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THE INFLUENCE AND APPLICATION OF SEA POWER ON
EXPEDITIONS BASED ON INDIA.

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Motto: "Quare fremuerunt gentes."

*"The storm-beaten ships on which the Grand Army never looked
stood between it and the dominion of the world."*

In considering the subject of this essay, almost the first thought that presents itself is that in the question of the influence of Sea Power on expeditions based on India, the whole principle of England's naval supremacy, and her command of the sea is involved. It is impossible to discuss how expeditions from India, be they over land through the passes, or over sea through the Gulf and the Indian Ocean, or through the Archipelago to the Far East, are affected by Sea Power, without understanding how the Empire rests on its maintenance, or how India and England stand towards each other.

Captain Mahan's famous saying, above, is at once the epitaph of British policy in the past, and the prophecy, of its future. Thanks to his writings, and the efforts of those who have followed in his footsteps, the axioms of Sea Power are now widely understood by Englishmen. The necessity for its maintenance is so universally recognized in these days that to discuss it, save as a prelude to argument is absurd.

Power on the Sea consists of
two essentials, fighting -power and
carrying capacity, and_ in this latter
must be included all the facilities
requisite for embarking troops, and loading or unloading freights.

Meaning of sea power.

This article is the Gold Medal Prize Essay for 1904

It is in the combination of these two constituents that lies England's strategic power. Add to the command of the high seas the capacity to transport troops to any spot in the wide world we please, and the full meaning of Sea Power is apparent. The despatch of 10,000 men from Europe to the Far East is a difficult matter, but for England, it is only necessary to cable to India, where irrespective of internal demands that number of men, and the ships to move them, wait only the signal to start. The power to move distant men by cable, enhances the value of a force so available, out of all proportion to its actual numbers. The capacity of India with regard to oversea expeditions will be discussed later on.

Now the broad principle of England's policy in time of war is to gain complete supremacy at sea, and then search how she may best force her adversary to sue for peace, employing her Sea Power in its' broadest sense to gain this end. It is the help that India, from her geographical position, can give to such a policy that seems to be the subject of this essay.

To examine therefore the question of "The influence and application of Sea Power on expeditions based on India," it is proposed to discuss it under the following headings, touching briefly on the main points of Imperial strategy, and such naval subjects as are necessary for a broad view of the subject.

PART I. *The Influence of Sea Power on India.*

- (1) Dual operations.
- (2) Oversea ventures from India in the past.
- (3) The economic position of India in war time.
- (4) India's strategic position.
- (5) Expeditions from India.
- (6) Summary of foregoing.

PART II. *The Application of Sea Power to India.*

- (7) The communications of India with Europe.
- (8) Coal strategy.
- (9) The Indian Ocean.
- (10) Conclusions affecting the route to India.
- (11) The Isthmian Canal.
- (12) The application of Sea Power in the East.
- (13) Coaling stations in the Far-East.
- (14) Resume.

PART I.-THE INFLUENCE OF SEA POWER ON EXPEDITIONS FROM INDIA.

(1). DUAL OPERATION.

The study of European History, from the French Revolution to the present day, affords a series of illustrations of the extraordinary strategic value that a small military force has when it can be transported by sea and landed at will, at a point where its action will be most effective. It was not the size of the British force in the Iberian Peninsula that formed the "Spanish Ulcer." It was the fact that owing to our absolute command of the sea, and the configuration of the seaboard of Western Europe, England could plant, remove, and maintain with a base shifting at need, an army at a point furthest removed from Napoleon's other theatres of war, that made the genius of Wellington and the daring of his army possible. It was the "storm tossed ships" that started the ulcer, ever feeding it with fresh germs, and prevented its healing, by making the Channel and the Bay as English as the Humber and the Wash.

It was not the size of the Allied Expedition to the Crimea that brought Russia to terms, and to a humiliating surrender. It was the point at which Sea Power, fighting force and carrying capacity, maintaining a small army, enabled the blister to be applied. The distance between Great Russia and the Chersonese, then unspanned by railways and badly served with roads, cut off the seat of war from the vast armies of the Tzar, which had to march over countless miles of snow-swept or sun-dried steppes, to lose nine-tenths of their numbers on the road. It was her old soldiers, General January and General February, that played her false, added to the strategy that affixed the blister, at the point where remedies could not be applied.

Similarly, it was the Sea Power of England that enabled her to crush the French in the Mediterranean, to isolate the French in Egypt, who were cut off from France, and then to land in 1801 the British force that forced a superior army of Napoleon's veterans to complete surrender.

It was the power to place our expeditions where we pleased that has always served us in such good stead, and neither the strategical error that prompted the wretched expedition to Walcheren, instead of concentrating our strength in Spain, nor the follies of the abortive raids on the northern French coast in the early eighteenth century, detract from the value of such combined expeditious when wisely conceived.

