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Entry and Training of Naval Officers

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ADMIRAL SIR W. HOUSTON STEWART, G.C.B., Member of
Council, in the Chair.

ENTRY AND TRAINING OF NAVAL OFFICERS.

By Rear-Admiral N. BOWDEN-SMITH.

1x February last Admiral Mayne read a paper on recent Naval Manœuvres, in which he alluded in disparaging terms to the system of training involving early entry as now established on board the "Britannia," and expressed an opinion that the "Britannia" should be abolished.

Shortly afterwards some of the naval Members of Parliament expressed a similar opinion. It is therefore the object of the present paper to elicit from those who hold these views what system they propose to set up in place of the "Britannia," should the present training of naval Cadets be abolished; for surely they cannot wish to see young gentlemen come straight on board a ship from school, at the age of 16 or 17, and take their place as Officers without any preliminary training.

Such boys, although they might have passed a very good examination on shore, would be ignorant of everything pertaining to a ship, know nothing of signals, or the management of boats, and would, in fact, for the first year, be entirely useless, knowing much less about their duty than the ordinary seamen and boys under them.

I cannot suppose, therefore, that it can be the wish of any naval Officer to advocate such a system in lieu of the one now carried out at Dartmouth.

In this paper, I wish it to be distinctly understood that whenever the "Britannia" is alluded to it is not intended to apply to the

"*Britannia*" as a ship *versus* a college, but to the "*Britannia*" system, which could be carried out just as well in a building on shore, near the water, as it can be on board a hulk. A ship has some advantages over a house; indeed, the advantages and disadvantages between a ship and a house are very evenly balanced; but it is not intended to go into that question at present. I may add, however, that, as regards locality, I believe Dartmouth is the best place on our coast for a junior Naval Establishment.

In comparing our system with that carried out by some other nations, I have selected France, because she is the greatest naval Power after ourselves, and is our nearest neighbour.

I have mentioned the United States because, although they have not at present a very powerful Navy, they bid fair to have one, and are an English-speaking race like ourselves. Their training establishment also, at Annapolis, is the most complete I have seen, and is on a very large scale. Last, but not least, I have brought in Holland, because, though one of the smaller Powers, she has naval traditions second to no other country; moreover, she has, like ourselves, very important Colonies.

The system of early entry as carried out in England is, I understand, approved of by many naval Officers for the following reasons:—

First. The life of a sailor being an unnatural one, it is considered that by early association with the sea it becomes a sort of second nature, and that a man feels the restraint and discipline of a vessel of war less irksome if accustomed to it from boyhood than he would if entering the Service later in life.

Secondly. It is considered by many Officers that no one should have charge of a watch until he has had four years' experience in a sea-going ship. If a young gentleman therefore joins the "*Britannia*" at 14, and remains two years under training, he goes to sea at 16, and becomes Sub-Lieutenant about 20, after which age I do not think it advisable to keep them in the rank of Midshipmen; whereas, in some foreign Navies they are still under training until 21, or even later.

In England the candidate for a naval Cadetship may present himself for examination (after nomination) between the age of 13 and 14½ years.

This is, I admit, full young, and possibly renders the medical examination less effective than it would be if conducted at a later age. Hitherto the Cadets in the "*Britannia*" have suffered considerably from measles, mumps, scarlatina, and other maladies common to young people, involving the loss of much valuable time; but, now that the age has been increased, we may hope that many of the boys will have got over their infantile complaints.

It seems also a pity to take a boy away from his school and general education before he is 14 years of age, and the nominations should be

so arranged that the Cadet shall not join the "Britannia" till he is 14, or nearly so.

Some people are under the impression that in foreign Navies boys are prevented by law from becoming naval Cadets before they are 16, but this is not the case.

In France the age for entry is between 14 and 18, but, as the competition is open and a boy may go up for examination every year until he is past the age limit, a lad must be very clever to get in before he is 15 or 16.

When visiting the "Borda," at Brest, some years ago, the Captain informed me he preferred having the Cadets at the earlier age.

The examinations for entry only take place once a year, instead of half-yearly as with us.

French naval Officers are allowed to count their time for pension and retirement from the age of 16, thus including part of the time they are under training. French Cadets remain two years attached to the "Borda," then embark as "aspirants" of the 2nd class on board a sea-going training ship, where they pass nine months, and then have to spend two years on board a vessel of war as "aspirants" of the 1st class, when they become "Enseignes de Vaisseau." Thus some of them will be 21 before they become "Enseignes."

In the United States Navy a candidate for the Naval Academy must be not less than 15, nor more than 20, years of age. He must "be physically sound, well formed, and of robust constitution." If rejected at the examination, "he shall not have the privilege of another examination for admission to the same class, unless recommended by the Board of Examiners."

The examination for admission is not competitive, and is held only to ascertain proficiency, for which there is a fixed minimum for every branch, which is rigidly exacted. A competitive examination is frequently held for the nomination, and this custom is becoming more general. It is entirely optional with the Member of Congress, whose right to the nomination is qualified only by the legal requirement that the nominee must be an actual resident of his district.

The training consists of four years at the Academy, followed by two years at sea. All Cadets are kept an equal time, except in exceptional cases, such as severe illness, when a Cadet may be given an additional year at the Academy. Promotion to a higher class is not allowed, even in case of exceptional cleverness, as they think there is sufficient in the course to occupy the time of the cleverest.

There are some few elective branches of study, but these are in addition to the regular course which all are required to pursue.

After the two years at sea the Cadets return to Annapolis for graduation, when the greater part of those who are retained in the Service are appointed Ensigns, a few being gazetted Assistant-Engineers, and Second Lieutenants of the Marine Corps. The majority resign, or are honourably discharged; thus taking the year from 1st September, 1888, to 23rd November, 1889, the following list will show the disposal of the Cadets:—

Appointed Ensigns	..	..	..	25
" Assistant-Engineers	..	..	..	2
" Second Lieutenants of Marines	..	..	..	1
Honourably discharged..	..	..	..	16
Resigned..	..	..	..	52
Dropped ..	..	..	..	1
Dismissed	..	..	..	2
Died	..	..	..	1
Total	..	..	..	100

As the Americans propose to increase their Navy, it is supposed that in future a larger number of Cadets will be graduated Ensigns, &c.

