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Captain J. G. Goodenough In the Chair R.N.

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CAPTAIN J. G. GOODENOUGH, R.N., in the Chair.

EXTRACTS FROM THE FOUR LAST CHAPTERS OF
ADMIRAL JURIEN DE LA GRAVIERE'S BOOK EN-
TITLED "LA MARINE D'AUJOURD'HUI."

Admiral RYDER: It was arranged that on the termination of Captain Bridge's paper, I should read some extracts from the four last chapters of Admiral Jurien de la Gravière's work on the "Navy of to-day."* I propose, however, considering the lateness of the hour, merely to read those remarks which touch on "tactics." The paper will be printed and appear in the Journal, and I would recommend all those who are interested in knowing what so distinguished a Frenchman thinks on such a question, carefully to read it when they get their copy of the Journal in hand. The translation has been made at my request by Lieutenant Grenfell, of Her Majesty's ship "Excellent," who is the Honorary Secretary to that most useful institution, the "Junior Naval Professional Association," Portsmouth. As I was not sure that

* *Extract from the "Statesman's Year Book," 1873.*—The French Navy is manned partly by conscription, partly by voluntary enlistment. There is an *Inscription Maritime*, on the lists of which are the names of all males of the maritime population, that is, men and youths devoted to a seafaring life from the 18th to the 50th year of age. The number of men thus inscribed fluctuates from 150,000 to 180,000. Though all are liable to serve, the Government, as a rule, dispenses with men over 40, under 20, as well as pilots, Captains, the fathers of large families, and able seamen who have signed for long voyages. The term of service in the Navy is the same as that in the Army, with similar conditions as to Reserve duties, furloughs, and leave of absence for lengthened periods. It is enacted by the law of 1872, that a certain number of young men liable to service in the active army may select instead the naval service if recognized fit for the duties, even if not enrolled in the *Inscription Maritime*.

For administrative purposes France is divided into five *divisions maritimes*, and subdivided into twelve *arrondissements*, as follows:—

<i>Divisions.</i>	<i>Arrondissements.</i>
1. Cherbourg.	Dunkerque, Le Havre.
2. Brest.	Brest, St. Seroar.
3. Lorient.	Lorient, Nantes.
4. Rochefort.	Rochefort, Bordeaux, Bayonne.
5. Toulon.	Marseilles, Toulon, Ajaccio.

At the head of the Administrative Government of each maritime division is a Vice-Admiral, bearing the title of "Préfet Maritime."

It is estimated that there are in the *Inscription Maritime* over 50,000 men!! between the ages of 25 and 50 who have performed *over six years' service in the Navy!!* and are available in case of war. The Royal Naval Reserve in England has been allowed to dwindle down to about 12,000 men, who are drilled for one month each year, but not more than 6,000 are supposed to be in England at the same time. The Royal Naval Coast Volunteers are almost extinct; the Coast Guard numbers about 4,000 men; so that on war breaking out we should have only a Reserve of 10,000 men immediately available, one-fifth of the numbers available in France. Ships in which to embark these men would of course be required, but the late American war taught us how a navy could be promptly improvised.

Lieutenant Grenfell's professional duties would allow him leisure to complete the translation, I requested Mr. Stock, the French Master of the "Worcester" training ship to make a translation also, which he was good enough to do. The translation I am about to read is that of Lieutenant Grenfell, whose acquaintance with the technical terms used leaves nothing to be desired.

CHAPTER XIII.

Classification of the Fleet—Creation of Special Corps.

Ships no longer grow old on their building slips; they leave them now-a-days to receive their engines as soon as the hull is finished. By this arrangement the loss by waste of material is considerably increased; and if a certain number of ships were not annually built, at the end of eighteen or twenty years the fleet would have entirely disappeared. Moreover, to assure its existence for this length of time, the greatest care must be taken in its preservation.

A budget which aims at preventing decrease in the *matériel* of a fleet must estimate not only for the cost of these new constructions, but must also, side by side with this fund, devote another special one to its preservation in good order. Two or three additional ships could be built every year were it not for the great cost of the maintenance and occasional complete refit, as well as of the mass of minor repairs, of those already constructed.

It is easy to imagine the embarrassment with which the Minister of Marine, at the close of the Crimean war, must have seen the arrival in port of all those vessels which, though he was obliged to disarm, he could not leave to perish entirely. Machinery does not the less need the services of an engineer, after it has temporarily ceased its active duties, for he alone can take charge of, clean, and preserve so much dormant national property. The traditional shipkeeper who sufficed for sailing ships would ill preserve the delicate machinery of a steamship; for while too long a repose would rust the different joints and bearings, there would be great risk of fracture or of destroying the true working of the various parts if they were set in motion by an unskilful hand.

The first care of Admiral Hamelin was to place these treasures under the superintendence of a staff which, though small, was sufficient to guarantee them from too rapid a decay. For the condition of complete disarmament he substituted an intermediate one to which he sought to give the name of "reserve." This fleet, which preserved the most important members of its crews, was a reserve in every sense of the term, for each ship had only to complete its complement of men and Officers, and to fill up with powder and provisions, to be at once ready to put to sea; but when the Minister came to estimate the cost which such a system of reserve would demand, he recoiled before its enormity. Complaints were also made by the northern ports that the maintenance of a too advanced state of preparation would expose the fleet to the danger of having to put to sea with machinery already

half-used, and which would be in a far worse condition than if it had been carefully protected in store. Under a southern sky, however, these difficulties did not exist, Toulon raising no objection to the condition of immediate readiness.