By so much as does this amphibious power of England enhance her might, so much more does India; a vast, far advanced base, enhance the strategic range of her dual operations.

A glance at the oversea enterprises from India in the past will show how strong has been her position, and how resolutely the dual resources in the Far East have been employed to maintain the command of Eastern waters, and to exterminate all who could dispute it.

The study of the history of the last hundred years further establishes that permanent command of the sea is essential to the success of oversea expeditions. The position of the French in Egypt after the battle of the Nile, and of Ibrahim Pasha in the Peloponnese after Navarino, are both clinching demonstrations of this. Had the British fleet been driven from the Bay, there would have been no escape for Sir John Moore's army after Corunna.

One point seems to stand out from all these historical examples, and that is that Sea Power does not, at any rate for England, mean merely naval fighting force and carrying capacity, but the power to employ an army and a navy in combined operations, and that this broad meaning should always be understood when we use the expression. That this must be so is borne out by the reflection that no mere strength in ships would have brought Napoleon to Elba, without the "ulcer" of the army in Spain.

(2). OVERSEA VENTURES FROM INDIA IN THE PAST.

In the days of the Great Shadow, when free England financed and subsidised all Europe to combat Napoleon, India boldly despatched oversea expeditions to seize every point whence the trade to the East could be threatened.

In 1795, when France dominated Holland, an expedition from England occupied the Dutch possessions at the Cape, and an expedition from India took the Dutch territory of Ceylon, holding the latter for good and all, and restoring the former to Holland at the Peace of Amiens, secured it in perpetuity in 1805, in pursuit of the determination that nothing should jeopardise the road to the East.

In 1802, India, recognising her strategic interest in Egypt, sent, at the instance of the great Marquis, a force to assist in expelling the French.

In 1810, a further expedition from India captured Bourbon and the Mauritius, the bases whence French privateers preyed on the India trade, and

whence French Governors intrigued with, and assisted, the native powers—an interesting prototype for future enterprise.

In 1802, and again in 1808, we occupied the Portuguese colony, Macao, close to Canton, because France had dominated Portugal and might occupy her ports. In the earlier instance the Indian Government effected this on its own initiative, recognising the necessity of denying bases to the enemy. Such forethought, however, was severely censured by the Home Government.

In 1811, the same policy, the preservation of our military and commercial routes to India and the Far East, saw us take Java from the French, who held it for the Dutch.

In the wars with France, prior to the French Revolution, the French navy in Indian waters was much handicapped by the distance of its only refitting base, the Mauritius, from the point where its action was needed, while British vessels had many points to which they could repair to refit. The latter, with the Hooghly, Trincomalee and Bombay at their disposal, had immense advantages and could not only keep the sea, but constantly bring troops from the other Presidencies to reinforce points threatened by the French ashore.

In 1782, Admiral Suffren, the capable French naval commander in the East Indies, succeeded in capturing Trincomalee, thus forcing the British vessels to refit at Bombay, Madras or Calcutta, and his possession of this naval base at once caused us to collect a force to expel him, which we finally did.

Now all these ventures took place to protect our Eastern communications, and were possible because we had sufficient naval strength in Indian waters to safely convoy our transports and maintain communications with their base. The possibility and prosperity of our Indian rule in the past is therefore shown at every turn to be wrapped up in the two great constituents of Sea Power—carrying capacity and fighting force.

(3). THE ECONOMIC POSITION OF INDIA IN WAR TIME.

Close on a quarter of a century ago, when Indian defence and its varied problems were deeply and acrimoniously discussed, when many schools of thought existed, and various points were in turn spoken of as the "Key of India," it was Lord Beaconsfield who brought men back from the by-paths by saying, "The Key of India is London." By which, in the true spirit of strategy, he

meant that so long as the Empire, of which London is the hub, was in no danger, so long India stood safe, and the road to it stood open.

The Roman semi-military occupation of Britain, for nigh on 400 years, bears a striking analogy to our own rule in India, and it was not till the hub of the Roman Empire was threatened and involved that Britain, deprived of its best legions, gradually fell a prey to barbarian inroads, local risings, and oversea invasions. Curiously enough, it was the acuteness of the food supply question that largely contributed to the fall of Rome.

From the point of view of possible war, India at first sight seems to differ economically from England in every way. England now barely feeds a ninth part of her own population, while one third of that population live from hand to mouth, ever dependent on wages earned by converting raw imports to manufactured exports. No State stores of food in the country can provide that third with wages if the inflow of raw material and the export of manufactured material be checked for more than a few days. The absolute and almost unbroken command of the sea is therefore a condition of national existence. Isolation of a few weeks even means consternation and misery untold.

India, on the other hand, is not economically dependent on ocean-borne trade. No corn and beeves are borne on the sea to feed her millions. Isolation by sea does not bring immediately a starving population surging to the doors of Government. Cotton mills may close, corn merchants may fail, tea plantations close, but no immediate catastrophe threatens a country that feeds its own population, which is almost entirely agricultural.