In Holland the age for entry is between 14 and 17, and, as in France, competition being open, it is difficult for a boy to get in earlier than 15; however, when I was at Helder, a short time ago, I saw two boys amongst the Cadets much smaller than the others, and was told that they were not 15, though some of the lads were over 20. This is accounted for by the fact that they allow Cadets to remain at the college until they can pass out up to a certain limit of age. The course of instruction is four years, but a good deal of the last two years is spent afloat in a small sailing corvette. The Dutch have a handsome college at Helder, with 150 Cadets under training, that number including a few for the Marines.

We now come to the question of open competition *versus* nomination for entry, and, after relating what the system is at present in England and the other three countries, I will state my own opinion.

In England appointments are made to naval Cadetships by limited competition, with some exceptions, as follows:—

Four are given annually to sons of gentlemen in the Colonies, on the recommendation of the Secretary of State for the Colonies. Service Cadetships, the total number of which is not to exceed five in any one year, are selected by the Board of Admiralty from sons of Officers of the Army, Navy, or Marines who have been killed in action, lost at sea, killed on duty, or have died of wounds, &c. Except in special circumstances, not more than one-third of the number of candidates actually presenting themselves before the Civil Service Commissioners are entered.

All nominations of candidates for naval Cadetships are made by the First Lord, with the exception of a limited number which are at the disposal of individual members of the Board of Admiralty. Admirals and 1st Class Commodores are allowed two nominations on hoisting their flag, and Captains are given one on commissioning a ship, but this right, as regards Captains, can only be exercised once.

In France and Holland, as has already been stated, naval Cadetships are thrown open to public competition; but in the United States a nomination is necessary. The President has ten, and the others are in the gift of the Members of Congress.

Having carefully considered this matter, I am strongly in favour of open competition, except that I should like to see a number of Cadetships reserved for the sons of deceased and meritorious Officers; but even these candidates should be required to pass a severe test, and no boy of less than ordinary ability should be allowed to enter, no matter how distinguished his father may have been. The late Sir Alfred Ryder proposed a plan for dividing the nominations between some of the best of our public schools, but who is to choose the schools, and what would those schools say which were left out? Besides, if a man wished to educate his son in Germany, or at home, with a tutor, why should he not do so? Again, with regard to the schools, what reason have we to suppose that if nominations were given to them the best and cleverest boys would endeavour to compete, as has been assumed by the adherents of this scheme? The prizes which the Navy offers are not so great as those offered by the Bar and some other professions, and I see no reason, therefore, why all the best boys should compete for naval Cadetships.

On the other hand, I see no reason why a boy who has a strong desire to go to sea, who is sufficiently educated, and whose friends are able to pay the annual charge for him, should not be allowed to compete at the half-yearly examinations, provided, of course, he is of good character and can pass the medical examination. It may be argued that all *desirable* boys who wish to go to sea do at present get nominations; but some men are too proud to ask for favours, and thus it happens that a really desirable boy is lost to us, and drifts into the merchant service.

It used to be said that it would be cruel to make the competition open amongst such very young boys, but since that objection was made, the age for entry has been increased by one year, and the same efforts would be made by a keen boy desirous of entering the Navy when competing against two other candidates as against ten. Cadetships given by nomination tend, I fear, in some instances, to make fathers urge their sons to join the Navy whether they really care for it or not. It is at present the cheapest education going, and if a boy does leave at 18 or 19, he is just as fit for many occupations as he would have been had he been educated at a public school at double the expense.

During the time I commanded the "Britannia," two brothers passed through the ship, and, knowing that a third had passed out a short time before, I wondered what made all these boys so fond of the sea; then I discovered the father was an Irish landlord, and, as I felt sure he could get as many nominations as he chose, I ceased to wonder.

I not only think it would be right to throw Cadetships open, but believe we should get as good Officers as we do at present, if not better.

I advocate, therefore, open competition for the Navy, the First Lord being allowed to reserve about 10 per cent. of the vacancies for special cases. For these, nominations would be necessary, subject to limited competition. The Colonial Cadetships might be abolished, as,

the Service being open, the sons of Colonial gentlemen, if British subjects, would have the same opportunity of competing as any one else.

One argument brought against the present "Britannia" system is that it is expensive, and that a considerable portion of the cost of the maintenance and education of the Cadets is borne by the State. This is, doubtless, the case, but it must not be assumed that in this matter we are more liberal than other nations; indeed, I propose to show that in some cases the contributions from the State towards the naval training establishment are greater than ours. In France, the charge for each Cadet is 700 francs a year, and the outfit for the two years is about 1,000 francs, so that the total charge for the two years is only about 96*l.* in our money; and in some cases, where the parents or guardians are unable to pay, the whole or a portion of this sum is remitted, and paid by the State.

The Cadets in the United States are granted a salary of 500 dollars a year immediately on joining the Naval Academy at Annapolis, which is supposed to cover the cost of their maintenance and instruction.¹ Many more Cadets are admitted than are required to fill vacancies, consequently, only a small proportion finally enter the Navy. Thus, naval Cadets in America are educated at the cost of the State, whether they remain in the Service or not.²

In Holland the Cadets have to contribute 400 gulden (about 35*l.*) a year, and, as the course lasts four years, it makes a total sum of about 140*l.* to be paid by the parents or guardians of each Cadet. The naval Captain in charge of the Establishment told me that, in addition, he thought each Cadet cost the State 100*l.* a year. Here also the sons of deceased Officers, or other exceptional cases, are admitted free.

On board the "Britannia" the charge at present for each Cadet is 75*l.* a year for ordinary cases, and 40*l.* a year for Service Cadets, that is, sons of meritorious Officers and special cases. In addition to this, the parents or guardians have to pay for the outfit, which, during the two years, should not exceed 50*l.* or 60*l.* No Cadets are admitted free, nor at reduced prices below those stated.