The decision finally taken by the Minister of Marine was to divide the reserve fleet into a sufficient number of classes to satisfy the wants of the moment and the various demands of the different seaports.

In the old Navy there were but two conditions: "In commission," and "Dismantled." For the new were introduced, "Preparing for commission;" "Harbour commission;"* "Fitted out for anchoring in the roadstead;"† "Half manned;" and lastly, "Fully commissioned."

"Half manned" answers to that state—unknown hitherto in the life of a ship—which now-a-days always precedes her entry into the ranks of the seagoing fleet, viz., when she is undergoing her various trials.

Adjusting the machinery of a ship requires from five to six months' work, during which time she may remain in a state of "preparing for commission," that is to say, having on board a staff which superintends but does not take any active part in the trials, and a crew whose only duty is to prepare her for leaving port; but as soon as all the machinery is fixed, the contractor impatiently demands repayment of his expenses; these demands it is impossible to satisfy until completely enlightened as to the value of the engines delivered; thus it is that, notwithstanding financial difficulties and the desire on the part of the Minister of Marine of diminishing the cost of commissioning the ship, she must nevertheless be more or less manned, and sent to test her engines at sea.

It will be sufficient to half-man her for these trials so long as she has her full complement of engineers and stokers. A Minister of Marine has thus three fleets constantly on his hands: one seagoing, another in reserve, and the third under trial; this last, owing to the uncertain result of experiments, to repairing and retouching, and consequently the frequent use of docks and basins, is incontestably the most likely to disarrange the estimates.

The fixing of a naval budget is very far from being an exact mathematical operation; a very large amount ought to be allotted to miscalculations. It is, however, very important that the figures should not be arranged at the expense of the construction of new ships, as there is always a temptation to do. Candour is not only the first duty of a Minister, but is also his wisest course, as it is impossible to mystify others in the budget without to some extent mystifying oneself.

The organisation of the *matériel* had been a work of at least five years. Admiral Hamelin solved this question in a manner which appeared to satisfy, and in fact did satisfy, every necessity. The preservation of the fleet in good working order was assured, and, not less important, harmonious working between the central administration and the seaports, was obtained. A single word sufficed to indicate the designs of the Minister, and to say all that was necessary with regard to the authorised expenditure and the prescribed pre-

* Commission de port.

† Disponibilité de rade.

parations. It was a happy mixture of simplicity and economy to which nothing was wanting.

Nevertheless this was only a minor point, the really important question being the constitution of the *personnel* of the fleet.

Admitting that we possess the ship, no maritime nation can flatter itself in being able to man it so quickly as we can. The "Inscription Maritime" is a force which is always at hand, a reserve which itself preserves its ranks at full strength, while the very trade by which its members live, preserves them in full vigour and efficiency without need of training. It has its first and second classes of reserve, namely, the men of the first and second levies. One portion of this population, which lives by the coast fisheries, is always to be found on the coast; the other is employed on distant voyages. It is possible that this latter might be compromised by a very sudden declaration of war, if the fishermen were not at hand to supply the first armament, which ought to secure its return.

No resource has ever been more precious, and—if I may say so—none better managed. It is only too easy to rely too much upon it, and we have severely tested it at times; luckily this is not our only reserve, for we can apply to the same source as the Army for the third of our effective strength. Thus we have found that men have never been wanting whenever it has been necessary to rapidly pass from a peace to a war footing. A number of men do not, however, alone constitute a crew; if, as seems reasonable, we take for the basis upon which we should allot a complement to a ship, the *rôle* she will have to fulfil in action, it will be seen that it is indispensable to provide beforehand for certain special duties. A large extension was given to the system which was established by the Government of July of forming a school afloat for seamen-gunners; it was sought to have for each of these duties, men specially prepared by technical instruction, and furnished, like the seamen-gunners, with a certificate of efficiency. Thus to the port of Lorient was allotted the task of furnishing the fleet with men acquainted with the field exercises, while, in addition to training captains of guns, instruction for a certain number of youths in the use and application of signals, as well as of the helm and lead, was established at Toulon.

The creation of these two special corps was an admirable measure. To realise his idea, it had been sufficient for the Admiral to reproduce, with but some slight and insignificant changes, an institution already vigorous; but to assure the easy recruiting and constant supply of the various elements of the engineer staff was no easy matter. Though a text-book was authorized, six monthly courses established and thrown open to candidates of all grades, and appeal made to the industrial schools as well as to schools in the seaports, the scheme remained incomplete.

Frequently as a solution to this difficulty has been sought, the solution is still wanting. In truth, it is no less a question than that of creating a Navy within the Navy.

The *rôle* of engineer will not remain much longer a subordinate one; if the ranks of the other Officers of the ship do not speedily open to

them, the corps of Naval Engineers will forcibly create a position for themselves out of their own. No other solution will suffice.

I have reviewed in succession the different elements which compose a ship's company: the seamen gunners, the small-arm men, the helmsmen, and the engineers. I have only omitted those men charged with duties aloft, those sailors *par excellence* so honoured hitherto by the name of topmen. It was thought—very wrongly, I think—that we should be able to get them from the Merchant Navy sufficiently licked into shape, and that we could then complete their education during a cruise or two, as well as that of the *deck-hands*. The *deck-hand* is the main working unit of a ship's company; at times we see him on a yard furling a sail, again with a musket on his shoulder, or straining at an oar; while he is equally ready with a tackle-fall, hair broom, or a gun-handspike. The advance of mechanical appliances will eventually give him some time to himself; at present he has none, his *spécialité* being to lend a hand to everything that is going on.

