian center; and the wooden ships of the Austrian middle division, led by the 92-gun *Kaiser*, smashed into the Italian rear. Of all the Austrian ships, the big *Kaiser*, a relic of other days, saw the hardest fighting. Twice she avoided the *Affondatore's* ram, and she was struck by one of her 300-pound projectiles. Then the *Re di Portogallo* bore down, but Petz, the *Kaiser's* captain, rang for full speed ahead and steered for the ironclad, striking a glancing blow and scraping past

her, while both ships poured in a heavy fire. The *Kaiser* soon afterward drew out of the action, her foremast and funnel down, and a bad blaze burning amidships. Altogether she fired 850 rounds in the action, or about one-fifth of the total fired by the Austrians, and she received 80 hits, again one-fifth of the total. Of the 38 Austrians killed and 138 wounded in the battle, she lost respectively 24 and 75.

The *Kaiser's* combat, though more severe, was typical of what was going on elsewhere. The Italian gunboat *Palestro* was forced to withdraw to fight a fire that threatened her magazines. The *Re d'Italia*, which was at first supposed by the Austrians to be Persano's flagship, was a center of attack and had her steering gear disabled. As she could go only straight ahead or astern, the Austrian flagship seized the chance and rammed her squarely amidships at full speed, crashing through her armor and opening an immense hole. The Italian gunboat heeled over to starboard, then back again, and in a few seconds went down, with a loss of 381 men.

This spectacular incident practically decided the battle. After an hour's fighting the two squadrons drew apart about noon, the Austrians finally entering St. Giorgio harbor and the Italians withdrawing to westward. During the retreat the fire on the *Palestro* reached her ammunition and she blew up with a loss of 231 of her crew. Except in the two vessels destroyed, the Italian losses were slight—8 killed and 40 wounded. But the armored ships were badly battered, and less than a month later the *Affondatore* sank in a squall in Ancona harbor, partly, it was thought, owing to injuries received at Lissa.

For a long time after this fight, an exaggerated view was held regarding the value of ramming, line abreast formation, and bow fire. Weapons condition tactics, and these tactics of Tegetthoff were suited to the means he had to work with. But they were not those which should have been adopted by his opponents; nor would they have been successful had the Italians brought their broadsides to bear on a parallel course and avoided a mêlée. What the whole campaign best illustrates—and the lesson has permanent interest—is how a passive and defensive policy, forced upon the Italian fleet by the incompetence of its admiral or otherwise, led to its demoralization and ultimate destruction. After a long period of inactivity, Persano weakened his force against shore defenses before he had disposed of the enemy fleet, and was then taken at a disadvantage. His passive strategy was reflected in his tactics. He engaged with only a part of his force, and without a definite plan; "A storm of signals swept over his squadron" as it went into action. What really decided the battle was not the difference in ships, crews, or weapons, but the difference in aggressiveness and ability of the two admirals in command.

The Battle of the Yalu

Twenty-eight years elapsed after Lissa before the next significant naval action, the Battle of the Yalu, between fleets of China and Japan. Yet the two engagements may well be taken together, since at the Yalu types and tactics were still transitional, and the initial situation at Lissa was duplicated—line abreast against line ahead. The result, however, was reversed, for the Japanese in line ahead took the initiative, used their superior speed to conduct the battle on their own terms, and won the day.

Trouble arose in the Far East over the dissolution of the decrepit monarchy of Korea, upon which both Japan and China cast covetous eyes. As nominal suzerain, China in the spring of 1894 sent 2000 troops to Korea to suppress an insurrection, without observing certain treaty stipulations which required her to notify Japan. The latter nation despatched 5000 men to Chemulpo in June. Hostilities broke out on July 25, when four fast Japanese cruisers, including the *Naniwa Kan* under the future Admiral Togo, fell upon the Chinese cruiser *Tsi-yuen* and two smaller vessels, captured the latter and battered the cruiser badly before she got away, and then to complete the day's work sank a Chinese troop transport, saving only the European officers on board.

After this affair the Chinese Admiral Ting, a former cavalry officer but with some naval experience, favored taking the offensive, since control of the sea by China would at once decide the war. But the Chinese Foreign Council gave him orders not to cruise east of a line from Shantung to the mouth of the Yalu. Reverses on land soon forced him to give all his time to troop transportation, and this occupied both navies throughout the summer.

On September 16, the day before the Battle of the Yalu, the Chinese battleships escorted transports with 5000 troops to the mouth of the Yalu, and on the following morning they were anchored quietly outside the river. "For weeks," writes an American naval officer who was in command of one of the Chinese battleships, "we had anticipated an engagement, and had had daily exercise at general quarters, etc., and little remained to be done.... The fleet went into action as well prepared as it was

humanly possible for it to be with the same officers and men, handicapped as they were by official corruption and treachery ashore."[1] As the midday meal was in preparation, columns of black smoke appeared to southwestward. The squadron at once weighed anchor, cleared for action, and put on forced draft, while "dark-skinned men, with queues tightly coiled around their heads, and with arms bare to the elbow, clustered along the decks in groups at the guns, waiting to kill or be killed." Out of the smoke soon emerged 12 enemy cruisers which, with information of the Chinese movements, had entered the Gulf intent on battle.

[Footnote 1: Commander P. N. McGiffin, THE BATTLE OF THE YALU, *Century Magazine*, August, 1895, pp. 585-604.]

The forces about to engage included the best ships of both nations. There were 12 on each side, excluding 4 Chinese torpedo boats, and 10 actually in each battle line. The main strength of the Chinese was concentrated in two second-class battleships, the *Ting-yuen* and the *Chen-yuen*, Stettin-built in 1882, each of 7430 tons, with 14-inch armor over half its length, four 12-inch Krupp guns in two barbettes, and 6-inch rifles at bow and stern. The two barbettes were *en echelon* (the starboard just ahead of the port), in such a way that while all four guns could fire dead ahead only two could bear on the port quarter or the starboard bow. These ships were designed for fighting head-on; and hence to use them to best advantage Admiral Ting formed his squadron in line abreast, with the *Ting-yuen* and *Chen-yuen* in the center. The rest of the line were a "scratch lot" of much smaller vessels—two armored cruisers (*Lai-yuen* and *King-yuen*) with 8 to 9-inch armored belts; three protected cruisers (*Tsi-yuen, Chi-yuen*, and

Kwang-ping) with 2 to 4-inch armored decks; on the left flank the old corvette *Kwang-chia*; and opposite her two other "lame ducks" of only 1300 tons, the *Chao-yung* and *Yang-wei*. Ting had properly strengthened his center, but had left his flanks fatally weak. On board the flagship *Ting-yuen* was Major von Hannekin, China's military adviser, and an ex-petty officer of the British navy named Nichols. Philo N. McGiffin, a graduate of the United States Naval Academy, commanded the *Chen-yuen*.

The Japanese advanced in column, or line ahead, in two divisions. The first, or "flying squadron," was led by Rear Admiral Tsuboi in the *Yoshino*, and consisted of four fast protected cruisers. Four similar ships, headed by Vice Admiral Ito in the *Matsushima*, formed the chief units of the main squadron, followed by the older and slower ironclads, *Fuso* and *Hiyei*. The little gunboat *Akagi* and the converted steamer *Saikio Maru* had orders not to engage, but nevertheless pushed in on the left of the line. Aside from their two battleships, the Chinese had nothing to compare with these eight new and well-armed cruisers, the slowest of which could make 17-1/2 knots.

In armament the Japanese also had a marked advantage, as the following table, from Wilsan's *Ironclads in Action*, will show:

	SHIPS	GUNS			SHOTS IN 10 MINUTES	
	Number	6-inch	Large quick fire	Small q. f. and machine	Number	Weight of metal
China	12	40	2	130	33	4,885

Japan	10	34	66	154	185	11,706

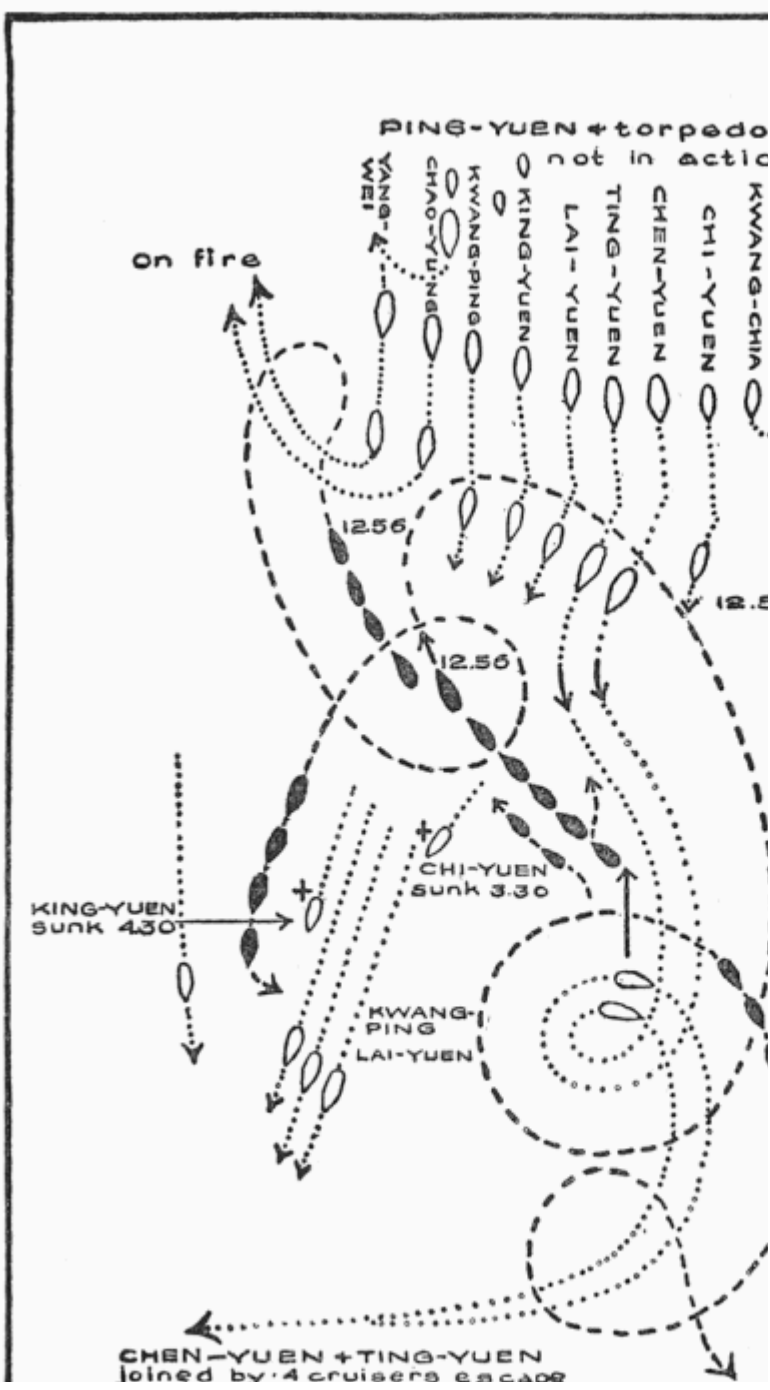
The smaller quick-fire and machine guns proved of slight value on either side, but the large Japanese quick-firers searched all unprotected parts of the enemy ships with a terrific storm of shells. After the experience of July 25, the Chinese had discarded much of their woodwork and top hamper, including boats, thin steel gun-shields, rails, needless rigging, etc., and used coal and sand bags an the upper decks; but the unarmored ships nevertheless suffered severely. From the table it is evident that the Japanese could pour in six times as great a volume of fire. The Chinese had a slight advantage in heavier guns, and their marksmanship, it is claimed, was equally accurate (possibly 10% hits on each side), but their ammunition was defective and consisted mostly of non-bursting projectiles. They had only 15 rounds of shell for each gun.

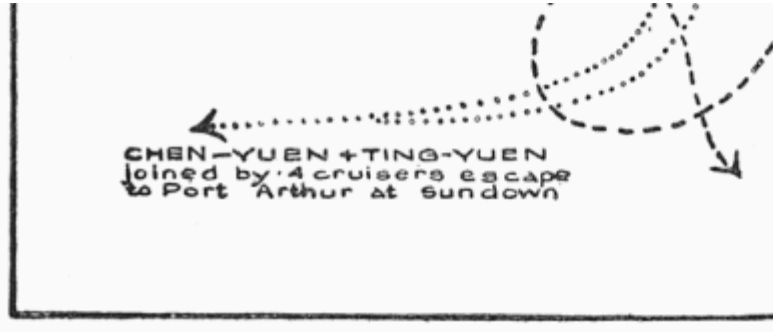
During the approach the Japanese steered at first for the enemy center, thus concealing their precise objective, and then swung to port, with the aim of attacking on the weaker side of the Chinese battleships (owing to their barbette arrangement) and on the weaker flank of the line. In the meantime the Chinese steamed forward at about 6 knots and turned somewhat to keep head-on, thus forcing the Japanese to file across their bows. At 12.20 p.m. the *Chen-yuen* and *Ting-yuen* opened at 5800 yards on Tsuboi's squadron, which held its fire until at 3000 yards or closer it swung around the Chinese right wing.

The main squadron followed. Admiral Ito has been criticized for thus drawing his line across the enemy's advance, instead of attacking their left flank. But he

was previously committed to the movement, and executed it rapidly and for the most part at long range. Had the Chinese pressed forward at best speed, Lissa might have been repeated. As it was, they cut off only the *Hiyei*. To avoid ramming, this old ironclad plunged boldly between the *Chen-yuen* and *Ting-yuen*. She was hit 22 times and had 56 killed and wounded, but managed to pull through.

Before this time the *Chao-yung* and *Yang-wei* on the right flank of the Chinese line had crumpled under a heavy cross-fire from the flying squadron. These ships had wooden cabins on deck outboard, and the whole superstructure soon became roaring masses of flames. Both dropped out of line and burned to the water's edge. The two ships on the opposite flank had seized an early opportunity to withdraw astern of the line, and were now off for Port Arthur under full steam, "followed," writes McGiffin, "by a string of Chinese anathemas from our men at the guns."


PING-YUEN + torpedo
not in actio
KWANG-CHIA
CHI-YUEN
CHEN-YUEN
TING-YUEN
LAI-YUEN
KING-YUEN
KWANG-PING
CHAO-YUNG
YANG-WEI
On fire
12.56
12.56
CHI-YUEN
sunk 3.30
KING-YUEN
sunk 4.30
KWANG-
PING
LAI-YUEN
CHEN-YUEN + TING-YUEN



BATTLE OF THE YALU,

The Japanese van turned to port and was thus for some time out of action. The main division turned to starboard and circled the Chinese rear. Of the 6 Chinese ships left in the line, the four smaller seem now to have moved on to southward, while both Japanese divisions concentrated on the two battleships *Chen-yuen* and *Ting-yuen*. These did their best to keep head to the enemy, and stood up doggedly, returning slowly the fire of the circling cruisers. Tsuboi soon turned away to engage the lighter vessels. Finally, at 3.26, as the *Matsushima* closed to about 2000 yards, the *Chen-yuen* hit her fairly with a last remaining 12-inch shell. This one blow put Ito's flagship out of action, exploding some ammunition, killing or wounding 50 or more men, and starting a dangerous fire. The Japanese hauled off, while according to Chinese accounts the battleships actually followed, but at 4.30 came again under a severe fire. About 5.30, when the Chinese were practically out of ammunition, Ito finally withdrew and recalled his van.

Of the other Chinese ships, the *Chi-yuen* made a desperate attempt to approach the Japanese van and went down at 3.30 with screws racing in the air. The *King-yuen*, already on fire, was shot to pieces and sunk an hour later by the *Yoshino's* quick-firers. As

the sun went down, the *Lai-yuen* and *Kwang-ping*, with two ships from the river mouth, fell in behind the battleships and staggered off towards Port Arthur, unpursued. The losses on the two armored ships had been relatively slight—56 killed and wounded. The Japanese lost altogether 90 killed and 204 wounded, chiefly on the *Matsushima* and *Hiyei*.

Though China saved her best ships from the battle, her fighting spirit was done for. The battleships were later destroyed by Japanese torpedo operations after the fall of Wei-hai-wei. Her crews had on the whole fought bravely, handicapped as they were by their poor materials and lack of skill. For instance, when McGiffin called for volunteers to extinguish a fire on the *Chen-yuen's* forecastle, swept by enemy shells, "men responded heartily and went to what seemed to them certain death." It was at this time that the commander himself, leading the party, was knocked over by a shell explosion and then barely escaped the blast of one of his own 12-inch guns by rolling through an open hatch and falling 8 feet to a pile of débris below.

In the way of lessons, aside from the obvious ones as to the value of training and expert leadership and the necessity of eliminating inflammables in ship construction, the battle revealed on the one hand the great resisting qualities of the armored ship, and on the other hand the offensive value of superior gunfire. Admiral Mahan said at the time that "The rapid fire gun has just now fairly established its position as the greatest offensive weapon in naval warfare."[1] Another authority has noted that, both at Lissa and the Yalu, "The winning fleet was worked in divisions, as was the British fleet in the Dutch wars and at Trafalgar, and the Japanese fleet

afterwards at Tsushima." Remarking that experiments with this method were made by the British Channel Fleet in 1904, the writer continues: "The conception grew out of a study of Nelson's Memorandum. Its essence was to make the fleet flexible in the hands of the admiral, and to enable any part to be moved by the shortest line to the position where it was most required."[2]

[Footnote 1: LESSONS FROM THE YALU FIGHT, *Century Magazine*, August, 1895, p. 630.]

[Footnote 2: Custance, THE SHIP OF THE LINE IN BATTLE, p. 103.]

By the Treaty of Shimonoseki (April 17, 1895) which closed the war, Japan won Port Arthur and the Liao-tung Peninsula, the Pescadores Islands and Formosa, and China's withdrawal from Korea. But just as she was about to lay hands on these generous fruits of victory, they were snatched out of her grasp by the European powers, which began exploiting China for themselves. Japan had to acquiesce and bide her time, using her war indemnity and foreign loans to build up her fleet. The Yalu thus not only marks the rise of Japan as a formidable force in international affairs, but brings us to a period of intensified colonial and commercial rivalry in the Far East and elsewhere which gave added significance to naval power and led to the war of 1914.

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CHAPTER XV

RIVALRY FOR WORLD POWER

Even more significant in its relation to sea power than the revolution in armaments during the 19th century was the extraordinary growth of ocean commerce. The total value of the world's import and export trade in 1800 amounted in round numbers to 1-1/2 billion dollars, in 1850 to 4 billion, and in 1900 to nearly 24 billion. In other words, during a period in which the population of the world was not more than tripled, its international exchange of commodities was increased 16-fold. This growth was of course made possible largely by progress in manufacturing, increased use of steam navigation, and vastly greater output of coal and iron.[1] At the end of the Napoleonic wars England was the only great commercial and industrial state. At the close of

the century, though with her colonies she still controlled one-fourth of the world's foreign trade, she faced aggressive rivals in the field. The United States after her Civil War, and Germany after her unification and the Franco-Prussian War, had achieved an immense industrial development, opening up resources in coal and iron that made them formidable competitors. Germany in particular, a late comer in the colonial field, felt that her future lay upon the seas, as a means of securing access on favorable terms to world markets and raw materials. Other nations also realized that their continued growth and prosperity would depend upon commercial expansion. This might be accomplished in a measure by cheaper production and superior business organization, but could be greatly aided by political means—by colonial activity, by securing control or special privileges in unexploited areas and backward states, by building up a merchant fleet under the national flag. Obviously, since the seas join the continents and form the great highways of trade, this commercial and political expansion would give increased importance to naval power.

[Footnote 1: Coal production increased during the century from 11.6 million tons to 610 million, and pig iron from half a million tons to 37 million. Figures from Day, HISTORY OF COMMERCE, Ch. XXVIII.]

Admiral Mahan, an acute political observer as well as strategist, summed up the international situation in 1895 and again in 1897 as "an equilibrium on the [European] Continent, and, in connection with the calm thus resulting, an immense colonizing movement in which all the great powers were concerned."[1] Later, in 1911, he noted that colonial rivalries had again been superseded by rivalries

within Europe, but pointed out that the European tension was itself largely the product of activities and ambitions in more distant spheres. In fact the international developments of recent times, whether in the form of colonial enterprises, armament competition, or actual warfare, find a common origin in economic and commercial interests. Commerce and quick communications have drawn the world into closer unity, yet by a kind of paradox have increased the possibilities of conflict. Both by their common origin and by their far-reaching consequences, it is thus possible to connect the story of naval events from the Spanish-American to the World War, and to gather them up under the general title, "rivalry for world power."

1. THE SPANISH-AMERICAN WAR

To this rivalry the United States could hardly hope or desire to remain always a passive spectator, yet, aside from trying to stabilize the western hemisphere by the Monroe Doctrine, she cherished down to the year 1898 a policy of isolation from world affairs. During the first half of the 19th century, it is true, her interests were directed outward by a flourishing merchant marine. In 1860 the American merchant fleet of 2,500,000 tons was second only to Great Britain's and nearly equal to that of all other nations combined. But its decay had already begun, and continued rapidly. The change from wood to iron construction enabled England to build cheaper ships; and American shipping suffered also from lack of government patronage, diversion of capital into mare profitable projects of Western development, and loss of a third of its tonnage by destruction or shift to foreign register during the Civil War. At the outbreak of that war 72 per cent of American exports were

carried in American bottoms; only 9 per cent in 1913. Thus the United States had reached the unsatisfactory condition of a nation with a large and rapidly growing foreign commerce and an almost non-existent merchant marine.

[Footnote 1: NAVAL STRATEGY, p. 104.]

This was the situation when the nation was thrust suddenly and half unwillingly into the main stream of international events by the Spanish-American War. Though this war made the United States a world power, commercial or political aggrandizement played no part in her entry into the struggle. It arose solely from the intolerable conditions created by Spanish misrule in Cuba, and intensified by armed rebellion since 1895. Whatever slight hope or justification for non-intervention remained was destroyed by the blowing up of the *U. S. S. Maine* in Havana harbor, February 15, 1898, with the loss of 260 of her complement of 354 officers and men. Thereafter the United States pushed her preparations for war; but the resolution of Congress, April 19, 1898, authorizing the President to begin hostilities expressly stated that the United States disclaimed any intention to exercise sovereignty over Cuba, and after its pacification would "leave the government and control of the island to its people."

It was at once recognized that the conflict would be primarily naval, and would be won by the nation that secured control of the sea. The paper strength of the two navies left little to choose, and led even competent critics like Admiral Colomb in England to prophesy a stalemate—a "desultory war." Against five new American battleships, the *Iowa, Indiana, Massachusetts, Oregon* and *Texas*, the first four of

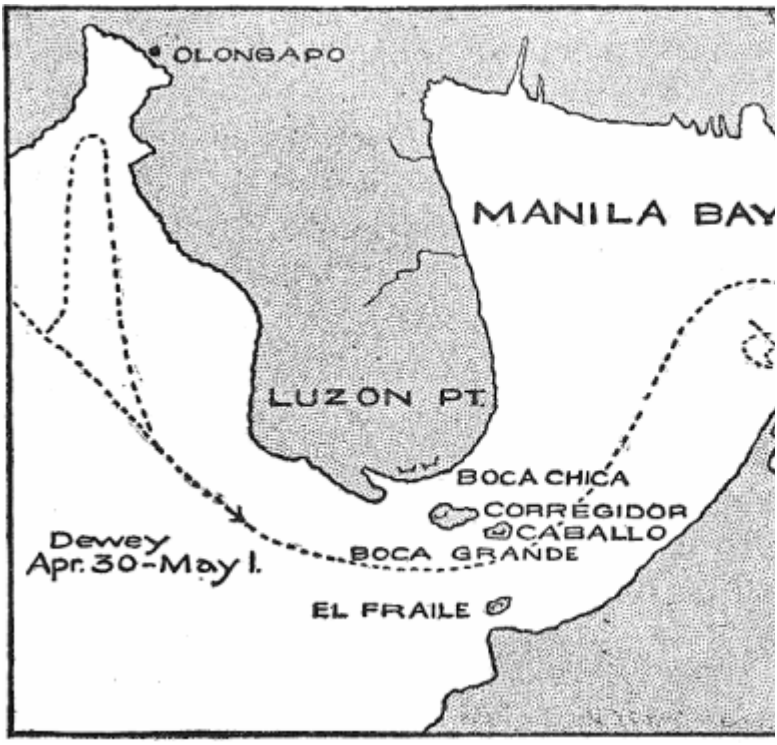
10,000 tons, and the armored cruisers *Brooklyn* and *New York* of 9000 and 8000 tans, Spain could oppose the battleship *Pelayo*, a little better than the *Texas* and five armored cruisers, the *Carlos V, Infanta Maria Teresa, Almirante Oquendo*, and *Vizcaya*, each of about 7000 tons, and the somewhat larger and very able former Italian cruiser *Cristobal Colon*. Figures and statistics, however, give no idea of the actual weakness of the Spanish navy, handicapped by shiftless naval administration, by dependence on foreign sources of supply, and by the incompetence and lack of training of personnel. Of the squadron that came to Cuba under Admiral Cervera, the *Colon* lacked two 10-inch guns for her barbettes, and the *Vizcaya* was so foul under water that with a trial speed of 18-1/2 knots she never made above 13—Cervera called her a "buoy." There was no settled plan of campaign; to Cervera's requests for instructions came the ministerial reply that "in these moments of international crisis no definite plans can be formulated."[1] The despairing letters of the Spanish Admiral and his subordinates reveal how feeble was the reed upon which Spain had to depend for the preservation of her colonial empire. The four cruisers and two destroyers that sailed from the Cape Verde Islands on April 29 were Spain's total force available. The *Pelayo* and the *Carlos V*, not yet ready, were the only ships of value left behind.

[Footnote 1: Bermejo to Cervera, April 4, 1898.]

On the American naval list, in addition to the main units already mentioned, there were six monitors of heavy armament but indifferent fighting value, a considerable force of small cruisers, four converted liners for scouts, and a large number of gunboats, converted yachts, etc., which proved useful in the

Cuban blockade. Of these forces the majority were assembled in the Atlantic theater of war. The *Oregon* was on the West Coast, and made her famous voyage of 14,700 miles around Cape Horn in 79 days, at an average speed of 11.6 knots, leaving Puget Sound on March 6 and touching at Barbados in the West Indies an May 18, just as the Spanish fleet was steaming across the Caribbean. The cruise effectively demonstrated the danger of a divided navy and the need of an Isthmian canal. Under Commodore Dewey in the Far East were two gunboats and four small cruisers, the best of them the fast and heavily armed flagship *Olympia*, of 5800 tons.

The Battle of Manila Bay



APPROACHES TO M

With this latter force the first blow of the war was struck on May 1 in Manila Bay. Dewey, largely through the influence of Assistant Secretary of the Navy Roosevelt, had been appointed to the eastern command the autumn before. On reaching his station in January, he took his squadron to Hong Kong to be close to the scene of possible hostilities. On February 25 he received a despatch from Roosevelt, then Acting Secretary: "Keep full of coal. In the event of declaration of war Spain, your duty will be to see that Spanish squadron does not leave the Asiatic coast, and then offensive operations in the Philippine Islands." On April 25 came the inspiring order:

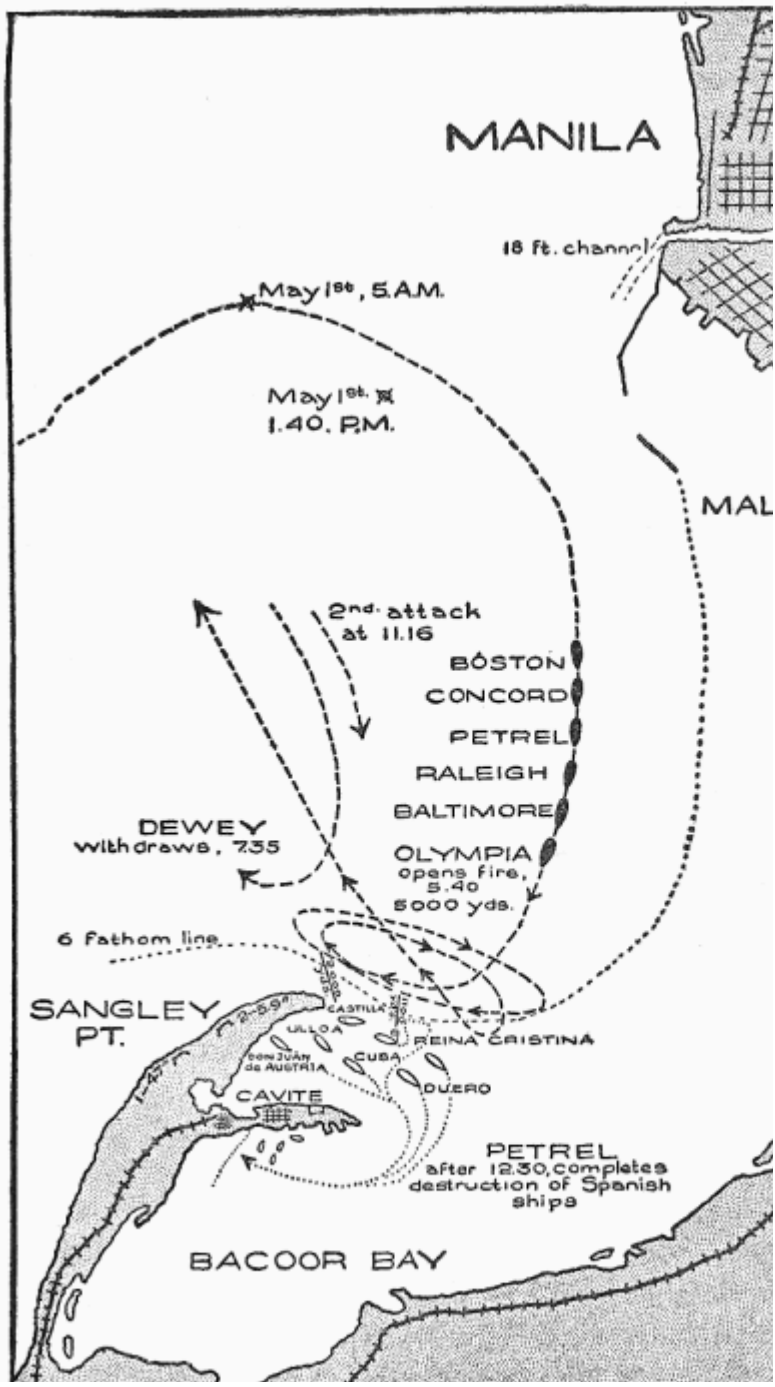
"Proceed at once to Philippine Islands. Commence operations particularly against the Spanish fleet. You must capture vessels or destroy. Use utmost endeavor." The Commodore had already purchased a collier and a supply ship for use in addition to the revenue cutter *McCulloch*, overhauled his vessels and given them a war coat of slate-gray, and made plans for a base at Mirs Bay, 30 miles distant in Chinese waters, where he would be less troubled by neutrality rules in time of war. On April 22 the *Baltimore* arrived from San Francisco with much-needed ammunition. On the 27th Consul Williams joined with latest news of preparations at Manila, and that afternoon the squadron put to sea.

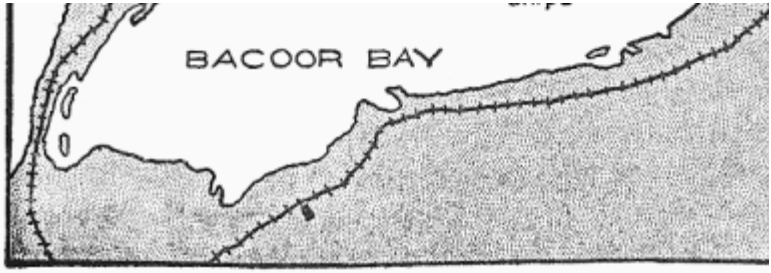
On the morning of the 30th it was off Luzon, and two ships scouted Subig Bay, which the enemy had left only 24 hours before. At 12 that night Dewey took his squadron in column through the entrance to Manila Bay, just as he had steamed past the forts on the Mississippi with Farragut 35 years before. Only three shots were fired by the guns on shore. The thoroughness of Dewey's preparations, the rapidity of his movements up to this point, and his daring passage through a channel which he had reason to believe strongly defended by mines and shore batteries are the just titles of his fame. The entrance to Manila is indeed 10 miles wide and divided into separate channels by the islands Corregidor, Caballo, and El Fraile. The less frequented channel chosen was, as Dewey rightly judged, too deep for mining except by experts. Yet the Spanish had news of his approach the day before; they had 17 guns, including 6 modern rifles, on the islands guarding the entrance; they had plenty of gunboats that might have been fitted out as torpedo launches for night

attack. It does not detract from the American officer's accomplishment that he drew no false picture of the obstacles with which he had to deal.

At daybreak next morning, having covered slowly the 24 miles from the mouth of the bay up to Manila, the American ships advanced past the city to attack the Spanish flotilla drawn up under the Cavite batteries 6 miles beyond. Here was what an American officer described as "a collection of old tubs scarcely fit to be called men-of-war." The most serviceable was Admiral Montojo's flagship *Reina Cristina*, an unarmored cruiser of 3500 tons; the remaining half dozen were older ships of both wood and iron, some of them not able to get under way. They mounted 31 guns above 4-inch to the Americans' 53. More serious in prospect, though not in reality, was the danger from shore batteries and mines. The United States vessels approached in column, led by the *Olympia*, which opened fire at 5.40. In the words of Admiral Dewey's report, "The squadron maintained a continuous and precise fire at ranges varying from 5000 to 2000 yards, countermarching in a line approximately parallel to that of the Spanish fleet. The enemy's fire was vigorous, but generally ineffective. Three runs were made from the eastward and three from the westward, so that both broadsides were brought to bear." One torpedo launch which dashed out was sunk and another driven ashore. The *Cristina* moved out as if to ram, but staggered back under the *Olympia's* concentrated fire. At 7.35, owing to a mistaken report that only 15 rounds of ammunition were left for the 5-inch guns, the American squadron retired temporarily, but renewed action at 11.16 and ended it an hour later, when the batteries were

silenced and "every enemy ship sunk, burned or deserted."


MANILA
18 ft. channel
May 1st, 5.A.M.
May 1st. 1.40. P.M.
MAL
2nd. attack at 11.16
BOSTON
CONCORD
PETREL
RALEIGH
BALTIMORE
OLYMPIA opens fire, 5.40 5000 yds.
DEWEY withdrawe, 7.35
6 Fathom line
SANGLEY PT.
CASTILLA
ULLOA
REINA CRISTINA
CUBA
DUERO
CAVITE
PETREL after 12.30, completes destruction of Spanish ships
BACOOR BAY



BATTLE OF MANILA, MAY 1,

As reported by Admiral Montojo, the Spanish lost 381 men. The American ships were hit only 15 times and had 7 men slightly injured. Volume and accuracy of gunfire won the day. Somewhat extravagant language has been used in describing the battle, which, whatever the perils that might naturally have been expected, was a most one-sided affair. But it is less easy to overpraise Admiral Dewey's energetic and aggressive handling of the entire campaign.