It must be remembered, however, that the India as we know it to-day, the peaceful homogeneous whole, is entirely a product of the British occupation, a rule ringed with bayonets, lest Sikh and Pathan, Mahrattan and Rajput, Rohilla and Mugul, and every masterless man in the country, once more struggle for power and the spoils of war. The British power in India is absolutely dependent on a regular and undiminished supply of the moral petrol from England. The constant flow through the great canal of fresh drafts for all the services, the outflow of the jaded, the inflow of the fit, and of all the supplies and all the stores requisite to our rule, can only bear temporary interruption. In ordinary times of peace the flow and the wastage is considerable. The smallest frontier war increases, be it never so small, the demands on England.

In the days of the Honourable Company, when small arms, explosives, and cannon were easy to make, and when railroads existed not, India was far more self-supporting from the British point of view than now. The Company manufactured its own military stores and evolved armies from its subject races to keep pace with its expansion. No law of proportion existed between the European and native forces, and India was deemed less dependent on Europe than now. The safety of the Indian trade rested, as it ever rests, on the command of the sea, and when foreigners were strong on the sea, the trade suffered, though every Indian could fight for her own hand. India, prior to 1857, was regarded almost as a self-supporting base with regard to military supplies, even though the most powerful native confederacies held arrogant sway in the greater half of the land; whenever more armies were required the Lat Sahib ordered and the legions grew, and it was not realised how the British bayonet alone stood behind the British Raj.

The Mutiny nearly brought down our card house about our ears, and from that date the unlimited raising of troops from local sources ceased. The alloy of the Indian Army was to have a fixed proportion of East to West in its constitution, and the East was no longer to be unduly increased as a cheap support for Imperial burdens.

This, at once, to change the metaphor, made India a reservoir rather than the self-supporting supply it had been erroneously deemed—a reservoir, it is true, from which troops could be poured in considerable quantities, but only on condition of prompt refilment. The realisation of the true position of India has naturally shown her military condition to be far less independent—more dependent on support because of the limitations of her military resources, more so because of the “Great Fear” behind; that legacy of 1857.

With the introduction of modern guns, modern rifles, and explosives, added to that of railways, India’s manufacturing capabilities made her even more dependent on Europe, and though of late years the policy has been to create as many arsenals and factories as possible, still engines, many rails, bridge girders, rifles and cannon, all equally important military stores, must come from Europe or America.

The normal peace demands on India then are most extensive; and while the smallest frontier expedition increases to some

extent the military drafts, such larger wars as the Mutiny, the Afghan War of 1878–80, or the Frontier campaign of 1897–98, create a very large and imperative demand on Europe. In a recent speech in the House of Commons, the Premier has openly said that in the event of war with Russia it would be necessary to despatch the equivalent of two Army Corps to India. Now an Army Corps at home war strength, such as went to South Africa, requires 130 large steam transports.

The foregoing considerations show, therefore, clearly enough how much India depends on her free communication with Europe, and how immense in every way must be the influence of Sea Power, that combination of carrying capacity with fighting force, on expeditions based on India.

It has been shown, it is true, that any temporary interruption of the command of the sea does not bring consternation and disaster in its train to her, but it is evident that any prolonged isolation must at best have the most crippling effect on her offensive power.

To see how Indian expeditions are influenced in more detail, the military position of India must next be to some extent reviewed.

(4). INDIA'S STRATEGIC POSITION.

The military position of India presents two different problems, for we have to consider her, on the one hand, as a continental power, a country with frontiers that march with powerful neighbours and with possibilities of great internal trouble, and on the other hand, as an advanced base from which certain forces may be despatched, of strategical importance out of all proportion to their actual numbers. It is necessary to consider the former point of view, to gauge the possibilities of the latter.

We have seen that a century ago, when Great Britain was the paramount, but not the only power in India, she cheerfully undertook oversea expeditions against powers we were at war with, for the general advancement of the cause, and the special protection of the Eastern routes. At this period she had powerful internal enemies to fear. No sooner, however, had the British rule been consolidated over the whole of the Indian Peninsula, and India therefore made a far securer base for expeditions, than the persistent policy bequeathed by Peter the Great brought Russian advance looming on the horizon, while the Mutiny showed the volcanic possibilities that lay beneath even an all-red India.

The continual Russian advance has now put India almost in the position of a continental power,
The proximity of Russia

unable to make effective oversea expeditions till she is certain of her neighbours' intentions. Exactly as France can never think of large oversea operations till her relations with Germany are satisfactory, so can India never send armies across the sea till Russia's attitude be guaranteed. This means that for all practical purposes the mass of the Indian army is tied to India, except in circumstances when Russia may be our firm ally.