With regard to the charge of the excessive cost of the "Britannia," the school could, of course, be made self-supporting by increasing the charge for the ordinary Cadet to 100*l.* a year; but, remembering that an outfit has to be provided by the parent, this limit should not be exceeded. At that price it would still be the cheapest education of the kind in England, for I am informed that a boy cannot be kept at any of the ordinary public schools under 150*l.* a year, and at Eton the

¹ They have to supply their outfit and to lodge 20 dollars with the pay Officer, for the purchase of text-books and other authorized articles in addition to those enumerated in the outfit.

² Each Cadet, however, on entry is required to sign articles, by which he binds himself to serve in the United States Navy eight years (including his time of probation at the Naval Academy) unless sooner discharged.

expense is greater. Some of the boys before joining the "Britannia" are sent to crammers, where they pay at the rate of 200 guineas per annum. If the ordinary Cadets paid 100*l.* a year, instead of 75*l.* as at present, the gain to the country would be a little over 5,000*l.* a year.

Whilst seeing no reason why the Cadets should not contribute more to their education and maintenance, supposing the supply to be plentiful, and whilst strongly objecting to see the Navy made a receptacle for the sons of impecunious gentlemen who have sufficient interest to get nominations, I should be very sorry to see the sons of gentlemen of small means kept out of it by unduly increasing the charges. Amidst all the extravagance and luxury of the present time, the Naval Service has, to a great extent, kept to its simple habits, and Officers, after attaining the rank of Lieutenant, are able to live on their pay, and not only to live, but are able to go into society and see something of the many places of interest they visit.

Naval messing is cheap, and a source of astonishment to any householder who looks into it, and I should regret seeing anything done to destroy our simplicity of life and habits.

A very important subject in connection with the question we are considering is the examination for the entry of Cadets. This should be made as general as possible, and in England it is so, for all candidates are tested by examination in the following subjects:—

	Marks.
1. Arithmetic: including proportion, vulgar and decimal fractions	250
2. Algebra: including fractions, simple equations and problems and quadratic equations of one unknown quantity	200
3. Geometry: Euclid, Book I, with exercises and questions. .	200
4. English: handwriting, dictation, reading with intelligence, and composition	150
5. French: translating French into English and English into French; grammatical questions, speaking, and dictation	250
6. Scripture	100
<i>Note.</i> —Candidates will be required to obtain half marks in arithmetic, and 40 per cent. in each of the other subjects.	
Candidates will be further examined in—	
7. Mathematics: harder questions in arithmetic, algebra, and geometry	300
8. Latin: translation, grammar and prose composition	300
9. Geography: subjects treated of in Grove's Primer, and elementary knowledge of principal places in British Isles and dependencies	150
10. English history: short selected period	150
11. Drawing: free-hand and simple rectangular model	100

A candidate who passes the test examination, but does not succeed in the competition, is entitled to compete at the next examination,

provided he is within the limits of age at that time, but no candidate is allowed to compete more than twice.

Any boy who obtains admission into the Service by competition should have no difficulty in finally passing out, and the loss in the "Britannia" is but small: thus, in six years, from June, 1881, to November, 1887, the percentage of loss through failing to pass out, or from being withdrawn, was 6·7 per annum.

With regard to France and Holland, I have been unable to find out the exact percentage of loss, but I was informed that it was very small.

In France the subjects in which the candidates are examined are—

French.
Latin.
English.
History.
Geography.
Drawing.
Arithmetic.
Algebra.
Trigonometry.
Geometry.
Physics.
Chemistry.

Note.—A knowledge of the German language will be taken into consideration.

In the United States the examination for entry does not appear to be so general as in France and England, the subjects being reading and writing, spelling, arithmetic, algebra, grammar, geography, history. The requirements, however, under these heads, with the exception of algebra, which is only elementary, appear to be very thorough; thus, under reading and writing it states that the candidate "must be able to write legibly, neatly, and rapidly," and after defining the requirements under arithmetic, the article concludes by enacting that the "candidates are required to possess such a thorough understanding of all the fundamental operations of arithmetic as will enable them to apply the various principles to the solution of any complex problem which can be solved by the methods of arithmetic; in other words, they must possess such a complete knowledge of arithmetic as will enable them to proceed at once to the higher branches of mathematics without further study of arithmetic."

The examination in history appears to be confined to the history of the United States, but it embraces questions on the different forms of government, and also requires an account of the formation and adoption of their Constitution.

With reference to the subjects taught whilst under training, some difference exists between the different countries. When the Cadet has joined the "Britannia," he gives up Latin altogether, and arith-

metic after the first term, but he has to commence navigation and nautical astronomy, and he is also instructed during the latter part of his time in trigonometry, steam, and physics. All have to learn mechanical drawing, but free-hand drawing and colouring are only taught those who show a taste for it. French is the only foreign language taught, and the result after the two years on board is not very satisfactory.

The Cadets have at once to commence a course of seamanship instruction, which embraces knots, splices, and hitches, tackles, the compass, log and lead, the names and uses of all masts and sails, a knowledge of anchors and cables, the management of boats under oars and sails, and signalling, including semaphore and Colomb's flashing lights. They go outside occasionally in the tender and work the sails and the engine, but never for more than half a day at a time. They are not instructed in gunnery or rifle drill, but go through a course of setting up and position drill. Gymnastics taught in the gymnasium are compulsory, each Cadet having about one hour a week till he passes out.

In saying that the results of the French instruction on board the "Britannia" are not satisfactory, I do not mean to imply any want of zeal or energy on the part of the masters.

The greatest obstacle to success is the nature of the pupil, the average British boy absolutely declining to learn French. He thinks his own language good enough, and does not care to learn any other. When he gets older, this antipathy wears off; he finds that in some places he visits he does not get on so well in society as others who speak the language, and he envies a brother Officer's amusement over a French novel.

Many naval Officers therefore later in their career have taught themselves one or more languages, and the Admiralty have, by recent legislation, encouraged the study of languages; but we must admit that, in this respect, we are behind the Officers of other Navies.

It has been suggested by a Flag Officer that no one should be given an independent command until he could speak at least one foreign language, and this proposition seems worth consideration.