Manila thereafter lay helpless under the guns of the squadron, and upon the arrival and landing of troops surrendered on August 13, after a merely formal defense. In the interim, Spain sent out a relief force under Admiral Camara consisting of the *Pelaya, Carlos V* and other smaller units, before encountering which Dewey planned to leave Manila and await the arrival of two monitors then on their way from San Francisco. After getting through the Suez Canal, Camara was brought back (July 8) by an American threat against the coast of Spain.

Soon after the battle a number of foreign warships congregated at Manila, including 5 German ships under Admiral von Diedrichs, a force superior to Dewey's, and apparently bent on learning by persistent contravention all the rules of a blockaded port. The message finally sent to the German Admiral is reticently described by Dewey himself,

but is said to have been to the effect that, if the German admiral wanted a fight, "he could have it right now." On the day of the surrender of Manila the British and the Japanese ships in the harbor took a position between the American and the German squadrons. This was just after the seizure of Kiao-chau, at a time when Germany was vigorously pushing out for "a place in the sun." But for the American commander's quiet yet firm stand, with British support, the United States might have encountered more serious complications in taking over 127,000 square miles of archipelago in the eastern world, with important trade interests, a lively insurrection, and a population of 7 million.

The Santiago Campaign

In the Atlantic, where it was the American policy not to carry their offensive beyond Spain's West Indies possessions, events moved more slowly. Rear Admiral Sicard, in command of the North Atlantic squadron based on Key West, was retired in March for physical disability and succeeded by William T. Sampson, who stepped up naturally from senior captain in the squadron and was already distinguished for executive ability and knowledge of ordnance. Sampson's first proposal was, in the event of hostilities, a bombardment of Havana, a plan approved by all his captains and showing a confidence inspired perhaps by coastal operations in the Civil War; but this was properly vetoed by the Department on the ground that no ships should be risked against shore defenses until they had struck at the enemy's naval force and secured control of the sea. An earlier memorandum from Secretary Long, outlining plans for a blockade of Cuba, had been based on suggestions from Rear Admiral (then

Captain) Mahan,[1] and his strategic insight may have guided this decision. On April 22, Sampson, now acting rear admiral, placed his force off Havana and established a close blockade over 100 miles on the northern coast.

[Footnote 1: Goode, WITH SAMPSON THROUGH THE WAR, p. 19.]

The problem for American strategy was now Cervera's "fleet in being,"—inferior in force but a menace until destroyed or put out of action—which, as before stated, left the Cape Verde Islands on April 29, for a destination unknown. A bombardment of cities on the American coast or a raid on the North Atlantic trade routes was within the realm of possibilities. Difficulties of coaling and an inveterate tendency to leave the initiative to the enemy decided the Spanish against such a project. But its bare possibility set the whole east coast in a panic, which has been much ridiculed, but which arose naturally enough from a complete lack of instruction in naval matters and from lack of a sensible control of the press. The result was an unfortunate division of the fleet. A so-called Flying squadron under Commodore Schley, consisting of the *Brooklyn, Massachusetts, Texas,* and 3 small cruisers, was held at Hampton Roads; whereas, if not thus employed, these ships might have blockaded the south side of Cuba from the beginning of the war. A northern patrol squadron, of vessels not of much use for this or any other purpose, was also organized to guard the coast from Hampton Roads north.

On May 4, with Cervera still at large, Sampson lifted his guard of Havana—unwisely in the opinion of Mahan—and took his best ships, the *New York,*

Indiana, Iowa, and two monitors, to reconnoiter San Juan, Porto Rico, where it was thought the missing fleet might first appear. Just as he was bombarding San Juan, on the morning of May 12, the Navy Department received a cable from Martinique announcing Cervera's arrival there. Havana and Cienfuegos (on the south side of Cuba and connected with Havana by rail) were considered the only two ports where the Spanish fleet could be of value to the forces on the island; and from these two ports both American squadrons were at this time a thousand miles away. Schley hastened southward, left Key West on the 19th, and was off Cienfuegos by daylight on the 21st. It was fairly quick work; but had the Spanish fleet moved thither at its usual speed of 6 knots from its last stopping-place, it would have got there first by at least 12 hours. The Spanish admiral, finding no coal at Martinique, had left a crippled destroyer there and moved on to the Dutch island of Curaçao, where on the 14th and 15th he secured with difficulty about 500 tons of fuel. Thence, in all anxiety, he made straight for the nearest possible refuge, Santiago, where he put in at daybreak on the 19th and was soon receiving congratulations on the completion of a successful cruise.



By the next day Sampson, having hurried back from San Juan and coaled, was again in force off Havana. There he received news of Cervera's arrival in Santiago. Since Havana could not be uncovered,

he sent instructions to Schley—at first discretionary, and then, as the reports were confirmed, more imperative—to blockade the eastern port. Though the commander of the Flying Squadron received the latter orders on the 23d, he had seen smoke in Cienfuegos harbor and still believed he had Cervera cornered there. Accordingly he delayed until evening of the next day. Then, after reaching Santiago, he cabled on the 27th that he was returning to Key West to coal, though he had a collier with him and stringent orders to the contrary; and it was not until the 29th that he actually established the Santiago Blockade. Sampson, his superior in command (though not his senior in the captains' list), later declared his conduct at this time "reprehensible"[1] —possibly too harsh a term, for the circumstances tried judgment and leadership in the extreme. Cervera found Santiago destitute of facilities for refitting. Yet the fact remains that he had 10 days in which to coal and get away. "We cannot," writes Admiral Mahan, "expect ever again to have an enemy so inept as Spain showed herself to be."[1*]

[Footnote 1: Letter to Secretary, July 10, 1898, SAMPSON-SCHLEY DOCUMENTS, p. 136: "Had the commodore left his station at that time he probably would have been court-martialed, so plain was his duty.... This reprehensible conduct I cannot separate from his subsequent conduct, and for this reason I ask you to do him ample justice on this occasion." A court of inquiry later decided that Commodore Schley's service up to June 1 was characterized by "vacillation, dilatoriness, and lack of enterprise."]

[Footnote 1*: LESSONS OF THE WAR WITH SPAIN, p. 157.]

The "bottling up" of Cervera cleared the situation, and the navy could now concentrate on a task still difficult but well defined. Sampson brought his force to Santiago on June 1, and assumed immediate

command. A close blockade was instituted such as against adequate torpedo and mine defenses would have been highly dangerous even at that day. Three picket launches were placed about a mile off shore, three small vessels a mile further out, and beyond these the 5 or 6 major units, under steam and headed toward the entrance in a carefully planned disposition to meet any attempt at escape. At night a battleship stood in and played its searchlight directly on the mouth of the channel. The latter was six miles in length, with difficult turns, and at the narrowest point only 300 feet wide. Lieut. Hobson's gallant effort on June 3 to sink the collier *Merrimac* across the channel had made its navigation even more difficult, though the vessel did not lie athwart-stream. Mine barriers and batteries on the high hills at the harbor mouth prevented forcing the channel, but the guns were mostly of ancient type and failed to keep the ships at a distance. On the other hand, bombardments from the latter did little more than to afford useful target practice.

The despatch of troops to Santiago was at once decided upon, and the subsequent campaign, if it could be fully studied, would afford interesting lessons in combined operations. On June 22, 16,000 men under General Shafter landed at Daiquiri, 15 miles east of Santiago, in 52 boats provided by the fleet, though the War Department had previously stated that the general would "land his own troops."[2] "It was done in a scramble," writes Col. Roosevelt; and there was great difficulty in getting the skippers of army transports to bring their vessels within reasonable distance of the shore. Since the sole object of the campaign was to get at and destroy the enemy fleet, the navy fully expected and

understood that the army would make its first aim to advance along the coast and capture the batteries at the entrance, so that the mines could be lifted and the harbor forced. Army authorities declare this would have involved division of forces on both sides of the channel and impossibilities of transportation due to lack of roads. But these difficulties applied also in a measure to the defenders, and might perhaps have been surmounted by full use of naval aid.

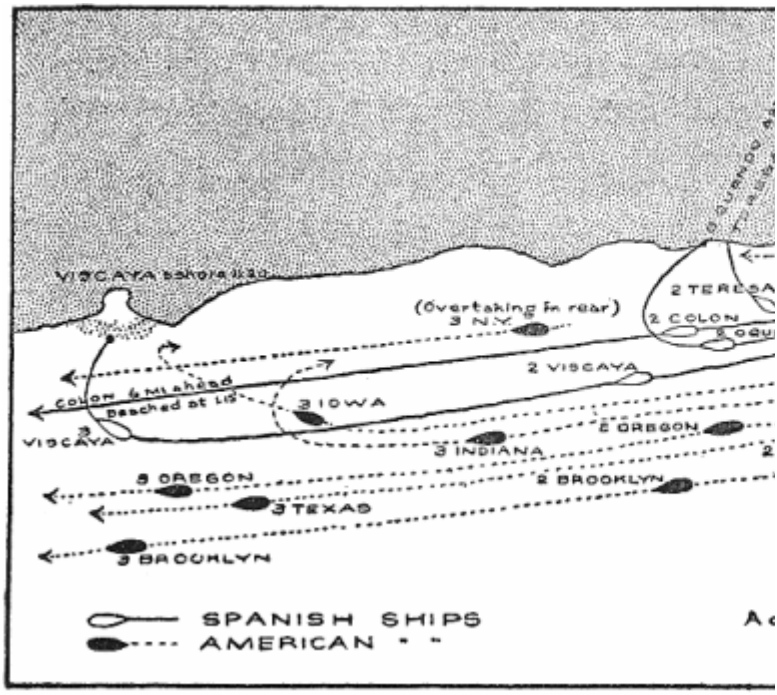
[Footnote 2: Goode, WITH SAMPSON THROUGH THE WAR, p. 182.]

Instead, the army set out with some confidence to capture the city itself. El Caney and San Juan Hill were seized on July 2 after a bloody struggle in which the Spanish stuck to their defenses heroically and inflicted 1600 casualties. By their own figures the Spanish on this day had only 1700 men engaged, though there were 36,500 Spanish troops in the province and 12,000 near at hand. In considerable discouragement, Shafter now spoke of withdrawal, and urged Sampson "immediately to force the entrance"[1]—in spite of the fact that the main purpose in sending troops had been to avoid this very measure. In view of threatening foreign complications and the impossibility of replacing battleships, it was imperative not to risk them against mines.

[Footnote 1: *Ibid.*, p. 190.]

Food conditions were serious in Santiago, but Cervera was absolutely determined not to assume responsibility for taking his fleet out to what he regarded as certain slaughter. A night sortie, with

ships issuing one by one out of an intricate channel into the glare of searchlights, he declared more difficult than one by day. Fortunately for the Americans, in view of the situation ashore, the decision was taken out of his hands, and Governor General Blanco from Havana peremptorily ordered him to put to sea. The time of his exit, Sunday morning, July 3, was luckily chosen, for Sampson, in the *New York*, was 10 miles to eastward on his way to a conference with Shafter, and the *Massachusetts* was at Guantanamo for coal. The flagship *Maria Teresa* led out at 9.35, followed 10 minutes later by the *Vizcaya*, and then by the *Colon, Oquendo*, and the destroyers *Furor* and *Pluton*, each turning westward at top speed.



Simultaneously the big blockaders crowded toward them and opened a heavy fire, while stokers shoveled desperately below to get up steam. To the surprise of other vessels, Schley's ship, the *Brooklyn*, after heading towards the entrance, swung round, not with the enemy, but to starboard, just sliding past the *Texas'* bow. This much discussed maneuver Schley afterward explained as made to avoid blanketing the fire of the rest of the squadron. The *Oregon*, which throughout the blockade had kept plenty of steam, "rushed past the *Iowa*," in the words of Captain Robley Evans, "like an express train," in a cloud of smoke lighted by vicious flashes from her guns. In ten minutes the *Maria Teresa* turned for shore, hit by 30 projectiles, her decks, encumbered with woodwork, bursting into masses of flame. The concentration upon her at the beginning had shifted to the *Oquendo* in the rear, which ran ashore with guns silenced 5 minutes after the leader.

Shortly before 11, the *Vizcaya*, with a torpedo ready in one of her bow tubes, turned towards the *Brooklyn*, which had kept in the lead of the American ships. A shell hitting squarely in the *Vizcaya's* bow caused a heavy explosion and she sheered away, the guns of the *Brooklyn, Oregon*, and *Iowa* bearing on her as she ran towards the beach. The *Colon*, with a trial speed of 20 knots, and 6 miles ahead of the *Brooklyn* and *Oregon*, appeared to stand a good chance of getting finally away. The *New York*, rushing back toward the battle, was still well astern. But the *Colon's* speed, which had averaged 13.7 knots, slackened as her fire-room force played out; and shortly after 1 p.m. she ran shoreward, opened

her Kingston valves, and went down after surrender. She had been hit only 6 times.

In the first stage of the fight the little yacht *Gloucester*, under Lieutenant Commander Wainwright, had dashed pluckily upon the two destroyers, which were also under fire from the secondary batteries of the big ships. The *Furor* was sunk and the *Plutón* driven ashore.

There is hardly a record in naval history of such complete destruction. Of 2300 Spaniards, 1800 were rescued as prisoners from the burning wrecks or from the Cuban guerillas on shore, 350 met their death, and the rest escaped towards Santiago. The American loss consisted of one man killed and one wounded on the *Brooklyn*. This ship, which owing to its leading position had been the chief enemy target, received 20 hits from shells or fragments, and the other vessels altogether about as many more. An examination of the half-sunken and fire-scarred Spanish hulks showed 42 hits out of 1300 rounds from the American main batteries, or 3.2 per cent, and 73 from secondary batteries. Probably these figures should be doubled to give the actual number, but even so they revealed the need of improvement in gunnery.

Sampson was right when he stated earlier in the campaign that the destruction of the Spanish fleet would end the war. Santiago surrendered a fortnight later without further fighting. An expeditionary force under General Miles made an easy conquest of Puerto Rico. On August 12, a protocol of peace was signed, by the terms of which the United States took over Puerto Rico, Guam, and the Philippines (upon payment of 20 million dollars), and Cuba became

independent under American protection. The war greatly strengthened the position of the United States in the Caribbean, and gave her new interests and responsibilities in the Pacific. In the possession of distant dependencies the nation found a new motive for increased naval protection and for more active concern in international affairs.

2. THE RUSSO-JAPANESE WAR

At the time when the United States acquired the Philippines, the Far East was a storm center of international disturbance. Russia, with the support of Germany and France, had, as already noted, combined to prevent Japan from fully exploiting her victory over China. The latter country, however, had every appearance of a melon ripe for cutting; and under guise of security for loans, indemnity for injuries, railroad and treaty-port concessions, and special spheres of influence, each European nation endeavored to mark out its prospective share. Russia, in return for protecting China against Japan, gained a short-cut for her Siberian Railway across Northern Manchuria, with rail and mining concessions in that province and prospects of getting hold of both Port Arthur and Kiao-chau. But, at an opportune moment for Germany, two German missionaries were murdered in 1897 by Chinese bandits. Germany at once seized Kiao-chau, and in March, 1898, extorted a 99-year lease of the port, with exclusive development privileges throughout the peninsula of Shantung. "The German Michael," as Kaiser Wilhelm said at a banquet on the departure of his fleet to the East, had "firmly planted his shield upon Chinese soil"; and "the gospel of His Majesty's hallowed person," as Admiral Prince Heinrich asserted in reply, "was to be preached to every one who will hear it

and also to those who do not wish to hear." "Our establishment on the coast of China," writes ex-Chancellor van Bülow, "was in direct and immediate connection with the progress of the fleet, and a first step into the field of world politics... giving us *a place in the sun* in Eastern Asia."[1]

[Footnote 1: From London *Spectator*, Dec. 26, 1897, quoted in Morse, INTERNATIONAL RELATIONS OF THE CHINESE EMPIRE, Vol. III, p. 108.]



THEATER OF OPERATIONS, RUS

Thus forestalled at Kiao-chau, Russia at once pushed through a 25-year lease of Port Arthur, and proceeded to strengthen it as a fortified port and

naval base. England, though preoccupied with the Boer War, took Wei-hai-wai as a precautionary measure, "for as long a time as Port Arthur shall remain a possession of Russia."[1] France secured a new base in southern China on Kwang-chau Bay, and Italy tried likewise but failed. Aroused by the foreign menace, the feeling of the Chinese masses burst forth in the summer of 1900 in the massacres and uprisings known as the Boxer Rebellion. In the combined expedition to relieve the legations at Peking Japanese troops displayed superior deftness, discipline, and endurance, and gained confidence in their ability to cope with the armies of European powers.

[Footnote 1: *Ibid.*, III, 118.]

In the period following, Germany in Shantung and Russia in Manchuria pursued steadily their policy of exploitation. Against it, the American Secretary of State John Hay advanced the policy of the *Open Door*, "to preserve Chinese territorial and administrative entity... and safeguard for the world the principle of equal and impartial trade with all parts of the Chinese Empire."[1] To this the powers gave merely lip-service, realizing that her fixed policy of isolation would restrain the United States from either diplomatic combinations or force. "The open hand," wrote Hay in discouragement, "will not be so convincing to the poor devils of Chinese as the raised club,"[2] nor was it so efficacious in dealing with other nations concerned. Japan, however, had strained every energy to build up her army and navy for a conflict that seemed inevitable, and was ready to back her opposition to European advances by force if need be. In 1902 she protected herself against a combination of foes by defensive alliance

with England. She demanded that Russia take her troops out of Manchuria and recognize Japanese predominance in Korea. Russia hoped to forestall hostilities until she could further strengthen her army and fleet in the East, but when the transfer of ships reached the danger point, Japan declared war, February 8, 1904, and struck viciously that same night.

[Footnote 1: NOTE TO THE EUROPEAN POWERS, July 3, 1900.]

[Footnote 2: Thayer, LIFE OF HAY, II, 369.]

As in the Spanish-American War, control of the sea was vital, since Japan must depend upon it to move her troops to the continental theater of war. Nor could she hold her army passive while awaiting the issue of a struggle for sea control. Delay would put a greater relative strain on her finances, and give Russia, handicapped by long communications over the single-track Siberian Railway, a better chance to mass in the East her troops and supplies. Japan's plan was therefore to strike hard for naval advantage, but to begin at once, in any event, the movement of troops overseas. At the outbreak of war her fleet of 6 battleships and 6 armored cruisers, with light cruiser and destroyer flotillas, was assembled at Sasebo near the Straits of Tsushima, thoroughly organized for fighting and imbued with the spirit of war. Japan had an appreciable naval superiority, but was handicapped by the task of protecting her transports and by the necessity—which she felt keenly—of avoiding losses in battle which would leave her helpless upon the possible advent of Russia's Baltic reserves.

Russia's main naval strength in the East consisted

of 7 battleships and 3 armored cruisers, presenting a combined broadside of 100 guns against Japan's 124. The support of the Black Sea fleet was denied by the attitude of England, which would prevent violation of the agreement restricting it from passing the Dardanelles. The Baltic fleet, however, was an important though distant reserve force, a detachment from which was actually in the Red Sea on its way east at the outbreak of war.

Just as clearly as it was Japan's policy to force the fighting on land, so it should have been Russia's to prevent Japan's movement of troops by aggressive action at sea. This called for concentration of force and concentration of purpose. But neither was evident in the Russian plan of campaign, which betrayed confusion of thought and a traditional leaning toward the defensive—acceptance on the one hand of what has been called "fortress fleet" doctrine, that fleets exist to protect bases and can serve this purpose by being shut up in them; and on the other hand of exaggerated "fleet in being" theory, that the mere presence of the Russian fleet, though inactive, would prevent Japan's use of the sea. Thus in October, 1903, Witjeft, chief of the Port Arthur naval staff, declared that a landing of Japanese troops either in the Liao-tung or the Korean Gulf was "impossible so long as our fleet is not destroyed." Just as Russia's total force was divided between east and west, so her eastern force was divided between Vladivostok and Port Arthur, with the Japanese in central position between. Three armored cruisers were in the northern port, and 7 battleships in the other; and all Russia's efforts after war broke out were vainly directed toward remedying this faulty disposition before it began. The whole Russian fleet

in the East, moreover, was, it is said, badly demoralized and unready for war, owing chiefly to bureaucratic corruption and to the fact that not merely its strategical direction but its actual command was vested in the Viceroy, Alexieff, with headquarters on shore.

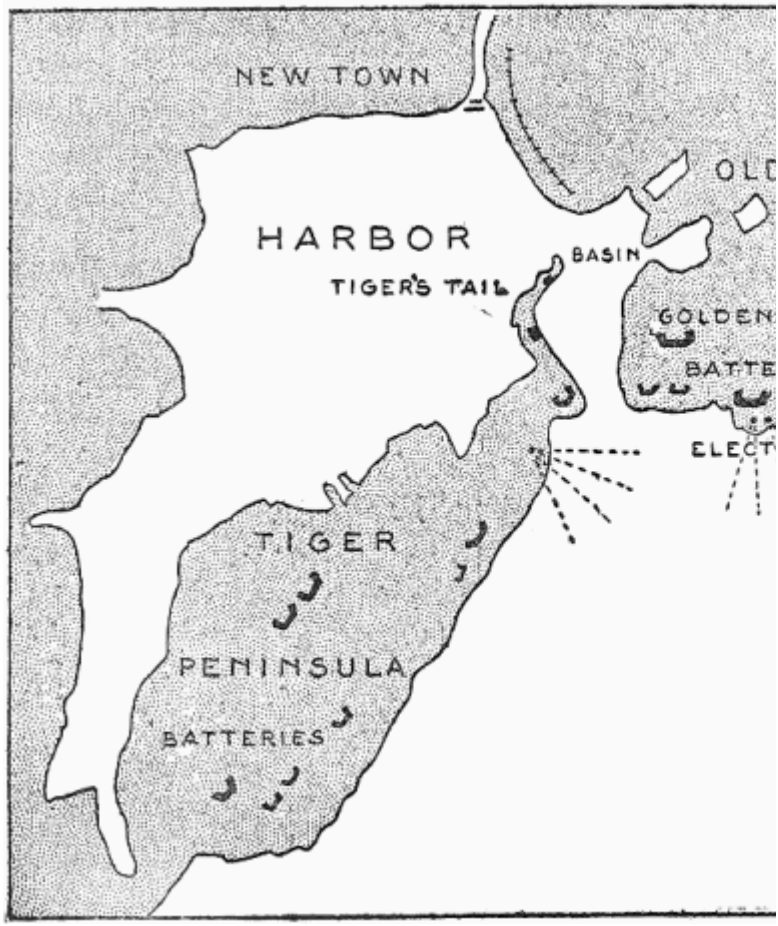
Operations Around Port Arthur

On January 3, 1904, Japan presented practically an ultimatum; on February 6 broke off diplomatic relations; on February 8 declared war; and on the same night—just as the Czar was discussing with his council what should be done—she delivered her first blow. By extraordinary laxity, though the diplomatic rupture was known, the Port Arthur squadron remained in the outer anchorage, "with all lights burning, without torpedo nets out, and without any guard vessels."[1] Ten Japanese destroyers attacked at close quarters, fired 18 torpedoes, and put the battleship *Tsarevitch* and two cruisers out of action for two months. It was only poor torpedo work, apparently, that saved the whole fleet from destruction. A Russian light cruiser left isolated at Chemulpa was destroyed the next day. The transportation of troops to Korea and Southern Manchuria was at once begun. Though not locked in by close blockade, and not seriously injured by the frequent Japanese raids, bombardments, and efforts to block the harbor entrance, the Port Arthur squadron made no move to interfere.

[Footnote 1: Semenoff, RASPLATA, p. 45.]

Both fleets suffered from mines. Vice Admiral Makaroff, Russia's foremost naval leader, who took command at Port Arthur in March, went down with

the *Petropavlosk* on April 13, when his ship struck a mine laid by the Japanese. On May 14, on the other hand, the Russian mine-layer *Amur* slipped out in a fog, spread her mines in the usual path of Japanese vessels off the port, and thus on the same day sank two of their best ships, the *Hatsuse* and *Yashima*. Mining, mine-sweeping, an uneventful Russian sortie an June 23, progress of Japanese land forces down the peninsula and close investment of Port Arthur—this was the course of events down to the final effort of the Russian squadron on August 10.



HARBOR OF

By this time Japanese siege guns were actually reaching ships in the harbor. Action of any kind, especially if it involved some injury to the enemy navy, was better than staying to be shot to pieces from the shore. Yet Makaroff's successor, Witjeft, painfully and consciously unequal to his responsibilities, still opposed an exit, and left port only upon imperative orders from above. Scarcely

was the fleet an hour outside when Togo appeared on the scene. The forces in the Battle of August 10 consisted of 6 Russian battleships and 4 cruisers, against 6 Japanese armored vessels and 9 cruisers; the combined large-caliber broadsides of the armored ships being 73 to 52, and of the cruisers 55 to 21, in favor of Togo's squadron. In spite of this superiority in armament, and of fully a knot in speed, Togo hesitated to close to decisive range. Five hours or more of complicated maneuvering ensued, during which both squadrons kept at "long bowls," now passing each other, now defiling across van or rear, without marked advantage for either side.

At last, at 5.40 p.m., the Japanese got in a lucky blow. Two 12-inch shells struck the flagship *Tsarevitch*, killing Admiral Witjeft, jamming the helm to starboard, and thus serving to throw the whole Russian line into confusion. Togo now closed to 3000 yards, but growing darkness enabled his quarry to escape. The battle in fact was less one-sided than the later engagement at Tsushima. On both sides the percentage of hits was low, about 1% for the Russians and 6 or 7% for their opponents. Togo's flagship *Mikasa* was hit 30 times and lost 125 men; the total Japanese loss was about half that of the enemy—236 to 478.

Much might still have been gained, in view of the future coming of the Baltic fleet, had the Russians still persisted in pressing onward for Vladivostok; but owing to loss of their leader and ignorance of the general plan, they scattered. The cruiser *Novik* was caught and sunk, another cruiser was interned at Shanghai, a third at Saigon, and the *Tsarevitch* at Kiao-chau. The rest, including 5 of the 6 battleships, fled back into the Port Arthur death-trap. Largely in

order to complete their destruction, the Japanese sacrificed 60,000 men in desperate assaults on the fortress, which surrendered January 2, 1905. As at Santiago, the necessity of saving battleships, less easily replaced, led the Japanese to the cheaper expenditure of men.

On news of the Port Arthur sortie, the Vladivostok squadron, which hitherto had made only a few more or less futile raids on Japanese shipping, advanced toward Tsushima Straits, and met there at dawn of August 14 a slightly superior force of 4 cruisers under Kamimura. The better shooting of the Japanese soon drove the slowest Russian ship, the *Rurik*, out of line; the other two, after a plucky fight, managed to get away, with hulls and funnels riddled by enemy shells.

The complete annulment of Russia's eastern fleet in this first stage of hostilities had enabled Japan to profit fully by her easier communications to the scene of war. Its final destruction with the fall of Port Arthur gave assurance of victory. The decisive battle of Mukden was fought in March, 1905. Close to their bases, trained to the last degree, inspired by success, the Japanese navy could now face with confidence the approach of Russia's last fleet.

Rojdestvensky's Cruise

After a series of accidents and delays, the Baltic fleet under Admiral Rojdestvensky—8 battleships, 5 cruisers, 8 destroyers, and numerous auxiliaries—left Libau Oct. 18, 1904, on its 18,000-mile cruise. Off the Dogger Bank in the North Sea, the ships fired into English trawlers under the impression that they were enemy torpedo craft, and thus nearly stirred England to war. Off Tangier some of the lighter vessels separated to pass by way of Suez, and a third division from Russia followed a little later by the same route. Hamburg-American colliers helped Rojdestvensky solve his logistical problem on the long voyage round Africa, and German authorities

stretched neutrality rules upon his arrival in Wahlfish Bay, for the engrossment of Russia in eastern adventures was cheerfully encouraged by the neighbor on her southern frontier. France also did her best to be of service to the fleet of her ally, though she had "paired off" with England to remain neutral in the war.

With the reunion of the Russian divisions at Nossi Bé, Madagascar, January 9, 1905, came news of the fall of Port Arthur. The home government now concluded to despatch the fag-ends of its navy, though Rojdestvensky would have preferred to push ahead without waiting for such "superfluous encumbrances" to join. Ships, as his staff officer Semenoff afterward wrote, were needed, but not "old flatirons and galoshes"; guns, but not "holes surrounded by iron."[1] After a tedious 10 weeks' delay in tropical waters, the fleet moved on to French Indo-China, where, after another month of waiting, the last division under Nebogatoff finally joined—a slow old battleship, 3 coast defense ironclads, and a cruiser. Upon these, Rojdestvensky's officers vented their vocabulary of invective, in which "war junk" and "auto-sinkers" were favorite terms.

[Footnote 1: RASPLATA, p. 426.]

Having already accomplished almost the impossible, the armada of 50 units on May 14 set forth on the last stage of its extraordinary cruise. Of three possible routes to Vladivostok—through the Tsugaru Strait between Nippon and Yezo, through the Strait of La Perouse north of Yezo, or through the Straits of Tsushima—the first was ruled out as too difficult of navigation; the second, because it would

involve coaling off the coast of Japan. Tsushima remained. To avoid torpedo attack, the Russian admiral planned to pass the straits by day, and fully expected battle. But the hope lingered in his mind that fog or heavy weather might enable him to pass unscathed. He had been informed that owing to traffic conditions on the Siberian railway, he could get nothing at Vladivostok in the way of supplies. Hence, as a compromise measure which weakened fighting efficiency, he took along 3 auxiliary steamers, a repair ship, 2 tugs, and 2 hospital ships, the rest of the train on May 25 entering Shanghai; and he so filled the bunkers and piled even the decks with fuel, according to Nebogatoff's later testimony, that they went into action burdened with coal for 3,000 miles.[2]

[Footnote 2: Mahan, NAVAL STRATEGY, p. 412.]



RO

The main Russian fighting force entered the battle in three divisions of 4 ships each: (1) the *Suvaroff*

(flagship), *Alexander III, Borodino* and *Orel*, each a new battleship of about 13,600 tons; (2) the *Ossliabya*, a slightly smaller battleship, and three armored cruisers; (3) Nebogatoff's division as given above, with the exception of the cruiser. Then there was a squadron of 4 smaller cruisers, 4 other cruisers as scouts, and 9 destroyers. The Japanese engaged in two main divisions of 6 ships each (4 battleships and 8 armored cruisers), backed by four light cruiser divisions of 4 ships each. The Russian line had the advantage in heavy ordnance, as will appear from the following table, but this was more than compensated for by the enemy's superiority in 8-inch guns and quick-firers, which covered the Russians with an overwhelming rain of shells. Of guns in broadside, the Japanese ships-of-the-line had 127 to 98; and the cruisers 89 to 43.

	Ships	Main Batteries				Q.F.	
		12″	10″	9″	8″	6″	4″
Japan	12	16	1		30	160	
Russia	12	26	15	4	3	90	20

On the basis of these figures, and the 50% superiority of the Japanese in speed, the issue could hardly be in doubt. Admiral Togo, moreover, had commanded his fleet in peace and war for 8 years, and had veteran subordinates on whom he could depend to lead their divisions independently yet in coordination with the general plan. Constant training and target practice had brought his crews to a high degree of skill. The Japanese shells were also superior, with fuses that detonated their charges on the slightest contact with an explosive force like that of mines. Between the enemy and their base, the

Japanese could wait quietly in home waters, while the Russian fleet was worn out by its eight months' cruise. At best, the latter was a heterogeneous assemblage of new ships hastily completed and old ships indifferently put in repair, which since Nebogatoff joined had had but one opportunity for maneuvers and had operated as a unit for only 13 days.

On the night of May 26-27, as the Russian ships approached Tsushima through mist and darkness, half the officers and men were at their posts, while the rest slept beside the guns. Fragments of wireless messages—"Last night" ... "nothing" ... "eleven lights" ... "but not in line"—revealed enemy patrols in the waters beyond. Semenoff on the *Suvaroff* describes vividly "the tall, somewhat bent figure of the Admiral on the side of the bridge, the wrinkled face of the man at the wheel stooping over the compass, the guns' crews chilled at their posts." In the brightly lighted engine-rooms, "life and movement was visible on all sides; men were nimbly running up and down ladders; there was a tinkling of bells and buzzing of voices; orders were being transmitted loudly; but, on looking more intently, the tension and anxiety—that same peculiar frame of mind so noticeable on deck—could also be observed."[1]

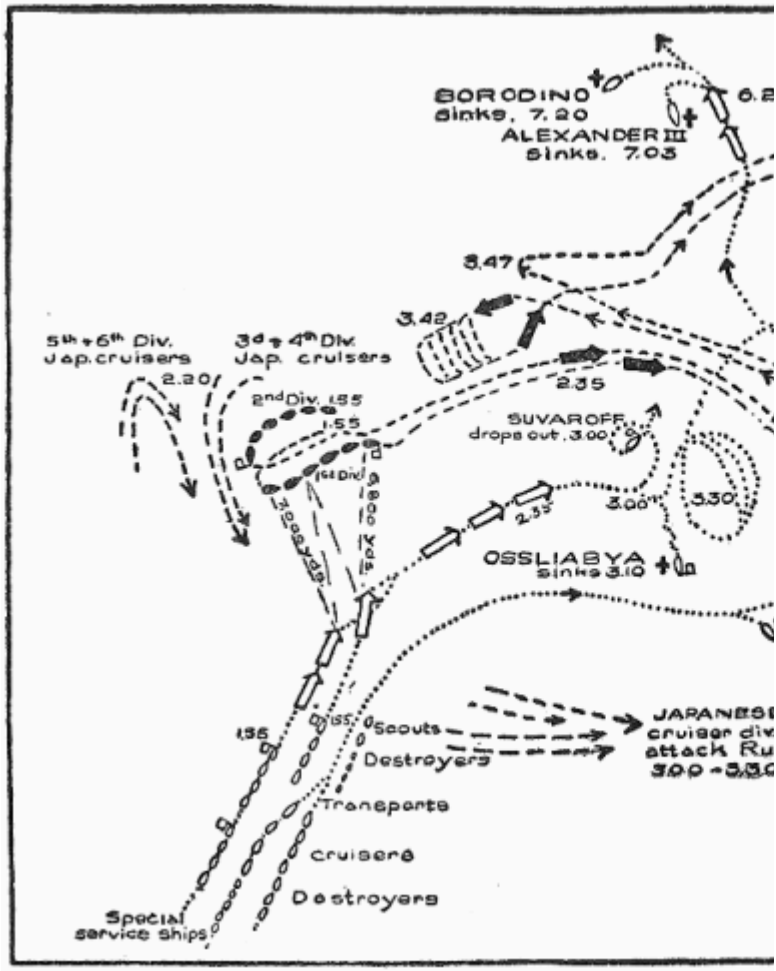
[Footnote 1: THE BATTLE OF TSUSHIMA, p. 28.]