One point, therefore, that stands out from the above, and is a point that is not always kept in sight, is that the army in India exists for the protection and retention of India.

India is prepared to use force to help protect her communications, but save on special occasions, when all is quiet within, the army of India cannot send forces to assist elsewhere in the Empire. The free despatch of troops to China, to South Africa, and to East Africa was only possible because all was quiet in India.

It is not within the scope of this essay to discuss the military forces of India and their destination, but it may be accepted that 25,000 men, of whom the majority would be native soldiers, would be the very maximum that we could ever send out of India, so long as Russia's action was uncertain, unless we were in the position to pour troops into India from Europe as fast as we take them out. At the same time, it is very evident that a force of from 5,000 men upwards, always available in Eastern seas, is a factor that no one could neglect.

Without discussing the varied possibilities before us in the East, sufficient reference to our position is necessary to see how Sea Power must influence oversea expeditions from India.

Our possible opponents are—

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| Possible Opponents | <p>(1) Russia, who is rapidly gaining in the Far East a strategical position similar to our own, inferior because not so central, superior because her hinterland seems destined to be a powerful and fruitful Russian province, from Moscow to Port Arthur.</p> <p>(2) Japan, which is an island and maritime power, with many analogies to Britain, and whose strategical position is advantageous.</p> <p>(3) The United States, who in the Philippines will have, in generations to come, a powerful advanced base, and on whom the Isthmian Canal is to confer great advantages.</p> |
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- (4) Germany, whose Eastern settlements are hopelessly isolated.
- (5) France, whose colonies and possessions are more dependent than India on connection with Europe, and whose offensive military strength in the East is trivial.
- (6) China, the great unknown, against whom large dual expeditions have been necessary in the past, and may be again at any time.
- (7) Various possible campaigns where, as in the past, England would want help from India, such as Somaliland, Abyssinia, and the Soudan.

Dual operations against Japan are not within the sphere of practical politics, and war with Russia must tie up most of our troops in India, though the offensive defence of India may necessitate communications via the Gulf. War with the United States entails so many consequences, and has so many aspects, that India's possible share has never been thought out. The support of Canada, and in years to come the control of the Isthmian Canal, would be objects of a greater strategy.

Against France and Germany, all that is probable is the reduction of their power to damage Eastern trade; the possession of their colonies must come as a result of success, or at any rate be an easy matter so soon as England's command of the sea becomes absolute.

Concentration is the first axiom of strategy, and only forces, naval and military, that cannot be brought into the main theatre of war, could be diverted into colonial enterprises. It is now an accepted axiom, so far as Great Britain is concerned, that India's Amphibious power in fighting a European Power, fed by rail from an allied or neutral neighbour, power on sea alone cannot bring a war to a successful determination. Sufficient dual enterprises against an adversary's colonial possessions can alone affect her purse or her pride sufficiently to clinch matters.

Such considerations give a general idea of how India's position helps the Empire, remembering always that Russia must be safe before many troops leave, or else that England can pour troops in within a week or so of others leaving. More is hardly necessary to realize how great is the influence of the force that keeps open the road from home.

For the despatch of oversea expeditions generally, a local command of the sea may often be all that is necessary, viz., command in the waters to be traversed. In the event of a war with France, for instance, a command of the sea in Eastern waters would suffice for the mere safety of an expedition from India against the French Indies. Similarly, it is only the Russian squadron in the Far East that affects the question of a Japanese landing in Korea.

In view of the foregoing, it therefore seems clear that the employment of our full Sea Power in the Far East, viz., the power to send and protect combined expeditions, will be aimed against the coaling stations in the East that support hostile cruisers. The dispersions of force and the upkeep of garrisons that such enterprises entail must always limit them to the capture of vital points, while final success puts others at our mercy.

A point is here worth noticing with regard to the accessories to Sea Power, viz., that in all India there are very few docks and wharves from which troops can be embarked. Between Calcutta and Bombay, a distance of 2,000 miles, there is not one. Even with the immense resources of England, it takes days to embark an Army Corps. To despatch even a division from India is a lengthy matter, when secrecy and surprise are of any value.

(5). THE NATURE OF EXPEDITIONS BASED ON INDIA.

Before considering how this Sea Power is to be applied in the interests of expeditions from India, a more detailed elimination of the nature of expeditions based on India is desirable.

Such expeditions may be divided into three categories:

- A. Those based on India by land.
- B. Those based on India by sea.
- C. Those despatched from India, but based elsewhere.

Category A would include any overland enterprise, from a punitive raid to a war with Russia and a campaign on the Helmund or through the Dasht-i-Lut.

Category B comprises two sorts of expeditions—

- (a) Those against Native States.
- (b) Those against European Powers or Japan.

In (a) would come our Burmese, Persian, and China Wars, while in (b) we have had nothing since the capture of Java and the Mauritius.