The decree of the 5th June, 1856, was one of those regulations which would have lasted a century in the days of Colbert or M. de Choiseul, for it guaranteed us good materials for our crews, leaving us only to find the cement to keep them together.

But here, perhaps, the desire of hastening and facilitating the manning of ships was carried a step too far. By sacrificing the cohesion of a crew, one great motive of emulation was lost. As provision for the rapid formation of a crew was alone made, on paying off it was allowed to disperse and scatter to the four winds of heaven.

This arrangement, which suddenly separates old comrades, old "chums," accustomed to undergo together the trials and privations of the Service, and equally proud and concerned in supporting the good name of their ship, is a most vicious one, to which a remedy must be found. We had, under the first Empire, regular 'man-of-war' crews—in other words, naval regiments, and during the last years of the Restoration, Permanent Divisions, but the Decree of 1857 allows of no other permanency than that of those officers and petty officers who are on the roster for sea service. All the others are subject to be discharged and completely dispersed.

Our naval barracks, no longer occupied by the Permanent Divisions, afforded a dépôt for the special classes—a sort of reservoir, where the authorities sought for each ship commissioning the necessary number of gunners, riflemen, helmsmen, engineers, and deck-hands. Though I am unable to thoroughly approve of a system against which I have already made known my objections, it is impossible to deny that with these three institutions—the Reserve Fleet, Dépôts for Special Corps, and the "*Inscription Maritime*," the Empire solved, in the most complete and economical manner, the problem of prompt mobilisation.

Though from 1858 to 1870 the Navy has many times been taken unexpectedly, at one time being asked to transport armies of 25,000 to 30,000 men across the high seas, at another, being required to have all its forces ready at a few days' notice, yet it has never been appealed to in vain. The rapidity with which those orders have been executed has excited the astonishment of foreign nations. Of all the great

powers of the State, the Navy is perhaps that one which has least deceived expectation. Though it is true that we have not had to undergo a naval war, at the same time we must never forget that, if France seeks to maintain her rank in the world, if her alliance is again one day to be sought for, it is always this crucial test of a maritime war which she must keep in view; and it is strictly with a view to obtaining the advantage in such a war that the constitution of her fleet must be arranged.

CHAPTER XIV.

The Uses of a Navy.—Considerations on Naval Matériel.

What is the use of a Navy?—is the first and most difficult question which a statesman in the present embarrassed state of the finances should ask himself.

My answer is given unhesitatingly—To occupy and maintain the great ocean highways.

The occupation of the seas, though it were only temporary, ought to have consequences of the very deepest importance, even in a purely continental war. It was thus that the Federal States of America triumphed over the resistance of the Southern States; it was thus that England eventually exhausted the resources of the first Empire; it was thus in the Crimea that we conquered Russia. The damage done to American commerce by a few privateers has been greatly exaggerated, and the capture of a French merchantman by a German corvette issuing in the depth of winter from an inaccessible and no longer blockaded port, has caused the most absurd sensation. A naval supremacy, however well established, can never entirely prevent depredations of this nature; at sea, as on shore, the convoys of a victorious force are never absolutely secure from attack. But what results can flow from these comparatively insignificant successes? Is it to be imagined that the bold deeds of twenty "Alabamas" could have delayed the fall of Richmond for a single day? If it is from a reliance on such facts that the paying off of our squadrons is demanded, and a mere predatory and privateering warfare prescribed, I, for my part, would ask the advocates for such a course to consider for a moment the following hypothetical case:—The French armies are again massed on the banks of the Rhine, while every sea is furrowed by the keels of our countless frigates and corvettes; but before our ports, cruises a German fleet, to which we have no fleet to oppose.

What would follow from such a state of things? All our coasts would be kept in constant alarm, all our ports would be asking for garrisons, and the whole of our maritime population would be exposed to falling into the enemy's hands. It has always been the cruel destiny of the crews of privateers to finish their adventurous career in the hulks, and by privateers I mean equally ships of war specially designed for cruising and those vessels which are equipped by private speculation. In the war of 1778, we saw our isolated cruisers succumb, one after another, the very day the high seas were momentarily abandoned to the English

squadrons. We ought in fact to look upon squadrons as so many moveable fortresses able to send forth their flying columns in comparative security to scour the surrounding districts. I am of opinion that before this predatory warfare could be set on foot, it would be necessary to sweep the seas. So long as the broom of Van Tromp remained at his main-mast head, the merchants of Amsterdam and Flushing were without fear; they knew well that their losses, should they experience any, would be light.

I do not deny that this predatory warfare may be the sole refuge of the weakest side. The moment the disproportion of the two forces has become too great, it may be well to disperse in order to reduce the chance of capture; but to accept this programme *à priori*, without knowing exactly which is the adversary fate is reserving for us, would be to foolishly abdicate our naval position in virtue of a force which is not yet in existence. What figure should we cut in the Mediterranean, for instance, if we gave up our squadrons in those waters? Shall we let it become an Italian or a Spanish lake, when we would not allow it to be a Russian one?