When visiting the "Borda," at Brest, I asked the Captain if he thought the French Cadets could all speak English after their two years' instruction on board, and he said, "he feared not," but I have noticed that the German, Dutch, and Swedish naval Officers are very good linguists. In the Dutch Naval Academy at Helder, the Cadets have to learn four languages, French, German, English, and Malay, and after their four years course they are fairly proficient in most of them.

The present courteous Minister of Marine at the Hague (himself a naval Officer), and several other Officers with whom I came in contact, spoke English fluently.

Whilst on the subject of languages, I would observe that, although one language is sufficient to be regularly taught on board the

"*Britannia*," I see no reason why other languages should not be encouraged by allowing marks at the half-yearly and final examinations for German, Spanish, Italian, or Russian. Occasionally a boy joins the "*Britannia*" knowing something of one of the languages I have mentioned, but, as they confer no advantage, he speedily forgets all he knew, whereas, if marks were allowed, he might possibly in his spare time be induced to keep up what he has already learnt.¹

Some difference of opinion exists on the question of drawing. In recent years, at Dartmouth, though all the Cadets are instructed in mechanical drawing and making charts, only those who are artistically inclined are taught sketching and colouring.

In France and Holland all the Cadets are compelled to learn drawing of every kind, whether they show a taste for it or not; but in the United States mechanical drawing alone is taught, on the plea that time does not permit of anything further, and yet their course of studies extends over a period of four years. In this matter I think the English system is decidedly the best, for, although drawing and painting are graceful and useful accomplishments for naval Officers, it seems little use to teach them to boys who have absolutely no taste for them, and who would probably never touch a pencil or brush after leaving the "*Britannia*."

Curiously enough, although at the Naval Academy at Annapolis they profess to have no time for drawing, dancing and fencing are made part of the instruction. I would also here observe that at this magnificent establishment, of which the Americans are justly proud, the Cadets, who enter older than ours, and remain two years longer under training, are naturally taken much further in mathematics and science than the "*Britannia*" Cadets.

It was on a Saturday when I visited the American Naval School, situated in park-like grounds on Chesapeake Bay, and therefore I did not see the establishment at work, but the young men were at the time drawn up under arms for inspection by the Secretary of the Navy (Mr. Tracy), and marched past in a most creditable manner. I had also the good fortune to see them turn out afterwards in flannels, to play a game of football, when they had all the appearance of young men at an English school.

Although baseball is the national game in America, football seems to be getting popular, and at Washington scarcely a Saturday afternoon passes without a match being played between two rival teams.

Any Englishman visiting the United States for the first time must be pleased to see his own manly game played in good form, and be proud to acknowledge his near relationship with this English-speaking nation of 60 million people.

Although the Cadets go to sea in a training ship for three months in each year during three out of the four they spend at Annapolis, I consider four years' training to be excessive, and have no wish to see our course prolonged to that time, believing that the proper place

¹ In the United States Naval Academy, although most attention is paid to French, Spanish and German are given as an advanced course.

for training sailors practically is the sea itself, and not a shore establishment, however good it may be. It will be observed that whilst France and England still hold to a ship for their training school, the Americans and Dutch have a college on shore.

The Dutch Naval Academy at Helder has only been completed three or four years, and is a fine building with good library, recreation room, and gymnasium, besides the usual studies, dormitories, and mess-room.

It has been said that foreign naval Officers are better educated than ours, and that therefore a change should take place in our system.

Now it goes without saying, that if there are two boys of equal intelligence, the one who leaves school at fourteen, and then passes only two years at a Naval Training Establishment, cannot be so well educated, in one sense of the word, as the other boy who does not leave school till he is sixteen, and then spends from three to four years at a Naval Academy. But there are two sorts of education: there is the one which is learnt from books and professors, and there is the other which is acquired from experience, and I am no advocate for giving up the four years' practical training which is now given to our Midshipmen on board sea-going vessels. You may give a boy such a dose of instruction in his youth as to deter him from studying the same subjects again in after life, whereas many of our naval Officers do continue to educate themselves long after they are made Lieutenants; besides, I have yet to learn that our naval Officers are inferior to any others in practical qualifications. I cannot admit that foreign men-of-war are in better order or better handled or navigated than the ships of Her Majesty's Navy; and although foreign Officers are doubtless better linguists, and may have made greater progress in mathematics and science, we should remember that the first duty of a naval Officer is to handle and navigate his ship, and the second is to understand the management of men. This latter qualification is, perhaps, more important with us than any other nation, because, having no conscription in this country, we have to look to volunteers to man our Fleets and Armies. We have a large Fleet scattered all over the world, so that we are able to distribute our Midshipmen in small numbers, instead of crowding them all in one sea-going training ship, a system which I have always considered objectionable, and which has been tried and has failed in England. The Midshipmen, if wisely distributed, learn their duties by actual experience. One is placed with the Navigating Officer for three months; one with the Gunnery Officer; another is placed in the signals; and, if there are sufficient, one might be attached to the Chief Engineer, not only at sea, when the ship is steaming, but in harbour, when the engines are opened up, and other necessary work has to be done. In making this suggestion it is to be understood that I am not in favour of abolishing the Engineers as a class, as has been suggested by some, but I think as sails for vessels of war are things of the past, and we are in future to look

entirely to steam as our motive power, naval Officers should have a good practical knowledge of the steam engine. The accountant Officers, as a class, might possibly be abolished with advantage, but I should not care to command a ship whose engines were in charge of an amateur Engineer, nor should I like to be subjected to the possibility of having my arm or leg amputated by an amateur Surgeon.

The Cadets in the "Britannia" have longer vacations and shorter working hours than the Cadets in similar establishments abroad, but this is only in accordance with our general English school system, which is less severe than that of the Continent, and it must be borne in mind that manly games and other athletic exercises are not encouraged abroad as they are with us.

On the other hand, as already stated, they are not taught any gun or rifle drill, or sword exercise, which is carried out in all foreign academies. As there is so much to be learnt, I think it quite right that this instruction should be left till they embark in a sea-going ship, where a young Officer lives amongst the guns, and where he can be drilled with great facility, and be exercised also with others in small arm drill.