Category C would include such expeditions as the force sent to Africa in 1899, and to some extent those sent to Egypt, the Soudan, or Abyssinia, inasmuch as they were not entirely supplied from India.

From what has already been put forward, it follows that Category A is affected by Sea Power, so far as the throwing of reinforcements and the replenishment of expended personnel and matériel is concerned, which vary from drafts to the sole despatch of Army Corps.

Expeditions in Category B are further dependent on complete naval supremacy in Indian and Eastern waters when war with a naval power is concerned. When, however, the expedition is against a non-naval state, such as a native state or China, the carrying capacity is the only portion of Sea Power that is in demand.

Category C again is dependent on sufficient naval supremacy and carrying capacity for the safe despatch of the expedition, which has of course to be supplied by sea in its new destination.

(6). SUMMARY OF PART I.

Summing up the conclusions which it has been the endeavour to elicit in the previous pages, it would seem that, so far as expeditions based on India are concerned, the influence of Sea Power is much as follows:—

1. Owing to the geographical position of India and the naval supremacy of England, the former is an advanced base of extreme strategical value, whence oversea expeditions, small in number, are immense in their effect.
2. That, from the fact of Russia's vicinity and possible hostility, heavy reinforcements may be required at any time, and that Sea Power must keep the road open, and that for this same reason expeditions that can leave India can only be numerically small till Russia's course of action be certain.
3. That, owing to the nature of our position in India, the volcanic possibilities below the surface, and the drain that any expedition causes in a greater or less degree, free communication in time of peace and war is an essential, and without Sea Power this would be impossible.
4. That oversea expeditions cannot safely leave India until full command in the waters to be crossed has been obtained.

PART II.—THE APPLICATION OF SEA POWER TO INDIA.

From the foregoing pages, it is clear that in the application of Sea Power for the benefit of expeditions based on India the main objects to be aimed at are:—

- (1) The safety of the communications of India with Europe.
- (2) Sufficient command of the local seas, to despatch and safely base on India any required expedition.

It should also be mentioned that even when an expedition proceeds overland from India, warlike stores, personnel and animals may come to India not only from Europe, but from Australia, Canada and the Far East. Once again, therefore, it is evident how bound up with the general question of British naval supremacy is the military situation in India.

(7). THE COMMUNICATIONS OF INDIA WITH EUROPE.

This question alone involves one of the biggest Imperial controversies of the day, viz., the merits and possibilities of the Cape or the Canal routes.

A few years ago it was generally believed that in the event of war with a maritime power, we should have to abandon the Canal route; but further study of the question has caused expert opinion to think that it can be kept open. The naval strategic front of England is said to be from the Channel round to the Hellespont, watching the naval ports of Europe, including Bizerta; but just as a block-house line is the safest route for unescorted convoys, so would the Mediterranean route, with the naval force concentrated along it, be the safest for our eastern commerce and troops. It is a question which war alone can settle, but the following points are worth bearing in mind:—

(a) Ditchers and tramps are almost entirely built for the England to Bombay trip *via* the Canal, and are neither equal to the strain of the voyage and weather round the Cape, nor have they coal capacity to enable them to go from coal point to coal point.

(b) The coal supply and coaling accommodation at the Cape is entirely inadequate to the strain of supplying the Eastern trade, and ships might be kept one or two months there before they could coal, while colliers proceeding there from England would consume part of their cargo in getting there. During the South African War, the coaling of all the war shipping was attended with many delays.

(c) The sinking of a ship in the Canal to block it is not nearly so feasible as it might seem. Surely we should assume a strong enough line in the event of war to use our position in Egypt to insist on placing a guard on every foreign ship passing the Canal between Port Said and Suez.

(d) Even the sinking of a ship laden with bricks in the Canal would not be the catastrophe usually imagined. The depth of the Canal is about 30 feet, while freight ships draw 24 feet, so that it would be a question of raising a vessel 6 feet, no great task with the resources of the Canal Company, and towing her to the Canal mouth or lake opening.

It would therefore seem that the route *via* the Canal is as likely to be available as any other, and we may reckon on using it.

The following naval considerations have some bearing on this question of trade ships and troopers to the East *via* the Canal:

(h) One ship in every three that goes through the Canal is not English. A warship of a Power at war with England dare not sink a ship till she had ascertained that it did belong to us. By day the route would be sufficiently patrolled, unless we were beaten from the seas, and by night a foreign cruiser would have to overhaul every passer-by, and probably board her and examine papers, ere she dared effect seizure. Under such conditions it is not likely that many prizes would be made in each night, and for every vessel taken many would elude capture.

(g) Convoys, on the contrary, attract attention by their smoke, are easily located by day, can be followed, and are a fair mark for torpedo boats at night. On a route not entirely clear of hostile cruisers, but which our own cruisers patrol, ships that slip along as best they may would probably have a better chance of escape, and a more satisfactory voyage, than if tied to a convoy and the pace of their slowest consort.