Unless fate gives us England for an adversary, we ought to be prepared to undertake *la grande guerre* at sea. Even against England herself, this line of action would be necessary on the very day that new complications modified the number and nature of our allies. It is from this basis, then, that I always consider any plea for the maintenance of our fleet.

Under the Empire, our war-fleet was a homogeneous fleet; each of the ships which composed it could turn in nearly the same circle. As long as ramming remains for our vessels the grand mode of attack, naval actions will inevitably be mere *mêlées*. It is, above all, necessary in *mêlées* to have ships which describe circles to all intents similar. At the same time I am far from thinking it impossible to reconcile the advantages to be derived from the progressive researches of science, with those which result from uniformity in construction. In a squadron, two or three ships working together form the tactical unit; in a large naval force, it is the squadron which becomes the unit, that is to say, a group composed of six ships at least, of twelve at most. Each squadron ought to manœuvre separately and independently, in such a manner as to achieve the result indicated by the orders of the Commander-in-Chief.

The homogeneity of the fleet can thus be given up, so long as that of each squadron be preserved. This programme will, no doubt, appear very limited to those who find fault with our naval architects for their timidity and lack of enterprise. Happily, we have other designs under trial than these costly constructions which form our first-class fighting ships. It is not now-a-days necessary to restrict in any particular those vessels which are not the equivalents of our old line-of-battle ships, save to some conditions of strength and speed; for they belong beforehand to no particular type, and each should be an individual design franked and guaranteed by its author. It is to this domain that I would direct the inventive boldness of our naval constructors.

Our progress in naval architecture has hitherto proceeded rather by

impulses than by any continued effort; from 1852 to 1857 the leap was enormous. All our youth was passed in fierce debates, in which theory and practice were ever at variance, when a young man appeared on the scene, who both loved our profession and had its true instinct. Him we took and raised above the rivalry, criticism, and barriers which opposed him on every side. His very first creation was a masterpiece. The productions of his original and fertile mind were called successively the "Napoléon," "Algesiras," "Gloire," "Solferino," "Océan." To him we owe the whole of that Navy of which we are so justly proud. This fleet is homogeneous, because it sprang fully armed like Minerva from a single brain. It is time that a new inspiration manifested itself; the same type is reproduced too often with modifications which indicate ingenuity of arrangement rather than fertility of design. We wait for a new "Algesiras," in other words, one of those ships whose appearance is at once a great event and a vast acquisition of strength. In the "Algesiras" it was not so much the ship herself which was the novelty, as her engines. In the merchant Navy less attention is paid than in ours to the external appearance of the machinery, and more to the results to be obtained from it. There is much to learn from those long voyages where extreme speed is maintained sometimes for weeks, and passages accomplished with a regularity which is rarely interrupted. When our ships of war are able to cross the Atlantic in company with any of our great mail steamers, they may easily dispense with the other trials which they now undergo. The science of the naval architect is, now-a-days, exceedingly complex; we are far removed from the days when builders handed down to each other the simple secrets of an hereditary art. In the architect, the engineer now-a-days rivals the ship-builder—I should say, surpasses him, for this faculty is by far the most rare and most necessary of the two. By study it is possible to become a builder, but one must be born an engineer.

The Administration—let it be well noted—is not generally so hostile to progress as is said or supposed; its extreme caution, which keeps it somewhat behind the times, is the result of that pitiless criticism which public opinion lavishes on all which is not on first trial an undoubted success. Could it obtain a little indulgence, the Administration would not view novelties with so much suspicion. What public opinion should do—if I may use the expression—is, give strength to the budget and wings to genius. We ought more than ever to aim at perfection in our constructions since we are certainly menaced with a reduction in the number of our ships. The question of pay is insignificant compared to that of the general expenditure of stores and the salaries of workmen. It is to the estimates for the *matériel* of the fleet that we must turn if we wish to economise seriously; but at the same time we must thoroughly realise what these economies are, which is not so easy as we might suppose. It is impossible on any given day to discharge the large population which lives on the work obtained in our building-slips. While we can economise in the matter of these expenses there are others in which it is impossible to cut down anything.

In fact, reductions should never be undertaken unless the principles on which they are to be regulated are thoroughly understood. I have

never had any doubt in my own mind about these principles; whenever it is a question of sacrificing either our dockyards or our fleet, the former, I affirm, must always give way. These grand monuments of our greatness must, I think, be sacrificed to preserve our ships; our national pride must submit to it. What matter if we display less magnificence to strangers, if we can confront an enemy with forces not sensibly diminished? This is the result to which we must aim.

I think I have already sufficiently indicated how, as far as the "*matériel*" of the fleet is concerned, we may still maintain our warlike condition; but in so doing I have only attacked the least important part of the question. The real point, as no one doubts, is that which concerns the living organism of the fleet; it is here, unquestionably, that a judicious and conservative scheme is required. I shall describe briefly one which I have conceived, at the same time I confess that I have sometimes exceeded my own programme. Although this is no time for too exalted views, I could not forbear from seeking to improve and perfect those institutions whose maintenance I have persistently demanded.

CHAPTER XV.

Constitution of the "Personnel" of a Fleet. The Officers and Men.

The real strength of any military organisation is measured by its effective force in officers and men.

This may, perhaps, be called a truism, though it is not the less important to be occasionally reminded of it. If I was not certain that the officers of the fleet will meet with respectful consideration, and that the hardly less valuable class of petty officers will be equally well treated, I should have but little hope in endeavouring to discover the future of the French Navy, for in a very short time our Navy would cease to exist; the zeal of Commissioners of Finance causes me but little anxiety on this point.