The Battle of Tsushima

At dawn (4.45) the Japanese scout *Sinano Maru*, which for an hour or more had been following in the darkness, made them out clearly and communicated the intelligence at once to Togo in his base at Masampho Bay, on the Korean side of the straits, and

to the cruiser divisions off the Tsushima Islands. This was apparently the first definite news that Togo had received for several days, and the fact suggests that his scouting arrangements were not above criticism, for it took fast steaming to get to the straits by noon. Cruiser divisions were soon circling towards the Russians through the mist and darting as swiftly away, first the 5th and 6th under Takeomi and Togo (son of the admiral), then the 3d under Dewa, all reporting the movements of the enemy fleet and shepherding it till the final action began. Troubled by their activity, Rojdestvensky made several shifts of formation, first placing his 1st and 2d divisions in one long column ahead of the 3d, then at 11.20 throwing the 1st division again to starboard, while the cruisers protected the auxiliaries which were steaming between the lines in the rear.

This was the disposition when, shortly after one o'clock, the Japanese main divisions appeared to northward about 7 miles distant, steaming on a westerly course across the enemy's bows. Since morning Togo had covered a distance of 90 miles. From his signal yards fluttered the stirring message: "The fate of the empire depends upon to-day's battle. Let every man do his utmost." Ordering all his cruisers to circle to the Russian rear, and striking himself for their left flank, which at the moment was the weaker, Togo first turned southward as if to pass on opposite courses, and then at about two o'clock led his two divisions around to east-northeast, so as to "cross the T" upon the head of the enemy line.



BATTLE OF TSUS

Japanese

I Division (Togo)	II Division (Kamimura)
Mikasa, B.S.	Idzumo
Shikishima, B.S.	Iwate
Asahi, B.S.	Adzumo

Fuji, B.S.	Asama
Nisshin, A.C.	Tokiwa
Kasuga	Yakumo

Russians

I Division	II Division
Suvaroff	Ossliabya (flag)
Alexander III	
Borodino	III Division
Orel	

Just as Togo's flagship *Mikasa* straightened on her new course, nearly north of the *Suvaroff*, and 6400 yards distant, the *Suvaroff* opened fire. It has been suggested that at this critical moment the Russian admiral should have closed with the enemy, or, leading his ships on a northwesterly course, laid his starboard broadsides on the knuckle formed by the Japanese turn. But the position of the enemy cruisers and destroyers, and worry over his transports, guided his movements. Moreover, he had not yet completed an awkwardly executed maneuver to get his ships back into single column with the 1st division ahead. The *Ossliabya* and other ships of the 2d division were thrown into confusion, and forced to slow down and even stop engines. Under these difficulties, the *Suvaroff* sheered more to eastward. As they completed their turn the Japanese secured a "capping" position and could concentrate on the leading ships of both the 1st and the 2d Russian divisions, 4 ships on the *Suvaroff* and 7 on the *Ossliabya*. Under this terrible fire the *Ossliabya* went down, the first modern battleship (in the narrow

sense of the word) ever sunk by gunfire, and the *Suvaroff* a few moments later fell out of line, torn by shells, her forward funnel down, and steering gear jammed. "She was so battered," wrote a Japanese observer, "that scarcely any one would have taken her for a ship."

With an advantage in speed of 15 knots to 9, the Japanese drew ahead. The *Alexander*, followed by other Russian ships in much confusion, about three o'clock made an effort to pass northward across the enemy rear, but they were countered by the Japanese first division turning west together and the 2d division in succession at 3.10. The first and decisive phase of the action thus ended. Both fleets eventually resumed easterly and then southerly courses, for considerable periods completely lost to each other in smoke and haze.

Plunging through heavy seas from the southwest, the Japanese cruisers had in the meantime punished the Russian rear less severely than might have been expected. Two transports went down in flames, two cruisers were badly damaged, and the high-sided ex-German liner *Ural* was punctured with shells. On the other hand, Dewa's flagship *Kasagi* was driven to port with a bad hole under water, and Toga's old ship *Naniwa Kan* had to cease action for repairs. Hits and losses in fact were considerable in both the main and the cruiser divisions of the Japanese, their total casualties numbering 465. Late in the afternoon the Russian destroyer *Buiny* came up to the wreck of the *Suvaroff*, and lurched alongside long enough for Rojdestvensky, wounded and almost unconscious, to be practically thrown on board. He was captured with the destroyer next day. In spite of her injuries, the *Suvaroff* held off a swarm of cruisers and

destroyers until at last torpedoed at 7.20 p. m.

The Russian battleships had meanwhile described a large circle to southward, and at 5 p. m. were again steaming north, accompanied by some of their cruisers and train. Attacked once more between 6 and 7 o'clock, and almost incapable of defense, the *Alexander III* and *Borodino* went down, making 4 ships lost out of the 5 new vessels that had formed the backbone of Rojdestvensky's forces. In the gathering darkness. Nebogatoff collected the survivors and staggered northward.

Of slight value in the day engagement, 21 Japanese destroyers, with about 40 torpedo boats which had sheltered under Tsushima Island, now darted after the fleeing foe. In the fog and heavy weather they were almost as great a menace to each other as to the enemy. Russian ships without searchlights escaped harm. Of three or perhaps four Russian vessels struck, all but the *Navarin* stayed afloat until the next day. Admiral Custance estimates 8 hits, or 9% of the torpedoes fired. There were at least 6 collisions among the flotillas, and 4 boats destroyed.

On the morning of the 28th the remains of the Russian fleet were scattered over the sea. Nebagatoff with 4 battleships and 2 cruisers surrendered at 10.30. Of the 37 ships all told that entered Tsushima Straits, only the following escaped: the cruisers *Oleg, Aurora*, and *Jemschug* reached Manila on June 3; a tug and a supply ship entered Shanghai, and another transport with plenty of coal went clear to Madagascar; only the fast cruiser *Almaz* and two destroyers made Vladivostok.

Among the lessons to be drawn from Tsushima, one of the clearest is the weakening effect of divided purpose. With all honor to Admiral Rojdestvensky for his courage and persistence during his cruise, it is evident that at the end he allowed the supply problem to interfere with his preparations for battle, and that he fought "with one eye on Vladivostok." It is evident also that only by a long period of training and operating as a unit can a collection of ships and men be welded into an effective fighting force. Torpedo results throughout the war, whether due to faulty materials or unskilled employment, were not such as to increase the reliance upon this weapon. The gun retained its supremacy; and the demonstrated advantage conferred by speed and heavy armament in long range fighting was reflected in the "all-big-gun" *Dreadnought* of 1906 and the battle cruisers of 1908.

Immediately after the Russian navy had been swept out of existence, President Roosevelt offered to mediate, and received favorable replies from the warring nations. By the treaty signed at Portsmouth, New Hampshire, on September 5, 1905, Russia withdrew from Manchuria in favor of China, recognized Japan's paramount position in Korea (annexed by Japan in 1910), and surrendered to Japan her privileges in Port Arthur and the Liao-tung Peninsula. In lieu of indemnity, Japan after a long deadlock was induced by pressure on the part of England and the United States to accept that portion of the island of Saghalien south of the parallel of 50°. Thus the war thwarted Russia's policy of aggressive imperialism in the East, and established Japan firmly on the mainland at China's front door. At the same time, by the military débâcle of Russia, it

dangerously disturbed the balance of power in Europe, upon which the safety of that continent had long been made precariously to depend.

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CHAPTER XVI

THE WORLD WAR: THE FIRST YEAR (1914-1915)

The Russo-Japanese war greatly weakened Russia's position in Europe, and left the Dual Alliance of France and Russia overweighted by the military strength of the Teutonic Empires, Germany and Austria, whether or not Italy should adhere to the Triple Alliance with these nations. To Great Britain, such a disturbance of the European balance was ever a matter of grave concern, and an abandonment of her policy of isolation was in this instance virtually forced upon her by Germany's rivalry in her own special sphere of commerce and sea power.

The disturbing effect of Germany's naval growth during the two decades prior to 1914 affords in fact an excellent illustration of the influence of naval strength in peace as well as in war. Under Bismarck Germany had pushed vigorously though tardily into the colonial field, securing vast areas of rather doubtful value in East and West Africa, and the Bismarck Archipelago, Marshall Islands, and part of New Guinea in the Pacific. With the accession of William II in 1888 and the dropping of the pilot, Bismarck, two years later, she embarked definitely upon her quest for world power. The young Kaiser read eagerly Mahan's *Influence of Sea Power Upon History* (1890), distributed it among the ships of his still embryonic navy, and fed his ambition on the doctrines of this epoch-making work.

Naval development found further stimulus and justification in the rapid economic growth of Germany. In 1912 her industrial production attained a value of three billion dollars, as compared with slightly over four billion for England and seven billion for the United States. Since 1893 her merchant marine had tripled in size and taken second place to that of England with a total of over five million tons. During the same period she surpassed France and the United States in volume of foreign commerce, and in this respect also reached a position second to Great Britain, with a more rapid rate of increase. An emigration of 220,000 a year in the early eighties was cut down to 22,000 in 1900. [1] To assure markets for her manufactures, and continued growth in population and industry, Germany felt that she must strive to extend her political power.

[Footnote 1: Figures from Priest, GERMANY SINCE 1840, p. 150 ff.]

Though Germany's commercial expansion met slight opposition even in areas under British control, it undoubtedly justified measures of political and naval protection; and it was this motive that was advanced in the preface to the German Naval Bill of 1900, which declared that, "To protect her sea trade and colonies ... Germany must have a fleet so strong that a war, even with the greatest naval power, would involve such risks as to jeopardize the position of that power."[2] Furthermore, Germany's quest for colonies and points of vantage such as Kiao-chau, her scheme for a Berlin-Bagdad railroad with domination of the territories on the route, had parallel in the activities of other nations. Unfortunately, however, Germany's ambitions grew even more rapidly than

her commerce, until her true aim appeared to be destruction of rivals and domination of the world.

[Footnote 2: Hurd and Castle, GERMAN SEA POWER, Appendix II.]

The seizure of Kiao-chau in 1897-98 coincided with the appointment of Admiral von Tirpitz as Imperial Minister of Marine. Under his administration, the Naval Bill of 1900, passed in a heat of anglophobia aroused by the Boer War, doubled the program of 1898, and contained ingenious provisions by which the Reichstag was bound to steady increases covering a long period of years, and by which the Navy Department was empowered to replace worthless old craft, after 20 or 25 years' service, with new ships of the largest size. As the armament race grew keener, this act was amended in the direction of further increases, but its program was never cut down.

International crises and realignments marked the growing tension of these years. In 1905 England extended for ten years her understanding with Japan. By the *Entente Cordiale* with France in 1904 and a later settlement of outstanding difficulties with Russia, she also practically changed the Dual Alliance into a Triple Entente, though without positively binding herself to assistance in war. To the agreement of 1904 by which England and France assured each other a free hand in Egypt and Morocco, respectively, the Kaiser raised strenuous objections, and forced the resignation of the anglophile French Foreign Minister, Delcassé; but at the Algeciras Convention of 1906, assembled to settle the Morocco question, Germany and Austria stood virtually alone. Even the American delegates, sent by

President Roosevelt at the Kaiser's invitation, voted generally with the Western Powers. When Austria annexed Bosnia and Herzegovina in 1909, the Kaiser shook the mailed fist to better effect than at Algeciras, with the result that Russia had to accept this extension of Austro-German influence in the Balkan sphere. Still again two years later, when the German cruiser *Panther* made moves to establish a base at Agadir on the Atlantic coast of Morocco, Europe approached the verge of war; but Germany found the financial situation against her, backed down, and eventually took a strip of land on the Congo in liquidation of her Morocco claims.

For all her resolute saber-rattling in these years, Germany found herself checkmated in almost every move. The Monroe Doctrine, for which the United States showed willingness to fight in the Venezuela affair of 1902, balked her schemes in the New World. In the Far East she faced Japan; in Africa, British sea power. A "*Drang nach Osten*," through the Balkans and Turkey toward Asia Minor, offered on the whole the best promise; and it was in this quarter that Austria's violent demands upon Serbia aroused Russia and precipitated the World War.

Great Britain's foreign agreements, already noted, had as a primary aim the concentration of her fleet in home waters. Naval predominance in the Far East she turned over to Japan; in the western Atlantic, to the United States (at least by acceptance of the Monroe Doctrine and surrender of treaty rights to share in the construction of the Panama Canal); and in the Mediterranean, to France, though England still kept a strong cruiser force in this field. The old policy of showing the flag all over the world was abandoned, 160 old ships were sent to the scrap

heap as unable "either to fight or to run away," and 88% of the fleet was concentrated at home, so quietly that it "was found out only by accident by Admiral Mahan."[1]

[Footnote 1: Admiral Fisher, MEMORIES, p. 185.]

These and other changes were carried out under the energetic régime of Admiral Fisher, First Sea Lord from 1904 to 1910. The British *Dreadnought* of 1906, completed in 10 months, and the battle cruisers of 1908—*Indefatigable, Invincible* and *Indomitable*—came as an unpleasant surprise to Germany, necessitating construction of similar types and enlargement of the Kiel Canal. Reforms in naval gunnery urged by Admiral Sir Percy Scott were taken up, and plans were made for new bases in the Humber, in the Forth at Rosyth, and in the Orkneys, necessitated by the shift of front from the Channel to the North Sea. But against the technical skill, painstaking organization, and definitely aggressive purpose of Germany, even more radical measures were needed to put the tradition-ridden British navy in readiness for war.

Naval preparedness was vital, for the conflict was fundamentally, like the Napoleonic Wars, a struggle between land power predominant on the Continent and naval power supreme on the seas. As compared with France in the earlier struggle, Germany was more dependent on foreign commerce, and in a long war would feel more keenly the pressure of blockade. On the other hand, while the naval preponderance of England and her allies was probably greater than 100 years before, England had to throw larger armies into the field and more of her shipping into naval service, and found her commerce not augmented but

cut down.

Indeed, Germany was not without advantage in the naval war. As she fully expected, her direct sea trade was soon shut off, and her shipping was driven to cover or destroyed. But Germany was perhaps 80% self-supporting, was well supplied with minerals and munitions, and could count on trade through neutral states on her frontiers. Her shallow, well-protected North Sea coast-line gave her immunity from naval attack and opportunity to choose the moment in which to throw her utmost strength into a sortie. So long as her fleet remained intact, it controlled the Baltic by virtue of an interior line through the Kiel Canal, thus providing a strangle hold on Russia and free access to northern neutrals. Only by dangerous division of forces, or by leaving the road to England and the Atlantic open, could the British fleet enter the Baltic Sea. England it is true had a superior navy (perhaps less superior than was commonly thought), and a position of singular advantage between Germany and the overseas world. But for her the maintenance of naval superiority was absolutely essential. An effective interference with her sea communications would quickly put her out of the war.

The importance (for Germany as well as for England) of preserving their main fighting fleets, may explain the wariness with which they were employed. Instead of risking them desperately, both sides turned to commerce warfare—the Western Powers resorting to blockade and the Germans to submarines. Each of these forms of warfare played a highly important part in the war, and the submarine campaign in particular, calling for new methods and new instruments, seems almost to have monopolized

the naval genius and energies of the two groups of belligerents. It may be noted, however, that but for the cover given by the High Seas Fleet, the submarine campaign could hardly have been undertaken; and but for the Grand Fleet, it would have been unnecessary.

The naval strength of the various belligerents in July, 1914, appears in the table on the following page.[1]

[Footnote 1: From table prepared by U. S. Office of Naval Intelligence, July 1, 1916.]

	Great Britain	Ger-many	U.S. (1916)	France	Japan	Russi
Dreadnoughts	20	13	12	4	2	..
Pre-dreadn'ts	40	20	21	18	13	7
Battle Cruisers	9	4	..	..	2	..
Armored Cr's	34	9	10	20	13	6
Cruisers	74	41	14	9	13	9
Destroyers	167	130	54	84	50	91
Submarines	78	30	44	64	13	30

Owing to new construction, these figures underwent rapid change. Thus England added 4 dreadnoughts (2 built for Turkey) in August, 1914; the battle cruiser *Tiger* in November; the dreadnought *Canada* and 5 *Queen Elizabeths* in 1915; and 5 *Royal Sovereigns* in 1915-1916. In comparisons, full account is not always taken of the naval support of England's allies; it is true, however, that the necessity of protecting coasts, troop convoys, and commerce prevented her from throwing her full strength into the North Sea. Her capital ships were in two main divisions—the 1st or Grand Fleet in the

Orkneys, and the 2d fleet, consisting at first of 16 pre-dreadnoughts, in the Channel. Admiral Jellico[1] gives the strength of the Grand Fleet and the German High Seas Fleet, on August 4, 1914, as follows:

[Footnote 1: THE GRAND FLEET, p. 31.]

	Dread-noughts	Pre-Dread-noughts	Battle cruisers	Light cruisers	Destroyers	A
British	20	8	4	12	42	
German	13	16	3	15	88	

Of submarines, according to the same authority, England had 17 of the D and E classes fit for distant operations, and 37 fit only for coast defense, while Germany had 28 U boats, all but two or three of which were able to cruise overseas. The British admiral's account of the inferiority of the British navy in submarines, aircraft, mines, destroyers, director firing (installed in only 8 ships in 1914), armor-piercing shells, and protection of bases, seems to justify the caution of British operations, but is a severe indictment of the manner in which money appropriated for the navy was used.

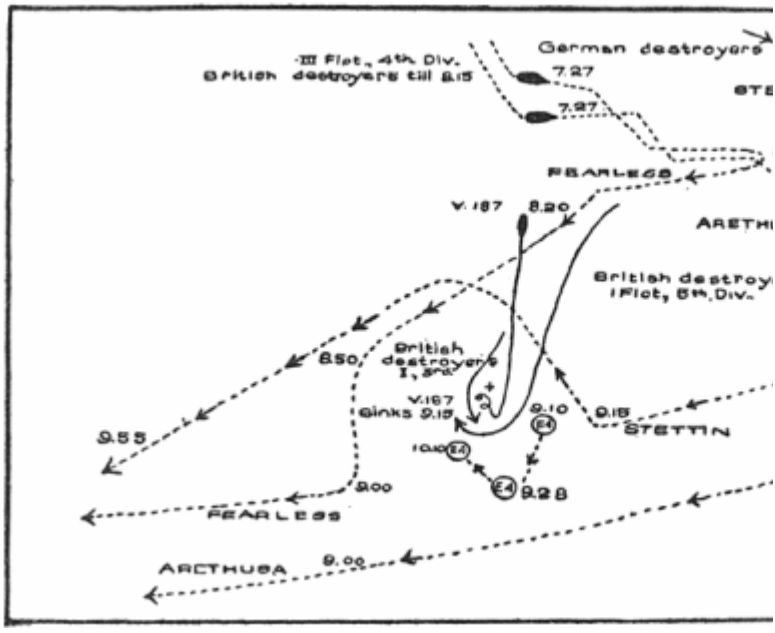
To open a war with England by surprise naval attack was no doubt an element in German plans; but in 1914 this was negatived by the forewarning of events on the Continent, by Germany's persistent delusion that England would stay neutral, and by the timely mobilization of the British fleet. This had been announced the winter before as a practical exercise, was carried out according to schedule from July 16 to July 23 (the date of Austria's ultimatum to Serbia), and was then extended until July 29, at which date the Grand Fleet sailed for Scapa Flow.

At midnight of August 4 the British ultimatum to Germany expired and hostilities began. During the same night the Grand Fleet swept the northern exit of the North Sea to prevent the escape of enemy raiders, only one of which, the *Kaiser Wilhelm der Grosse,* actually reached the Atlantic in this first stage of the war. On a similar sweep further south, the Harwich light cruiser and destroyer force under Commodore Tyrwhitt sank by gunfire the mine layer *Königin Luise*, which a trawler had reported "throwing things overboard"; but the next morning, August 6, the cruiser *Amphion*, returning near the same position, was destroyed by two mines laid by her victim of the day before. On the same date five cables were cut leading from Germany overseas. From August 10 to 23 all British forces were busy covering the transit of the first troops sent to the Continent. Such, in brief summary, and omitting more distant activities for the present, were the opening naval events of the war.

The Heligoland Bight Action

On the morning of August 28 occurred a lively action in Heligoland Bight, which cost Germany 3 light cruisers and a destroyer, and seemed to promise further aggressive action off the German shores. The British plan called for a destroyer and light cruiser sweep southward to a point about 12 miles west of Heligoland, and thence westward, with submarines disposed off Heligoland as decoys, the object being to cut off German destroyers and patrols. Commodore Tyrwhitt's force which was to execute the raid consisted of the 1st and 3rd flotillas of 16 destroyers each, led by the new light cruiser *Arethusa*, flagship (28.5 knots, two 6", six 4" guns), and the *Fearless* (25-4 knots, ten 4" guns). These were

to be supported about 50 miles to westward by two battle cruisers from the Humber. This supporting force was at the last moment joined by three battle cruisers under Admiral Beatty and 6 cruisers under Commodore Goodenough from the Grand Fleet; but news of the accession never reached Commodore Keyes of the British submarines, who was hence puzzled later by the appearance of Goodenough's cruisers on the scene.



HELIGOLAND BIGHT ACTION, AUG. 28

The Germans, it appears, had got wind of the enemy plan, and arranged a somewhat similar counter-stroke. As Commodore Tyrwhitt's flotillas swept southward, they engaged and chased 10 German destroyers straight down upon Heligoland. Here the *Arethusa* and the *Fearless* were sharply

engaged with two German light cruisers, the *Stettin*, and the *Frauenlob* (ten 4.1" guns each), until actually in sight of the island. Both sides suffered, the *Frauenlob* withdrawing to Wilhelmshaven with 50 casualties, and the *Arethusa* having her speed cut down and nearly every gun put temporarily out of commission.

Whipping around to westward, the flotillas caught the German destroyer *V 187*, which at 9.10, after an obstinate resistance, was reduced to a complete wreck enveloped in smoke and steam. As British destroyers picked up survivors, they were driven off by the *Stettin*; but two boats with British crews and German prisoners were rescued later by the British submarine *E 4*, which had been lurking nearby.

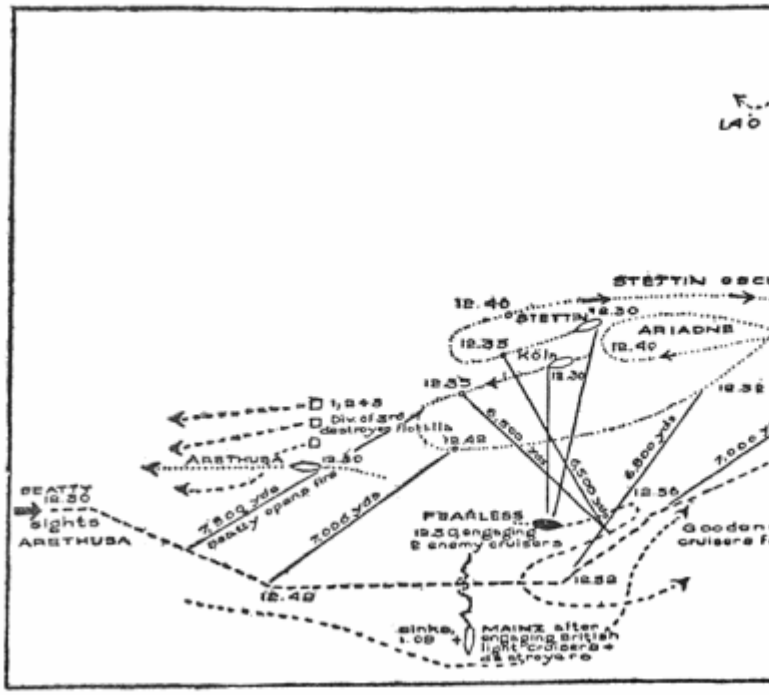
Extraordinary confusion now developed from the fact that Commodore Keyes in his submarine flotilla leader *Lurcher* sighted through the mist two of Goodenough's cruisers (which had chased a destroyer eastward), and reported them as enemies. The call was picked up by Goodenough himself, who brought his remaining four ships to Keyes' assistance; but when these appeared, Keyes thought that he had to deal with four enemies more! Tyrwhitt was also drawn backward by the alarm. Luckily the situation was cleared up without serious consequences.

German cruisers, darting out of the Ems and the Jade, were now entering the fray. At 10.55 the *Fearless* and the *Arethusa* with their flotillas were attacked by the *Stralsund*, which under a heavy fire made off toward Heligoland. Then at 11.15 the *Stettin* engaged once more, and five minutes later the *Mainz*. Just as this last ship was being finished up by destroyer attack, and the *Stettin* and two fresh

cruisers, *Köln* and *Ariadne*, were rushing to her assistance, Beatty's five battle cruisers appeared to westward and rose swiftly out of the haze.

Admiral Beatty's opportune dash into action at this time, from his position 40 miles away, was in response to an urgent call from Tyrwhitt at 11.15, coupled with the fact that, as the Admiral states in his report, "The flotillas had advanced only 2 miles since 8 a.m., and were only about 25 miles from two enemy bases." "Our high speed," the report continues, "made submarine attack difficult, and the smoothness of the sea made their detection fairly easy. I considered that we were powerful enough to deal with any sortie except by a battle squadron, which was unlikely to come out in time, provided our stroke was sufficiently rapid."

The *Stettin* broke backward just in the nick of time. The *Köln* flagship of the German commodore, was soon staggering off in a blaze, and was later sunk with her total complement of 380 officers and men. The *Ariadne*, steaming at high speed across the bows of the British flagship *Lion*, was put out of action by two well-placed salvos. At 1.10 the *Lion* gave the general signal "Retire."



HELIGOLAND BIGHT ACTION, F

From 20 to 40 miles slightly S.

Though the German cruisers had fought hard and with remarkable accuracy of fire, their movements had been tardy and not well concerted. The British losses amounted altogether to only 33 killed and 40 wounded; while the enemy lost in killed, wounded, and prisoners over 1000 men. Very satisfactory, from the British standpoint, was the effect of the victory upon their own and upon enemy morale.

Encouragement of this kind was desirable, for German submarines and mines were already beginning to take their toll. Off the Forth on September 5, a single torpedo sank the light cruiser

Pathfinder with nearly all hands. This loss was avenged when a week later the *E 9*, under Lieut. Commander Max Harton, struck down the German cruiser *Hela* within 6 miles of Heligoland. But on September 22, at 6.30 a.m., a single old-type German craft, the *U 9*, dealt a staggering blow. With a total of 6 torpedoes Commander Weddigen sank first the *Aboukir*, and then in quick succession the *Hogue* and the *Cressy*, both dead in the water at the work of rescue. The loss of these rather antiquated vessels was less serious than that of over 1400 trained officers and men. A shock to British traditions came with the new order that ships must abandon injured consorts and make all speed away.

In the bases at Rosyth and Scapa Flow, which at the outbreak of war were totally unprotected against submarines and thought to be beyond their reach, the Grand Fleet felt less secure than when cruising on the open sea. Safer refuges were sought temporarily on the west coast of Scotland and at Lough Swilly in the north of Ireland, but even off this latter base on October 27, the big dreadnought *Audacious* was sunk by mines laid by the German auxiliary cruiser *Berlin*. In view of the impending Turkish crisis, the loss was not admitted by the Admiralty, though since pictures of the sinking ship had actually been taken by passengers on the White Star liner *Olympic*, it could not long remain concealed. Mines and submarines had seemingly put the British navy on the defensive, even if consolation could be drawn from the fact that troops and supplies were crossing safely to France, the enemy had been held up at the Marne, the German surface fleet was passive, and the blockade was closing down.

Escape of the "Göben" and the "Breslau"

In distant waters Germany at the outbreak of the war had only ten cruisers—*Scharnhorst, Gneisenau, Emden, Nürnberg*, and *Leipzig* in the Pacific, *Königsberg* on the east coast of Africa, *Karlsruhe* and *Dresden* in the West Indies, and *Göben* and *Breslau* in the Mediterranean. Within six months' time, these, together with a few auxiliary cruisers fitted out abroad, were either destroyed or forced to intern in neutral ports. Modern wireless communication, difficulties of coaling and supply, and the overwhelming naval strength of the Allies made the task of surface raiders far more difficult than in previous wars. They were nevertheless skillfully handled, and, operating in the wide ocean areas, created a troublesome problem for the Western Powers.

The battle cruiser *Göben* and the light cruiser *Breslau* alone, operating under Admiral Souchon in Mediterranean waters, accomplished ultimate results which would have easily justified the sacrifice of ten times the number of ships lost by Germany in distant seas. To hunt down these two vessels, and at the same time contain the Austrian Navy, the Entente had in the Mediterranean not only the bulk of the French fleet but also 3 battle cruisers, 4 armored cruisers, and 4 light cruisers of Great Britain. Early on August 4, as he was about to bombard the French bases of Bona and Philippeville in Algiers, Admiral Souchon received wireless orders to make for the Dardanelles. Germany and England were then on the very verge of war. Knowing the British ships to be concentrated near Malta, and actually passing the *Indomitable* and the *Invincible* in sullen silence as he turned eastward, the German commander decided to

put in at Messina, Sicily.

At the end of the 24 hours granted in this port, the prospects for the German ships appeared so desperate that the officers, it is said, made their final testaments before again putting to sea. Slipping eastward through the Straits of Messina at twilight of the 6th, they were sighted by the British scout *Gloucester*, which stuck close at their heels all that night and until 4.40 p.m. the next day. Then, under orders to turn back, and after boldly engaging the *Breslau* to check the flight, Captain Kelly of the *Gloucester* gave up the pursuit as the enemy rounded the Morea and entered the Greek Archipelago.

The escape thus apparently so easy was the outcome of lack of coördination between French and British, slow and poor information from the British Admiralty, and questionable disposition of the British forces on the basis of information actually at hand. Prior to hostilities, it was perhaps unavoidable that the British commander, Admiral Milne, should be ignorant of French plans; but even on August 5 and 6 he still kept all his battle cruisers west and north of Sicily to protect the French troop transports, though by this time he might have felt assured that the French fleet was at sea. At the time of the escape Admiral Troubridge with 4 armored cruisers and a destroyer force barred the Adriatic; though he caught the *Gloucester's* calls, he was justified in not moving far from his station without orders, in view of his inferior strength and speed. Not until August 10 did British forces enter the Ægean; and at 5 p.m. that day the two German ships steamed uninvited up the Dardanelles. Since the Turkish situation was still somewhat dubious, Admiral Souchon had been ordered to delay his entrance; but on the 10th,

hearing British wireless signals steadily approaching his position in the Greek islands, he took the decision into his own hands. Germany had "captured Turkey," as an Allied diplomat remarked upon seeing the ships in the Golden Horn.

In this affair the British, it is true, had many preoccupations—the hostile Austrian fleet, the doubtful neutrality of Italy, the French troop movement; the safety of Egypt and Suez. Yet the Admiralty were well aware that the German Ambassador von Wangenheim was dominant in Turkish councils and that the Turkish army was mobilized under German officers. It seems strange, therefore, that an escape into Constantinople was, in the words of the British Official History, "the only one that had not entered into our calculations." The whole affair illustrates the immense value political information may have in guiding naval strategy. The German ships, though ostensibly "sold" to the Turks, retained their German personnel. Admiral Souchon assumed command of the Turkish Navy, and by an attack on Russian ships in the Black Sea later succeeded in precipitating Turkey's entrance into the war, with its long train of evil consequences for the Western Powers.

Coronel and the Falkland Islands

In the Pacific the German cruisers were at first widely scattered, the *Emden* at Kiao-chau, the *Leipzig* on the west coast of Mexico, the *Nürnberg* at San Francisco, and the armored cruisers *Gneisenau* and *Scharnhorst* under Admiral von Spee in the Caroline Islands. The two ships at the latter point, after being joined by the *Nürnberg*, set out on a leisurely cruise for South America, where, in view of Japan's entry

into the war, the German Admiral may have felt that he would secure a clearer field of operations and, with the aid of German-Americans, better facilities for supplies. After wrecking on their way the British wireless and cable station at Fanning Island, and looking into Samoa for stray British cruisers, the trio of ships were joined at Easter Island on October 14 by the *Leipzig* and also by the *Dresden*, which had fled thither from the West Indies.

The concentration thus resulting seems of doubtful wisdom, for, scattered over the trade routes, the cruisers would have brought about greater enemy dispersion and greater injury to commerce; and, as the later course of the war was to show, the loss of merchant tonnage was even more serious for the Entente than loss of fighting ships. It seems evident, however, that Admiral van Spee was not attracted by the tame task of commerce destroying, but wished to try his gunnery, highly developed in the calm waters of the Far East, against enemy men-of-war.

In its present strength and position, the German "fleet in being" constituted a serious menace, for to assemble an adequate force against it on either side of Cape Horn would mean to leave the other side dangerously exposed. It was with a keen realization of this dilemma that Admiral Cradock in the British armored cruiser *Good Hope* left the Falklands on October 22 to join the *Monmouth, Glasgow*, and auxiliary cruiser *Otranto* in a sweep along the west coast. The old battleship *Canopus*, with 12-inch guns, but only 12 knots cruising speed, was properly judged too slow to keep with the squadron. It is difficult to say whether the failure to send Cradock reënforcements at this time from either the Atlantic or the Pacific was justified by the preoccupations in

those fields. Needless to say, there was no hesitation, *after* Coronel, in hurrying ships to the scene. On November 1, when the Admiralty Board was reorganized with Admiral Fisher in his old place as First Sea Lord, orders at once went out sending the *Defense* to Cradock and enjoining him not to fight without the *Canopus*. But these orders he never received.