These are points which add to the likelihood of the Canal route, and to the necessity of holding the Mediterranean as the road to India.

To pursue further the discussion of the alternative route to India is perhaps outside the scope of this essay, and encroaches on ground which only naval strategists are competent to cover; and we may confine ourselves to the question of how vessels passing the Cape and issuing from the Canal may be safely passed on to India; but as Sea

Power is largely a naval question, sea topics must be discussed as best a landsman may.

Bound up with the question of Sea Power in all waters, but especially in far distant seas, is the matter of coal supply and coaling stations, or what is now termed "Coal Strategy," and an outline of the chief facts regarding them is essential before proceeding with the discussion in hand.

(8). COAL STRATEGY.

A century ago, vessels, or any other craft, could keep the seas so long as their food and water supplies held out, and important repairs were not necessary. Even then, almost any small port would afford supplies and material for refitment. Now, however, coal is a necessity, which has entirely altered the whole matter of naval strategy, and every vessel must stow enough of it to carry her from one coaling port to another.

Hostile cruisers are dependent for their action on coal supply; blockading fleets must coal at sea, a difficult operation, or else always have a proportion of vessels away coaling. When colliers accompany a fleet, they must often keep up with it, which means that they expend far more of their freight than when steaming quietly in the way of trade over an equivalent distance, while they must retain sufficient coal to take them back when empty. So that coaling by collier convoy does not give a very satisfactory or far-reaching coal supply.

Every steamer has its economical rate of speed, and directly this has to be enhanced the expenditure of coal is out of all proportion to the distance covered. Vessels chased by others that have more coal capacity, or a nearer coaling port, may be rendered quite impotent. A foreign cruiser making via the Cape for Diego Suarez might steam there quietly at her economical speed, but if forced for some days to travel faster by British cruisers, who could themselves coal at Ascension, St. Helena, or the Cape, she might never get to her destination. Such "riding off" from coal supplies is to be a prominent feature of modern minor naval strategy.

For fleets and cruisers to have freedom of action there must be an abundance of coaling stations available. Coaling stations are of two kinds: defended ones, varying from naval ports and fortresses to defended coal heaps, and commercial ones. In time of war, a power that has a naval supremacy can establish on any suitable shore a temporary coal heap, and the most economical form of this is a row of anchored colliers, if the ships can be spared.

Malta is a fortress coaling station; Aden is more a fortified coal heap; Port Said and St. Vincent in the Cape Verde Islands are types of commercial coaling stations.

Now all these coaling stations can only store a certain amount of coal, and are fed almost daily by colliers from Europe, chiefly England, while Welsh coal even for the East and the Far East comes through the Canal.

The following coaling facts are worth noting here:—

(a) The speeds of all vessels are measured when burning hard Welsh coal, and that class of coal is found in all the wide world in England alone. A vessel that does not burn Welsh coal loses 2.5 per cent. of her speed. Thus a twenty-knot foreign cruiser becomes a fifteen-knot vessel when Cardiff coal is denied her.

(b) All coal deteriorates by keeping; in a few weeks Welsh coal is no better than any other; therefore it is useless to accumulate stacks of it at coaling points. Whosoever would use it must be assured of a constant and steady supply. The amount that foreigners depend on us for coal is instanced by the fact that an average of six colliers a day leave Cardiff for France alone.

(c) The position of England, therefore, with regard to the rest of the world, so long as no one else can find Welsh coal, and no other fuel can be devised, is amazing, and is one that is not usually realised by the lay mind. The strategic value of the Cape, and the command in the Red Sea, are immense, viewed by the light of this fact.

(d) The steaming capacity, viz., the coal-carrying capacity, varies in different vessels, but the very latest type of cruiser, or commerce destroyer, specially built for independence in this respect, can only steam 12,000 knots at its most economical speed, viz., 10 knots an hour; any enhancement of this rate lessens considerably the total knots that can be covered. Most battleships and cruisers have far less capacity than this.

(e) Coaling stations, naval and commercial, in the East are almost entirely dependent on coal from Europe or America, and we possess the few ports that are not so. Table Bay and Durban can be supplied locally with indigenous though inferior coal, and the same applies to the Indian ports, to Labuan, though here our supply is not sufficiently protected, and to Australia, whose future as a strategic self-supporting base will be of vast importance. Russia can draw coal of

sorts from Siberia for Port Arthur, while Japan has her own mines, but none of this coal is of much value to warships, especially cruisers. Other ports are entirely dependent on sea supply, and a glance at the map will show how isolated are most of the coaling stations, especially the non-British.

Colliers coming East from Europe must weather the Cape or pass through the Canal, and from Europe coal must come eastward till American coal becomes the nearer. In the Far East coal mostly comes from America, but no American coal is equal to the hard Welsh coal, so that fuel for warships and the mail steamers still comes via the Canal.