I wish I could speak with equal confidence of the proposals of our reformers; I fear certain schemes which appear to me stamped, I confess, with a peculiar imprudence. Among these I may mention one which aims at suppressing the training-ship which for nearly forty years has supplied us with all our officers. It is impossible, no doubt, that the Navy should completely escape from those reforms which will result from a considerable modification in our social system, but it would be curious if endeavour was made to pass it through most dangerous experiments just when its praises are in every mouth, and when it possesses a greater share than ever of public estimation.

I admit, perhaps, the necessity for a *free* training for officers, but I cannot understand how they can entirely do without training. It would be equally dangerous to apply serious modifications to our existing mode of recruiting our ships' companies. By the introduction of forced military service for all, the duration of which is to be divided into two or three distinct periods, every one in France will have to submit to the hitherto exceptional *régime* under which—not indeed

since Colbert, but since the latter years of the Government of July—the whole of our sea-faring population has lived.

If the "*Inscription Maritime*," such as the last decrees made it, continues to exist in some particulars as an exceptional *régime*, it will be due far more to the privileges it authorises than to the cost it imposes. I am unable to see what inconvenience would arise if that interesting class, which has such great claims on the State, continued to enjoy its privileges for some few years more. For many years it has been placed under the Admiralty, a guardianship it should not be deprived of too suddenly; the high degree of discipline to be found among French sailors is due to this constant though hardly visible attachment, a bond which could not be broken without the most serious disturbances being at once produced in our Service. A nomadic Navy, like that of the United States, would be the result. France would lose those devoted sons who exist along her coasts, those sailors, fashioned to obedience and discipline from their earliest days, who regard their native country with affection as the home of their declining years.

For these reasons I still look to the "*Inscription Maritime*" for producing the main portion of our crews, and to our training ships for giving that theoretical instruction to our young officers, which is essential for a sailor of the present day. Our profession, as I have already said, and not without some slight regret, was formerly an instinct, it is now a science. Let us work, then; let us work incessantly, since success is now-a-days the reward of labour alone. However limited our budget may be, I would still devote the greater portion of it to the instruction of our officers and men. The Navy has hitherto been most frequently employed on entirely imaginary duties; stationed to protect a commerce which often never existed, or on diplomatic service, where the chief difficulty lay in unravelling complications which it had itself produced. The only essentials of a peace armament are, in my opinion, those which conduce to the rapid formation of a war armament. Naval stations are not only useless, they are positively cruel. Three or four of the best years in a young man's life are devoted to an enforced absence in an unhealthy climate. A remedy for this has been proposed in constant circulation; it is the general wish of the Navy, to which I give my unqualified adherence. I make but one demand; that among all these ships constantly circumnavigating the globe, there should be one specially detailed for providing the fleet with properly certificated topmen. It is difficult to understand why, when all other classes have been deemed worthy of special training, the most important branch of all should have remained uncared for. The topman will always be the most intrepid and most intelligent man in the ship. The chief boatswain's mate* is incontestably superior to all the other petty officers; it is to him, and not to the chief gunner's mate,† or chief-quartermaster,‡ that the regulations give the command in case all the officers are removed. The class of topmen is the nursery for these chief boatswain's mates. We see, then, that both justice and foresight counsel us to surround the recruiting of

* Maître de manœuvre.

† Maître canonnier.

‡ Chef de timonerie.

this precious class with all those guarantees which assure the effectual discharge of duties in other branches of the Service.

The task of developing the child into the man has ever been considered a difficult one by philosophers. To make an officer out of a cadet does not demand less care. Supposing that one of these young scholars who leave the training ship sufficiently acquainted with the elements of their profession, was confided to my care, and that I was charged with training him for the rank of lieutenant in the most thorough manner, this is how I should set to work. He should make, first of all, two or three trips round the world. These voyages would "sailorize" him, without making him a thorough sailor. Should there be a certificate for seamanship, as there is for gunnery, musketry, and engineering, it should only be given to those who combine knowledge of pilotage with knowledge of handling a ship. It has always been my belief that the course of instruction will be incomplete until pilotage is taught as well as seamanship and gunnery. Training in this subject should be conducted where all the difficulties of navigation are united. From Bayonne to Dunkerque we find at once fogs, currents, and shoals; it is there our young officers and our quartermasters should be taken. The latter would there learn to watch the course of the vessel with more attention and intelligence; into whatever waters chance should take them, they would soon be most useful auxiliaries to pilots; while the former would soon have sufficient skill to do without pilots altogether.

Five or six years well laid out would give a young officer an amount of instruction of which he would feel the advantage all his lifetime. Before entering the higher ranks, he should be called upon to pass through the various schools which have been instituted for the different classes of which our crews are composed. He should become a rifleman at Lorient, a gunner at Toulon, an engineer at Brest and Indret. Having arrived at the rank of Lieutenant he would be ripe for the grand school of all, where all the acquirements and experiences of a young officer's education are put into practice; I mean the evolutionary squadron. This squadron, which was organised in 1825 by M. de Clermont-Tonnerre in the West Indies, and since that time has assembled nearly every year in the Mediterranean, is the source where all our officers and men from time to time renew their warlike spirit.

Even if this were its only advantage, the evolutionary squadron ought to be preserved at all hazards; but a consideration still more important, if it be possible, imperiously commands its maintenance. It is our only school of tactics.