The composition of the two squadrons now approaching each other off the Chilean coast was as follows:

Name	Type	Displace-ment	Belt armor	C
Scharnhorst	Armored cruiser	11,600	6-inch	8-8.2″, 6
Gneisenau	Armored cruiser	11,600	6-inch	8-8.2″, 6
Leipzig	Protected cruiser	3,250	none	10-4″
Nürnberg	Light cruiser	3,450	none	10-4″
Dresden	Light cruiser	3,600	none	10-4″
Good Hope	Armored cruiser	14,000	6-inch	2-9.2″, 1
Monmouth	Armored cruiser	9,800	4-inch	14-6″, 8
Glasgow	Light cruiser	4,800	none	2-6″, 10
Canopus (not engaged)	Coast defense	12,950	6-inch	4-35 cal

Without the *Canopus*, the British had perhaps a slight advantage in squadron speed, but only the two 9.2-inch guns of the *Good Hope* could match the sixteen 8.2-inch guns of the Germans. Each side had information of the other's strength; but on the

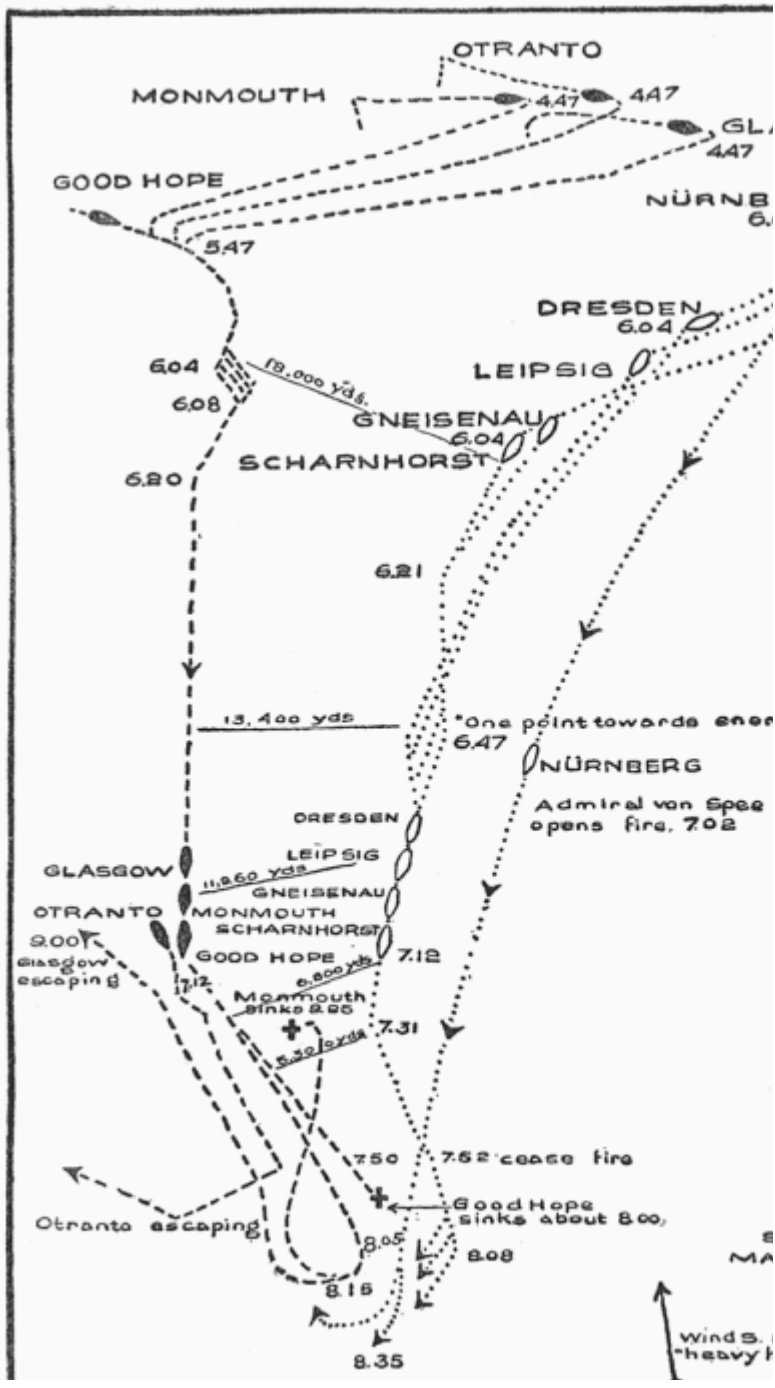
afternoon of November 1, the date of the Battle of Coronel, each supposed that only one enemy cruiser was in the immediate vicinity. Hence there was mutual surprise when the two squadrons, spread widely on opposite courses, came in contact at 4.40 p. m.

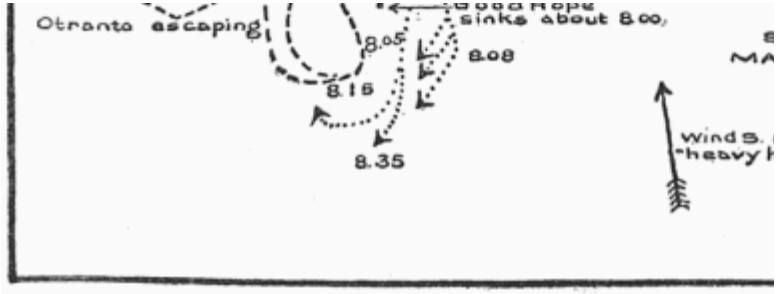
While concentrating and forming his squadron, Admiral Cradock must have pondered whether he should fight or retreat. The *Canopus* he knew was laboring northward 250 miles away. It was highly doubtful whether he could bring the enemy into action later with his slow battleship in line. His orders were to "search and protect trade." "Safety," we are told, "was a word he hardly knew." But his best justification lay in the enemy's menace to commerce and in the comment of Nelson upon a similar situation, "By the time the enemy has beat our fleet soundly, they will do us no more harm that year." It was perhaps with this thought that Admiral Cradock signaled to the *Canopus*, "I am going to fight the enemy now."

At about 6 p.m. the two columns were 18,000 yards distant on southerly converging courses. The British, to westward and slightly ahead, tried to force the action before sunset, when they would be silhouetted against the afterglow. Their speed at this time, however, seems to have been held up by the auxiliary cruiser *Otranto*, which later retreated southwestward, and their efforts to close were thwarted by the enemy's turning slightly away. Admiral von Spee in fact secured every advantage of position, between the British and the neutral coast, on the side away from the sun, and on such a course that the heavy seas from east of south struck the British ships on their engaged bows, showering the

batteries with spray and rendering useless the lower deck guns.

At 7 o'clock the German ships opened fire at 11,260 yards. The third salvo from the *Scharnhorst* disabled the *Good Hope's* forward 9.2-inch gun. The *Monmouth's* forecastle was soon on fire. It seems probable indeed that most of the injury to the British was inflicted by accurate shooting in this first stage of the action. On account of the gathering darkness, Admiral von Spee allowed the range to be closed to about 5500 yards, guiding his aim at first by the blaze on the Monmouth, and then for a time ceasing fire. Shortly before 8 o'clock a huge column of flame shooting up between the stacks of the *Good Hope* marked her end. The *Monmouth* sheered away to westward and then northward with a heavy list that prevented the use of her port guns. An hour later, at 9.25, with her flag still flying defiantly, she was sunk by the *Nürnberg* at point blank range. The *Glasgow*, which had fought throughout the action, but had suffered little from the fire of the German light cruisers, escaped in the darkness.

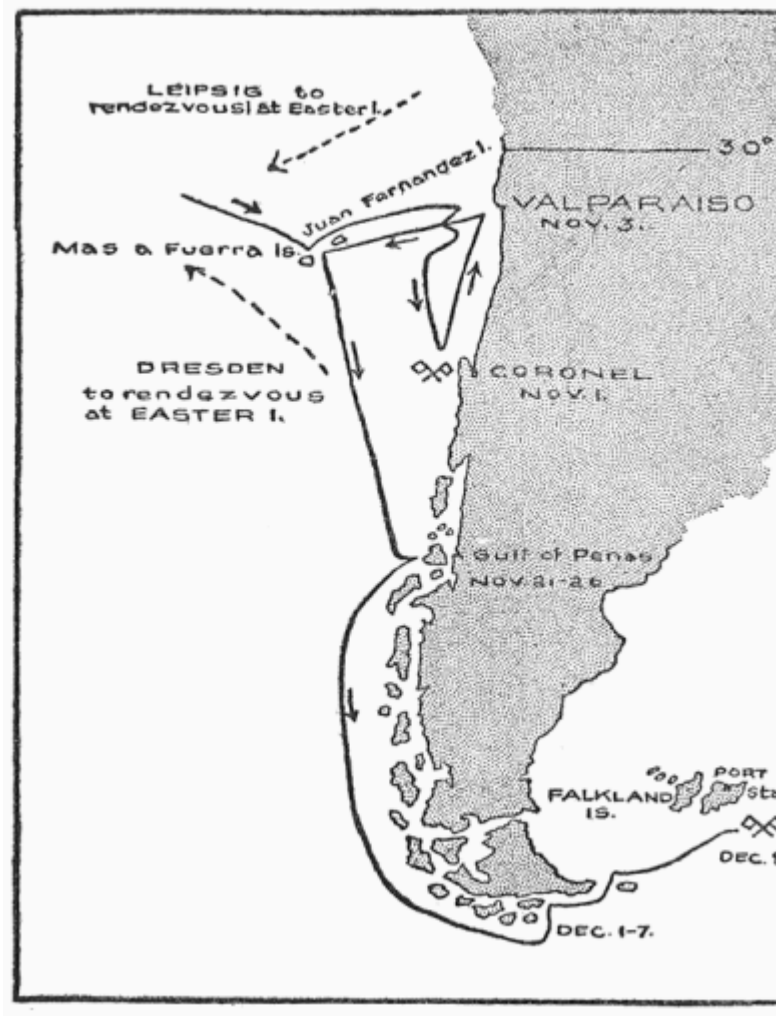

OTRANTO
MONMOUTH
4.47
4.47
4.47
GOOD HOPE
5.47
NÜRNB
6.
DRESDEN
6.04
6.04
18,000 yds.
LEIPSIG
6.08
GNEISENAU
6.04
SCHARNHORST
6.20
6.21
13,400 yds
*One point towards ener
6.47
NÜRNBERG
Admiral von Spee
opens fire, 7.02
DRESDEN
LEIPSIG
GLASGOW
11,860 yds
GNEISENAU
OTRANTO
MONMOUTH
SCHARNHORST
9.00
Glasgow
escaping
GOOD HOPE
7.12
6,800 yds
7.12
Monmouth
sinks 8.05
7.31
5,300 yds
7.50
7.52 cease fire
Good Hope
sinks about 8.00
Otranto escaping
8.05
8.08
8.15
8.35
Wind S.
"heavy h



BATTLE OF CORONEL, NOV. 1,

"It is difficult," writes an American officer, "to find fault with the tactics of Admiral van Spee; he appears to have maneuvered so as to secure the advantage of light, wind, and sea, and to have suited himself as regards the range."[1] The *Scharnhorst* was hit twice, the *Gneisenau* four times, and the German casualties were only two men wounded.

[Footnote 1: Commander C. C. Gill, NAVAL POWER IN THE WAR, p. 51.]



ADMIRAL VON SPEE'S MOVEMENTS

This stinging blow and the resultant danger aroused the new Board of Admiralty to energetic moves. Entering the Atlantic, the German squadron might scatter upon the trade routes or support the rebellion in South Africa. Again, it might double

westward or northward in the Pacific, or pass in groups of three, as permitted by American rules, through the Panama Canal into the West Indies. Concerted measures were taken against these possibilities. Despite the weakening of the Grand Fleet, the battle cruisers *Invincible* and *Inflexible* under Admiral Sturdee, former Chief of Admiralty Staff, sailed on November 11 for the Falkland Islands. Their destination was kept a close secret, for had the slightest inkling of their mission reached German ears it would at once have been communicated to von Spee.

After the battle, the German admiral moved slowly southward, coaling from chartered vessels and prizes; and it was not until December 1 that he rounded the Horn. Even now, had he moved directly upon the Falklands, he would have encountered only the *Canopus*, but he again delayed several days to take coal from a prize. On December 7 the British battle cruisers and other ships picked up in passage arrived at the island base and at once began to coal.

Their coming was not a moment too soon. At 7.30 the next morning, while coaling was still in progress and fires were drawn in the *Bristol*, the signal station on the neck of land south of the harbor reported two strange vessels, which proved to be the *Gneisenau* and the *Nürnberg*, approaching from the southward. As they eased down to demolish the wireless station, the *Canopus* opened on them at about 11,000 yards by indirect fire. The two ships swerved off, and at 9.40, perceiving the dense clouds of smoke over the harbor and what appeared to be tripod masts, they fell back on their main force.

Hull down, and with about 15 miles' start, the

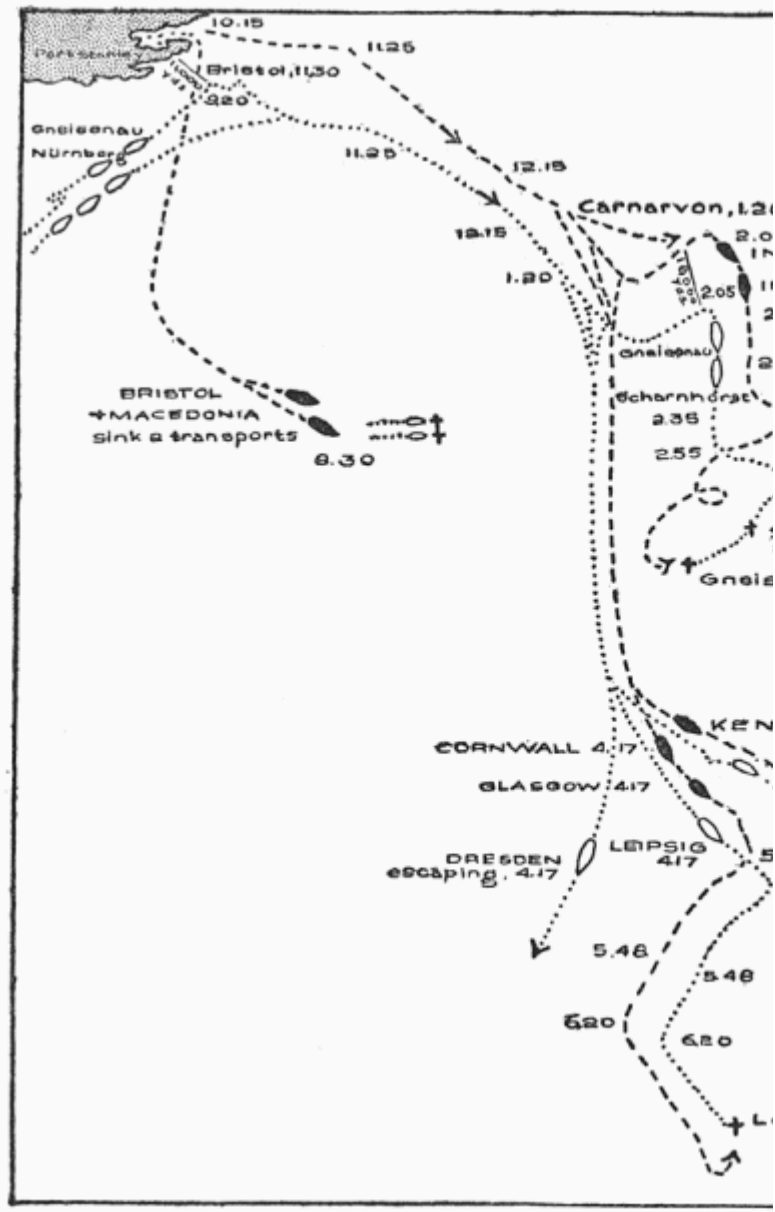
Germans, had they scattered at this time might, most of them at least, have escaped, as they certainly would have if their approach had been made more cautiously and at a later period in the day. The British ships were now out, with the fast *Glasgow* well in the lead. In the chase that followed, Admiral van Spee checked speed somewhat to keep his squadron together. Though Admiral Sturdee for a time did the same, he was able at 12.50 to open on the rear ship *Leipzig* at 16,000 yards. At 1.20 the German light cruisers scattered to southwestward, followed by the *Cornwall, Kent*, and *Glasgow*. The 26-knot *Bristol*, had she been able to work up steam in time, would have been invaluable in this pursuit; she was sent instead to destroy three enemy colliers or transports reported off the islands.

Between the larger ships the action continued at long range, for the superior speed of the battle cruisers enabled Admiral Sturdee to choose his distance, and his proper concern was to demolish the enemy with his own ships unscathed. At 2.05 he turned 8 points to starboard to clear the smoke blown down from the northwest and reduce the range, which had increased to 16,000 yards. Admiral von Spee also turned southward, and the stern chase was renewed without firing until 2.45. At this point both sides turned to port, the Germans now slightly in the rear and working in to 12,500 yards to use their 5.9-inch guns.

At 3.15 the British came completely about to avoid the smoke, and the Germans also turned, a little later, as if to cross their bows. (See diagram.) The *Gneisenau* and *Scharnhorst*, though fighting gamely, were now beaten ships, the latter with upper works a "shambles of torn and twisted iron," and holes in her

sides through which could be seen the red glow of flames. She turned on her beam-ends at 4.17 and sank with every man an board. At 6 o'clock, after a fight of extraordinary persistence, the *Gneisenau* opened her sea-cocks and went down. All her 8-inch ammunition had been expended, and 600 of her 850 men were disabled or killed. Some 200 were saved.

Against ships with 12-inch guns and four times their weight of broadside the *Gneisenau* and *Scharnhorst* made a creditable record of over 20 hits. The British, however, suffered no casualties or material injury. While Admiral Sturdee's tactics are thus justified, the prolongation of the battle left him no time to join in the light cruiser chase, and even opened the possibility, in the rain squalls of the late afternoon, that one of the armored cruisers might get away. In spite of a calm sea and excellent visibility during most of the action, the gunnery of the battle cruisers appears to have been less accurate at long range than in the later engagement off the Dogger Bank.


10.15
11.25
Bristol, 11.30
9.20
Gneisenau
Nürnberg
11.25
12.15
12.15
1.20
Carnarvon, 1.2
2.05
Gneisenau
Scharnhorst
2.35
2.55
BRISTOL
+MACEDONIA
sink a transports
8.30
CORNWALL 4.17
GLASGOW 4.17
DRESDEN
escaping, 4.17
LEIPSIG
4.17
5.48
5.48
6.20
6.20

British Squadron			
Name	*Type*	*Guns*	*Speed*
Invincible	Battle Cruiser	8–12″, 16–4″	26.5
Inflexible	Battle Cruiser	8–12″, 16–4″	26.5
Carnarvon	Armored Cruiser	4–7.5″, 6–6″	23.0
Cornwall	Armored Cruiser	14–6″	23.5
Kent	Armored Cruiser	14–6″	23.0
Bristol	Scout Cruiser	2–6″, 10–4″	26.5
Glasgow	Scout Cruiser	2–6″, 10–4″	26.5
Canopus	Coast Defense	4–12″, 12–6″	16.5
	German Squadron		
Scharnhorst	Armored Cruiser	8–8.2″, 6–6″	23.5
Gneisenau	Armored Cruiser	8–8.2″, 6–6″	23.5
Leipzig	Protected Cruiser	10–4″	23.0
Nürnberg	Scout Cruiser	10–4″	24.0
Dresden	Scout Cruiser	10–4″	24.0

Following similar tactics, the *Glasgow* and *Cornwall* overtook and finally silenced the *Leipzig* at 7 p.m., four hours after the *Glasgow* had first opened fire. Defiant to the last, like the *Monmouth* at Coronel, and with her ammunition gone, she sank at 9.25, carrying down all but 18 of her officers and crew. The *Kent*, stoking all her woodwork to increase steam, attained at 5 o'clock a position 12,000 yards from the *Nürnberg*, when the latter opened fire. At this late hour a long range action was out of the question. As the *Nürnberg* slowed down with two of her boilers burst, the *Kent* closed to 3000 yards and at 7.30 finished off her smaller opponent. The *Dresden*, making well above her schedule speed of 24 knots, had disappeared to southwestward early in the afternoon. Her escape entailed a long search, until, on March 14, 1915, she was destroyed by the *Kent*

and *Glasgow* off Juan Fernandez, where she had taken refuge for repairs.

Cruise of the "Emden"

Among the German cruisers other than those of Admiral van Spee's squadron, the exploits of the *Emden* are best known, and reminiscent of the *Alabama's* famous cruise in the American Civil War. It may be noted, however, as indicative of changed conditions, that the *Emden's* depredations covered only two months instead of two years. A 3600 ton ship with a speed of 25 knots, the *Emden* left Kiao-chau on August 6, met von Spee's cruisers in the Ladrones on the 12th, and on September 10 appeared most unexpectedly on the west side of the Bay of Bengal. Here she sank five British merchantmen, all following the customary route with lights aglow. On the 18th she was off the Rangoon River, and 6 days later across the bay at Madras, where she set ablaze two tanks of the Burma Oil Company with half a million gallons of kerosene. From September 26 to 29 she was at the junction of trade routes west of Ceylon, and again, after an overhaul in the Chagos Archipelago to southward, spent October 16-19 in the same profitable field. Like most raiders, she planned to operate in one locality not more than three or four days, and then, avoiding all vessels on her course, strike suddenly elsewhere. During this period, British, Japanese, French, and Russian cruisers—the Germans assert there were 19 at one time—followed her trail.

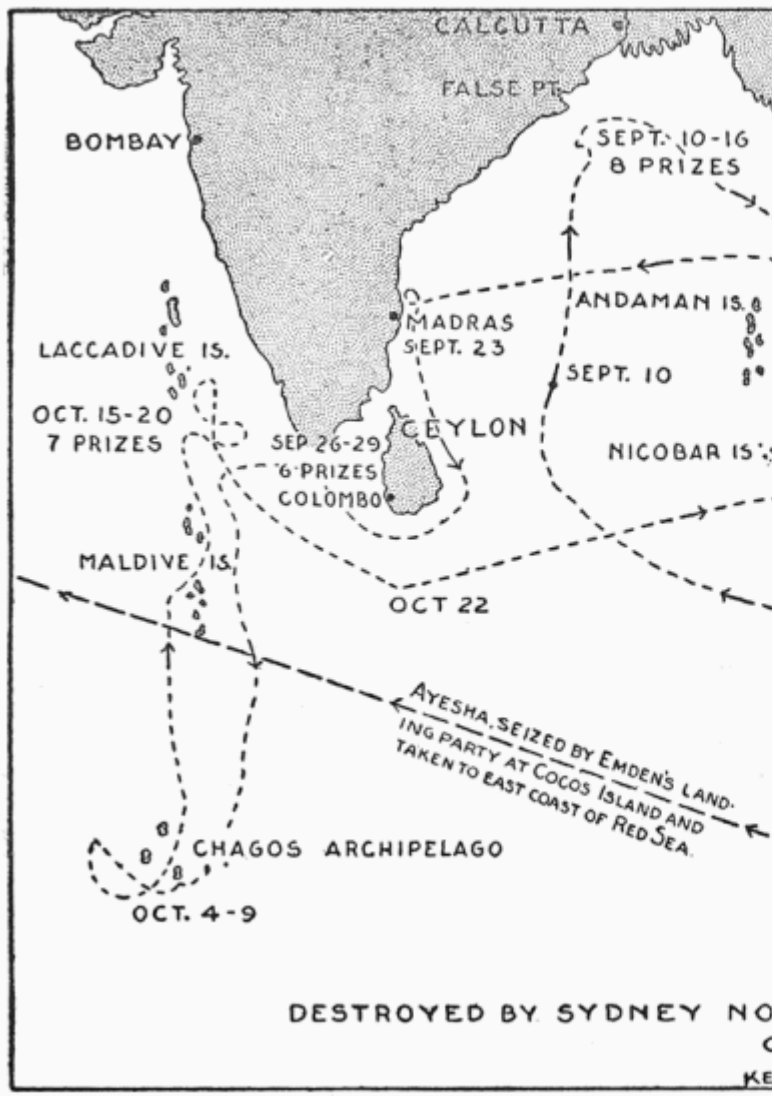
The most daring adventure of Captain von Müller, the *Emden's* skipper, was now carried out in the harbor of Penang, on the west side of the Malay Peninsula. With an additional false funnel to imitate

British county-class cruisers, the *Emden* at daybreak of October 28 passed the picket-boat off the harbor unchallenged, destroyed the Russian cruiser *Jemtchug* by gunfire and two torpedoes, and, after sinking the French destroyer *Mousquet* outside, got safely away. The Russian commander was afterward condemned for letting his ship lie at anchor with open lights, with only an anchor watch, and with strangers at liberty to visit her.

Steaming southward, the raider made her next and last appearance on the morning of November 9 off the British cable and wireless station on the Cocos Islands. As she approached, word was promptly cabled to London, Adelaide, and Singapore, and—more profitably—was wirelessed to an Australian troop convoy then only 45 miles away. The *Emden* caught the message, but nevertheless sent a party ashore, and was standing outside when the armored cruiser *Sydney* came charging up. Against the *Emden's* ten 4.1-inch guns, the *Sydney* had eight 6-inch guns, and she was at least 4 knots faster. Outranged and outdone in speed, the German ship was soon driven ashore in a sinking condition, with a funnel down and steering gear disabled. During her two months' activity thus ended, the *Emden* had made 21 captures, destroying ships and cargoes to the value of over $10,000,000.

The other German cruisers were also short-lived. The *Karlsrühe*, after arming the liner *Kronprinz Wilhelm* off the Bahamas (August 6) and narrowly escaping the *Suffolk* and the *Bristol* by superior speed, operated with great success on the South American trade routes. Her disappearance—long a mystery to the Allies—was due to an internal explosion, just as she was about to crown her exploits by a raid on the

island of Barbados. The *Königsberg*, on the east coast of Africa, surprised and sank the British light cruiser *Pegasus* while the latter lay at Mombasa, Zanzibar, making repairs. She was later bottled up in the Rufigi River (October 30) and finally destroyed there (July 11, 1915) by indirect fire from monitors, "spotted" by airplanes.



THE

Of the auxiliary cruisers, the *Kaiser Wilhelm der Grosse* was sunk by the *Highflyer* (August 26), and the *Cap Trafalgar* went down after a hard fight with the

Carmania (September 14). The *Prinz Eitel Friedrich*, which had entered the Atlantic with von Spee, interned at Newport News, Virginia, in March, 1915, and was followed thither a month later by the *Kronprinz Wilhelm*.

The results of this surface warfare upon commerce amounted to 69 merchant vessels, totaling 280,000 tons. With more strict concentration upon commerce destruction, and further preparations for using German liners as auxiliaries, the campaign might have been prolonged and made somewhat more effective. But for the same purpose the superiority of the submarine was soon demonstrated. To take the later surface raiders: the *Wolf* sank or captured 20 ships in 15 months at sea; the *Seeadler*, 23 in 7 months; the *Möwe* 15 in 2 months. But many a submarine in one month made a better record than these. The opening of Germany's submarine campaign, to be treated later, was formally announced by her blockade proclamation of February 4, 1915.

The Dogger Bank Action

The strategic value of the battle cruiser, as a means of throwing strength quickly into distant fields, was brought out in the campaign against von Spee. As an outcome of German raids on the east coast of England, its tactical qualities, against units of equal strength, were soon put to a sharper trial. Aside from mere *Schrecklichkeit*—a desire to carry the terrors of war to English soil—these raids had the legitimate military objects of helping distant cruisers by holding British ships in home waters, of delaying troop movements to France, and of creating a popular clamor that might force a dislocation or division of

the Grand Fleet. The first incursion, on November 3, inflicted trifling damage; the second, on December 16, was marked by the bombardment of Scarborough, Hartlepool, and Whitby, in which 99 civilians were killed and 500 wounded. The third, on January 24 following, brought on the Dogger Bank action, the first encounter between battle cruisers, and one of the two capital ship actions of the war.

At dawn on this date, the *Derfflinger, Seydlitz* (flagship of Admiral von Hipper), *Moltke*, and armored cruiser *Blücher*, with 4 light cruisers and two destroyer flotillas, were moving westward about midway in the North Sea on a line between Heligoland and the scene of their former raids. Five battle cruisers under Admiral Beatty were at the same time approaching a rendezvous with the Harwich Force for one of their periodical sweeps in the southern area. The Harwich Force first came in contact with the enemy about 7 a.m. Fortunately for the Germans, they had already been warned of Beatty's approach by one of their light cruisers, and had just turned back at high speed when the British battle cruisers made them out to southeastward 14 miles away. The forces opposed were as follows:

British	Displace-ment	Armor	Guns	Best recent speed[*]	Germ
Lion	26,350	9″	8 13.5″	31.7	Derffli
Tiger	28,500	9″	8 13.5″	32	Seydlit
Princess Royal	28,500	9″	8 13.5″	31.7	Moltke
New Zealand	18,800	8″	8 12″	29	Blüche
Indomitable	17,250	7″	8 12″	28.7	

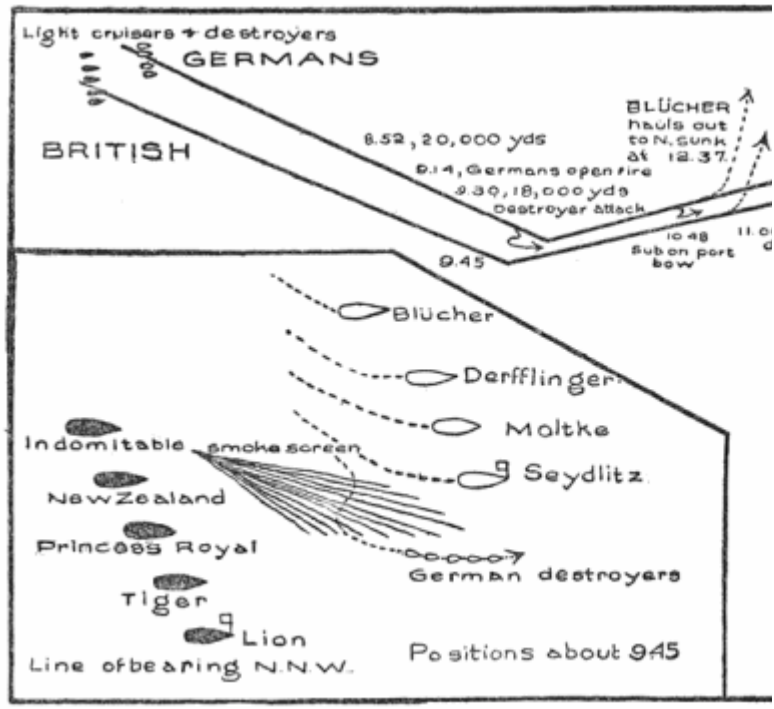
[Footnote *: Jane's FIGHTING SHIPS, 1914.]



THEATER OF OPE

Settling at once to a stern chase, the British ships increased speed to 28.5 knots; while the Germans, handicapped by the slower *Blücher*, were held down to 25. At 8.52 the *Lion* was within 20,000 yards of the *Blücher*, and, after deliberate ranging shots, scored her first hit at 9.09. As the range further

decreased, the *Tiger* opened on the rear ship, and the *Lion* shifted to the third in line at 18,000 yards. The enemy returned the fire at 9.14. Thus the action continued, both squadrons in lines of bearing, and Beatty's ships engaged as a rule with their opposites in the enemy order.



DOGGER BANK ACTION,

At 9.45 the German armored cruiser had suffered severely, and ships ahead also showed the effects of the heavier enemy fire. Under cover of a thick smoke screen from destroyers on their starboard bow, and a subsequent destroyer attack, the Germans now shifted course away from the enemy and the rear ships hauled out on the port quarter of their leader

to increase the range. The British cruisers, according to Admiral Beatty's report, "were ordered to form a line of bearing N.N.W., and proceed at their utmost speed." An hour later the *Blücher* staggered away to northward. Badly crippled, she was assigned by Beatty to the *Indomitable*, and was sunk at 12.37. At 10.54 submarines were reported on the British starboard bows.

Just after 11 the flagship *Lion*, having received two hits under water which burst a feed tank and thus put the port engine out of commission, turned northward out of the line. Though the injury was spoken of as the result of a "chance shot," the *Lion* had been hit 15 times. About an hour later Admiral Beatty hoisted his flag in the *Princess Royal*, but during the remainder of the battle Rear Admiral Moore in the *Tiger* had command. Judging from the fact that the *Tiger* was hit only 8 times in the entire action and the *Princess Royal* and the *New Zealand* not at all, there seems to have been little effort at this time to press the attack. The British lost touch at 11.50, and turned back at noon.

In the lively discussion aroused by the battle, the question was raised why the *Blücher* was included in the German line. Any encounter that developed on such an excursion was almost certain to be with superior forces, against which the armored cruiser would be of slight value. In a retreat, the "lame duck" would slow down the whole squadron, or else must be left behind.

During the first hour of the battle, the British gained about three knots, and brought the range to 17,500 yards. The range after 9.45 is not given, but was certainly not lowered in a corresponding degree.

This may have been due to increased speed on the part of the German leaders, or to the interference of German destroyers, which now figured for the first time as important factors in day action. Two of these attacks were delivered, one at 9.40 and another about an hour later, and though repulsed by British flotillas, they both caused interference with the British course and fire.

The injury to the *Lion*, in the words of Admiral Beatty, "undoubtedly deprived us of a greater victory." The British wireless caught calls from Hipper to the High Seas Fleet, which (though this seems strange at the time of a battle cruiser sortie) is declared by the Germans to have been beyond reach at Kiel.[1] Worried by the danger to the *Lion* in case of retreat before superior forces, and in the belief that he was being led into submarine traps and mine fields, Admiral Moore gave up the chase. The distance to Heligoland was still at least 70 miles; the German ships were badly injured; the course since 9.45 had been more to the northward; the Grand Fleet was rapidly approaching the scene. The element of caution, seen again in the Jutland battle 15 months later, seems to have prevented pressing the engagement to more decisive results.

[Footnote 1: Capt. Persius, *Naval and Military Record*, Dec. 10, 1919.]

The conditions of flight and pursuit obtaining at the Dogger Bank emphasized the importance of speed and long range fire. Owing to the fact that they had twice the angle of elevation (30 degrees), the German 11-inch and 12-inch guns were not outranged by the British 13.5-inch guns; and at 17,000 yards their projectiles had no greater angle of

fall. The chief superiority of the larger ordnance therefore lay in their heavier bursting charges and greater striking energy, 12,800 foot-tons to 8,900 foot-tons. According to a German report, the first salvo that hit the *Seydlitz* knocked out both after-turrets and annihilated their crews; and the ship was saved only by flooding the magazines.[1]

[Footnote 1: Admiral van Scheer, quoted in *Naval and Military Record*, London, March 24, 1920.]

The Dardanelles Campaign

Throughout the war a difference of opinion existed in Allied councils as to whether it was better to concentrate all efforts in the western sphere of operations, or to assail the Central Powers in the Near East as well, where the accession of Turkey (and later of Bulgaria) threatened to put the resources of all southeastern Europe under Teutonic control, and even opened a gateway into Asia. Such a division of effort was suggested not only by the necessity of protecting the Suez Canal, Egypt, and Mesopotamia, but by the difficulty of breaking the stalemate on the western front, and by the opportunity that would be offered of utilizing Allied control of sea communications. Furthermore, the Allies had a margin of predreadnoughts and cruisers ready for action and of no obvious value elsewhere.