Although Officers educating for the British Navy spend a shorter time on board the training ship on first entering than those of most other nations, we have our Naval College, at Greenwich, and Gunnery and Torpedo Schools, at Portsmouth, where Sub-Lieutenants go through a course of instruction before their final examination. This part of our system is, as far as I am aware, unique, and is not carried out by any other nation, and although many Officers complain of the time Sub-Lieutenants are kept at the College away from their active duties afloat, it appears to me a better system than the one of keeping them from three to four years under training on first entry at a shore establishment.

The weak point in our system is the fact that it has necessitated our having Naval Instructors on board many sea-going ships, but this might in future be discontinued.

Cadets will now go to sea a year older than formerly, and as it is absolutely necessary to reduce the number of non-combatants on board our ships, Naval Instructors when not in Holy Orders might be abolished by making no more entries, and thus allowing the rank to become extinct.

As it is highly necessary, however, that the Midshipmen should be encouraged to educate themselves, a Lieutenant might be directed, where necessary, to assist them in their studies. The Officer selected would receive extra pay, and, if a watch keeper, would probably be excused his watch in harbour. Any Lieutenant who had gone through a course at Greenwich ought to be able to instruct the junior Officers. The knowledge that they have to pass a stiff examination at Greenwich should be a sufficient inducement to young Officers to continue their studies, and time and opportunity should be afforded them to do so. There is a well known case of an Officer who passed a considerable portion of his Midshipman's time in a small vessel without a Naval Instructor, and yet worked so well by

himself that, at his final examination, he obtained his Lieutenant's commission. The "Britannia" is an excellent school, and, though possibly not perfect, is constantly improving. The Captain is wisely changed every three years, and as he is usually appointed straight from a sea-going ship, and has probably had some of the recently embarked Midshipmen under his orders, he has been in a position to notice any weak points in their practical training, and is able to make alterations or suggestions. The Chief Instructor is properly a permanent Officer, and anyone knowing the gentleman who occupies the post at present will testify to the interest he takes in the Naval Service, and to his readiness to adopt any improvements. In course of time, as masts and sails become entirely abolished, it may be necessary to make some further change in our system, but as the recent alteration in age has only lately come into force, I would strongly advocate leaving matters as they are for the present, and would venture to protest against the cry for the abolition of our present training establishment without proposing anything else to take its place.

From the foregoing it will be gathered that I am not in favour of making any radical change, my only suggestions being as follows:—

First.—That Cadetships for the Navy should be open to competition with the reservations proposed.

Second.—That marks for other modern languages besides French should be given on entry, and that Cadets whilst in the "Britannia," though only instructed in French, should be allowed marks for German, Spanish, Italian, or Russian, as extra subjects.

Third.—That any candidate who passes the test should be allowed a second trial if under fifteen years of age, the object being to deter boys from going up for their first examination before they are fourteen.

Fourth.—Whilst unable to propose any practical plan for awarding marks to those candidates for Cadetships who excel in athletic or gymnastic exercises, it would tend to encourage them if whilst on board the "Britannia" such marks were granted.

Prizes are already given to the best swimmers and best gymnasts in each term, and if these were accompanied by a few marks it would tend still farther to encourage these excellent exercises.

Rear-Admiral R. C. MAYNE, O.B., M.P.: Mr. Chairman, and gentlemen, as this paper is manifestly intended as a reply to the views on naval education in a paper which I read in this Institution last summer, it is, perhaps, right that I should open the discussion. I regret that at the outset I must take exception to the whole basis of the lecturer's argument. In the first place he says that I "alluded in disparaging terms to the system of training involving the early entry as now established on board the 'Britannia.' " I can only say I had not the slightest intention of alluding in any disparaging terms to the actual education carried on on board the "Britannia," but to the system which embodies a "Britannia" at all. Then he goes on to say that there is surely nobody who wishes to send Officers to sea without attending some training vessel or college. "I cannot suppose, therefore, it is the wish of any naval Officer to advocate such a system in lieu of that now carried out at Dartmouth." This reminds me of the well-known story of the two

Frenchmen who were discussing how to cook a fowl, when the fowl raised the objection that he did not wish to be cooked at all, "Mais," said one of the gentlemen, "vous évitez la question, Monsieur le coq." I am one of those who wish to see Officers or young gentlemen go straight to sea from public schools, or from other educational establishments, and that is the sum of my objection to the present system. When I look to see what I really had said, I found that I said our system of training was not the best in my opinion, "that too much time was spent at college and in training ships, that we did not require our people to design or build ships, guns, or torpedoes, but to manipulate them, and to develop their utmost power, and to have such physical training as shall, under the misnomer of nerve, qualify them to handle the biggest ships under the most trying circumstances, never forgetting that a single wrong order at a critical moment may cause the loss of a ship, and perhaps of a fleet." The real question is, What do we mean by education? One set of people consider that the end and aim of all education is to bring up a boy to a certain standard, to pass a certain examination at a fixed date. That is not my view of education. My view is that which will best fit the man to take his position among his fellowmen as an English gentleman, or, in this case, as an English sea Officer, when he is grown up, or at the age at which he is required to take such a position. I will not enter closely into the comparison that my friend has made with foreign navies, but on the other hand I should not like to shut him up, if I may use the expression, with the promptitude with which I was shut up when I referred to the German Navy. When I pointed out the opinion of the German Officers I said what I knew to be the case, that the head of the German Naval Education stated that our system of education was so utterly unfitted for modern requirements, that they could not adopt any part of it. I was immediately met by the First Sea Lord saying that he did not wish to have the opinion of the German Officers, because he did not consider that they were capable of forming any opinion as to what our requirements were. Well, while I do not agree with that now, neither do I agree with the view that we have anything to learn, or ought to have anything material to learn as to the best way of handling our ships, and generally filling ably and well the requisite position. I apprehend the real aim of education is to fit men for holding the positions of Lieutenants, Captains, and Admirals, whenever they can attain those positions, in the ablest possible way. Admiral Bowden-Smith has spoken of the naval traditions of this country being second to those of no other country. He omits the consideration that all those naval traditions come from the time when there was no "Britannia," when we did go to sea precisely in the way I suggested. [No, no.] I should like to be corrected if I am wrong. I do not know the date of the commencement of the Naval College, but it is sufficient for my purpose that it was never compulsory to go there. There are many Officers who I know at any rate did not go through the Naval College. I mentioned that to the Chairman the other day, and he told me that he felt rather at first the want of this preliminary education in nautical matters as compared with two others who had been to the College; but I pointed out that it was sufficient for my purpose as showing this had no permanent value, that he was selected to be for ten years the Controller of the Navy. It is one of the arguments of the lecturer that the life of a sailor being an unnatural one he should enter the Service at a very early age. There, again, I disagree with him. I think that when we required to learn seamanship, that is to say, to have our hands in the tar-bucket and to be continually aloft on yards, then it was necessary to start a boy young, for the same reason, in great measure, that it is necessary to start the gymnast at a very early age indeed; but I hold that that necessity has disappeared with masts and sails. It is also, he says, considered by many Officers that no one should have charge of a watch until he has had four years' experience of a sea-going ship. [Admiral BOWDEN-SMITH: Hear, hear.] The lecturer says "Hear, hear." It may be vanity on my part, but I consider that when I came home, after three years in the "Inconstant," I was perfectly qualified to take charge of a watch; and what is more I will say this, I can remember the case of a tremendous mess, the stunsails flying all over the place, and three Lieutenants being put under arrest one after the other, and the Captain of the ship saying—I speak in memory of a very dear old friend—"Send for Mr. Burgoyne; he is the