The fleet which has the greatest acquaintance with tactical manœuvres will possess a great element of success in the day of battle.

When two fleets meet at sea, when the two lines, after hurling one against the other have been mutually penetrated, the action can only be continued by immediately reversing the course previously taken. This manœuvre, which will be almost inevitable, is of such a nature as to cause more than one involuntary collision between ships of the same fleet; the homogeneous composition of the fleet and similarity in their circles of turning will diminish these risks; skill in combined

movements will make them disappear altogether. It is not in the practice of *regular* evolutions and in the execution of geometric figures that proof is given of a trained and skilful eye. The practice which can alone develop the nerve required for most of the manoeuvres which will be carried out on the day of actual combat is very different. Neither isolated cruises, nor the endeavouring to represent squadrons by a collection of despatch vessels and gunboats provide a sufficient school for this most difficult art. An Officer must learn how to handle in a very small space, masses of 6,000 to 7,000 tons, which cannot come into collision without mutual destruction; he must nerve himself to behold unmoved the imminency of the most terrible catastrophes; he must be accustomed to preserve a close-order both day and night; to know how to group, how to spread out, sometimes presenting a compact mass, at others, successive *échelons*; he must possess, above all things, the indispensable art of divining the intentions of his Commander-in-Chief, and by watching intently his slightest change of course, at once to comprehend and conform to his movements so as to be independent of his signals. *This is the whole secret of Naval tactics.*

There is but one definition for this word "tactics:" it is the art of sustaining the fight, and of not falling foul of each other. The most skilful are those who are able to combine their efforts even when the regular transmission of orders has become impossible. The very last economy France ought, in my opinion, to make, is that of giving up the evolutionary squadron. The day when the condition of our finances forbids us the maintenance of such a force, it will be necessary that at least every year an instruction-cruise — should its duration be only one month—be undertaken to prevent the total loss of those precious traditions which we owe to fifty years of toil. With a diminished armament, neither the period of service of the officers, nor the commands, can be of such long duration as hitherto.

If it be admitted, as I have endeavoured to show, that in time of peace but a very small display of force is necessary, and that the chief object of a naval armament is to instruct and train all those various elements which we shall need in the day of battle; then we shall naturally seek such an arrangement as will most widely extend instruction through the entire body of the Navy. This arrangement is to me self-evident; we must increase the number of cruises, and shorten their duration.

We have recently discovered among our blue-jackets aptitudes of which formerly we doubted; while admitting that they were good gunners no one believed that they would ever make more than indifferent soldiers. Though one of those who hold that we should never lose sight of our own proper profession, and though I should regret to see seamen neglect their proper and traditional sphere of action to become an auxiliary branch of the Army, I have not the less constantly protested against the views of those who would discourage our ever disembarking our men. I am very glad that events have shown what these landing-parties can be; the action of our fleets on an enemy's coast will become far more efficacious. Would it not be very

lamentable if the 5,000 or 6,000 picked men on board a squadron were not always ready, without further assistance, to execute a *reconnaissance*, a *coup de main*, or a descent on an enemy's coast? Every considerable assemblage of ships should be able to forthwith furnish troops sufficient to undertake any of the minor operations of warfare. I have long since discussed this question with young officers who will one day have to realize it, and I have never ceased to demand that the number of small-arms allowed to each ship should be considerably increased, companies for landing provided with those materials for encamping without which it would be impossible to leave the sea-coast, and that a section, provided with the necessary tools for throwing up an earthwork or clearing away an obstacle, should always accompany our riflemen and mountain artillery. That which the Roman fleets and the Norman invasions were able to accomplish, our squadrons, when once they had swept the seas, should be in a position to attempt. When every ironclad shall carry on her sides seven or eight steamboats, which I think is indispensable, no squadron will appear on an enemy's coast without spreading alarm and causing a vast amount of destruction.

It would be superfluous to insist upon this view of the matter; a complete transformation in our social system will be due to the misfortunes we have just gone through. Every Frenchman is about to become a soldier. Those hopes, which I formed less than a year ago without concealing from myself the great difficulties which might defer their realization, will be accomplished if the Navy is only allowed to follow the natural tendency of events in the present day.

Many people will be astonished to see me develop with such calm confidence a programme which breathes so little discouragement; more than once my friends have rallied me upon what they are pleased to term my "robust hopes." We shall see whether the future will prove them or me to be right.

Struck by a mortal blow Charles XII carried, it is said, his hand to the hilt of his sword. Shall we, for a wound less deep than many we have often inflicted on other nations, resign all hope, and despair of the future of France? What may become of the organisation of the Army during the critical phase through which we are passing, I cannot say; but I think I can confidently state what that of our Navy ought to be in the present day.

CHAPTER XVI.

The Fleet of the Future.—Institutions which are absolutely essential.

To gain our point, it is by no means indifferent from what conditions we start; the very best reasoning will only lead to a false conclusion unless the premises are sound.

What is the principle on which the organisation of our fleet should be based? On that principle which was true in all time and which is an hundred times more true to-day—neither Colonies nor Dockyards make a Navy, but *Ships*. The Colonies must seek elsewhere than in our budget the means for squaring their expenses; the

Dockyard must lose the opinion of its own greatness, and be content to become the very humble slave of the Ship. "We all, while we are here," said Admiral Lalande in 1837, then Superintendent at Brest, "are but the servants of the servants of God. Our resources, we only accumulate to dispense to those who will have to make use of them; a seaport must never be judged by its workshops or stores, but by the ships it fits out." This is wise language, containing in its brevity a complete system. In order that those passions that are so natural to the heart of man should not prevent its accomplishment, I could wish that history never related a naval action without saying—"the ships which have fought were built by such a Naval Architect, equipped by such a Maritime Préfet, and commanded by such an Admiral."