On November 3, 1914, three days after Turkey entered the war, an Allied naval force that had been watching off the Dardanelles engaged the outer forts in a 10-minute bombardment, of no significance save perhaps as a warning to the Turks of trouble later on. In the same month the First Lord of the British Admiralty, Mr. Winston Churchill, proposed an

attack on the Straits as "an ideal method of defending Egypt"; but it was not seriously considered until, on January 2, Russia sent an urgent appeal for a diversion to relieve her forces in the Caucasus. Lord Kitchener, the British Minister of War, answered favorably, but, feeling that he had no troops to spare, turned the solution over to the Navy.

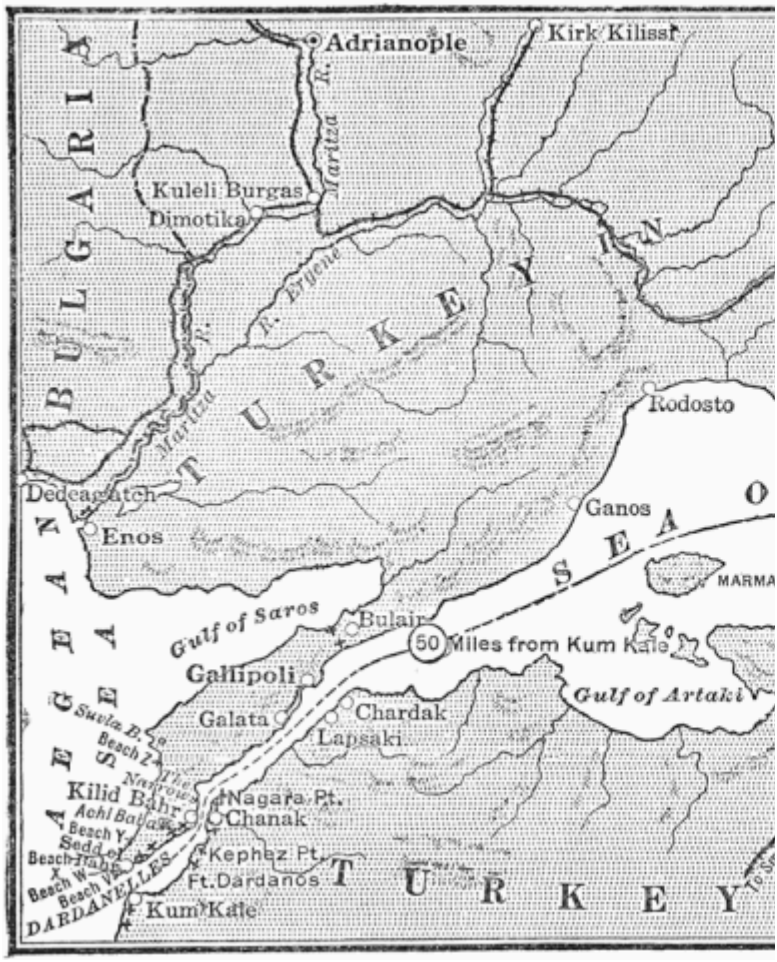
From the first the decision was influenced by political considerations. Russia needed assurance of Allied solidarity—and it is significant that in February Lord Grey announced that England no longer opposed Russia's ambition to control Constantinople. Nine-tenths of Russia's exports were blocked by the closing of the Straits; their reopening would afford not only access to her vast stores of foodstuffs, but an entry—infinitely more convenient than Vladivostok or Archangel—for munitions and essential supplies. The Balkan States were wavering. In Turkey there was a strong neutral or pro-Ally sentiment. Victory would give an enormous material advantage, help Russia in the impending German drive on her southwestern frontier, and bolster Allied prestige throughout the eastern world.

Faced with the problem, the Admiralty sent an inquiry to Admiral Carden, in command on the scene, as to the practicability of forcing the Dardanelles by the use of ships alone, assuming that old ships would be employed, and "that the importance of the results would justify severe loss." He replied on January 5: "I do not think the Dardanelles can be rushed, but they might be forced by extended operations with a large number of ships." In answer to further inquiries, accompanied by not altogether warranted assurance from the First Lord that "High authorities here concur in your

opinion," Admiral Carden outlined four successive operations:

(a) The destruction of defenses at the entrance to the Dardanelles.

(b) Action inside the Straits, so as to clear the defenses up to and including Cephez Point battery N8.



(c) Destruction of defenses of the Narrows.

(d) Sweeping of a clear channel through the mine-field and advance through the Narrows; followed by a reduction of the forts further up, and advance into the Sea of Marmora.

This plan was presented at a meeting of the British War Council on January 13. It may be noted at this point that the War Council, though composed of 7 members of the Cabinet, was at this time dominated by a triumvirate—the Premier (Mr. Asquith), the Minister of War (General Kitchener), and the First Lord of the Admiralty (Mr. Churchill); and in this triumvirate, despite the fact that England's strength was primarily naval, the head of the War Office played a leading rôle. The First Sea Lord (Admiral Fisher) and one or two other military experts attended the Council meetings, but they were not members, and their function, at least as they saw it, was "to open their mouths when told to." Staff organizations existed also at both the War Office and the Admiralty, at the latter consisting of the First Lord, First Sea Lord and three other officers not on the Admiralty Board. The working of this improvised and not altogether ideal machinery for the supreme task of conducting the war is interestingly revealed in the report[1] of the commission subsequently, appointed to investigate the Dardanelles Campaign.

[Footnote 1: British ANNUAL REGISTER, 1918, Appendix, pp. 24 ff., from which quotations here are taken.]

"Mr. Churchill," according to this report, "appears to have advocated the attack by ships alone before the War Council on a certain amount of half-hearted and hesitating expert opinion." Encouraged by his sanguine and aggressive spirit, the Council decided that "the Admiralty should prepare for a naval expedition in February to bombard and take the Gallipoli Peninsula with Constantinople as its objective." In view of the fact that the operation as then conceived was to be purely naval, the word "take" suggests an initial misconception of what the

navy could do. The support for the decision, especially from the naval experts, was chiefly on the assumption that if Admiral Carden's first operation were unpromising, the whole plan might be dropped.

Admiral Fisher's misgivings as to the wisdom of the enterprise soon increased, owing primarily to his desire to employ the full naval strength in the home field. He did not believe that "cutting off the enemy's big toe in the East was better than stabbing him to the heart." He had begun the construction of 612 new vessels ranging from "hush-hush" ships of 33 knots and 20-inch guns to 200 motor-boats, and he wished to strike for access to the Baltic, with a threat of invasion on Germany's Baltic coast. The validity of his objections to the Dardanelles plan appears to depend on the practicability of this alternative, which was not attempted later in the war. The First Lord and the First Sea Lord presented their difference of opinion to the Premier, but it appears that there was no ill feeling; Admiral Fisher later writes that "Churchill had courage and imagination—he was a war man."

At a Council meeting on January 28, when the decision was made definite, Admiral Fisher was not asked for an opinion and expressed none. (The Investigation Commission declare that the naval experts should have been asked, and should have expressed their views whether asked or not.) But there was a dramatic moment when, after rising as if to leave the Council, he was quickly followed by Lord Kitchener, who pointed out that all the others were in favor of the plan, and induced him once more to take his seat. After the decision, Mr. Churchill testifies, "I never looked back. We had left the region of discussion and consultation, of

balancings and misgivings. The matter had now passed into the domain of action."

To turn to the scene of operations, there were now assembled at the Dardanelles 10 British and 4 French predreadnoughts, together with the new battleship *Queen Elizabeth*, the battle cruiser *Inflexible*, and many cruisers and torpedo craft. On February 19, 1915, again on February 25-26, and on March 1-7, this force bombarded the outer forts at Kum Kale and Sedd-el-Bahr and the batteries 10 miles further up at Cephez Point. These were in part silenced and demolished by landing parties. Bad weather, however, interfered with operations, and there was also some shortage of ammunition. The batteries, and especially the mobile artillery of the Turks, still greatly hampered the work of mine sweeping, which at terrible hazards was carried on at night within the Straits.

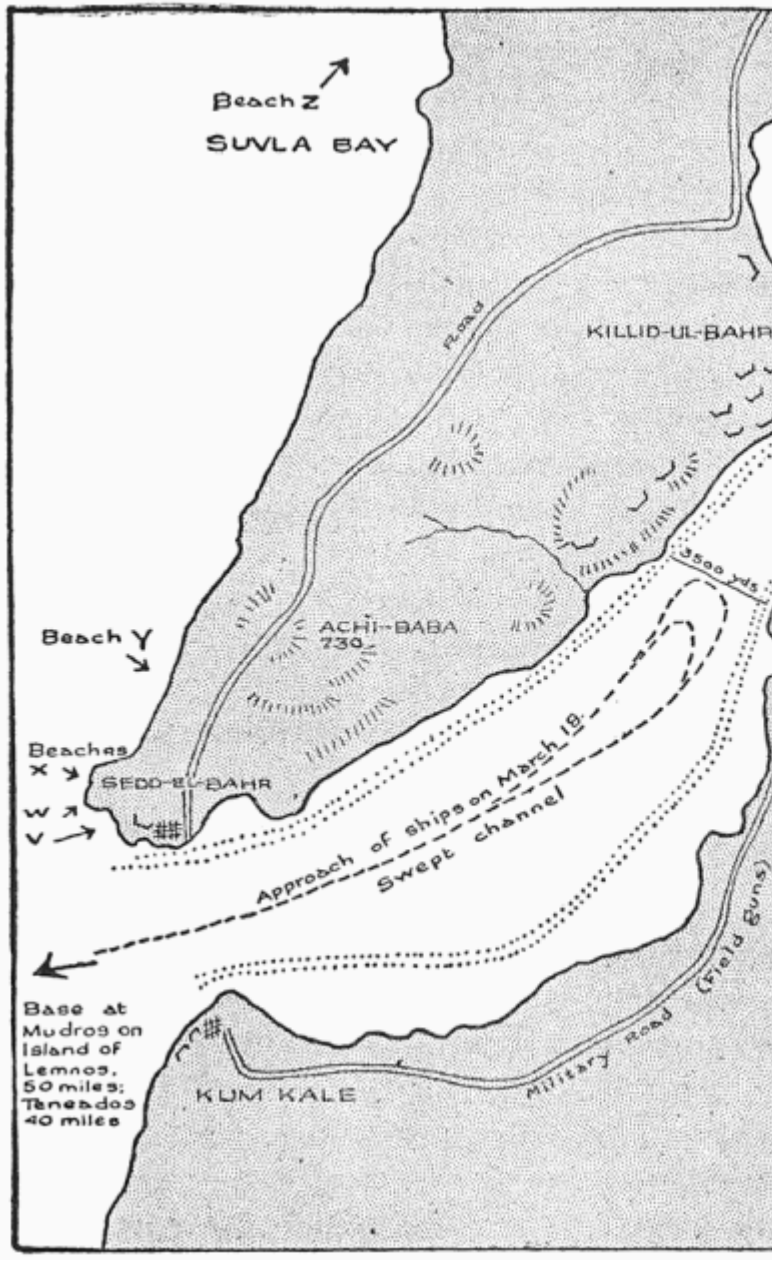
In the meantime the Government, to quote General Callwell, the Director of Military Operations, had "drifted into a big military attack." But the despatch from England of the 29th Division, which was to join the forces available in Egypt, was delayed; owing to Lord Kitchener's concern about the western situation, from Feb. 22 to March 16—an unfortunate loss of time. By March 17, however, the troops from Egypt and most of the French contingent were assembled at the island of Lemnos, and General Sir Ian Hamilton had arrived to take command. His instructions included the statement that "employment of military forces on any large scale at this juncture is only contemplated in the event of the fleet failing to get through after every effort has been exhausted. Having entered on the project of forcing the Straits, there can be no idea of abandoning the scheme."

On March 11 the First Lord sent to Admiral Carden a despatch asking whether the time had not arrived when "you will have to press hard for a decision," and adding: "Every well-conceived action for forcing a decision, even should regrettable losses be entailed, will receive our support." The Admiral replied concurring, but expressing the opinion that "in order to insure my communication line immediately fleet enters Sea of Marmora, military operations should be opened at once." On March 16 he resigned owing to ill health, and his second in command, Admiral de Robeck, succeeded, with the feeling that he had orders to force the Straits.

The attack of March 18 was the crucial and, as it proved, the final action of the purely naval campaign. At this time the mines had been swept as far up as Cephez Point, and a clear channel opened for some distance beyond. During the morning the *Queen Elizabeth* and 5 other ships bombarded the Narrows forts at 14,000 yards. Then at 12.22 the French predreadnoughts *Suffren, Gaulois, Charlemagne*, and *Bouvet* approached to about 9000 yards and by 1.25 had for the time being silenced the batteries of the Narrows. Six British battleships now advanced (2.36) to relieve the French. In the maneuvering and withdrawal, the *Biouvet* was sunk by a drifting mine[1] with a loss of over 600 men, and the *Gaulois* was hit twice under water and had to be beached on an island outside the Straits. About 4 o'clock the *Irresistible* also ran foul of a mine and was run ashore on the Asiatic side, where most of her men were taken off under fire. The *Ocean*, after going to her assistance, struck a mine and went down about 6 o'clock. Not more than 40 per cent. of the injuries sustained in the action were attributable

to gunfire, the rest to mines sent adrift from the Narrows. Of the 16 capital ships engaged, three were sunk, one had to be beached, and some of the others were hardly ready for continuing the action next day.

[Footnote 1: It is stated that an ingenious device caused these mines to sink after a certain time and come back on an under-current that flows *up* the Dardanelles, and then rise at the Narrows for recovery. This may have enabled the Turks to keep up their presumably limited supply of mines; but how well the automatic control worked is not known.]


Beach Z
SUVLA BAY
Road
KILLID-UL-BAHR
3500 yds
ACHI-BABA
730
Beach Y
Beaches
X
W
V
SEDD-EL-BAHR
Approach of ships on March 18
Swept channel
Base at
Mudros on
Island of
Lemnos,
50 miles;
Tenedos
40 miles
KUM KALE
Military Road
(Field Guns)

There is some military support for the opinion that if, on the 18th or at some more suitable time, the fleet had acted in the spirit of Farragut's "Damn the torpedoes! Full steam ahead!" and, protected by dummy ships, bumpers, or whatever other devices naval ingenuity could devise, had steamed up to and through the Narrows in column, it would not have suffered much more severely than during the complicated maneuvering below. Of such an attack General von der Goltz, in command of the Turkish army, said that, "Although he thought it was almost impossible to force the Dardanelles, if the English thought it an important move in the general war, they could by sacrificing ten ships force the entrance, and do it very fast, and be up in Marmora within 10 hours from the time they forced it."[l] Admiral Fisher estimated that the loss would be 12 ships.

[Footnote 1: Repeated by Baron van Wangenheim to Ambassador Morgenthau, prior to the attack of March 18, AMBASSADOR MORGENTHAU'S STORY, *World's Work*, September, 1918. See also Col. F. N. Maude, Royal Engineers, *Contemporary Review*, June, 1915.]

After such deductions, there would be no great surplus to deal with the *Göben*, which would fight desperately, and with the defenses of Constantinople. Indeed, such losses would seem absolutely prohibitive, if viewed only from the narrow standpoint of the force engaged, and without taking into fullest account the limited value of the older ships and the fact that the Government was fully committed to a prosecution of the campaign. It is of course easy to see that victory purchased by the loss of 10 predreadnoughts and 10,000 men would be

cheap, as compared with the sacrifice of over 100,000 men killed and wounded and 10,000 invalided in the later campaign on land.

General Callwell has pointed out that the naval commanders were properly worried about what would happen after they got through the Straits, if the Sublime Porte should not promptly "throw up the sponge." "The communications would have remained closed to colliers and small craft by movable armament, if not also by mines. Forcing the pass would in fact have resembled bursting through a swing door. Sailors and soldiers alike have an instinctive horror of a trap, and they are in the habit of looking behind them as well as before them."[1] But according to Ambassador Morgenthau, who was probably in a better position than any one else to form an opinion, "The whole Ottoman State on the 18th day of March, 1915, was on the brink of dissolution." The Turkish Government was divided into factions and restive under German domination, and there was thus an excellent prospect that it would have capitulated under the guns of the Allied fleet. If not, then there might have been nothing left for the latter but to try to get back the way it came.

[Footnote 1: NINETEENTH CENTURY AND AFTER, March, 1919, p. 486.]

Feeling in Constantinople during the month from February 19th to March 19th has already been suggested; it was nervous in the extreme. Neither Turks nor Germans felt assured that the Dardanelles could withstand British naval power. Plans were made for a general exit to Asia Minor, and there was a conviction that in a few days Allied ships would be in the Golden Horn. At the forts, if we may believe

evidence not as yet definitely disproved, affairs were still more desperate. The guns, though manned largely by Germans, were not of the latest type, and for a month had been engaged in almost daily bombardment. Ammunition was running short. "Fort Hamadié, the most powerful defense on the Asiatic side, had just 17 armor-piercing projectiles left, while at Killid-ul-Bahr, the main defense on the European side, there were precisely 10."[2] To this evidence may be added the statement of Enver Pasha: "If the English had only had the courage to rush more ships through the Dardanelles they could have got to Constantinople, but their delay enabled us to fortify the peninsula, and in 6 weeks' time we had taken down there over 200 Austrian Skoda guns."

[Footnote 2: AMBASSADOR MORGENTHAU'S STORY, *World's Work*, September, 1918, p. 433, corroborating the statement of the correspondent G. A. Schreiner, in FROM BERLIN TO BAGDAD.]

If Mr. Churchill was chiefly responsible for undertaking the campaign, he was not responsible for the delay after March 18. "It never occurred to me," he states, "that we should not go on." Admiral de Robeck in his first despatches appeared to share this view. On March 26, however, he telegraphed: "The check on March 18 is not, in my opinion, decisive, but on March 22 I met General Hamilton and heard his views, and I now think that, to obtain important results and to achieve the object of the campaign, a combined operation will be essential." This despatch, Mr. Churchill says, "involved a complete change of plan and was a vital decision. I regretted it very much. I believed then, as I believe now, that we were separated by very little from

complete success." He proposed that the Admiral should be directed to renew the attack; but the First Sea Lord did not agree, nor did Admiral Sir Arthur Wilson, nor Admiral Sir Henry Jackson. So it was decided to wait for the army, and some satire has been directed at Mr. Churchill and those other "acknowledged experts in the technicalities of amphibious warfare," Mr. Balfour and Mr. Asquith, who were inclined to share his views. The verdict of the Dardanelles Commission was that, "Had the attack been renewed within a day or two there is no reason to suppose that the proportion of casualties would have been less; and, if so, even had the second attack succeeded, a very weak force would have been left for subsequent naval operations."

Once decided upon, it was highly essential that the combined operation should begin without further delay. But it was now found that the army transports had been loaded, so to speak, up-side-down, with guns and munitions buried under tents and supplies. Sending them back to Alexandria for reloading involved a six weeks' delay, though Lord Kitchener wired, "I think you had better know at once that I regard such postponement as far too long." The landing on the tip of the Gallipoli Peninsula, which was nearest the forts in the Straits and said to be the only feasible place, actually began on April 25, and was achieved under the guns of the fleet, and by almost unexampled feats of heroism by boats' crews and the first parties on shore.

Henceforth the navy played a subordinate though not insignificant part in the campaign. "By our navy we went there and were kept there," writes Mr. John Masefield in *Gallipoli*, "and by our navy we came away. During the nine months of our hold on the

peninsula over 300,000 men were brought by the navy from places three, four, or even six thousand miles away. During the operations some half of these were removed by our navy, as sick and wounded, to ports from 800 to 3000 miles away. Every day, for 11 months, ships of our navy moved up and down the Gallipoli coast bombarding the Turk positions. Every day during the operations our navy kept our armies in food, drink and supplies. Every day, in all that time, if weather permitted, ships of our navy cruised in the Narrows and off Constantinople, and the seaplanes of our navy raided and scouted within the Turk lines."

On May 12 the predreadnought *Goliath* was torpedoed by a Turkish destroyer; and on May 25-26 the German submarine *U 23*, which had made the long voyage by way of Gibraltar, sank the *Triumph* and the *Majestic*. It was upon a forewarning of this attack that Admiral Fisher, according to his own statement, resigned as a protest against the retention of the *Queen Elizabeth* and other capital units in this unpromising field. British and French submarines, on the other hand, worked their way into the Sea of Marmora, entered the harbor of Constantinople, and inflicted heavy losses, including two Turkish battleships, 8 transports, and 197 supply vessels.

So almost unprecedented were the problems of a naval attack on the Dardanelles that it appears rash to condemn either the initiation or the conduct of an operation that ended in failure when seemingly on the verge of success. Clearly, the campaign was handicapped by lack of unanimous support and whole-hearted faith on the part of authorities at home. It was not thoroughly thought out at the start, and was subjected to trying delays. No advantage

was ever taken of the invaluable factor of surprise. Even so, it was not wholly barren of results. It undoubtedly relieved Russia, kept Bulgaria neutral for at least five months, and immobilized 300,000 Turks, according to Lord Kitchener's estimate, for nine months' time. Nevertheless, the final failure was a tremendous blow to Allied prestige. Upon the withdrawal, in January of 1916, some of the troops were transferred to Salonika; and it is noteworthy that in Macedonia, as at Gallipoli, the army was dependent on the navy for the transport of troops, munitions, and in fact virtually everything needed in the campaign.

Aside from the Dardanelles failure, the naval situation at the end of 1915 was such as to give assurance to the Western Powers. They had converted potential control of the sea into actual control, save in limited areas on the enemies' sea frontiers. Germany had lost her cruisers and her colonies, and her shipping had been destroyed or driven from the seas. Though losses from submarines averaged 150,000 tons a month in 1915, they had not yet caused genuine alarm. The German fleet was still a menace, but, in spite of attrition warfare, the Grand Fleet was decidedly stronger than in 1914.

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CHAPTER XVII

THE WORLD WAR [*Continued*]: THE BATTLE OF JUTLAND

There was only one action between the British Grand Fleet and the German High Seas Fleet in the World War, the battle of Jutland. This was indecisive, but even in a history with the limits of this book it deserves a chapter of its own. In the magnitude of the forces engaged, a magnitude less in numbers of ships—great as that was—than in the enormous destructive power concentrated in those ships, it was by far the greatest naval battle in history. Moreover, this was the one fleet battle fought with the weapons of to-day. Any discussion of modern tactics, therefore, must be based for some time to come on an analysis of Jutland. Finally, the indecisiveness of the action has resulted in a controversy among naval critics that is likely to continue indefinitely. Meanwhile the debatable points are rich in interest and suggestion.

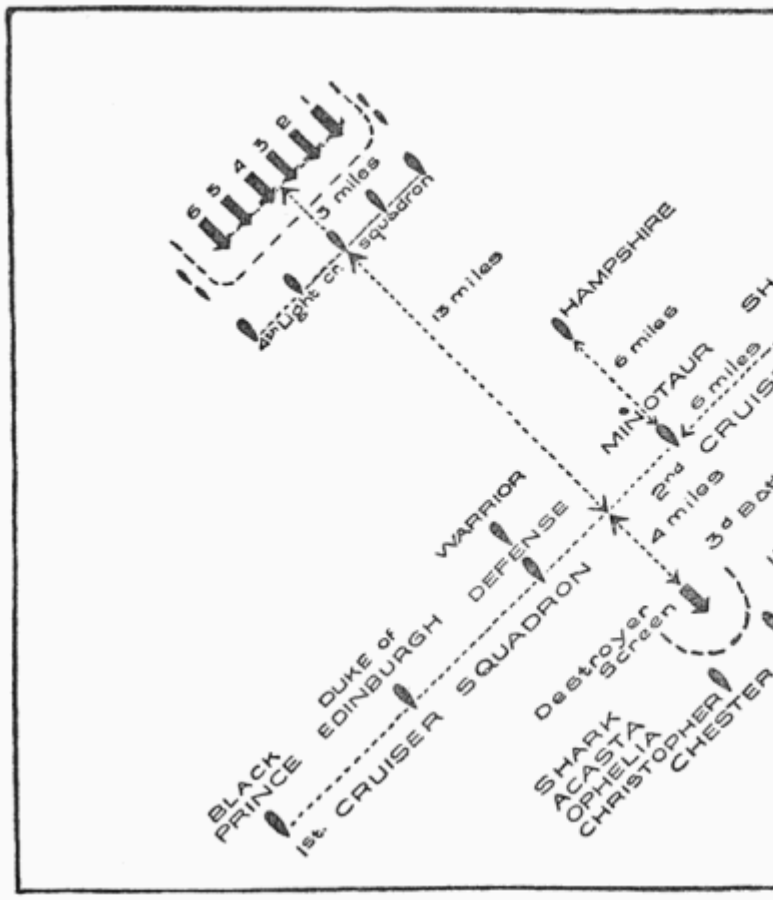
In earlier wars the nation with a more powerful

fleet blockaded the ports of the enemy. In this war the sea mine, the submarine, the aircraft and the long-range gun of coast defenses made the old-fashioned close blockade impossible. Such blockade as could be maintained under modern conditions had to be "distant." The British made a base in the Orkneys, Scapa Flow, which had central position with relation to a possible sortie of the German fleet toward either the North Atlantic or the Channel. The intervening space of North Sea was patrolled by a scouting force of light vessels of various sorts and periodical sweeps by the Grand Fleet. On May 30, 1916, the Grand Fleet, under Admiral Jellicoe, set out from its base at Scapa Flow for one of these patrolling cruises. On the same day Vice Admiral Beatty left his base at Rosyth (in the Firth of Forth) with his advance force of battle cruisers and battleships, under orders to join Jellicoe at sea. On the following day the High Seas Fleet took the sea and the two great forces came together in battle.

It is not certain why the German fleet should have been cruising at this time. Having declined to offer battle in the summer of 1914, on account of the British superiority of force, the High Command could hardly have contemplated attacking in 1916 when the odds were much heavier. From statements published by German officers since the war, the objects seem to have been, first, to prevent a suspected attempt to force an entrance into the Baltic; secondly, to fall upon Beatty's Battle Cruiser Squadron, during its frequent patrolling cruises, when it was detached from the main force; and, thirdly, to destroy the British trading fleets which were conducting an important volume of commerce from the ports of Norway with England and Russia. It

is not easy to see, however, why the High Seas Fleet should be sent out on a mere commerce destroying raid. The Germans had been out twice before, since April 1st of that year, and probably it was considered good policy to send the fleet to sea every now and then for the moral effect. The people could not relish the idea of their navy being condemned to inaction in their own harbors, and there was bad feeling over the fact that the government had just yielded to President Wilson's protest on ruthless submarine warfare. A victory over Beatty's battle cruisers, or some other detached unit of the British fleet, would have been very opportune in bracing German morale. At the same time Admiral von Scheer had probably reckoned on being able to avoid battle with the Grand Fleet by means of a swift retreat under cover of smoke screens and torpedo attacks. Certainly the odds were too heavy to permit of any other policy on his part.

The First Phase



CRUISING FORMATION OF THE

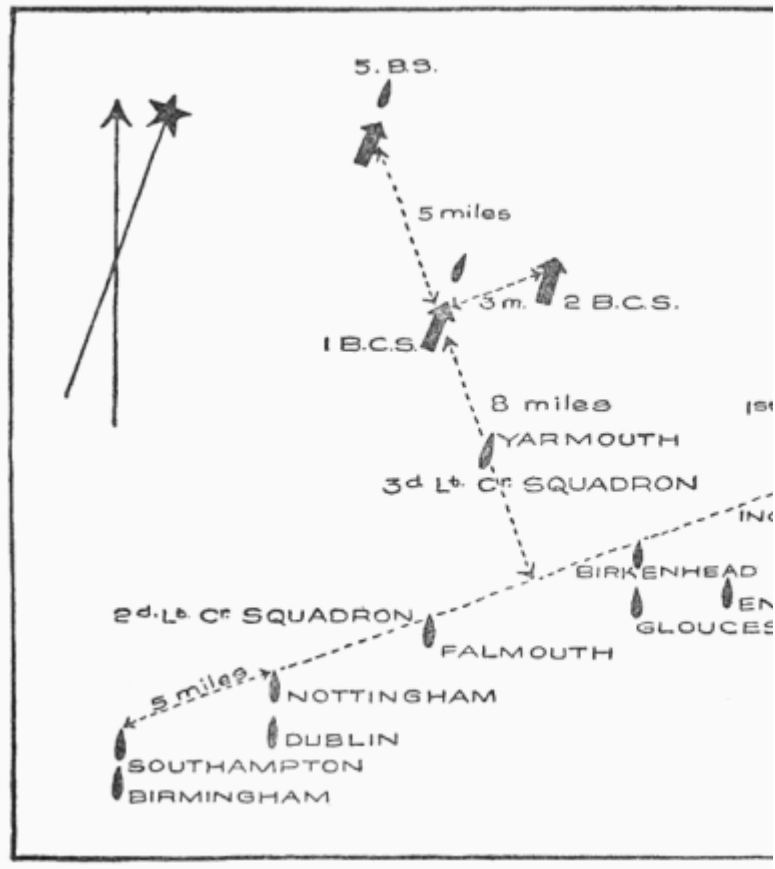
(After diagram by Lieut.-Comdr. H. H. Frost, U.S.N.,

Forces:

24 Dreadnought Battleships
3 Battle Cruisers
12 Light Cruisers
8 Armored Cruisers
51 Destroyers

Note: One destroyer accompanied each armored cruiser.

At 2 p. m. of the 31st of May, 1916, the British main fleet, under Admiral Jellicoe, was in Latitude 57° 57' N., Longitude 3° 45' E. (off the coast of Norway), holding a south-easterly course. It consisted of 24 battleships formed in a line of six divisions screened by destroyers and light cruisers, as indicated in the accompanying diagram. Sixteen miles ahead of the battle fleet was the First Cruiser Squadron under Rear Admiral Arbuthnot and the Second Cruiser Squadron under Rear Admiral Heath; these consisted of four armored cruisers each. They were spread out at intervals of six miles, with the *Hampshire* six miles astern of the *Minotaur* to serve as link ship for signals to and from the main fleet. Four miles ahead was the Third Battle Cruiser Squadron of three ships under Rear Admiral Hood. These were steaming in column, screened by four destroyers and two light cruisers (*Chester* and *Canterbury*). The diagram on p. 388 shows the complete formation of the Battle Fleet and Cruiser Squadrons, under Admiral Jellicoe's personal command. It is interesting as an example of the extreme complexity of fleet formation under modern conditions, especially when it is realized that the whole fleet was proceeding on its base course by zigzagging.



BEATTY'S CRUISING FOR

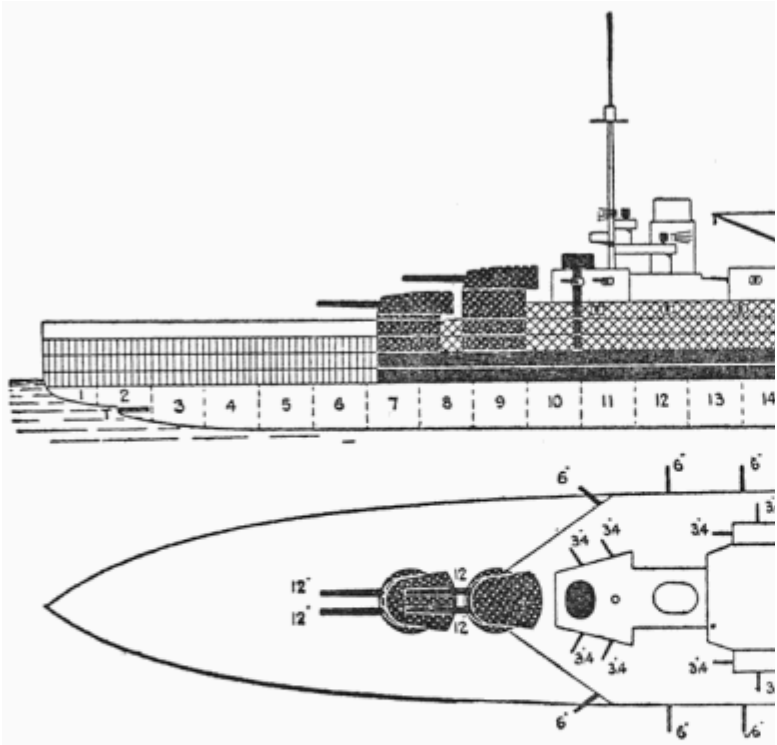
(After diagrams by Lieut.-Comdr. H. H. Frost, U.S.N.,

Seventy-seven miles to the southward Vice Admiral Beatty, commanding the scouting force, was heading on a northeasterly course. His force was spread out in scouting formation. The First Battle Cruiser Squadron of four ships, headed by the flagship *Lion*, was flanked three miles to the eastward by the Second Battle Cruiser Squadron of two ships, and five miles to the north by the Fifth

Battle Squadron, consisting of four of the finest battleships in the fleet, 25-knot *Queen Elizabeths*, under Rear Admiral Evan-Thomas. Each of these squadrons had its screen of destroyers and light cruisers. Eight miles to the south the First, Second, and Third Light Cruiser Squadrons were spread out in line at five-mile intervals. The formation is made clear by the accompanying diagram.

At the same hour, 2 p. m., Vice Admiral Hipper, with the German scouting force, was heading north about 15 to 20 miles to the southeast of Beatty. Hipper commanded the First Battle Cruiser Squadron, consisting of the *Lützow* (flag), *Derflinger, Seydlitz, Moltke*, and *Van der Tann*, accompanied by a screening force of four or five light cruisers and about 15 destroyers. Fifty miles south of this advance force was the main body of the High Seas Fleet under Vice Admiral von Scheer. It consisted of three battle squadrons arranged apparently in one long column of 22 ships escorted by a screen of 62 destroyers, eight or ten light cruisers, and the one remaining armored cruiser in the German navy, the *Roon*.

Thus the stage was set and the characters disposed for the great naval drama of that day.



TYPE OF GERMAN BATTLE CR

Normal displacement, 2
Length (waterline), 689 to 700 feet. Beam,
Guns:
8—12 inch, 50 cal. (A5)
14—5.9 inch, 50 cal. in M. & H.
but only
12—5.9 inch, 50 cal. in D.
(12 or less—3.4 inch, 22 pdr. ?)

At 2.20 the light cruiser *Galatea* (v. diagram), which lay farthest to the east of Beatty's force, reported two German light cruisers engaged in boarding a neutral steamer. Beatty thereupon changed course toward Horn Reef Lightship in order to cut them off from their base, his light cruisers of

the first and third divisions spreading out as a screen to the eastward. It would be interesting to know why, at this point, he did not draw in his battleships and thus concentrate his force, for when he did establish contact with the Germans, Evan-Thomas's squadron was too far away for effective support. Ten minutes later Hipper got word of British light cruisers and destroyers sighted to the westward and, changing course to northwest, he headed for them at high speed. At 2.45 Beatty sent out a seaplane from the *Engadine* to ascertain the enemy's position. This is the first instance in naval history of a fleet scouting by means of aircraft. The airplane came close enough to the enemy to draw the fire of four light cruisers, and returning reported their position. Meanwhile the *Galatea* had reported heavy smoke "as from a fleet."