only Officer in the ship that can carry on the duty properly." Mr. Burgoyne at that time had not been nearly four years at sea. I maintain that an Officer going at sixteen straight to sea would be far better than any system that I could imagine of training beforehand. Perhaps I hold more strongly than most people to the view that we learn very little that is worth remembering until we are grown up; that the object of boyhood's education is to teach us to learn, to teach us, in fact, application, and that it matters little what subject you set boys at, provided you teach them to learn. I would just as soon take a boy who could pass a good examination in Latin and Greek, as a boy who could pass a good examination in mathematics: I consider that we have made a great mistake in neglecting not only living languages, but those dead languages which assist us so materially in the study of living languages afterwards. To try to force all boys into mathematics is just as absurd, in my opinion, as what the lecturer spoke of in trying to force all boys to learn freehand drawing or sketching, whether they had a taste for it or not. I am glad to see that within certain limits the lecturer approves of open competition. I know that my friend Sir George Wiles regrets the day when that must come.

SIR GEORGE WILES: I have come here to contradict that.

REAR-ADMIRAL MAYNE: But still he admits that it probably must come. I am glad, however, to find the lecturer saying so, because my friend Sir Michael Seymour, when I was lecturing, put it down as a little bit of—what shall I say?—bait for my constituents. I do not think, so far as I am aware, that my constituents have expressed any opinion on this subject, and I do not think my next election is at all likely to hinge on the question of competitive examination for Naval Cadets. But apart from that, I am glad to have the high support that I have, and I perfectly agree with the lecturer that we never meant that every vacancy should be given up. One speaks of the First Lord in these days—I suppose one ought to say that august body the Board of Admiralty—the Board of Admiralty should retain in their own hands a certain amount of nominations for deceased Officers' children, and for various other purposes; but a certain portion should be open, in my opinion, to public schools without any selection. My idea of an examination was that which I see the lecturer puts down as being, I think, that of the United States, which is held only to ascertain proficiency. I would not "cram" a boy to go into the Service. I should like to take the raw material, only educated as any gentleman's son of that age should be educated, and teach him all the rest that I want him to know, after I have got him into my hands. I should then bring him back, after he has had his two or three years, as it may be, at sea, when he is of an age at which you can discuss the value of education with him, when he will see that he ought to be, and must be, well educated, if he expects to get on in his profession, and then send him to a college and force him in any way it may be thought advisable. I see my friend has barely touched upon another subject that I touched upon—what I may call the subsequent education of the naval Officer. He goes so far as to hint that he would consider whether he would, or not, give a separate command to an Officer who, to use my old Admiral's phrase, spoke "no other language than that which his mother gave him;" but I would go a good deal further than that, and I would ask why is all our education to end at nineteen or twenty? My opinion is it would be greatly to the advantage of the Service if, without drawing any hard or fast lines, without saying that Officers should not be promoted for service, without any subsequent examinations, we should have something in the nature of a Staff College, and that Officers should be obliged, in the ordinary way, to pass for Commander and to pass for Captain. I see no reason whatever against that, or, if not actually obliged to pass for these ranks, preference should be given to those who do pass examinations—not in the measure of a carpet or a wall-paper, as Lord Chelmsford once said was part of the education at that time in the "Britannia"; not even in what I believe still is part of their education, "gammoning a bowsprit," which I think may be dropped now; but in those higher qualifications which, if not absolutely essential, are, at least, highly desirable for the Captains of our ships, and still more for the Commanders-in-Chief of our stations. As to the expense, I do not wish to go into that; I think, perhaps, the State is rather overcharged, but as I should do away with this altogether until a later date, I will not enter into it. I think, if I am not mistaken,

Sir Edward Fanshawe holds somewhat similar views, which I should be very glad presently to hear him express, on the later education of young naval Officers. I remember reading a pamphlet of his on the subject with great interest. I quite agree, after all, with the summary which the lecturer makes at the end, when he says that for training sailors practically the best place is the sea itself. That is about the gist of all my argument. One word only on the "amateur" engineer. I might say, in self-defence, because of the "consternation in the engine-room" which some remarks of mine in this theatre last February appear to have produced. I had no intention of having an amateur engineer, and to take the *reductio ad absurdum* argument of my friend, that of the amateur doctor, I would ask him why should a naval Officer, that is to say, one entered in the same ranks and in the same position as our own, who studies engineering from the age of nineteen or twenty (which is the youngest age at which the ordinary engineer or the ordinary doctor commences his study), be incapable of taking proper charge of the engines, when he has completed those studies, any more than another Officer has to go through a course of study for navigation, torpedoes, or for any other special subject? My remarks of that time, which will come up again, because the question is very far from being settled, were directed rather to helping us out of a dead lift. At the present moment we have got a class of men who are not satisfied, and who will not be satisfied so long as they consider that they are essential to the Service, and who would be very foolish if they were satisfied, as long as they think they can get any more. I have nothing whatever to say against them, but I maintain that if you are to make the Engineers Commanders, Captains, and Admirals, they should be part and parcel with ourselves, of the same rank in life, the same position, and the same in every respect as Officers who select navigation, gunnery, or any other special branch of the Service.