As for the Minister, all success ought to redound to his glory; when an operation is successful, it is unquestionably he who should be first rewarded. The victor is but his emissary and his debtor. Why does public opinion hasten to consider him as a rival? Mean competition which, though it does not breed a refusal of active support, still embitters the mind and alarms patriotism! He who is occupied with the work of organisation is frequently tempted to envy the luck of those nations who have everything to create, and have not to clear away those obstacles with which time has obstructed our path. It needs but so little money to procure a fleet, and so very much may be spent on a Navy of long standing, without in the end being certain of possessing one! For the sum which two years of our old estimates would have given us, the fleet which the Empire left us could be built. This fleet, it is true, would last barely twenty years. It would be necessary thus in twenty years to have put by the value of another such fleet. This sinking fund, which is gradually expended on the annual constructions, instead of being accumulated in the coffers of the State, constitutes the main part of that which is called the normal expenditure. It is impossible to make any retrenchment in this sum, unless we consent to a rapid decay of our naval power; but, in my opinion, saving would be effected without loss of strength if we confined ourselves to merely preserving in good working order the whole of our transport fleet, instead of renewing it. If we are seeking for economics, this is one which will cost us but little in point of actual strength.

I believe I can indicate another, whose importance will readily be recognized. The annual sum for new constructions depends on the rapidity with which materials decay. The amount of this sum will be considerably reduced, if, in future constructions, wood is replaced by iron. It is true that this substitution will necessitate the purchase of new apparatus, that our stores of oak will be no longer of service, and that the mass of our carpenters will have to be discharged. The scheme is thus not so simple as it appears at first sight. It is a reform to be made, but one to be made with extreme caution. As for the workshops, basins, and all that fleet of stone, which, made for producing and preserving the fleet of wood and iron, for the most part devours it, its further development must be arrested, and we must content ourselves with allowing it a sum sufficient to maintain it in its present condition. On an annual credit of 65 millions, economics in

matériel ought to furnish us the means of saving those institutions whose defence I have undertaken.

The separation of the Admiralty and the Colonial Office* will also assist us. I should not propose to create, as in 1857, another portfolio; the Chamber of Commerce will undertake the administration of interests which are rather commercial than maritime. As for the Colonial garrisons they properly belong to the War Department. This little Army, which has always been increasing, has everything to gain by being absorbed into the great national Army. The services it has rendered, and the bravery it has shewn, ought to procure it this honour. While a mere pendant to the Navy it would still have continued to vegetate as an auxiliary corps. A far wider field must be opened to it, and the occasion seized, which we let slip fifteen years ago, of simplifying the arrangement of our Naval budget. We must still have Officers to build, to command, and to man our ships; doctors to tend, and chaplains to instruct and minister to our crews, and there must be no reduction made in these essential branches, whether civil or military, of our Service. The pay which they get is but a drop in the ocean of the Naval Estimates. For the cost of one ironclad frigate, we could afford to double, almost to triple the number of our Officers. M. Hyde de Neuville, who perhaps more than any Minister understood and defended the great interests confided to him, gave utterance during the Restoration to a saying, which is worthy of deep consideration, "*We must economize in things, never in men.*" If it were possible to impose silence for a moment on the jealousies of the human heart, and to go with an unprejudiced mind to the root of the matter, it would be seen that never was a truth so incontestable. It is possible to ruin many a life, to totally destroy the organisation of a great Service, without realizing by such ill-considered retrenchment, the decrease in expenditure which would be represented by the coal which it is sometimes so easy to save.

I most earnestly demand that no reduction be made in the number of the ships which we ought to be able to place in line of battle. But what purpose would the fleet serve if the *personnel*, without which our men-of-war are but useless toys, is to be disorganised? "The fleet," I shall be told, "will not be reduced, only the number of ships kept in commission in peace-time. Many of your Officers will find themselves without employment. It is not only their zeal which will suffer from such enforced inactivity, but still more so, their professional knowledge. A Naval Officer is not formed in barracks, nor in harbour, but at sea." A remedy for this state of things is easily found, and was applied during the first years of the Restoration; England and the United States have had recourse to it: An Officer must be permitted to serve on board merchant ships—on board private ships, is what the regulation of Louis XVIII says—without any loss of position. To me it only seems fair that he should not lose those claims to promotion which his seniority would give him. If we here apply the principle of renewing leave of absence, a reserve

* Now combined under one administration.—Trans.

of Officers will be assured almost without expense, as the "*Inscription Maritime*" has assured one of seamen. In the last thirty years I have seen several of those ideas which I ardently propagated, both patronised by public opinion, and adopted by the Admiralty. During these thirty years my opinions have been modified, though never falsified, by the course of events and the revolutions achieved by science. I find them in 1872 but little altered from what they were in 1842 and in 1859.* No doubt there are some on which, if needs must, I could accept some modification; but on those which appear to me fundamental, neither the misfortunes of the present day nor the mania for change, could gain from me the slightest alteration. I pronounced in a previous chapter the words "*Institutions Necessaires*." These institutions I enumerate again. The first is incontestably the "*Inscription Maritime*;" the second, our system of separate schools for special subjects, to which must be added a school for topmen, and one for pilotage; the third is called the evolutionary squadron. Save these institutions and you will save the Navy.