At the first report from the *Galatea*, which had been intercepted on the flagship, *Iron Duke*, Jellicoe ordered full speed, and despatched ahead the Third Battle Cruiser Squadron, under Hood, to cut off the escape of the Germans to the Skagerrak, as Beatty was then heading to cut them off from their bases to the south. Admiral Scheer, also, on getting report of the English cruisers, quickened the speed of his main fleet.

At 3.30 Beatty and Hipper discovered each other's battle cruiser forces. Hipper turned about and headed on a southerly course to lead the British toward the advancing main fleet. Beatty also turned, forming his battle cruisers on a line of bearing to clear the smoke, and the two forces approached each other on converging courses as indicated in the diagram.

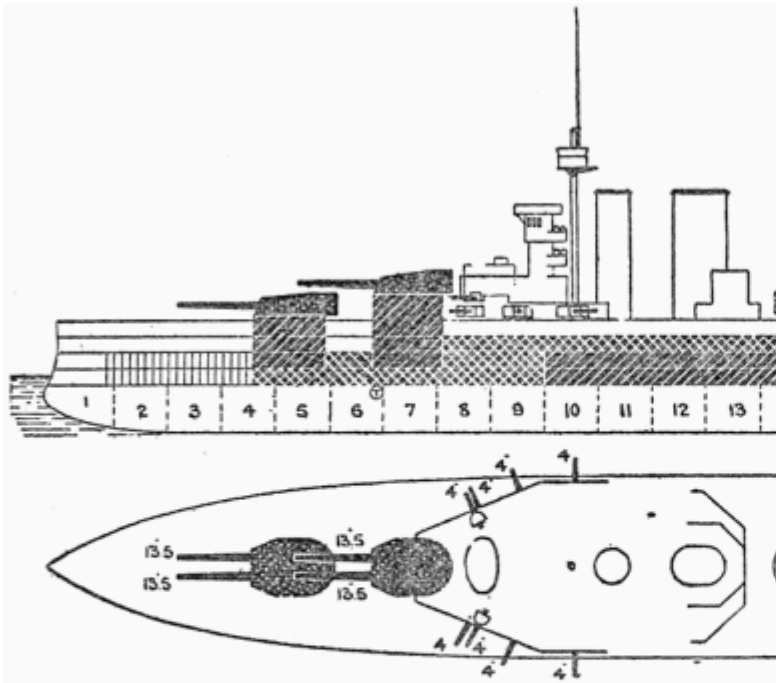
At this point it is worth while to compare the two

battle cruiser forces:[1]

BRITISH				
Name	Armor	Displacement	Guns	Name
Queen Mary	9″	26,350	8 13.5″	Lützow
Lion	9″	26,350	8 13.5″	Derfflinger
Tiger	9″	28,500	8 13.5″	Seydlitz
Princess Royal	9″	28,350	8 13.5″	Moltke
Indefatigable	8″	18,800	8 12″	VonderTann
New Zealand	8″	18,800	8 12″	
		145,150		

[Footnote 1: Table from Lieut. Comdr. H. H. Frost, U. S. N., *U. S. Naval Institute Proceedings*, Nov., 1919, p. 850.]

A glance shows the superiority of the British in guns and the German superiority in armor. The British had six ships to the German five, and if the four new battleships of Evan-Thomas's division could be effectively brought into action, the British superiority in force would be reckoned as considerably more than two to one. These battleships had 13" armor, eight 15" guns each, and a speed of 25 knots. They were the most powerful ships afloat.



TYPE OF BRITISH BATTLI

Normal displacement, 26,350
Length (w. l.), 675 feet. B
Mean draught, 27⅔ feet. Max. draught, 31⅔ feet.
Guns:
8—13.5 inch (M. V.), Dir. Con.
16—4 inch, 50 cal., Dir. Con.
2—3 inch (anti-aircraft)
4—3 pdr.

In speed, Beatty had a marked advantage. He could make 29 knots with all six of his cruisers and 32 knots with his four best,—*Queen Mary, Tiger, Lion*, and *Princess Royal*. Hipper's squadron could make but 28 knots, though the *Lützow* and *Derfflinger* were probably capable of 30.

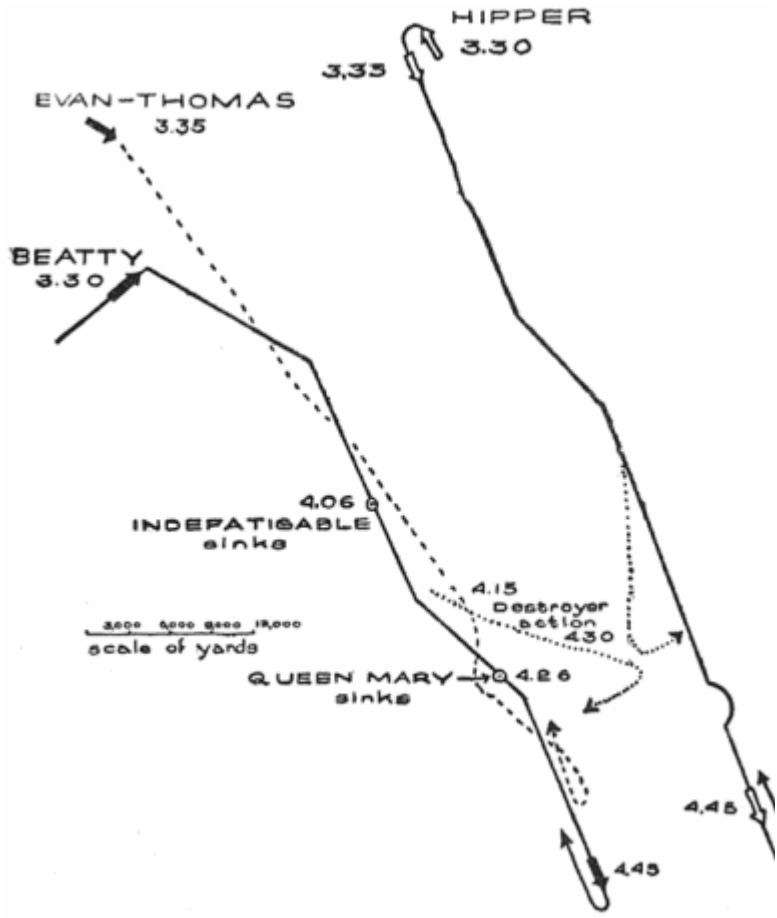
At 3.48 British and German battle cruisers opened

fire. According to Beatty's report the range at this moment was 18,500 yards. Beatty then turned to starboard, assuming a course nearly parallel to that of Hipper. Almost immediately, three minutes after the first salvo, the *Lion*, the *Tiger*, and the *Princess Royal* were hit by shells. In these opening minutes the fire of the Germans seems to have been fast and astonishingly accurate. The *Lion* was hit repeatedly, and at four o'clock the roof of one of her turrets was blown off. It is said that the presence of mind and heroic self-sacrifice of an officer saved the ship from the fate that subsequently overwhelmed two of her consorts. By this time the range had decreased to 16,000 yards (British reckoning) and Beatty shifted his course more to the south to confuse the enemy's fire control. Apparently this move did not succeed in its purpose for at 4.06 a salvo struck the *Indefatigable* on a line with her after turret, and exploded a magazine. As she staggered out of column and began sinking, another salvo smashed into her forward decks and she rolled over and sank like a stone.

About this time the Fifth Battle Squadron came into action, but it was not able to do effective service. The range was extreme, about 20,000 yards, and being some distance astern of the battle cruisers, on account of its inferior speed, it had to contend with the battle smoke of the squadron ahead as well as the gradually thickening atmospheric conditions. In addition the Germans frequently laid smoke screens and zigzagged. Evan-Thomas's division never saw more than two enemy ships at a time.

The shift of course taken by Beatty at four o'clock, accompanied possibly by a corresponding shift of Hipper, opened the range so far in a few minutes that fire slackened on both sides. Beatty then swung

to port in order to close to effective range. At 4.15 twelve of his destroyers, acting on the general order to attack when conditions were favorable, dashed out toward the German line. At the same instant German destroyers, to the number of fifteen accompanied by the light cruiser *Regensburg*, advanced toward the British line, both forces maneuvering to get on the bows of the opposing battle cruisers. For this purpose the British flotilla was better placed because their battle cruisers were well ahead of the Germans. The German destroyers, therefore, concentrated their efforts on the battleship division, which turned away to avoid the torpedoes. In numbers the advantage lay with the Germans, and a fiercely contested action took place between the lines conducted with superb gallantry on both sides. The Germans succeeded in breaking up the British attack at a cost of two destroyers. Two of the British destroyers also were rendered unmanageable and sank later when the High Seas Fleet arrived on the scene.



BATTLE OF JUTLAND, FIRST PHASE
Action Between Battle Cruiser Forces.

Meanwhile, at 4.26, just before the destroyers clashed, a salvo struck the *Queen Mary*, blew up a magazine, and she disappeared with practically all on board. Thus the second of Beatty's battle cruisers was sent to the bottom with tragic suddenness.

At 4.38, Commodore Goodenough, commanding

the Second Light Cruiser Squadron, who was scouting ahead of the battle cruisers, reported that the German battle fleet was in sight steering north, and gave its position. Beatty at once called in his destroyers and turned his ships in succession, sixteen points to starboard, ordering Evan-Thomas to turn similarly. Thus the capital ships turned right about on the opposite course, the battleships following the cruisers as before, and all heading for the main fleet which was then about fifty miles away to the north. Commodore Goodenough at this point used his initiative in commendable fashion. Without orders he kept on to the south to establish contact with the German battle fleet and hung on its flanks near enough to report its position to the commander in chief. He underwent a heavy fire, but handled his frail ships so skillfully as to escape serious loss. At the same time the constant maneuvering he was forced to perform or a defect in the British system of communication made his reports of bearing seriously inaccurate. Whatever the cause, this error created a difficulty for the commander in chief, who, fifty miles away, was trying to locate the enemy for attack by the Grand Fleet.

The Second Phase

The northward run of the British advance force and the German advance force, followed by their main fleet, was uneventful. The situation was at this stage exactly reversed. Beatty was endeavoring to lead the German forces into the guns of the Grand Fleet, while ostensibly he was attempting to escape from a superior force, much as Hipper had been doing with relation to Scheer during the first phase. Beatty's four remaining battle cruisers continued to engage the five German battle cruisers, at a range of

14,000 yards, assisted by the two leading ships of Evan-Thomas's Battle Squadron. The other two battleships engaged the head of the advancing German battle fleet at the extreme range of 19,000 yards as often as they could make out their enemy. The visibility grew worse and apparently neither side scored on the other.

As the British main fleet was reported somewhat to the east of Beatty's position, he bore toward that quarter; and Hipper, to avoid being "T-d" by his enemy, turned to the eastward correspondingly. The mistiness increased to such a degree that shortly after five o'clock Beatty lost sight of the enemy's battle cruisers and ceased fire for half an hour. Between 5.40 and six o'clock, however, conditions were better and firing was opened again by the British ships, apparently with good effect. Meanwhile clashes had already taken place between the light cruiser *Chester*, attached to the Third Battle Squadron of the main fleet, and the light cruisers of the enemy, which were far in advance of their battle cruisers.

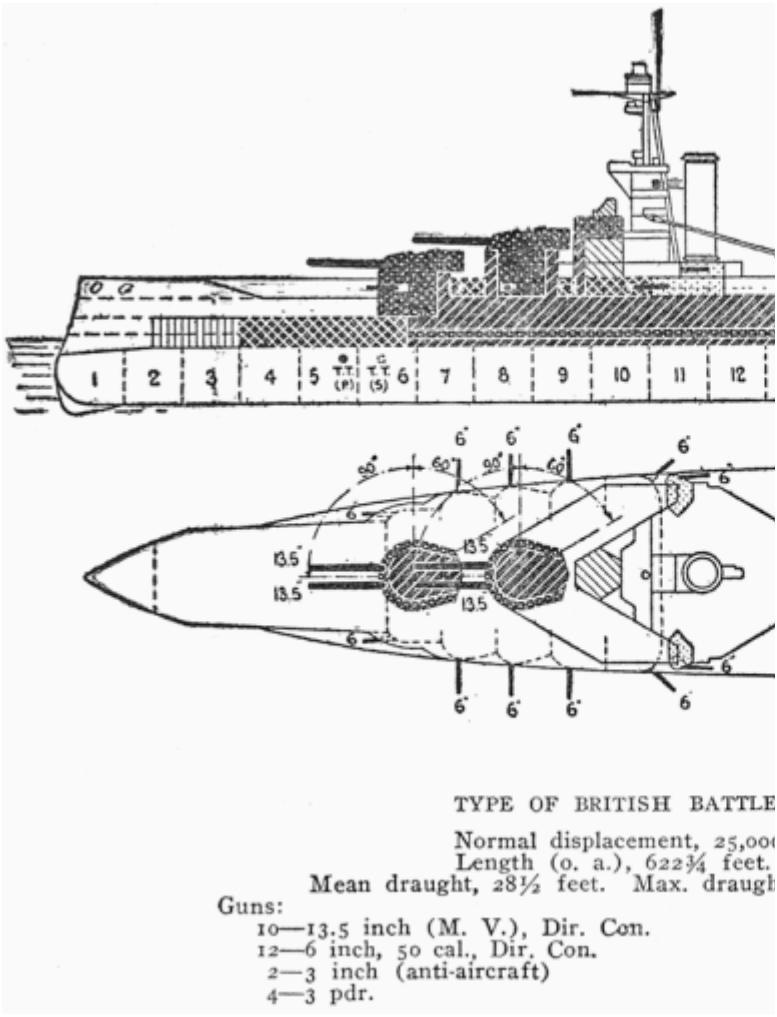
The Third Phase

We have already noted that as soon as Jellicoe learned of the presence of the enemy he ordered Hood, with the Third Battle Cruiser Squadron, to cut off the German retreat to the Skagerrak and to support Beatty. Hood's course had taken him well to the east of where the action was in progress. At 5.40 he saw the flashes of guns far to the northwest, and immediately changed course in that direction. Fifteen minutes later he was able to open fire on German light cruisers, with his four destroyers darting ahead to attack with torpedoes. These light cruisers, which had just driven off the *Chester* with heavy losses,

discharged torpedoes at Hood's battle cruisers and turned away. The latter shifted helm to avoid them and narrowly missed being hit. One torpedo indeed passed under the *Invincible*.

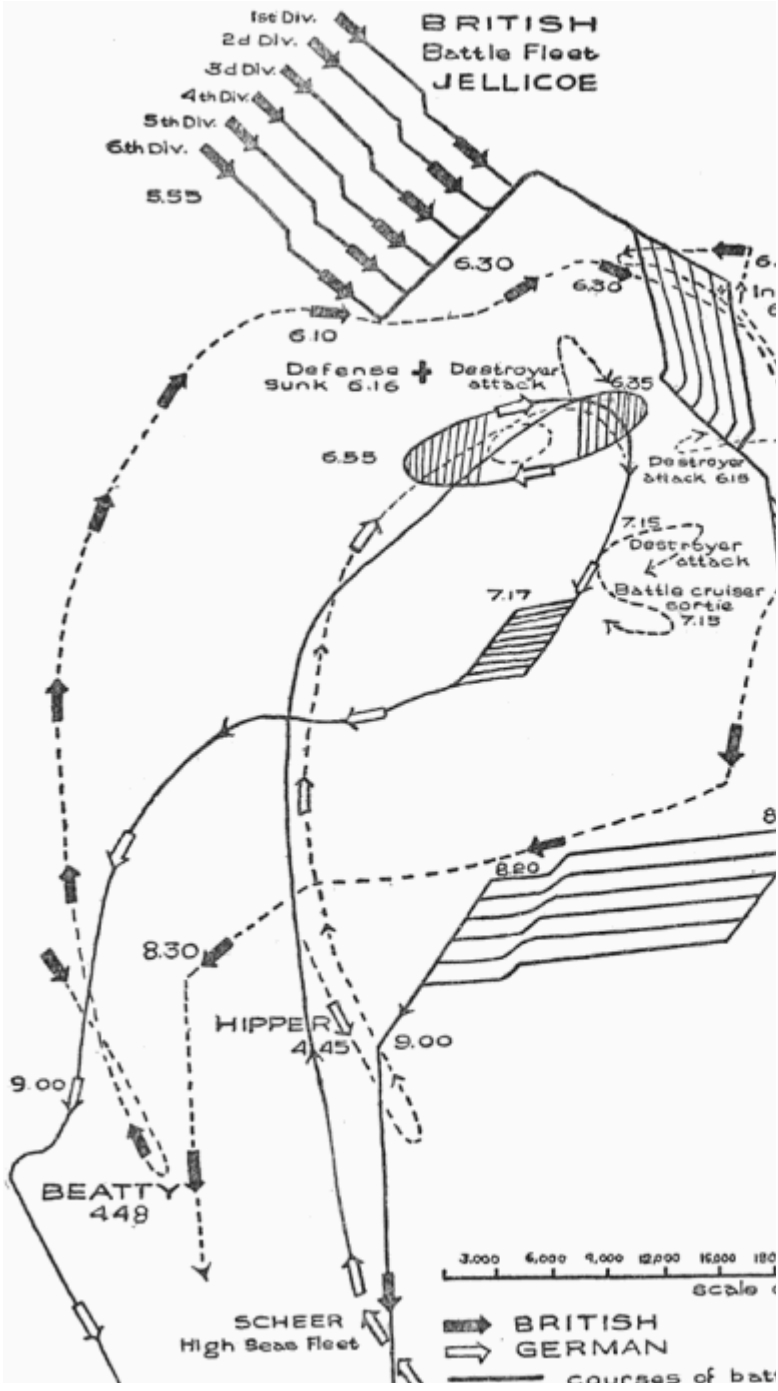
At this point another group of four German light cruisers appeared and Hood's destroyers advanced to attack them. The fire of the cruisers damaged two destroyers though not before one of them, the *Shark*, had torpedoed the German cruiser *Rostock*. The *Shark* herself was in turn torpedoed and sunk by a German destroyer. At about the same time action had begun between the ships of the armored cruiser squadron under Arbuthnot and another squadron of German light cruisers.

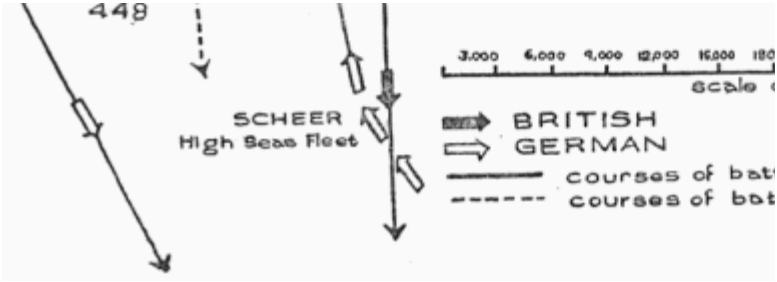
A moment later (at 5.56) Beatty sighted the leaders of the Grand Fleet and knew that contact with his support was established. At once he changed course to about due east and put on full speed in order to head off the German line, and by taking position to the eastward, allow the battle fleet to form line astern of his battle cruisers. Such an overwhelming force was now concentrated on the German light cruisers that they turned back. Of their number the *Wiesbaden* had been disabled by a concentration of fire and the *Rostock* torpedoed. Hipper then made a turn of 180° with his battle cruisers in order to get back to the support of the battleships which he had left far to the rear. Then he turned round again, and continued to lead the German advance. All this time he seems to have had no suspicion that the Grand Fleet was in the neighborhood.



As Beatty dashed across the front of the approaching battle fleet he sighted Hood's Third Battle Cruiser Squadron ahead of him and signaled him to take station ahead. Accordingly Hood countermarched and led Beatty's line in the *Invincible*. Evan-Thomas was by this time so far in the

rear of the speedier battle cruisers that he was unable to follow with Beatty, and in order to avoid confusion with the oncoming battle fleet he turned left 90° in order to form astern of the Sixth Battle Division, by this move, however, leaving Beatty's cruisers unsupported. Meanwhile the armored cruisers of Arbuthnot were already under fire from Hipper's squadron and suffering severely. At 6.16 the *Defense*, the flagship of the squadron, blew up; the *Warrior* was badly disabled, and the *Black Prince* was so crippled as to be sunk during the night action. As Evan-Thomas made his turn, one of his battleships, the *Warspite*, was struck by a shell that jammed her steering gear in such a way as to send her head on toward the Germans. She served to shield the *Warrior* from destruction, but suffered thirty hits from heavy projectiles before she was brought under control and taken out of action.


1st Div.
2d Div.
3d Div.
4th Div.
5th Div.
6th Div.
BRITISH
Battle Fleet
JELLICOE
5.55
6.30
6.30
6.10
Defense sunk 6.16
Destroyer attack
6.35
6.55
Destroyer attack 6.18
7.15
Destroyer attack
7.17
Battle cruiser sortie 7.15
8.20
8.30
HIPPER
4.45
9.00
9.00
BEATTY
4.48
SCHEER
High Seas Fleet
3,000 6,000 9,000 12,000 15,000
scale
BRITISH
GERMAN

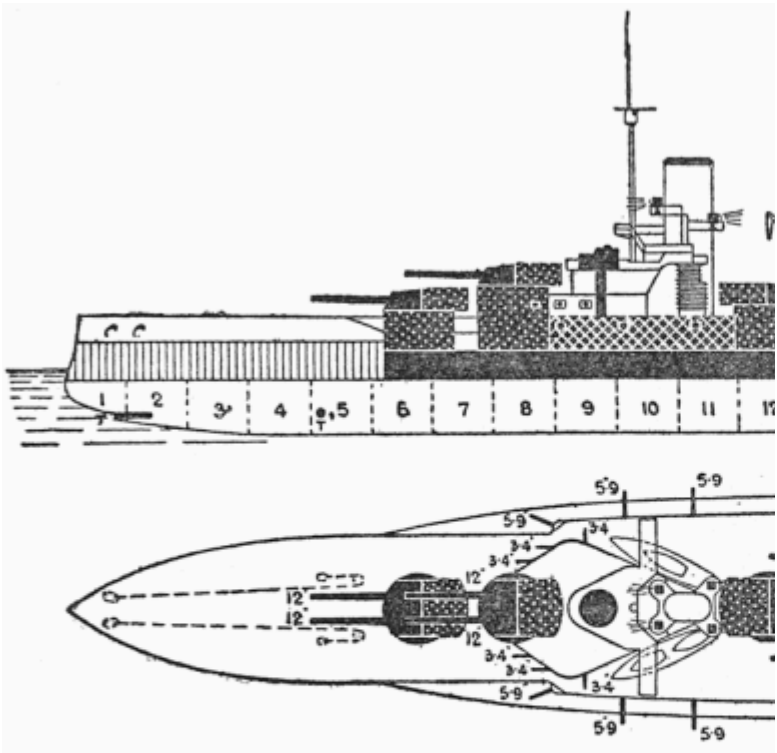


BATTLE OF JUTLAND, M
2nd and 3rd ph

Between six and 6.15 Jellicoe received bearings from Vice Admiral Burney (of the Sixth Battle Division), Evan-Thomas, and Beatty which enabled him for the first time to plot accurately the position of the German battle fleet. This information revealed the fact that previous plotting based on bearings coming from Goodenough and others was seriously wrong. The Germans were twelve miles to the west of where they were supposed to be. Jellicoe then formed line of battle, not on the starboard wing, which was nearest the head of the German advance, but on the port wing, which was farthest away, and speed was reduced to 14 knots in order to enable the battle cruisers to take station at the head of the line. Indeed some of the ships in the rear or sixth division had to stop their engines to avoid collision during deployment. By this time the ships of the sixth division began to come under the shells of the German battle fleet and they returned the fire. By half past six all sixteen of the German dreadnoughts were firing at the British lines, the slow predreadnoughts being so far to the rear as to be unable to take part. The battleship fire, however, neither at this point nor later showed the extraordinary accuracy displayed by the battle cruisers at the beginning, but this may possibly be attributed to the gathering mistiness that hung over the sea, darkened by the low-lying smoke from the

host of ships.

As soon as Scheer realized that he had not only run right into the arms of the Grand Fleet, but lay in the worst tactical position imaginable with an overwhelming force concentrated on the head of his line, he turned away to escape. The battle cruisers (at 6.30) swung away sharply from east to south, the ships turning in succession. Meanwhile the torpedo flotillas tried to cover the turn by a gallant attack on the British battle line. At the same time smoke screens also were laid to cover the retirement. The *Invincible*, Hood's flagship, which was leading the British line, was at this juncture struck by a shell that penetrated her armor and exploded a magazine. The ship instantly broke in two and went to the bottom, and only four officers and two men were saved. Almost at the same instant the German battle cruiser *Lützow*, Hipper's flagship, was so badly disabled by shells and torpedo that she fell out of line helpless. Hipper managed, however, to board a destroyer and two hours later succeeded in shifting his flag to the *Moltke*.



TYPE OF GERMAN BATTI

Normal displacement, 25,800 tons.
Length (waterline), 573 feet. Beam,
Length (over all), 580 feet.

Guns:
10—12 inch, 45 cal.
14—5.9 inch, 50 cal.
(10 or 4—3.4 inch, 22 pdr.?)
(2 anti-aircraft?)

At 6.35 Scheer performed a difficult maneuver that the fleet had practiced for just the situation that existed at this time. He wheeled his battleships simultaneously to starboard, forming line again on a westerly course. Twenty minutes later, finding that

he was no longer under fire from the Grand Fleet, he repeated the maneuver, the ships turning again to starboard and forming line ahead again on an easterly, then southerly course. These changes of course were made under cover of smoke screens and were not observed by the British.

By this time the Grand Fleet had formed line of battle on a southeasterly course and by 7.10 its leaders were concentrating their fire on the head of the German line, which was now caught under an overwhelming superiority of force. Unfortunately for the Germans the visibility conditions at this time were worse for them than for their enemy, for while the British ships were nearly or quite invisible, the Germans every now and then stood silhouetted against the western sky. The British fire at this time was heavy and accurate. The German fleet seemed marked for destruction.

For Scheer it was now imperative to withdraw if he could. Accordingly at this juncture he sent out a flotilla of destroyers in a desperate effort to cover the retreat of his fleet. They fired a number of torpedoes at the English battle line, and retired with the loss of one boat. Their stroke succeeded, for Jellicoe turned his whole line of battleships away to avoid the torpedoes. Beatty, holding his course at the head of the line, signaled Admiral Jerram of the *King George V* to follow astern, but he was evidently bound to the orders of his commander in chief. For the second time that day Beatty was left unsupported in his fight at the head of the line.

Meanwhile Scheer's capital ships had simultaneously wheeled away in line to the westward under cover of the torpedo attacks and

smoke screens made by the destroyers. This was the third time within an hour that they had effected this maneuver, and the skill with which the battleships managed these turns in line under a rain of fire speaks well for German seamanship. Meanwhile, to rëenforce the covering movement made by the destroyers, Scheer sent out his battle cruisers in a sortie against Beatty, who was pressing hard on the head of the German line. The following account from Commander von Hase of the *Derfflinger*, which led this sortie, is interesting not only for its description of what occurred at this time but also as a picture of a personal experience of the terrific fire that the battle cruisers of both sides had to sustain throughout the greater part of the engagement. It was on them that the brunt of the fighting fell. The narrative is quoted from the pages of the *Naval and Military Record*:

"By now our Commander-in-Chief had realized the danger threatening our fleet, the van of which was enclosed in a semicircle by the hostile fleet. We were, in fact, absolutely 'in the soup' (in absoluten Wurstkessel)! There was only one way to get clear of this tactically disadvantageous position: to turn the whole fleet about and steer on an opposite course. First to evade this dangerous encirclement. But the maneuver must be unobserved and executed without interference. The battle-cruisers and torpedo-boats must cover the movement of the fleet. At about[1] 9.12 the Commander-in-Chief made the signal to alter course, and almost simultaneously made by W/T [wireless] the historic signal to the battle-cruisers and torpedo-boats: 'Charge the enemy!' (Ran an den Feind!) Without turning a hair the captain ordered 'Full speed ahead, course south-east.' Followed by the

Seydlitz, Molke, and *Von der Tann*, we steamed at first south-east, then, from 9.15 onward, directly towards the head of the enemy's line.

[Footnote 1: There was a difference of two hours in time between the German and the English standard.]

"And now an infernal fire was opened on us, especially on the *Derfflinger*, as leading ship. Several ships were concentrating their fire upon us. I selected a target and fired as rapidly as possible. The range closed from 12,000 to 8,000 meters, and still we steamed full speed ahead into this inferno of fire, presenting a splendid target to the enemy, while he himself was very difficult to see. Salvo after salvo fell in our immediate vicinity, and shell after shell struck our ship. They were the most exciting minutes. I could no longer communicate with Lt. von Stosch (who was in the foretop control), as the telephone and voice-pipes had been shot away, so I had to rely an my own observations to direct the fire. At 9.13, previous to which all four 12 in. turrets were in action, a serious catastrophe occurred. A 15 in. shell penetrated the armor of No. 3 turret and exploded inside. The gallant turret captain, Lt. von Boltenstern, had both his legs torn off, and with him perished practically the entire guns' crew. The explosion ignited three cartridges, flames from which reached the working chamber, where eight more cartridges were set on fire, and passed down to the magazine, igniting still more cartridges. They burned fiercely, the flames roaring high above the turret—but they burned only, they did not explode—as our enemy's cartridges had done—and that saved the ship! Still, the effect of the burning cartridges was catastrophic; the flames killed everything within their reach. Of the 78 men of the turret crew only

five escaped, some badly wounded, by crawling out through the holes for expelling empty cartridge cases. The remaining 73 men died instantly. A few seconds after this catastrophe another disaster befell us. A 15 in. shell pierced the shield of No. 4 turret and burst inside, causing frightful destruction. With the exception of one man, who was blown out of the turret hatch by the blast of air, the entire crew, including all the men in the magazines and shell-rooms, 80 souls in all, were instantly killed. All the cartridges which had been taken out of their metal cases were ignited, so that flames were now shooting sky-high from both the after turrets....

"The enemy's shooting was splendid. Shell after shell crashed into us, and my heart stood still as I thought of what must be happening inside the ship. My thoughts were rudely disturbed. Suddenly it was to us as if the world had come to an end. A terrific roar, a mighty explosion, and then darkness fell upon us. We shook under a tremendous blow, which lifted the conning-tower bodily off its base, to which it sank back vibrating. A heavy shell had struck the gunnery control station about 20 inches from me. The shell burst, but did not penetrate because it had hit the thick armor at an angle, but huge pieces of plating were torn away.... We found, however, that all the artillery connections were undamaged. Splinters had penetrated the lookout slits of the conning-tower, wounding several people inside. The explosion had forced open the door, which jammed, and two men were unable to move it. But help from an unexpected quarter was at hand. Again we heard a terrific roar and crash, and with the noise of a thunderbolt a 15 in. shell exploded beneath the bridge. The blast of air swept away everything that

was not firmly riveted down, and the chart-house disappeared bodily. But the astounding thing was that this same air pressure closed the door of the conning-tower! The Englishman was polite; having first opened the door, he carefully shut it again for us. I searched with my glass for the enemy, but, although the salvos were still falling about us, we could see practically nothing of him; all that was really visible were the huge, golden-red flames from the muzzles of his guns.... Without much hope of hurting the enemy I fired salvo after salvo from the forward turrets. I could feel how our shooting was calming the nerves of the crew. Had we not fired at this moment the whole ship's company would have been overpowered by a great despair, for everyone knew that a few minutes more of this would finish us. But so long as we fired things could not be so bad with us. The medium guns fired also, but only two of the six 5.9's on one side were still in action. The fourth gun was split from end to end by a burst in the muzzle, and the third was shot to pieces...."

The battle-cruisers were recalled just in time—so it would appear—to save them from annihilation, and Com. von Hase proceeds:

"All hands were now busy quelling the fires. Thick clouds of yellow gas still poured from both after turrets, but the flooding of the magazines soon got rid of this. None of us had believed that a ship could stand so many heavy hits. Some twenty 15 in. hits were counted after the battle, and about the same number of bad hits from smaller calibers. The *Lützow* was out of sight (she sank later), but the *Seydlitz, Moltke*, and *Von der Tann* were still with us. They, too, had been badly punished, the *Seydlitz* worst of all. Flames still roared from one of her turrets, and

all the other ships were burning. The bow of the *Seydlitz* was deep in the water. Every battle-cruiser had suffered severe casualties.... But the death charge had achieved its purpose by covering the retreat of the battle fleet.... Our ship was very heavily battered, and in many places the compartments were mere heaps of débris. But vital parts were not hit, and, thanks to the strong armor, the engines, boilers, steering gear, and nearly all auxiliaries were undamaged. For a long time the engine-room was filled with noxious fumes, necessitating the use of gas masks. The entire ship was littered with thousands of large and small shell splinters, among which we found two practically undamaged 15 in. shell caps, which were later used in the wardroom as wine coolers. The belt armour was pierced several times, but either the leaks were stopped or the inflow of water was localized in small compartments. In Wilhelmshaven we buried our dead, nearly 200 in all."

By 8 o'clock the German battleships had vanished, with the British steering westward by divisions in pursuit. But never again did the two battle fleets regain touch with each other. Occasional contact with an enemy vessel was made by other units of Jellicoe's force. About 8.20 another destroyer attack was threatened, and again Jellicoe swerved away, at the same time, however, sending the Fourth Light Cruiser Squadron and two destroyer flotillas, which succeeded in breaking up the attempt. At 8.30 he reformed his fleet in column and continued on a southwesterly course until 9 o'clock.

Fourth Phase

As darkness came on, Jellicoe, declining to risk his

ships under conditions most favorable to torpedo attack, arranged his battleships in four squadrons a mile apart, with destroyer flotillas five miles astern, and sent a mine-layer to lay a mine field in the neighborhood of the Vyl lightship, covering the route over which the Germans were expected to pass if they attempted to get home via the Horn Reef. He then headed southeast. Beatty also drew off from pursuit with his battle cruisers. Jellicoe's plan was to avoid a general night action, but to hold such a position as to compel the Germans to fight again the following morning in order to reach their bases. During the night (between ten and 2.35) there were several sharp conflicts, mainly between the destroyers and light cruisers of the opposing fleets, with considerable loss on both sides. On the British side, two armored cruisers, *Black Prince* and *Warrior*, went down—both crippled by damages sustained during the day—and five destroyers. Six others were severely damaged. On the German side, the battle cruiser *Lützow* sank as a result of her injuries, the predreadnought battleship *Pommern* was blown up by a torpedo, three light cruisers were sunk, and four or five other ships suffered from torpedo or mine.