The question of neutral coal.

A few words on the question of the coal of neutrals in war will not be out of place. It is held to be a distinct breach of neutrality for a neutral to supply a belligerent warship with coal, save perhaps to steam on at her economical speed to the next port. It is always possible, and indeed not improbable, that a weak neutral might be coerced into supplying coal or have it forcibly taken, and be unable to take up the challenge. If such happened against us, it would be for us to clear out that neutral's coal and see she got no more. The strong maritime power can generally expect to profit in the end by such breaches of the law. In time of war, might makes right, since the earliest days of man. We should probably make it our business to protect, possibly garrison, the coal ports of a weak neutral, lest our adversary be tempted to raid them in despair of fuel.

(9). THE COMMAND OF THE INDIAN OCEAN.

The foregoing considerations throw our position in the Indian Ocean into clear relief. At Aden, Karachi, Colombo, Singapore, Mauritius, Durban and Table Bay we have defended harbours and coaling stations; at Trincomalee, Bombay and Simon's Town we have naval bases as well. The African and Indian ports have the indigenous coal supply referred to. Now glance at the foreign coaling stations. In the vast expanse of sea, between Suez, Table Bay and Colombo, France alone has defended coaling stations at Obok and Diego Suarez, both hopelessly isolated so far as coal and naval resources are concerned. With these exceptions, the Indian Ocean is practically a British lake, over which trooper and trader can be despatched with reasonable safety.

The importance of the Persian Gulf now stands out. A Russian port on the Gulf, connected with Russia by rail, or a German terminus of the Baghdad railway at Koweit, could entirely alter these

conditions. Such ports would not be isolated stations like Obok, but have the full resources of their countries behind them.

The building of a 4,000-ton steamer on Lake Baikal is an example of what can be done in the way of naval resources, even at the thousand-mile end of a railway, and shows the danger of allowing Germany or Russia a port in the Gulf.

Mastery of the Gulf of Suez means complete control of the Indian Ocean. Coal is a reasonable contraband of war, and were France the enemy, colliers for Obok and Diego Suarez must run the gauntlet of the Cape. The preservation of the *status quo*, and the barring of the Persian Gulf to all European powers, is a necessity on which too much stress cannot be laid.

There are certain commercial undefended coaling stations in these waters, such as Port Said, Perim (British), Beira and Delagoa (Portuguese), Mombasa, etc., mostly with a small supply of inferior coal. The Port Said store we may expect to control. Perim we can protect, and there remains the question of the coal of neutrals.

(10). CONCLUSIONS AFFECTING THE ROUTE FROM INDIA.

Conclusions of Route
from India.

Summing up, therefore, the deductions from the foregoing inquiry, it would seem that, as regards the strategical application of Sea Power to the communications of India, we

find:—

1. That the Suez Canal route is not so impossible as was formerly considered, and that there are great difficulties in sending the ditch trade, colliers and otherwise, round the Cape.
2. That so long as we control the coal at the Cape, and the southern exit from the Canal, our position in the Indian Ocean is secure, though exactly how this is to be brought about is a matter for the naval strategist.
3. That the Persian Gulf must never contain a port belonging to a European Power, more especially one that can connect it by rail with Europe.

(11). THE ISTHMIAN CANAL.

In considering the strategy that affects the despatch of combined expeditions from India, the prospect of the change in the situation in the Far East that the completion of the Panama Canal will bring about could not be overlooked. Trade that went round Cape Horn to Australia and New Zealand, or from Esquimaux and San Francisco to Japan, or via the Sandwich Islands to Australia, will then go through this Canal.

There has been a school of thought in England, hopelessly short-sighted and uninstructed, but insistent, that has urged the cession of our profitless West India Colonies to the United States. The Isthmian Canal was apparently unknown to them. Yet

Value of the West Indies.

Jamaica, a naval dockyard, lies straight across the route from New York to the Isthmus; the Virgin Isles are athwart the route from Europe, while St. Lucia, Trinidad, and George Town (British Guiana), fortified coaling stations, dominate more southerly routes.

The effect of this Canal must be to greatly enhance the naval power of the United States, allowing, as it must, a much quicker transference of strength from the Atlantic to the Pacific, while it will enable foreign men-of-war to reach the Far East without begging British coal *en route* in time of strained relations. In time of war, the neutrality of the Canal, if assured, would obviate further advantage in this direction, while undoubtedly the belligerent holding command in the Pacific would be able to control the traffic that must defile through the Canal.

The effect of the Canal, therefore, while detracting from the amazing position that our supremacy in the Red Sea and Ocean confers, is not entirely harmful in its effect on our naval supremacy. Such loss as we shall sustain will probably be counteracted by the establishment of a complete naval dockyard and arsenal in Australian waters to take the largest ships. With a fine coal supply and a growing country behind, the advantages of such a base are obvious.