If our Naval power was not situated on two seas very far apart, I should prefer having our central administration placed in one of our sea-ports rather than at Paris. I have long held this opinion. The river of time which hurries everything onward in its course does not spare the best thinking powers of a sailor. After having drunk for some years of these waters of Lethe, the sense of the deep needs of our Navy becomes less keen; other matters occupy our minds and engross our attention; little by little we sink under the moral stupor which invades us. The deserted fleet drifts hither and thither at the will of the waves, and we run the risk of only finding it again when it is among the breakers. Since a Minister of Marine can neither live at Brest nor Toulon, he should at least go frequently to both places; this, while reviving his zeal, will excite that of his subordinates. He should be seen everywhere, coming unexpectedly without pomp or excitement, in our dockyards where his presence would instil fresh life, at the trials of new ships, and on board our training ships in the midst of officers and men. These inspections could not be made too frequently; the work would be better carried on, and progress would be more real. There are few questions which would not be better solved if they were studied on the spot, whether by the Minister in person, or by the members of the Admiralty Board,† or by those of the Constructor's department.‡

How many contradictory orders and unfinished undertakings should we not be spared! As for business, the very worst way of carrying it on is by telegraph. With its oracular obscurity this mysterious wire is the most hateful instrument that an Administration ever used. By it, honest work has given way to undue haste, well-digested orders and explanations to feverish dialogues. It is impossible for one man to see and do everything himself; it is by far the wisest plan to repose

* See the author's "De l'Organisation Militaire de la Marine." (Extracts from "Guerres Maritimes" and "Souvenirs d'un Amiral)."

† Conseil d'Amirauté.—Trans.

‡ Conseil des Travaux.—Trans.

complete trust in those who see and those who perform. For a Minister, as for a Commander-in-Chief, or a King, the secret of governing is to know how to decide.

Hitherto I have been occupied with conservative schemes alone; it must, however, be thoroughly understood that if we make too sudden a halt we shall soon find ourselves left behind. Stagnation in these days is the very worst imprudence. Everything is advancing, ships, guns, engines, everything—even powder.

The practice-grounds, the great factories belonging to the State or subventioned by it, are also necessary institutions; nevertheless, much cost might be spared if we knew how to profit by those studies which other nations undertake. It is absurd to endeavour to experimentally determine every point for ourselves, and to seek from purely speculative researches what is after all only a trade-secret.

The Russian Navy sets us a very good example on this point. Russian officers are seen everywhere, and prove themselves to be, as a rule, very judicious observers. Very little of interest occurs in the naval world without their becoming immediately acquainted with it. The battle of Lissa was hardly fought, than one of their Admirals hastened to Ancona to examine the ships and question the officers and men who had taken part in it. We travel too little; we are neither acquainted with foreign ports nor foreign dockyards, while ours are constantly being visited by intelligent travellers. A special fund ought to provide for those doubly fruitful missions.

I repeat it; what our Navy has done in the last fifty years is nothing to what it will have to do in the event of a naval war. I have very often sketched in my mind the constitution of a fleet which could at any given moment unite its scattered fragments, and concentrate formidable masses on two or three previously chosen points. I asked myself how our institutions, our budget, and the distribution of our forces could be made to contribute to carrying out this idea. I revived on a larger scale the plan of 1805, convinced that the fleet which can most promptly concentrate, ought to be able to keep for several months the advantage gained in the first few days; for the return of its scattered seamen would be assured and those of the enemy intercepted; but it is impossible to undertake such operations if the fleet be not accompanied by a complete train of store and provision ships. We have constructed transports for troops and horses; these might be got rid of without great inconvenience; what we want are transports for provisions, and, above all, for coals. These latter will be of a type quite novel and very difficult to construct. Mixed transports of inferior speed will be nearly useless. The transport we need must be as swift as the squadrons whose operations they must accompany.

If I am not mistaken this is, indeed, a vast scheme; let us defer, if you will, its realisation, but let us not for that entirely lose sight of it. The day will come when a more fortunate generation will, perhaps, deem it too modest. The eclipse which we are undergoing, will be more or less long; but France is destined to emerge from the shadow, and our descendants will have difficulty in comprehending our present discouragement.

In the midst of the bitterness with which our hearts are overflowing, I fix my eyes on a future, which we of an older generation shall not see, but you, for whom Heaven in its mysterious dispensations is preparing it, take care that it does not come upon you unawares. Do not imitate the foolish virgins of Holy Writ, whose lamps were without oil when the bridegroom came. Watch! for who can tell the moment when it will be said, "The hour is come"? Watch! and most carefully preserve our great institutions. The Navy of To-morrow will then have no cause to envy the Navy of To-day.

Captain GOODENOUGH: I think you will feel no inclination at this late hour to commence any discussion on this paper. I merely ask you to return your thanks to Admiral Ryder for his kindness in taking so much pains in bringing it before us; we know he never spares any pains for our good. I would merely say that Admiral Jurien is known not only as a consummate writer on naval affairs, but as an elegant French writer—that he is known as such even amongst academicians. I therefore think that younger members of our profession cannot do better than read his works as a study of French, as well as a study of the particular subject of which they treat.