The contacts made by British destroyers and cruisers confirm the accounts of the Germans as to the course of their fleet during the night. About nine o'clock Scheer changed course sharply from west to southeast and cut through the rear of the British fleet. At dawn, about 2.40, he was twenty miles to eastward of Jellicoe on the road to Wilhelmshaven. At noon the greater part of the German fleet was safe in port. Some of the lighter ships, to escape the assaults of the British destroyers during the night, headed north and got home by way of the Skagerrak

and the Kiel Canal.

Jellicoe had avoided a night pursuit for the sake of fighting on better terms the next morning, but at dawn he found his destroyers scattered far and wide. Judging it unwise to pursue the High Seas Fleet without a screening force, and discovering by directional wireless that it was already south of Horn Reef and in the neighborhood of the mine fields, he gave up the idea of renewing the engagement and turned north. He spent the forenoon in sweeping the scene of the previous day's fighting, collecting his dispersed units, and then returned to his bases.

The claim of victory, which was promptly and loudly made by the German press, is absurd enough. After the Grand Fleet arrived there could be only one thought for the Germans and that was a fighting retreat. Nevertheless, they had every reason to be proud of what they had done. They had met a force superior by a ratio of about 8 to 5 and had escaped after inflicting nearly twice as much damage as they had sustained. These losses may be compared by means of the following table[1]:

BRITISH,	Three Battle Cruisers,	QUEEN MARY	2(
		INDEFATIGABLE	1{
		INVINCIBLE	1'
	Three Armored Cruisers,	DEFENSE	1-
		WARRIOR	1:
		BLACK PRINCE	1:
	Eight Destroyers,	TIPPERARY	1
		NESTOR	

		NOMAD	
		TURBULENT	1
		FORTUNE	
		ARDENT	
		SHARK	
		SPARROWHAWK	
		Total	11
GERMANS,	One Battle Cruiser	LUETZOW	2(
	One Pre-dreadnought,	POMMERN	1:
	Four Light Cruisers,	WIESBADEN	!
		ELBING	4
		ROSTOCK	4
		FRAUENLOB	2
	Five Destroyers,	V-4	
		V-48	
		V-27	
		V-29	
		S-33	
		Total	6(

Personnel, killed and wounded: BRITISH, about 6,600: GERMANS, 3,076.

[Footnote 1: Figures in these tables taken from Lieut. Comdr. H. H. Frost, U. S. N., *U. S. Naval Institute Proceedings*, Jan., 1920, p. 84.]

With all allowance for the poor visibility conditions and the deepening twilight, it must be admitted also that Scheer handled his ships with great skill. Caught in a noose by an overwhelming force, he disentangled himself by means of the

torpedo attacks of his destroyer flotillas and turned away under cover of their smoke screens. After nightfall he boldly cut through the rear of the British fleet in battle line, and reached his base in safety with the great bulk of his ships. Meanwhile at practically all stages of the fighting German gunnery was both rapid and accurate, the seamanship was admirable, and there was no lack of courage of the highest order.

As to material, Admiral Jellicoe notes the superiority of the German fleet in range-finding devices, searchlights, smoke screens, a star shell—unknown to the British and invaluable for night fighting—and in the armor piercing quality of the shells. Moreover the Germans were completely equipped with systems of director firing, while the British were not. According to Admiral Sir Percy Scott,[1] "at the Battle of Jutland ... the commander in chief had only six ships of his fleet completely fitted with director firing ... he had not a single cruiser in the fleet fitted for director firing."

[Footnote 1: FIFTY YEARS IN THE ROYAL NAVY, p. 278.]

The greatest superiority of all probably lay in the structural features of the newer German ships. For some years prior to the war Admiral von Tirpitz had devoted himself to the problem of under water protection, to localize the effect of torpedo and mine on the hull of a ship. To quote the words of von Tirpitz:[2]

[Footnote 2: MY MEMOIRS, Vol. I, p. 171.]

"We built a section of a modern ship by itself and carried out experimental explosions on it with

torpedo heads, carefully testing the result every time. We tested the possibility of weakening the force of the explosion by letting the explosive gases burst in empty compartments without meeting any resistance. We ascertained the most suitable steel for the different structural parts, and found further that the effect of the explosion was nullified if we compelled it to pulverize coal in any considerable quantity. This resulted in a special arrangement of the coal bunkers. We were then able to meet the force of the explosion ... by a strong, carefully constructed steel wall which finally secured the safety of the interior of the ship."

The only German armored ship that succumbed to the blow of a single torpedo was the *Pommern*, an old vessel, built before the fruits of these experiments were embodied in the German fleet. The labor of von Tirpitz was well justified by the results, as may be seen by the instantaneous fashion in which the three British battle cruisers went to the bottom, compared with the ability of the German battle cruisers to stand terrific pounding and yet stay afloat and keep going. According to the testimony of a German officer,[1] the *Lützow* was literally shot to pieces in the battle and even then it took three torpedoes to settle her. Actually she was sunk by opening her seacocks to prevent her possible capture. The remarkable ability of the battle cruiser *Göben*, in Turkish waters, to survive shell, mines, and torpedo, bears the same testimony, as does the *Mainz*, which, in the action of the Heligoland Bight had to be sunk by one of her own officers, as in the case of the *Lützow*. It is possible that Jellicoe assumed an inferiority of the British armor piercing shell because of this power of the German ships to stay afloat. But

photographs published after the armistice showed that British shells penetrated the 11-inch turret armor of the *Seydlitz* and the 13-inch of the *Derfflinger* with frightful effect. The difference was in the fact that they did not succeed in sinking those ships, which, after all is the chief object of a shell, and this must be attributed to better under-water construction.

[Footnote 1: Quoted in *Naval and Military Record*, Dec. 24, 1919, p. 822.]

The only criticism it seems possible to suggest on Scheer's tactics is the unwariness of his pursuit, which might so easily have led to the total destruction of the German fleet. Strangely enough, although a Zeppelin hovered over the British fleet at dawn of the day after the battle, no aircraft of any kind scouted ahead of the Germans the day before. In pursuing Beatty, Scheer had to take a chance, well aware that if the Grand Fleet were within reach, Beatty's wireless would bring it upon him. But Scheer was evidently perfectly willing to risk the encounter. Such criticism as arose in Germany—from Captain Persius, for example—centered on "Tirpitz's faulty constructional methods"; which, in the light of the facts of the battle would seem to be the very last thing to hit upon.

As for types and weapons it is clear that the armored cruisers served only as good targets and death traps. The British would have been better off if every armored cruiser had been left at home. The dominating feature of the story is the influence of the torpedo on Jellicoe's tactics. It is fair to say that it was the Parthian tactics of the German destroyer, both actual and potential, that saved the High Seas

Fleet and robbed the British of a greater Trafalgar. At every crisis in the battle it was either what the German destroyer did or might do that governed the British commander's maneuvers. At the time of deployment he formed on the farthest rather than on the nearest division because of what German destroyers might do. When the Grand Fleet swung away to the east and lost all contact with their enemy for the rest of the battle, it was because of a destroyer attack. At this time eleven destroyers accomplished the feat of driving 27 dreadnoughts from the field! Again, the pursuit was called off at nightfall because of the peril of destroyer attacks under cover of darkness, and finally Jellicoe decided not to risk an action the following morning because his capital ships had no screening forces against the torpedo of the enemy. It is worth noting in this connection that although the Admiralty were aware of the battle in progress, they held back the Harwich force of destroyers and light cruisers which would have proved a welcome reënforcement in pursuing the retreating fleet. The reason for this decision has never been published.

In connection with the important part played by the German destroyers at Jutland it is worth remarking that before the war it was the Admiralty doctrine that destroyers could not operate successfully by day, and they were accordingly painted black for night service. The German destroyers were painted gray. After Jutland the British flotillas also were painted the battleship gray.

Naturally the failure of the superior fleet to crush the inferior one aroused a storm of criticism, the most severe emanating from English naval writers. The sum and substance is the charge of overcaution

on the part of the British Commander in Chief. It is held that Jellicoe should have formed his battle line on his starboard instead of his port wing, thus turning toward the enemy and concentrating on the head of their column at once. Forming on the port division caused the battle fleet to swerve away from the enemy and open the range just at the critical moment of contact, leaving Beatty unsupported in his dash across the head of the enemy's line. It is said that the latter even sent a signal to the *Marlborough* for the battleships to fall in astern of him, and the failure to do so made his maneuver fruitless. Apparently this message was not transmitted to the flagship at the time. In answer Jellicoe explains in great detail that the preliminary reports received from Goodenough and others as to the position of the High Seas Fleet were so meager and conflicting that he could not form line of battle earlier than he did, and secondly that deploying on the starboard division at the moment of sighting the enemy would have thrown the entire battle fleet into confusion, blanketed their fire, and created a dangerous opening for torpedo attack from the destroyers at the head of the German column. On this point Scheer agrees with the critics. Deploying on the starboard division instead of the port, he says, "would have greatly impeded our movements and rendered a fresh attack on the enemy's line extremely difficult."

The second point of criticism rested on the turning away of the battleships at the critical point of the torpedo attack at 7.20, under cover of which the German battleships wheeled to westward and disappeared. Jellicoe's reply is that if he had swung to starboard, turning toward the enemy, he would have headed into streams of approaching torpedoes

under conditions of mist and smoke that were ideal for torpedo attack, and if he had maintained position in line ahead he would have courted heavy losses. In connection with this turn he calls attention to the fact that British light cruisers and destroyers could not be used to deliver a counter attack because, on account of the rapid changes of course and formation made by the battlefleet, they had been unable to reach their proper station in the van.

Thirdly, if conditions for night battle were too risky why did the Grand Fleet fail to keep sufficient touch with the enemy by means of its light flotillas so as to be informed of his movements and prevent his escape? There were frequent contacts during that short night, and the Germans were sighted steering southeast. The attacks made by British destroyers certainly threw the German line into confusion, and some of the light vessels were driven to the north, reaching German bases by way of the Baltic. Nevertheless the fleet succeeded in cutting through without serious loss. To this there seems to be no answer.

Lastly, to the query why Jellicoe did not seek another action in the morning, as originally intended, he replies that he discovered by directional wireless that the Germans were already safe between the mine fields and the coast, and that he could not safely proceed without his screening force of destroyers and light cruisers, which, after their night operations, were widely scattered. From German accounts, however, we find no mention of a shelter behind mine fields, but astonishment at the fact that they were permitted to go on their way unmolested. Morning found the two fleets only twenty miles apart, and the Germans had a half day's steaming

before they could reach port. They were in no condition to fight. The battleship *Ostfriesland* had struck a mine and had to be towed. The battle cruiser *Seydlitz* had to be beached to keep her from sinking, and other units were limping along with their gun decks almost awash.

Certainly the tactics of Jellicoe do not suggest those of Blake, Hawke, or Nelson. They do not fit Farragut's motto—borrowed from Danton[1] —"l'audace, encore l'audace, et toujours l'audace," or Napoleon's "frappez vite, frappez fort." War, as has been observed before, cannot be waged without taking risks. The British had a heavy margin to gamble on. As it happened, 23 out of the entire 28 battleships came out of the fight without so much as a scratch on their paint; and, after deployment, only one out of the battle line of 27 dreadnoughts received a single hit. This was the *Colossus*, which had four men wounded by a shell.

[Footnote 1: And borrowed by Danton from Cicero.]

The touchstone of naval excellence is Nelson. As Mahan has so ably pointed out, while weapons change principles remain. Dewey, in deciding to take the chances involved in a night entry of Manila Bay did so in answer to his own question, "What would Farragut do?" Hence in considering Jutland one may take a broader view than merely a criticism of tactics. In a word, does the whole conduct of the affair reveal the method and spirit of Nelson?

At Trafalgar there was no need for a deployment after the enemy was sighted because in the words of the famous Memorandum, "the order of sailing is to be the order of battle." The tactics to be followed

when the French appeared had been carefully explained by Nelson to his commanders. No signal was needed—except the fine touch of inspiration in "England expects every man to do his duty." In brief, the British fleet had been so thoroughly indoctrinated, and the plan was so simple, that there was no room for hesitation, uncertainty, or dependence on the flagship for orders at the last minute. It is hard to see evidence of any such indoctrination of the Grand Fleet before Jutland.

Again, Nelson was, by example and precept, constantly insisting on the initiative of the subordinate. "The Second in Command will ... have the entire direction of his line to make the attack upon the enemy, and to follow up the blow until they are captured or destroyed.... Captains are to look to their particular line as their rallying point. But in case signals can neither be seen nor perfectly understood, no captain can do very wrong if he places his ship alongside that of an enemy." At Jutland, despite the urgent signals of Beatty at two critical moments, neither Burney of the sixth division nor Jerram of the first felt free to act independently of the orders of the Commander in Chief. The latter tried, as Nelson emphatically did not, to control from the flagship every movement of the entire fleet.

Further, if naval history has taught anything it has established a point so closely related to the responsibility and initiative of the subordinate as to be almost a part of it; namely, a great fleet that fights in a single rigid line ahead never achieves a decisive victory. Blake, Tromp, and de Ruyter fought with squadrons, expecting—indeed demanding—initiative on the part of their flag officers. That was the period when great and decisive victories were won. The

close of the 17th century produced the "Fighting Instructions," requiring the unbroken line ahead, and there followed a hundred years of indecisive battles and bungled opportunities. Then Nelson came and revived the untrammeled tactics of the days of Blake with the added glory of his own genius. It appears that at Jutland the battleships were held to a rigid unit of fleet formation as in the days of the Duke of York or Admiral Graves. And concentration with a long line of dreadnoughts is no more possible to-day than it was with a similar line of two-decked sailing ships a century and a half ago.

Finally, in the matter of spirit, the considerations that swayed the movements of the Grand Fleet at all stages were apparently those of what the enemy might do instead of what might be done to the enemy, the very antithesis of the spirit of Nelson. It is no reflection on the personal courage of the Commander in Chief that he should be moved by the consideration of saving his ships. The existence of the Grand Fleet was, of course, essential to the Allied cause, and there was a heavy weight of responsibility hanging on its use. But again it is a matter of naval doctrine. Did the British fleet exist merely to maintain a numerical preponderance over its enemy or to crush that enemy—whatever the cost? If the battle of Jutland receives the stamp of approval as the best that could have been done, then the British or the American officer of the future will know that he is expected primarily to "play safe." But he will never tread the path of Blake, Hawke, or Nelson, the men who made the traditions of the Service and forged the anchors of the British Empire.

Thus the great battle turned out to be indecisive; in fact, it elated the Germans with a feeling of

success and depressed the British with a keen sense of failure. Nevertheless, the control of the sea remained in the hands of the English, and never again did the High Seas Fleet risk another encounter. The relative positions at sea of the two adversaries therefore remained unaltered.

On the other hand, if the British had destroyed the German fleet the victory would have been priceless. As Jervis remarked at Cape St. Vincent, "A victory is very essential to England at this hour." The spring of 1916 was an ebb point in Allied prospects. The Verdun offensive was not halted, the Somme drive had not yet begun, the Russians were beaten far back in their own territory, the Italians had retreated, and there was rebellion in Ireland. The annihilation of the High Seas Fleet would have reversed the situation with dramatic suddenness and would have at least marked the turning point of the war. Without a German battle fleet, the British could have forced the fighting almost to the very harbors of the German coast—bottling up every exit by a barrage of mines. The blockade, therefore, could have been drawn close to the coast defenses. Moreover, with the High Seas Fleet gone, the British fleet could have entered and taken possession of the Baltic, which throughout the war remained a German lake. By this move England would have threatened the German Baltic coast with invasion and extended her blockade in a highly important locality, cutting off the trade between Sweden and Germany. She would also have come to the relief of Russia, which was suffering terrible losses from the lack of munitions. Indeed it would have saved that ally from the collapse that withdrew her from the war. With no German "fleet in being" great numbers of workers in English industry

and vast quantities of supplies might have been transferred to the support of the army. The threat of invasion would have been removed, and the large army that was kept in England right up to the crisis of March, 1918,[1] would have been free to reenforce the army at the front. Finally, without the personnel of the German fleet there could have been no ruthless submarine campaign the year after, such as actually came so near to winning the war. Thus, while the German claim to a triumph that drove the British from the seas is ridiculous, it is equally so to argue, as the First Lord of the Admiralty did, that there was no need of a British victory at Jutland, that all the fruits of victory were gained as it was. The subsequent history of the war tells a different tale.

[Footnote 1: A quarter of a million men were sent from England at this time.]

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CHAPTER XVIII

THE WORLD WAR [*Continued*]: COMMERCE WARFARE

Interdiction of enemy trade has always been the great weapon of sea power; and hence, though mines, submarines, and the menace of the High Seas Fleet itself made a close blockade of the German coast impossible, Great Britain in the World War steadily extended her efforts to cut off Germany's intercourse with the overseas world. Germany, on the other hand, while unwilling or unable to take the risks of a contest for surface control of the sea, waged cruiser warfare on British and Allied commerce, first by surface vessels, and, when these were destroyed, by submarines. In the policies adopted by each belligerent there is an evident analogy to the British blockade and the French commerce destroying campaigns of the Napoleonic Wars. And just as in the earlier conflict British sea power impelled Napoleon to a ruinous struggle for the domination of Europe, so in the World War, though in a somewhat different fashion, the blockade worked disaster for Germany.

"The consequences of the blockade," writes the German General von Freytag-Loringhoven, "showed themselves at once. Although we succeeded in establishing our war economics by our internal strength, yet the unfavorable state of the world economic situation was felt by us throughout the war. That alone explains why our enemies found ever fresh possibilities of resistance, because the sea stood open to them, and why victories which would

otherwise have been absolutely decisive, and the conquest of whole kingdoms, did not bring us nearer peace."

For each group of belligerents, indeed, the enemy's commerce warfare assumed a vital significance. "No German success on land," declares the conservative British Annual Register for 1919, "could have ruined or even very gravely injured the English-speaking powers. The success of the submarine campaign, on the other hand, would have left the United States isolated and have placed the Berlin Government in a position to dominate most of the rest of the world." "The war is won for us," declared General von Hindenburg on July 2, 1917, "if we can withstand the enemy attacks until the submarine has done its work."

Commerce warfare at once involves a third party, the neutral; and it therefore appears desirable, before tracing the progress of this warfare, to outline briefly the principles of international law which, by a slow and tortuous process, have grown up defining the respective rights of neutrals and belligerents in naval war. *Blockade* is among the most fundamental of these rights accorded to the belligerent, upon the conditions that the blockade shall be limited to enemy ports or coasts, confined within specified limits, and made so effective as to create evident danger to traffic. It assumes control of the sea by the blockading navy, and, before the days of mines and submarines, it was enforced by a cordon of ships off the enemy coast. A blockade stops direct trade or intercourse of any kind.

Whether or not a blockade is established, a belligerent has the right to attempt the prevention of

trade in contraband. A neutral nation is under no obligation whatever to restrain its citizens from engaging in this trade. In preventing it, however, a belligerent warship may stop, visit, and search any merchant vessel on the high seas. If examination of the ship's papers and search show fraud, contraband cargo, offense in respect to blockade, enemy ownership or service, the vessel may be taken as a prize, subject to adjudication in the belligerent's prize courts. The right of merchant vessels to carry defensive armament is well established; but resistance justifies destruction. Under certain circumstances prizes may be destroyed at sea, after removal of the ship's papers and full provision for the safety of passengers and crew.

The Declaration of London,[1] drawn up in 1909, was an attempt to restate and secure general acceptance of these principles, with notable modifications. Lists were drawn up of *absolute* contraband (munitions, etc., adapted obviously if not exclusively for use in war), *conditional* contraband (including foodstuffs, clothing, rolling stock, etc., susceptible of use in war but having non-warlike uses as well), and free goods (including raw cotton and wool, hides, and ores). The most significant provision of the Declaration was that the doctrine of *continuous voyage* should apply only to absolute contraband. This doctrine, established by Great Britain in the French wars and expanded by the United States in the American Civil War, holds that the ultimate enemy destination of a cargo determines its character, regardless of transshipment in a neutral port and subsequent carriage by sea or land. The Declaration of London was never ratified by Great Britain, and was observed for only a brief period in

the first months of the war. Had it been ratified and observed, Germany would have been free to import all necessary supplies, other than munitions, through neutral states on her frontiers.

[Footnote 1: Printed in full in INTERNATIONAL LAW TOPICS of the U. S. Naval War College, 1910, p. 169 ff.]

The Blockade of Germany

Unable to establish a close blockade, and not venturing at once to advance the idea of a "long range" blockade, England was nevertheless able to impose severe restrictions upon Germany by extending the lists of contraband, applying the doctrine of continuous voyage to both absolute and conditional contraband, and throwing upon the owners of cargoes the burden of proof as to destination. Cotton still for a time entered Germany, and some exports were permitted. But on March 1, 1915, in retaliation for Germany's declaration of a "war area" around the British Isles, Great Britain asserted her purpose to establish what amounted to a complete embargo on German trade, holding herself free, in the words of Premier Asquith, "to detain and take into port ships carrying goods of presumed enemy destination, ownership, or origin." In a note of protest on March 30, the United States virtually recognized the legitimacy of a long-range blockade—an innovation of seemingly wide possibilities—and confined its objections to British interference with lawful trade between neutrals, amounting in effect to a blockade of neutral ports.

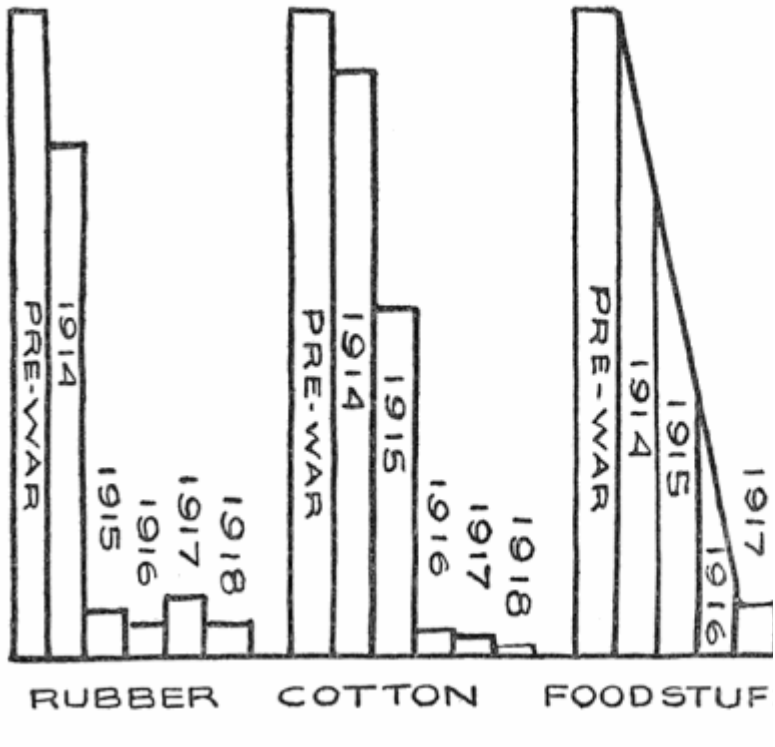
As a matter of fact, in spite of British efforts, there had been an immense increase of indirect trade with Germany through neutrals. While American exports

to Germany in 1915 were $154,000,000 less than in 1913, and in fact practically ceased altogether, American exports to Holland and the Scandinavian states increased by $158,000,000. This trade continued up to the time when the United States entered the war, after which all the restrictions which England had employed were given a sharper application. By a simple process of substitution, European neutrals had been able to import commodities for home use, and export their own products to Germany. Now, in order to secure supplies at all, they were forced to sign agreements which put them on rations and gave the Western Powers complete control of their exports to Germany.

The effect of the Allied blockade upon Germany is suggested by the accompanying chart. In the later stages of the war it created a dearth of important raw materials, crippled war industries, brought the country to the verge of starvation, and caused a marked lowering of national efficiency and morale.

Germany protested vigorously to the United States for allowing her foodstuffs to be shut out of Germany while at the same time shipping to England vast quantities of munitions. Throughout the controversy, however, Great Britain profited by the fact that while her methods caused only financial injury to neutrals, those employed by Germany destroyed or imperiled human lives.

The Submarine Campaign



From *The Blockade of Germany*, Alonzo E. T

EFFECTS OF THE BLOCKA

Decreased supply of commodities in

The German submarine campaign may be dated from February 18, 1915, when Germany, citing as a precedent Great Britain's establishment of a military area in the North Sea, proclaimed a *war zone* "in the waters around Great Britain and Ireland, including the whole English Channel," within which enemy merchant vessels would be sunk without assurance of safety to passengers or crew. Furthermore, as a means of keeping neutrals out of British waters, Germany declared she would assume no

responsibility for destruction of neutral ships within this zone. What this meant was to all intents and purposes a "paper" submarine blockade of the British Isles. Its illegitimacy arose from the fact that it was conducted surreptitiously over a vast area, and was only in the slightest degree effective, causing a destruction each month of less than one percent of the traffic. Had it been restricted to narrow limits, it would have been still less effective, owing to the facility of countermeasures in a small area.

Determined, however, upon a spectacular demonstration of its possibilities, Germany first published danger notices in American newspapers, and then, on May 7, 1915, sank the unarmed Cunard liner *Lusitania* off the Irish coast, with a loss of 1198 lives, including 102 Americans. In spite of divided American sentiment and a strong desire for peace, this act came little short of bringing the United States into the war. Having already declared its intention to hold Germany to "strict accountability," the United States Government now stated that a second offense would be regarded as "deliberately unfriendly," and after a lengthy interchange of notes secured the pledge that "liners will not be sunk without warning and without safety of the lives of non-combatants, provided that the liners do not try to escape or offer resistance." Violations of this pledge, further controversies, and increased friction with neutrals marked the next year or more, during which, however, sinkings did not greatly exceed the level of about 150,000 tons a month already attained.

During this period Allied countermeasures were chiefly of a defensive character, including patrol of coastal areas, diversion of traffic from customary routes, and arming of merchantmen. This last

measure, making surface approach and preliminary warning a highly dangerous procedure for the submarine, led Germany to the announcement that, after March 1, 1916, all armed merchant vessels would be torpedoed without warning. But how were U-boat commanders to distinguish between enemy and neutral vessels? Between vessels with or without guns? The difficulty brings out clearly the fact that while the submarines made good pirates, they were hampered in warfare on legitimate lines.

Germany redoubled U-boat activities to lend strength to her peace proposals at the close of 1916, and when these failed she decided to disregard altogether the cobwebs of legalism that had hitherto hindered her submarine war. On February 1, 1917, she declared unrestricted warfare in an immense barred zone within limits extending from the Dutch coast through the middle of the North Sea to the Faroe Islands and thence west and south to Cape Finisterre, and including also the entire Mediterranean east of Spain. An American ship was to be allowed to enter and leave Falmauth once a week, and there was a crooked lane leading to Greece.



GERMAN BARREL

British mined area and North

In thus announcing her intention to sink all ships

on sight in European waters, Germany burned her bridges behind her. She staked everything on this move. Fully anticipating the hostility of the United States, she hoped to win the war before that country could complete its preparations and give effective support to the Allies. General von Hindenburg's statement has already been quoted. It meant that the army was to assume the defensive, while the navy carried out its attack on Allied communications. Admiral von Capelle, head of the German Admiralty, declared that America's aid would be "absolutely negligible." "My personal view," he added, "is that the U-boat will bring peace within six months."

As it turned out, Germany's disregard of neutral rights in 1917, like the violation of Belgium in 1914, reacted upon her and proved the salvation of the Western Powers. After the defection of Russia, France was in imperative need of men. Great Britain needed ships. Neither of these needs could have been supplied save by America's throwing her utmost energies into active participation in the war. This was precisely the result of the proclamation of Feb. 1, 1917. The United States at once broke off diplomatic relations, armed her merchant vessels in March, and on April 6 declared a state of war.

Having traced the development of submarine warfare to this critical period, we may now turn to the methods and weapons employed by both sides at a time when victory or defeat hinged on the outcome of the war at sea.

Germany's submarine construction and losses appear in the following table from official German sources, the columns showing first the total number built up to the date given, next the total losses to

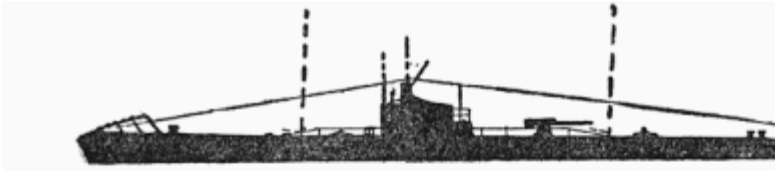
date, and finally the remainder with which Germany started out at the beginning of each year.

After 1916 Germany devoted the facilities of her shipyards entirely to submarine construction, and demoralized the surface fleet to secure personnel. Of the entire number built, not more than a score were over 850 tons. The U C boats were small mine-layers about 160 feet in length, with not more than two weeks' cruising period. The U B'g were of various sizes, mostly small, and some of them were built in sections for transportation by rail. The U boats proper, which constituted the largest and most important class, had a speed of about 16 knots on the surface and 9 knots submerged, and could remain at sea for a period of 5 or 6 weeks, the duration of the cruise depending chiefly upon the supply of torpedoes. In addition there were a half dozen large submarine merchantmen of the type of the *Deutschland*, which made two voyages to America in 1916; and a similar number of big cruisers of 2000 tons or more were completed in 1918, mounting two 6-inch guns and capable of remaining at sea for several months. The 372 boats built totaled 209,000 tons and had a personnel of over 11,000 officers and men. There were seldom more than 20 or 30 submarines in active operation at one time. One third of the total number were always in port, and the remainder in training.

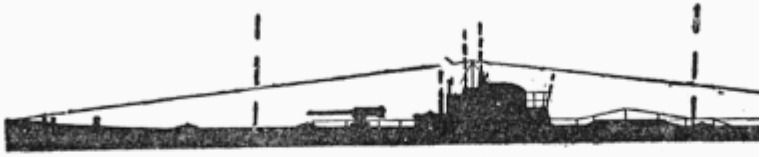
	Boats built	Losses	Remainder (On Jan. 1 of year following)
End of 1914	31	5	26
1915	93	25	68
1916	188	50	138

1917	291	122	169
1918	372	202	170

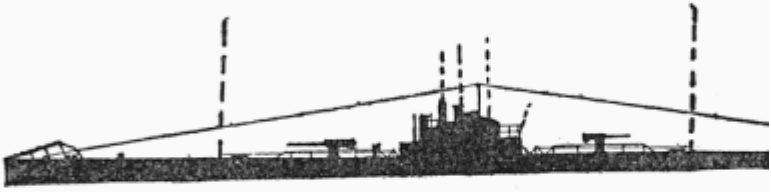
It is evident from her limited supply of submarines at the outbreak of war that Germany did not contemplate their use as commerce destroyers. To the Allied navies also, in spite of warnings from a few more far-sighted officers, their use for this purpose came as a complete surprise. New methods had to be devised, new weapons invented, new types of ship built and old ones put to uses for which they were not intended—in short, a whole new system of warfare inaugurated amidst the preoccupations of war. As usual in such circumstances, the navy taking the aggressive with a new weapon gained a temporary ascendancy, until effective counter-measures could be contrived. It is easy to say that all this should have been foreseen and provided for, but it is a question to what extent preparations could profitably have been made before Germany began her campaign. It has already been pointed out in the chapter preceding that, had the German fleet been destroyed at Jutland, subsequent operations on the German coast might have made the submarine campaign impossible, and preparations unnecessary.



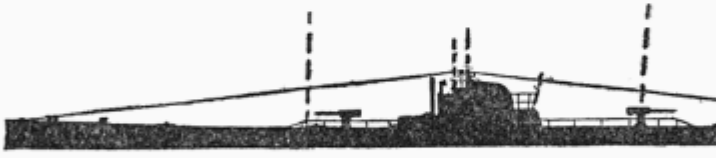
U 71-80 OCEAN-GOING MINE-LAYERS
U B 48-149
U C 80 CLASS OF MINE-LAYERS



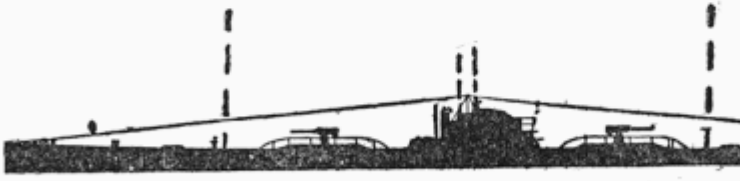
OCEAN-GOING TYPES U 30 TO U 39



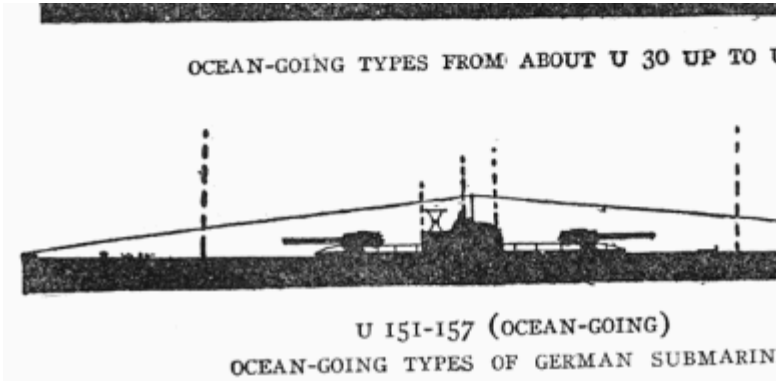
OCEAN-GOING TYPES FROM ABOUT U 51 TO U 7



OCEAN-GOING TYPES FROM U 19 TO U 28



OCEAN-GOING TYPES FROM ABOUT U 30 UP TO



Anti-Submarine Tactics

Of the general categories of anti-submarine tactics, —detection, evasion, and destruction—it was naturally those of evasion that were first employed. Among these may be included suspension of sailings upon warning of a submarine in the vicinity, diversion of traffic from customary routes, camouflage, and zigzag courses to prevent the enemy from securing favorable position and aim. The first method was effective only at the expense of a severe reduction of traffic, amounting in the critical months of 1917 to 40 per cent of a total stoppage. The second sometimes actually aided the submarine, for in confined areas such as the Mediterranean it was likely to discover the new route and reap a rich harvest. Camouflage was discarded as of slight value; but shifts of course were employed to advantage by both merchant and naval vessels throughout the war.