(12). THE APPLICATION OF SEA POWER IN THE EAST.

Following on the vital question of the communications with Europe, we come to the offensive application of Sea Power in its broad dual meaning, to Eastern waters considered by the light of foregoing conclusions.

It has already been shown that, with the exception of a campaign based on the Gulf, India's oversea expeditions are unlikely to be very strong in army strength, and that the general nature of such ventures would be in pursuit of the establishment of supreme naval control in the Far East. The necessity for command in the seas to be crossed has also been dwelt on (Part I, 3).

Now, since the existence of hostile fleets depends on their having coaling stations within reach, it seems that the practical command of the sea is to be obtained not only by destroying hostile ships in battle, but by denying them coal. To deny them coal, it would be necessary to capture their coaling ports, to protect the coaling ports of the weaker neutrals, and to prevent the establishment of special

temporary war coal-heaps. Their only source of supply, if such operations could be carried into effect, would be the most precarious one of direct supply by collier at sea.

Now, the simplest method of denying coal, with the exception of existing stocks, is to prevent the arrival of
 Denial of Coal. colliers. In the Indian Ocean we should be able to do this, but in the Far East, with coal coming by sea from Japan and America, this would be very difficult, if not impossible.

Owing to the geographical position of India, the gradual absorption of hostile coaling stations, and the protection of neutral ones by combined operations, is a feasible and reasonable way of gaining the object in view. It should also be noticed how favourably Australia is placed for a similar policy, and what a factor she is to be in the future, with her developing coal supply.

The command of the Indian Ocean that suffices to secure the safety of British vessels rounding the Cape or threading the Canal equally points to the ability to protect any expeditions sailing west and south from India, whether carrying troops to join Imperial gatherings, or for the reduction of coaling stations in those seas, as discussed in paragraph 9.

The protection of expeditions proceeding eastwards through the Straits would be more difficult. These expeditions would be proceeding either in pursuit of the policy of capturing coaling stations, as a factor in getting control of the sea, or in the acquisition of an adversary's colonies after complete control of the sea had been obtained. The latter course has the defect of needlessly dispersing force, and only forces, naval and military, that could not be brought into the theatre of war at more vital points would be employed. Such operations, however, might be the only mode for England of forcing an adversary not dependent on the sea to end a war.

In despatching such expeditions, our fleet in Eastern waters must have sufficient command for the convoy to be safe with an escort, or for single ships to run from port to port without great risk.

(13). COALING PORTS IN THE FAR EAST.

The defended foreign coaling stations in the Far East are as follows:—

British.	Singapore.
	Labuan.
	Thursday Island.
	Hong Kong (Naval Dockyard and Base.

	Wei-Hai-Wei.
French.	Saigon.
Japanese.	Sasebo.
	Nagasaki.
	Hiroshima.
	Kure.
	Shimonoseki.
	Yokosuka.
	Tsushima.
Russian.	Vladivostok (often ice-bound for weeks, if not months).
	Port Arthur.
German.	Kiao-Chau.
United States.	Manila and Guam.

If we include the South Pacific, we have a British Naval Base at Sydney and a coaling station at Brisbane, while there is a French fortified coaling station in New Caledonia.

There are coaling heaps also at various undefended places—in Java and Sumatra, in Borneo (Dutch), in the Pelew and Ladrone Islands (German), in Formosa (Japanese), and, of course, at Shanghai and Tientsin. At most of these coal is not to be found in very large quantities, while small stocks exist at almost every minor port where coasting steamers and local traders touch.

(14). RESUME.

Most of the conclusions which it seemed possible to draw from the subjects discussed have already been stated, but since a wide area has been covered, it seems desirable to finally summarise, at the risk of some repetition, the various salient points elicited, as follows:—

(a) Owing to India's continental position with a powerful and possibly hostile military neighbour, as well as to the volcanic possibilities underlying her peaceful exterior, large forces can rarely leave India, and the Indian Army exists for the defence of India.

(b) From her geographical and strategical position, however, India is able to send out combined expeditions, possessing a strategical value out of all proportion to the actual numbers despatched. Such minor armies can usually be spared, save in the gravest junctures.

(c) The security of the route from England is a necessity at all times, but especially in the event of a war with Russia, or other big campaign, and that a reasonable command of the sea is essential in waters to be crossed by an expedition.

(d) That England's policy is first to secure her trade routes by obtaining naval supremacy, after which operations against the enemy's colonies may be the best way to finish matters; also that owing to the coal question, the denial of all coal to the adversary's vessels must hasten the gaining of that supremacy. The capture of hostile coaling stations, and the protection of weak neutrals' coal-heaps, is the way to deny coal to the enemy.

(e) That it is expeditions of this nature—to capture coaling stations, or to protect them, and to capture colonies—that are best suited to the military capacity and the strategic position of India, and in which our Sea Power in the East may best be displayed.