Chief Engineer EDWARDS, R.N.: I am very glad, indeed, to find that the lecturer is not in favour of abolishing Engineers as a separate class. I think that the ordinary human mind would be incapable of becoming an efficient master of two such intricate and important professions as that of Naval Executive Officer and Naval Engineer Officer. With your permission, if I am quite in order, I should like to offer a few remarks to show why Admiral Mayne's proposition cannot be carried out. I quite admit it is a very good thing to give Midshipmen as much knowledge as possible, because I always find that I can carry out my duties much more to my own satisfaction and the satisfaction of the Service when I have an Officer as Captain to deal with who knows my profession to a certain extent, who can at all events sympathize with me and help me in the difficulties I have to encounter. Such a Captain generally has the most efficient ship, and the Captain who will get the most out of his ship is the Captain who knows her as he knows his own muscle, or his own brain. Admiral Mayne stated in the lecture that he delivered not long ago, "As regards the Engineers as a separate class, they should disappear. We have never had a more valuable and more highly respected Officer than the old Chief Engineer. There is no reason whatever to suppose that if the executive Officer devotes as much time, and no more, to learn Engineer's work as he does to learn torpedo work, he would not be perfectly competent to supervise the engine-room artificers by whom the principal part of the work is now performed, and the 'engine-room Lieutenant,' would bring to the discharge of his supervising duties the habits, constitutional and acquired, of supervision and command which are known to be the characteristics of the class which he joined on first entering the Service." That I think was stated by Admiral Mayne, in his lecture on "Lessons of the Naval Manœuvres."

Admiral MAYNE: I omitted the words "no more," because I found that they were capable of misconstruction.

Chief Engineer EDWARDS: Of course the whole question turns on the expression "no more." At all events I do not think the system proposed of training Lieutenants as Engineers, unless you can give them the same training that you give the Engineer Officers, is at all practicable, because the supervision and command in the engine-room to be effectual must be accompanied by a proper technical and practical knowledge acquired in actual workshop training, and in the use of tools that are employed in engineering work. I would here like to briefly describe the training

of naval Engineer students. Two forenoons and three evenings a week during their period of training, lasting five years, they are instructed in the theory of the steam-engine, and the sciences which bear on a proper knowledge of steam engineering, and in the remainder of their time they get practical instruction in the various workshops in the dockyard, and in ships afloat, occasionally under steam. Their training is essentially practical. I cannot quite see how you are to give the Torpedo Lieutenant practical instruction like this. You must have a man below in charge of the engine-room who not only has a fair knowledge of the theory of the thing that he supervises, but must be acquainted with the mental habits and practical training of the men. He must be a man who has been trained to know tools and materials, and must be familiar with the methods which are used in repairs in the engine-room. You cannot import the style of Drill Instructor into the engine-room. You cannot have the same habits of command which are very much in their proper place on deck, where smartness and agility at drills, &c., is a question, perhaps, of very great importance. That will not do at all in the engine-room; the whole training of an Engineer is directed to teaching the Officer to do his duty by deliberate thought and method. You cannot go to "quarters" to line up a piston, or to adjust a slide valve, or bearing. You must be trained to do things slowly and deliberately, and to consider what you are doing. For that reason alone I think it would be impossible to place a Torpedo Lieutenant in charge of the engine-room. Then you are putting your responsible Officer in the engine-room in control of a staff who know that they know more about their business than the Officer does, and what would be the result in an action if the engine-room staff had not confidence in their Officers, if they did not know that their Officer knew more about the machinery than they did? Nothing but panic and disaster. I cannot conceive that the system of having a man, who must be an amateur engineer, is going to be of benefit to the Service. You must have a man who is as well trained, in fact better trained than the men he commands, in the engine-room. The training of engine-room artificers is of a totally different character to that of seamen gunners and the sailors on deck, and the training of the naval Engineer Officer is of a very superior kind to that of the engine-room artificer. We have good practical training given to us in every detail of engineering, going through the fitting shop, the boiler-maker's shop, and so on, getting practical instruction, and we have to give practical proof of our capability of working in each shop. The engine-room artificer's training does not combine all these things. He is either a fitter, or a blacksmith, or a boiler-maker, or a coppersmith, but he does not know the whole of these trades; he is not at all capable on joining the Service of taking charge of a watch. I wonder what would have happened in the manoeuvres lately if the Torpedo Lieutenants, or the Gunnery Lieutenants, had had a staff of men under their charge who were fresh from the plough tail, to work the guns or torpedoes like the men that we had. Fifty per cent. of our men had hardly ever been in a ship before, and the few breakdowns that we had in the machinery department were more due to inherent defects in the engines and boilers than to a want of knowledge on the part of the Engineer Officers, and it was only by very strict attention to their duties that they managed to get their ships through. I do not think myself that a Torpedo Lieutenant commencing at the age of nineteen, and going on for four or five years, would be as good an Engineer as an Engineer Officer who is trained under the present system by the Government. Our present system has been in force for thirty years, and I think that thirty years' experience in the Navy has completely proved that the system we have got is a much better one than that obtaining in any other Navy. Not long ago, in the "Times," there was a long list published of breakdowns in the machinery of the French Fleet. Those ships had been in commission for some time; they had their crews on board for some time, and they ought to have had some knowledge of the machinery of their ships. But the system of officering the French Navy in the Engineer's department is altogether different from ours. Their sea-going Engineers are men of inferior professional training, corresponding more to our engine-room artificers. I am not saying anything against the capabilities of our artificers, for I believe we have not a more valuable set of men in the Service, and after they have been at sea for five or six years they become very valuable. I have not said nearly as much as I should like

to say upon this subject, I feel it is one that ought to be fully discussed here: but this I do say, I think on account of the complete change that has taken place in the last few years, since masts and sails have been abolished and machinery has been adopted to a great extent to the use of guns and torpedoes, it is absolutely necessary, if we are to maintain our supremacy on the sea, that we should face the necessity of altering our system of training naval Officers altogether. If naval Officers were efficiently trained in engineering matters, no one would welcome them more than the Engineer Officers themselves. I have heard something about Engineers wanting to be *Steam Admirals*. We do not want to be Steam Admirals; we are very proud of our own profession; we consider that it is second to none in the world; we know that fifty years of engineering has simply turned the world upside down, and has done more to advance civilization than that of the other professions linked together. I must say, as far as I know, there is no intention on the part of Engineer Officers to be anything but what they are, Engineers, and we hold that the man in charge of the engine-room, whoever he may be, whether Chief Engineer, Engineer Lieutenant, or even Steam Admiral, must be above all things a practically and professionally trained Engineer.