Methods of detection depended on both sight and sound. Efficient lookout systems on shipboard, with men assigned to different sectors so as to cover the entire horizon, made it possible frequently to detect a periscope or torpedo wake in time to change course, bring guns to bear, and escape destruction. According to a British Admiralty estimate, in case a

submarine were sighted the chances of escape were seven to three, but otherwise only one to four. Aircraft of all kinds proved of great value in detecting the presence of U-boats, as well as in attacking them. Hydrophones and other listening devices, though at first more highly perfected by the enemy, were so developed during the war as to enable patrol vessels to discover the presence and even determine the course and speed of a submerged foe. Along with these devices, a system of information was organized which, drawing information from a wide variety of sources, enabled Allied authorities to trace the cruise of a U-boat, anticipate its arrival in a given locality, and prophesy the duration of its stay.

Among methods of destruction, the mounting of guns on merchantmen was chiefly valuable, as already suggested, because of its effect in forcing submarines to resort to illegal and barbarous methods of warfare. Hitherto, submarines had been accustomed to operate an the surface, board vessels, and sink them by bombs or gunfire. Visit and search, essential in order to avoid injury to neutrals, was now out of the question, for owing to the surface vulnerability of the submarine it might be sent to the bottom by a single well-directed shot. In brief, the guns on the merchant ship kept submarines beneath the surface, forced them to draw upon their limited and costly supply of torpedoes, and hindered them from securing good position and aim for torpedo attack.

Much depended, of course, upon the range of the ship's guns and the size and experience of the gun-crews. When the United States began arming her ships in March, 1917, she was able to put enough

trained men aboard to maintain lookouts and man guns both night and day. A dozen or more exciting duels ensued between ships and U-boats before the latter learned that such encounters did not repay the risks involved. On October 19, 1917, the steamer *J. L. Luckenbach* had a four-hour running battle with a submarine in which the ship fired 202 rounds and the pursuer 225. The latter scored nine hits, but was at last driven off by the appearance of a destroyer. To cite another typical engagement, the *Navajo*, in the English Channel, July 4, 1917, was attacked first by torpedo and then by gunfire. The 27th shot from the ship hit the enemy's conning tower and caused two explosions. "Men who were on deck at the guns and had not jumped overboard ran aft. The submarine canted forward at an angle of almost 40 degrees, and the propeller could be plainly seen lashing the air."[1]

[Footnote 1: For more detailed narratives of this and other episodes of the submarine campaign, see Ralph D. Payne, THE FIGHTING FLEETS, 1918.]

In coastal waters where traffic converged, large forces of destroyers and other craft were employed for purposes of escort, mine sweeping, and patrol. Yet, save as a means of keeping the enemy under water and guarding merchant ships, these units had only a limited value owing to the difficulty of making contact with the enemy. During the later stages of the war destroyers depended chiefly upon the depth bomb, an invention of the British navy, which by means of the so-called "Y guns" could be dropped in large numbers around the supposed location of the enemy. It was in this way that the United States Destroyers *Fanning* and *Nicholson*, while engaged as convoy escorts, sank the *U-58* and

captured its crew.

The "mystery" or "Q" ships (well-armed vessels disguised as harmless merchantmen) were of slight efficacy after submarines gave up surface attack. In fact, it was the submarine itself which, contrary to all pre-war theories, proved the most effective type of naval craft against its own kind. Whereas fuel economy compelled German submarines to spend as much time as possible on the surface, the Allied under-water boats, operating near their bases, could cruise awash or submerged and were thus able to creep up on the enemy and attack unawares. According to Admiral Sims, Allied destroyers, about 500 in all, were credited with the certain destruction of 34 enemy submarines; yachts, patrol craft, etc., over 3000 altogether, sank 31; whereas about 100 Allied submarines sank probably 20.[1] Since 202 submarines were destroyed, this may be an underestimate of the results accomplished by each type, but it indicates relative efficiency. Submarines kept the enemy beneath the surface, led him to stay farther away from the coast, and also, owing to the disastrous consequences that might ensue from mistaken identity, prevented the U-boats from operating in pairs. The chief danger encountered by Allied submarines was from friendly surface vessels. On one occasion an American submarine, the AL-10, approaching a destroyer of the same service, was forced to dive and was then given a bombardment of depth charges. This bent plates, extinguished lights, and brought the submarine again to the surface, where fortunately she was identified in the nick of time. The two commanders had been roommates at Annapolis.

[Footnote 1: THE VICTORY AT SEA, *World's Work*, May, 1920, p.

56.]

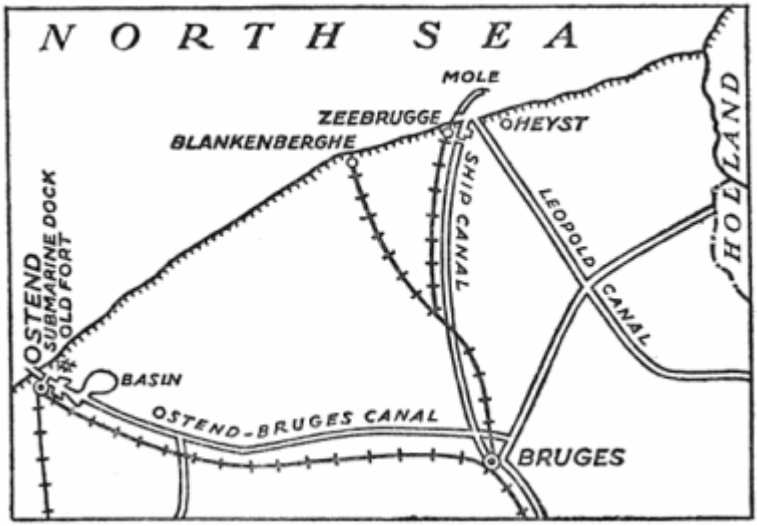
Work of the United States Navy

Having borne the brunt of the naval war for three years, the British navy welcomed the reënforcements which the United States was able to contribute, and shared to the utmost the experience already gained. On May 3, 1917, the first squadron of 6 American destroyers arrived at Queenstown, and was increased to 50 operating in European waters in November, and 70 at the time of the armistice. A flotilla of yachts, ill adapted as they were for such service, did hazardous duty as escorts in the Bay of Biscay; and a score of submarines crossed the Atlantic during the winter to operate off Ireland and in the Azores. Five dreadnoughts under Admiral Rodman from the U. S. Atlantic fleet became a part of the Grand Fleet at Scapa Flow.

Probably the most notable work of the American navy was in projects where American manufacturing resources and experience in large-scale undertakings could be brought to bear. In four months, from July to November, 1917, the United States Navy constructed an oil pipe line from the west to the east coast of Scotland, thus eliminating the long and dangerous northern circuit. Five 14-inch naval guns, on railway mountings, with a complete train of 16 cars for each gun, were equipped by the navy, manned entirely with naval personnel, and were in action in France from August, 1918, until the armistice, firing a total of 782 rounds on the German lines of communication, at ranges up to 30 miles.

The American proposal of a mine barrage across the entrance to the North Sea from Scotland to

Norway at first met with slight approval abroad, so unprecedented was the problem of laying a mine-field 230 miles in length, from 15 to 30 miles in width, and extending at least 240 feet downward in waters the total depth of which was 400 or more feet. Even the mine barrier at the Straits of Dover had proved ineffective owing to heavy tides, currents, and bad bottom conditions, until it was strengthened by Admiral Keyes in 1918. By employing a large type of mine perfected by the United States Naval Bureau of Ordnance, it was found possible, however, to reduce by one-third the number of mines and the amount of wire needed for the North Sea Barrage. The task was therefore undertaken, and completed in the summer of 1918. Out of a total of 70,000 mines, 56,570, or about 80 per cent, were planted by American vessels. The barrage when completed gave an enemy submarine about one chance in ten of getting through. According to reliable records, it accomplished the destruction or serious injury of 17 German submarines, and by its deterrent effect, must have practically closed the northern exit to both under-water and surface craft.



OSTEND-ZEEBRUGGE AREA

The Attack on Zeebrugge and Ostend

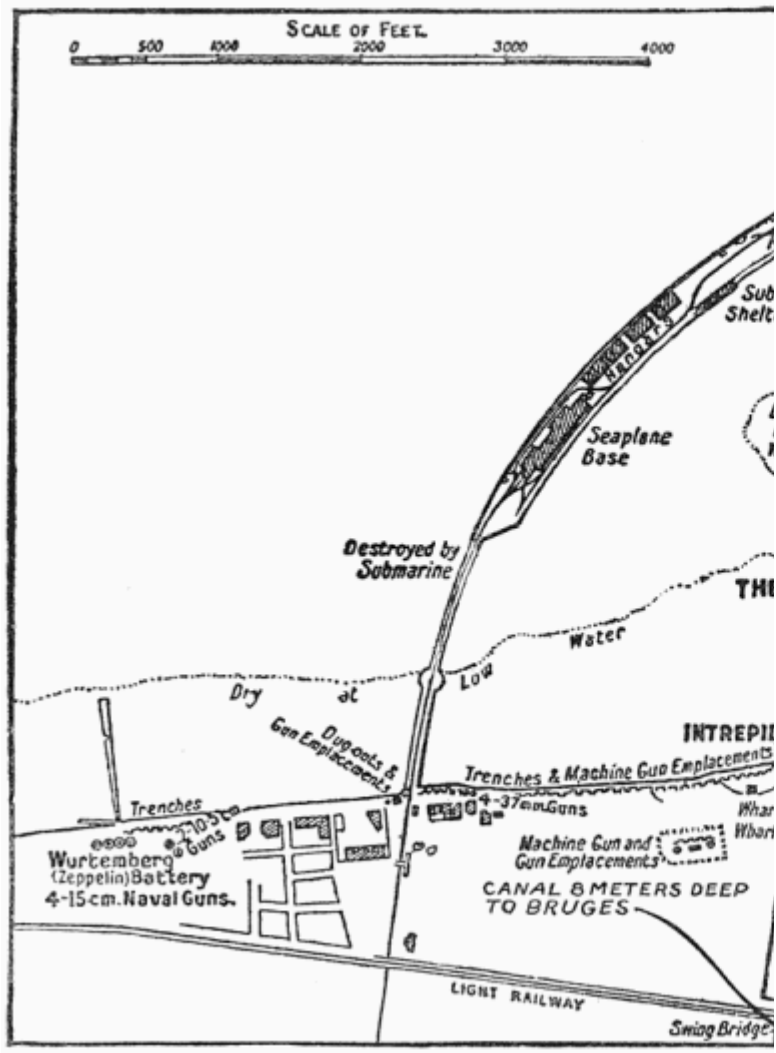
At the Channel exit of the North Sea, a vigorous blow at the German submarine nests on the Belgian coast was finally struck on April 22-23, 1918, by the Dover Force under Vice Admiral Roger Keyes, in one of the most brilliant naval operations of the war. Of the two Belgian ports, Ostend and Zeebrugge, the latter was much more useful to the Germans because better protected, less exposed to batteries on the land front, and connected by a deeper canal with the main base 8 miles distant at Bruges. It was planned, however, to attack both ports, with the specific purpose of sinking 5 obsolete cruisers laden with concrete across the entrances to the canals. The operation required extensive reconstruction work on the vessels employed, a thorough course of training for personnel, suitable conditions of atmosphere, wind, and tide, and execution of complicated

movements in accordance with a time schedule worked out to the minute.

At Ostend the attack failed owing to a sudden shift of wind which blew the smoke screen laid by motor boats back upon the two block ships, and so confused their approach that they were stranded and blown up west of the entrance.

At Zeebrugge, two of the three block ships, the *Iphigenia* and the *Intrepid*, got past the heavy guns on the mole, through the protective nets, and into the canal, where they were sunk athwart the channel by the explosion of mines laid all along their keels. To facilitate their entrance, the cruiser *Vindictive* (Commander Alfred Carpenter), fitted with a false deck and 18 brows or gangways for landing forces, had been brought up 25 minutes earlier—to be exact, at a minute past midnight—along the outer side of the high mole or breakwater enclosing the harbor. Here, in spite of a heavy swell and tide, she was held in position by the ex-ferryboat *Daffodill*, while some 300 or 400 bluejackets and marines swarmed ashore under a violent fire from batteries and machine guns and did considerable injury to the works on the mole. Fifteen minutes later, an old British submarine was run into a viaduct connecting the mole with the shore and there blown up, breaking a big gap in the viaduct. Strange to say, the *Vindictive* and her auxiliaries, after lying more than an hour in this dangerous position, succeeded in taking aboard all survivors from the landing party and getting safely away. Motor launches also rescued the crews of the blockships and the men—all of them wounded—from the submarine. One British destroyer and two motor boats were sunk, and the casualties were 176 killed, 412 wounded, and 49 missing. For a considerable

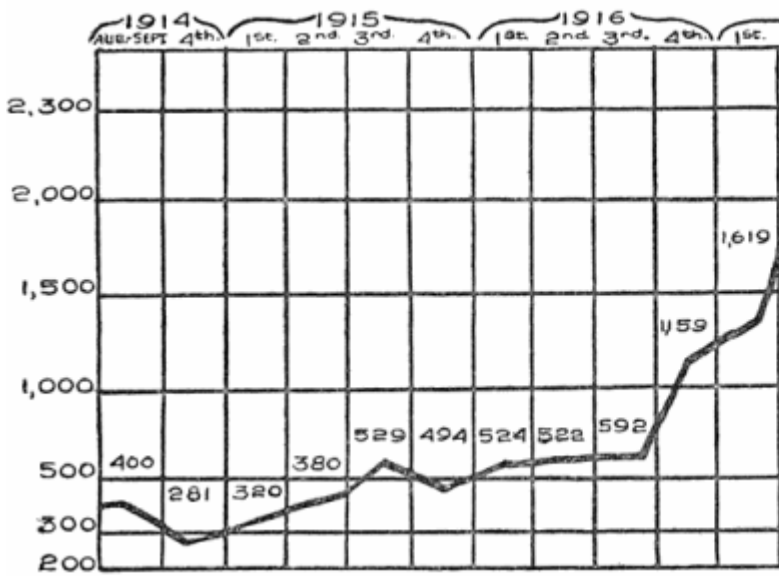
period thereafter, all the larger German torpedo craft remained cooped up at Bruges, and the Zeebrugge blockships still obstructed the channel at the end of the war.



ZEEBRUGGE

The Convoy System

Of all the anti-submarine measures employed, prior to the North Sea Barrage and the Zeebrugge attack, the adoption of the convoy system was undoubtedly the most effective in checking the loss of tonnage at the height of the submarine campaign. Familiar as a means of commerce protection in previous naval wars, the late adoption of the convoy system in the World War occasioned very general surprise. It was felt by naval authorities, however, that great delay would be incurred in assembling vessels, and in restricting the speed of all ships of a convoy to that of the slowest unit. Merchant captains believed themselves unequal to the task of keeping station at night in close order, with all lights out and frequent changes of course, and they thought that the resultant injuries would be almost as great as from submarines. Furthermore, so long as a large number of neutral vessels were at sea, it appeared a very doubtful expedient to segregate merchant vessels of belligerent nationality and thus distinguish them as legitimate prey.



BRITISH, ALLIED AND NEUTRAL MERCHANT SHIPS DES

(Figures in thou

The accompanying chart shows the merchant shipping captured or d inflicted almost entirely by submarines, either by mine laying or by t total loss during the war was 14,820,000 gross tons, of which 8,918,0 354,450 tons. During the same period the world's ship construction an put into Allied service totalled 2,393,000 tons, so that the net loss at th

But in April, 1917, the situation was indeed desperate. The losses had become so heavy that of every 100 ships leaving England it was estimated that 25 never returned.[1] The American commander in European waters, Admiral Sims, reports Admiral Jellicoe as saying at this time, "They will win unless we can stop these losses—and stop them soon."[2] Definitely adopted in May following, the convoy system was in general operation before the end of the summer, with a notable decline of sinkings in both the Mediterranean and the Atlantic. The following table, based on figures from the Naval

Annual for 1919, indicates the number of vessels sunk for each submarine destroyed. It shows the decreased effectiveness of submarine operations after September 1, 1917, which is taken as the date when the convoy system had come into full use, and brings out the crescendo of losses in 1917.

[Footnote 1: Brassey's NAVAL ANNUAL, 1919.]

[Footnote 2: *World's Work*, Sept., 1919.]

	Vessels sunk per submarine destroyed	Total No. sunk	
Aug. 1, 1914-Feb., 1915	10.4		69 ships sunk, almost entirely by surface cruisers.
Feb. 1, 1915-Feb. 1, 1917	48	544 (two years)	Half by torpedo; 148 without warning; 3,066 lives lost.
Feb. 1, 1917-Sept. 1, 1917	67	736 (7 months)	572 by torpedo; 595 (69%) with out warning.

Sept. 1, 1917-April 1, 1918	20.2	548 (7 months)	448 (82%) without warning.
April 1, 1918-Nov. 1, 1918	12	252 (7 months)	239 (91%) without warning.

From July 26, 1917, to October 26, 1918, 90,000 vessels were convoyed, with a total loss from the convoys of 436, or less than half of one per cent. The convoy system forced submarines to expose themselves to the attacks of destroyer escorts, or else to work close in shore to set upon vessels after the dispersion of the convoy. But when working close to the coast they were exposed to Allied patrols and submarines.

Testifying before a German investigation committee, Captain Bartenbach, of the V-boat section of the German Admiralty, gave the chief perils encountered by his boats as follows: (1) mines, (2) Allied submarines, which "destroyed a whole series of our boats," (3) aircraft of all types, (4) armed merchantmen, (5) hydrophones and listening devices. Admiral Capelle in his testimony referred to the weakening of their efforts due to "indifferent material and second-rate crews."

Transport Work

Dependent in large measure upon the anti-submarine campaign for its safety and success, yet in itself an immense achievement, the transport of over 2,000,000 American troops to France must be

regarded as one of the major naval operations of the war. Of these forces 48% were carried in British, and 43% in American transports. About 83% of the convoy work was under the protection of American naval vessels.

The transportation work of the British navy, covering a longer period, was, of course, on a far greater scale. Speaking in Parliament on October 29, 1917, Premier Lloyd George indicated the extent of this service as follows: "Since the beginning of the war the navy has insured the safe transportation to the British and Allied armies of 13,000,000 men, 12,000,000 horses, 25,000,000 tons of explosives and supplies, and 51,000,000 tons of coal and oil. The loss of men out of the whole 13,000,000 was 3500, of which only 2700 were lost through the action of the enemy. Altogether 130,000,000 tons have been transported by British ships." These figures, covering but three years of the war, are of significance chiefly as indicating the immense transportation problems of the British and Allied navies and the use made of sea communications.

These three main Allied naval operations—the blockade of Germany, the anti-submarine campaign, and the transportation of American troops to France—were unquestionably decisive factors in the war. Failure in any one of them would have meant victory for Germany. The peace of Europe, it is true, could be achieved only by overcoming Germany's military power on land. A breakdown there, with German domination of the Continent, would have created a situation which it is difficult to envisage, and which very probably would have meant a peace of compromise and humiliation for England and America. It is obvious, however, that, but for the

blockade, Germany could have prolonged the war; but for American reënforcements, France would have been overrun; but for the conquest of the submarine, Great Britain would have been forced to surrender.

In the spring of 1918 Germany massed her troops on the western front and began her final effort to break the Allied lines and force a decision. With supreme command for the first time completely centralized under Marshal Foch, and with the support of American armies, the Allies were able to hold up the enemy drives, and on July 18 begin the forward movement which pushed the Germans back upon their frontiers. Yet when the armistice was signed on November 11, the German armies still maintained cohesion, with an unbroken line on foreign soil. Surrender was made inevitable by internal breakdown and revolution, the first open manifestations of which appeared among the sailors of the idle High Seas Fleet at Kiel.

On November 21, 1918, this fleet, designed as the great instrument for conquest of world empire, and in its prime perhaps as efficient a war force as was ever set afloat, steamed silently through two long lines of British and Allied battleships assembled off the Firth of Forth, and the German flags at the mainmasts went down at sunset for the last time.

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CHAPTER XIX

CONCLUSION

The brief survey of sea power in the preceding chapters has shown that the ocean has been the highway for the march of civilization and empire. Crete in its day became a great island power and distributed throughout the Mediterranean the wealth and the arts of its own culture and that of Egypt. In turn, Phœnicia held sway on the inland sea, and though creating little, she seized upon and developed the material and intellectual resources of her neighbors, and carried them not only to the corners of the Mediterranean, but far out on the unknown sea. Later when Phœnicia was subject to Persia, Athens by her triremes saved the growing civilization of Greece, and during a brief period of glory planted the seeds of Greek, as opposed to Asiatic culture, on the islands and coasts of the Ægean. After Athens, Carthage inherited the trident, and in turn fell before the energy of a land power, Rome. And as the Roman Empire grew to include practically all of the known world, every waterway, river and ocean, served to spread Roman law, engineering, and ideals of practical efficiency, at the same time bringing back to the heart of the Empire not only the products of the colonies, but such impalpable treasures as the art, literature, and philosophy of Greece. This was the story of the sea in antiquity.

After the dissolution of the Roman empire, as Christian peoples were struggling in blood and darkness, a great menace came from Arabia, the Saracen invasion, which was checked successfully and repeatedly by the navy of Constantinople. To this, primarily, is due the preservation of the Christian ideal in the world. Later, the cities of Italy began to reëstablish sea commerce, which had been for centuries interrupted by pirates. Venice gained the ascendancy, and Venetian ships carried the Crusading armies during the centuries when western peoples went eastward to fight for the Cross and brought back new ideas they had learned from the Infidels. Then there arose a new Mohammedan threat, the Turk, determined like the earlier Saracen to conquer the world for the Crescent. Constantinople, betrayed by Christian nations, fell, Christian peoples of the Levant were made subject to the Turk, and thereafter till our day the Ægean was a Turkish lake. About the same time a new Mohammedan sea power arose in the Moors of the African coast, and for a century and more the Mediterranean was a no-man's land between the rival peoples and the rival religions.

Meanwhile the trade with the East by caravan routes to the Arabian Gulf had been stopped by the presence of the Turk. To reach the old markets, therefore, new routes had to be found and there came the great era of discovery. The new world was only an accidental discovery in a search for the westward route to Asia. The claims of Spain to this new region called forth her fleets of trading ships. But the lure of the West attracted the energies of the English also, and England and Spain clashed. As Spain became more and more dependent on her

western colonies for income, and yet failed to establish her ascendancy over the Atlantic routes, she declined in favor of her enemies, England and Holland. The latter country, being dependent on the sea for sustenance, early captured a large part of the world's carrying trade, especially in the Mediterranean and the East. Her rich profits excited the envy and rivalry of the English, and in consequence, after three hard-fought naval wars, the scepter of the sea passed to England. The subsequent wars between England and France served only to strengthen England's control of trade routes and extend her colonial possessions; with one notable exception, when France, denying to her rival the control of the sea at a critical juncture in the American Revolution, deprived her of her richest and most extensive colony. It was primarily England with her navy that broke the power of Napoleon in the subsequent conflict, and throughout a century of peace the spread of English speech and institutions has extended to the uttermost parts of the world. One power in our day challenged Britain's control of the sea—now even more essential to her security than it was in the 17th century to that of Holland—and the World War was the consequence.

In all this story it is interesting to note that insularity in position is the reverse of insularity in fact. Crete touched the far shores of the Mediterranean because she was an island and her people were forced upon the sea. Similarly, Phœnicia, driven to sea by mountains and desert at her back, spread her sails beyond the Pillars of Hercules. And England, hemmed in by the Atlantic, has carried her goods and her language to every nook and cranny of the earth. Thus the ocean has

served less to separate than to bring together. As a common highway it has not only excited quarrels, but established common interests between nations. Special agreements governing the suppression of piracy and the slave trade, navigation regulations and the like, have long since brought nations together in peace on a common ground. It has also gone far to create international law for the problems of war. Rules governing blockade, contraband, and neutral rights have been agreed upon long since. But, as every war has proved, international law has needed a higher authority to enforce its rules in the teeth of a powerful belligerent. To remedy this defect is one of the purposes of a League of Nations.

Such has been the significance of the sea. The nations who have used it have made history and have laid the rest of the world under their dominion intellectually, commercially, and politically. Indeed, the story of the sea is the history of civilization.

At the conclusion of this survey, it is appropriate to pause and summarize what is meant by the term "sea power." It is a catch phrase, made famous by Mahan and glibly used ever since. What does sea power mean? What are its elements?

Obviously it means, in brief, a nation's ability to enforce its will upon the sea. This means a navy superior to those of its enemies. But it means also strategic bases equipped for supplying a fleet for battle or offering refuge in defeat. To these bases there must run lines of communication guarded from interruption by the enemy. Imagine, for instance, the Suez or the Panama Canal held by a hostile force, or a battlefleet cut off from its fuel supply of coal or oil.

The relation of shipping to sea power is not what it was in earlier days. Merchantmen are indeed still useful in war for transport and auxiliary service, but it is no longer true that men in the merchant service are trained for man-of-war service. The difference between them has widened as the battleship of to-day differs from a merchantman of to-day. Nor can a merchantship be transformed into a cruiser, as in the American navy of a hundred years ago. The place of shipping in sea power is therefore subsidiary. In fact, unless a nation can control the sea, the amount of its wealth dispersed in merchantmen is just so much loss in time of war.

The major element in sea power is the fleet, but possession of the largest navy is no guarantee of victory or even of control of the sea. Size is important, but it is an interesting fact that most of the great victories in naval history have been won by a smaller fleet over a larger. The effectiveness of a great navy depends first on its quality, secondly, on how it is handled, and thirdly, on its power of reaching the enemy's communications.

The quality of a navy is two-fold, material and personal. In material, the great problem of modern days is to keep abreast of the time. The danger to a navy lies in conservatism and bureaucratic control. There is always the chance that a weaker power may defeat the stronger, not by using the old weapons, but by devising some new weapon that will render the old ones obsolete. The trouble with the professional man in any walk of life has always been that he sticks to the traditional ways. In consequence he lays himself open to the amateur, who, caring nothing about tradition, beats him with something novel. The inventions that have revolutionized naval

warfare have come from men outside the naval profession. Thus the Romans, unable to match the Carthaginians in seamanship, made that seamanship of no value by their invention of the corvus. Greek fire not only saved the insignificant fleets of the Eastern Empire, but annihilated the huge armadas of Saracen and Slav. If the South in our Civil War had possessed the necessary resources, her ironclad rams would have made an end of the Union navy and of the war. In our own time the German submarine came within an ace of winning the war despite all the Allied dreadnoughts, because its potentialities had not been realized and no counter measures devised. A navy that drops behind is lost.

The personal side is a matter of training and morale. The material part is of no value unless it is operated by skill and by the will to win. Slackness or inexperience or lack of heart in officers or men—any of these may bring ruin. Napoleon once spoke of the Russian army as brave, but as "an army without a soul." A navy must have a soul. Unfortunately, the tendency in recent years has been to emphasize the material and the mechanical at the expense of the intellectual and spiritual. With all the enormous development of the ships and weapons, it must be remembered that the man is, and always will be, greater than the machine.

As to handling the navy, first of all the War Staff and the commander in chief must solve the strategic problem correctly. The fate of the Spanish Armada in the 16th Century and that of the Russian navy at the beginning of the 20th are eloquent of the effect of bad strategy on a powerful fleet. Secondly, the commander in chief must be possessed of the right fighting doctrine—the spirit of the offensive. In all

ages the naval commander who sought to achieve his purpose by avoiding battle went to disaster. The true objective must be, now as always, *the destruction of the enemy's fleet*.

Such are the material and the spiritual essentials of sea power. The phrase has become so popular that a superior fleet has been widely accepted as a talisman in war. The idea is that a nation with sea power must win. But with all the tremendous "influence of sea power on history," the student must not be misled into thinking that sea power is invincible. The Athenian navy went to ruin under the catapults of Syracuse whose navy was insignificant. Carthage, the sea power, succumbed to a land power, Rome. In modern times France, with a navy second to England's, fell in ruin before Prussia, which had practically no navy at all. And in the World War it required the entry of a new ally, the United States, to save the Entente from defeat at the hands of land power, despite an overwhelming superiority on the sea.

The significance of sea power is *communications*. Just so far as sea control affects lines of communications vital to either belligerent, so far does it affect the war. To a sea empire like the British, sea control is essential as a measure of defense. If an enemy controls the sea the empire will fall apart like a house of cards, and the British Isles will be speedily starved into submission. It is another thing, however, to make the navy a sword as well as a shield. Whenever the British navy could cut the communications of the enemy, as in the case of the wars with Spain and Holland, it was terribly effective. When it fought a nation like Russia in the Crimean War, it hardly touched the sources of

Russian supplies, because these came by the interior land communications. So also the French navy in 1870 could not touch a single important line of German communications and its effect therefore was negligible. If in 1914 Russia, for example, had been neutral, no Allied naval superiority could have saved France from destruction by the combined armies of Germany and Austria, just as the Grand Fleet was powerless to check the conquest or deny the possession of Belgium. It must be borne in mind that a land power has the advantages of central position and interior lines, and the interior lines of to-day are those of rail and motor transport, offering facilities for a rapid concentration on any front.

Of course, modern life and modern warfare are so complex that few nations are able to live and wage war entirely on their own resources; important communications extend across the sea. In this respect the United States is singularly fortunate. With the exception of rubber, every essential is produced in our country, and the sea power that would attempt to strangle the United States by a blockade on two coasts would find it unprofitable even if it were practicable. A hostile navy would have to land armies to strike directly at the manufacturing cities near the seaboard in order to affect our communications. In brief, sea power is decisive just so far as it cuts the enemy's communications.

Finally in considering sea power we should note the importance of coördinating naval policies with national. The character of a navy and the size of a navy depend on what policy a nation expects to stand for. It is the business of a navy to stand behind a nation's will. For Great Britain, circumstances of position have long made her policy consistent,

without regard to change of party. She had to dominate the sea to insure the safety of the empire. With the United States, the situation has been different. The nation has not been conscious of any foreign policy, with the single exception of the Monroe Doctrine. And even this has changed in character since it was first enunciated.

At the present day, for example, how far does the United States purpose to go in the Monroe Doctrine? Shall we attempt to police the smaller South and Central American nations? Shall we make the Caribbean an area under our naval control? What is to be our policy toward Mexico? How far are we willing to go to sustain the Open Door policy in the Far East? Are we determined to resist the immigration of Asiatics? Are we bound to hold against conquest our outlying possessions,—the Philippines, Guam, Hawaiian Islands, and Alaska? Shall we play a "lone hand" among nations, or join an international league? Until there is some answer to these questions of foreign policy, our naval program is based on nothing definite. In short, the naval policy of a nation should spring from its national policy.

On that national policy must be based not only the types of ships built and their numbers, but also the number and locale of the naval bases and the entire strategic plan. In the past there has been too little mutual understanding between the American navy and the American people. The navy—the Service, as it is appropriately called—is the trained servant of the republic. It is only fair to ask that the republic make clear what it expects that servant to do. But before a national policy is accepted, it must be thought out to its logical conclusion by both the

popular leaders and naval advisers. As Mahan has said, "the naval officer must be a statesman as well as a seaman." Is the policy accepted going to conflict with that of another nation; if so, are we prepared to accept the consequences?

The recent history of Germany is a striking example of the effect of a naval policy on international relations. The closing decade of the 19th century found Great Britain still following the policy of "splendid isolation," with France and Russia her traditional enemies. Her relations with Germany were friendly, as they always had been. At the close of the century, the Kaiser, inspired by Mahan's "*Influence of Sea Power on History,*" launched the policy of a big navy. First, he argued, German commerce was growing with astonishing rapidity. It was necessary, according to Mahan, to have a strong navy to protect a great carrying trade. This von Tirpitz[1] emphasizes, though he never makes clear just what precise danger threatened the German trading fleets, provided Germany maintained a policy of friendly relations with England. Secondly, Germany found herself with no outlet for expansion. The best colonial fields had already been appropriated by other countries, chiefly England. To back up German claims to new territory or trading concessions, it was necessary to have a strong navy. All this was strictly by the book, and it is characteristic of the German mind that it faithfully followed the text. "*Unsere Zukunft*," cried the Kaiser, "*liegt auf dem Wasser!*" But what was implied in this proposal? A great navy increasing rapidly to the point of rivaling that of England could be regarded by that country only as a pistol leveled at her head. England would be at the mercy of any power that

could defeat her navy. And this policy coupled with the demand for "a place in the sun," threatened the rich colonies that lay under the British flag. It could not be taken otherwise.

[Footnote 1: MY MEMOIRS, Chap. xv and *passim.*]

These implications began to bear fruit after their kind. In the place of friendliness on the part of the English,—a friendliness uninterrupted by war, and based on the blood of their royal family and the comradeship in arms against France in the days of Louis XIV, Frederick the Great, and Napoleon—there developed a growing hostility. In vain missions were sent by the British Government to promote a better understanding, for the Germans declined to accept either a "naval holiday" or a position of perpetual naval inferiority. In consequence, England abandoned her policy of isolation, and came to an understanding with her ancient enemies, Russia and France. Thus Germany arrayed against herself all the resources of the British Empire and in this act signed her own death warrant.

A final word as to the future of sea power. The influence of modern inventions is bound to affect the significance of the sea in the future. Oceans have practically dwindled away as national barriers. Wireless and the speed of the modern steamship have reduced the oceans to ponds. "Splendid isolation" is now impossible. Modern artillery placed at Calais, for instance, could shell London and cover the transportation of troops in the teeth of a fleet. Aircraft cross land and sea with equal ease. The submersible has come to stay. Indeed, it looks as if the navy of the future will tend first to the submersible types and later abandon the sea for the

air, and the "illimitable pathways of the sea" will yield to still more illimitable pathways of the sky. The consequence is bound to be a closer knitting of the peoples of the world through the conquering of distance by time.

This bringing together breeds war quite as easily as peace, and the progress of invention makes wars more frightful. The closely knit economic structure of Europe did not prevent the greatest war in history and there is little hope for the idea that wars can never occur again. The older causes of war lay in pressure of population, the temptation of better lands, racial hatreds or ambitions, religious fanaticism, dynastic aims, and imperialism. Some of these remain. The chief modern source of trouble is trade rivalry, with which imperialism is closely interwoven and trade rivalry makes enemies of old friends. There is, therefore, a place for navies still.

At present there are two great naval powers, Great Britain and the United States. A race in naval armaments between the two would be criminal folly, and could lead to only one disastrous end. The immediate way toward guaranteeing freedom of the seas is a closer entente between the two English-speaking peoples, whose common ground extends beyond their speech to institutions and ideals of justice and liberty. The fine spirit of cöoperation produced by the World War should be perpetuated in peace for the purpose of maintaining peace. In his memoirs van Tirpitz mourns the fact that now "Anglo-Saxondom" controls the world. There is small danger that where public opinion rules, the two peoples will loot the world to their own advantage. On the other hand, there is every prospect that, for the immediate future, sea power in their hands can

be made the most potent influence toward peace, and the preservation of that inheritance of civilization which has been slowly accumulated and spread throughout the world by those peoples of every age who have been the pathfinders on the seas.

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