Admiral CLEVELAND: When Admiral Mayne spoke here last February, I was one of those who took part in the discussion, and endorsed most of the views which he addressed to the meeting on that occasion. I rather think since then we can claim another convert, and that is the worthy lecturer himself! There is very little divergence of opinion between us. I can quite understand his natural loyalty to a system which he administered for three years, and, as I always understood, administered remarkably well, but instead of dwelling upon the results in support of his argument, he has based his advocacy for the continuance of the present system principally by quotations of what is done by foreign nations. No doubt whatever good we find *anywhere* ought to be selected for our own Service, and, on the other hand, we should discard what is worthless, but we must always bear in mind that the conditions of foreign systems are different from our own, and, in most cases, as regards naval administration, are copied from us. In any remarks which I may have to make upon this paper, I wish it distinctly to be understood that it is the *system* alone to which I object, and not the administration in any way whatever. On the contrary, I have every reason to say, from what I have seen when recently serving in the West country, that both the establishment at Keyham (which, however, has not been touched upon in this paper on the training of naval Officers), as well as the "*Britannia*," seemed to me, as far as I am able to judge, to be admirably conducted. Well, then, what are the grounds of my objection to entering Cadets at the age of 13 to 14½ by nomination, and placing them *en masse* under naval Officers in a harbour ship? And what do I propose to substitute in lieu? As to the grounds of my objection, I cannot call a better witness than the lecturer himself as embodying nearly all my views. He states that "the proper place for training sailors, practically, is the sea itself, and not a shore establishment, however good it may be." I say doubly and trebly Amen to that; that is exactly the whole point of my contention. He again says: "We have a large fleet scattered all over the world, so that we are able to distribute our Midshipmen in small numbers instead of crowding them all in one sea-going training ship, a system which he has always considered objectionable, and which has been tried and has failed in England." Now that remark, I will do him the justice to say, alludes to a *sea-going* training ship, but surely the arguments are equally applicable to a harbour training ship. But still with those two points in my mind, if we are of opinion that a lad of the age at which we should require to send him to sea (which I think should be from 15 to 16) requires technical knowledge in gunnery, torpedoes, the working of machinery, the handling of ships and boats, tactics (including signalling), and practical navigation—if he requires all this before he can be sent to a sea-going man-of-war—when alone I maintain he can acquire it—then I say the State is bound to give him that education; in fact, the State alone can do it. The question, however, is, do we require this technical knowledge in youngsters of 15 or 16? I say we do not require it, and another point is, we do not get it under the present system. Lads go to sea having, no doubt, been well looked after, but their knowledge in all these subjects is very vague, and

the other subjects can be as well, if not better, taught in a public school or workshop. Of course, the question is really where is the technical training to be got? I say at sea, and only at sea. Having satisfied yourself what amount of knowledge you require in a lad of 16, admit him by open competition, arranging your examinations so as to determine the direction and character of his preliminary training at school, send him to sea straight, and let his technical training commence there under the Lieutenants and Engineers. I entirely agree with the gallant lecturer that "Naval Instructors" being non-combatants should be allowed to die out. A lad should certainly serve at sea for four years (the first being on probation) as a subordinate Officer, that would bring him up to the age of 20, and at that age he should pass a Sub-Lieutenant's examination; something similar to the present one, but of shorter duration for preparation, and his education should not cease here, but should be continued, and the examinations in appropriate subjects should also be continued, before he is confirmed in the ranks of Commander and Captain. I think the lecturer is of the same opinion.

Admiral BOWDEN-SMITH: Examination of Commanders? Oh no.

Admiral CLEVELAND: I think there should be an examination of Commanders and Lieutenants. Before I sit down I must record my dissent from the gallant lecturer where he lays it down "that masts and sails are things of the past." There I know I am on one of my fads. I entirely disagree with him. There is an old saying "that you ought never to prophesy unless you know." Now I say it most emphatically, that before five years are over our heads, the professional opinion of our Service will insist upon our cruisers having ample sail as well as steam power, as it will conduce to the safety, efficiency, and economy of these ships.

Admiral Sir GEORGE WILLES, K.C.B.: I have on previous occasions used perhaps some strong language in this theatre on the subject of the education of naval Officers. I concur in everything that Admiral Bowden-Smith states in the paper he has just read. Admiral Mayne quoted me as having questioned the propriety of open competition. I have come to the conclusion that really it will not do any harm, and the sooner it is started the better. The competition is nominally three to one, but I believe they do not obtain the requisite number of boys to compete, whilst some who do not pass the test are given a second nomination; and not only that, but to my knowledge, boys who have not passed at all are allowed to enter the Service. I say if that is the case, the sooner we commence open competition the better. It has existed in the Army for many years. Speaking in the presence of my friend Sir Beauchamp Walker, for many years Director of Military Education, I expect that on the whole the system has been beneficial to the sister Service.

Admiral Sir E. G. FANSHAWE, G.C.B.: Admiral Mayne alluded to me as having written some sixteen years ago on the subject of naval education. I am not prepared to go into the subject of the naval education of the present day, before this audience, not having satisfied myself beforehand what I should say by study of the state of education at the present time. I certainly did think at the time referred to, when I was interested very much in the question, that it was absolutely necessary that we should increase the age at which young Officers went into the Navy. I think, when you consider that the whole education of boys from 14 to 19 is occupied in every civilized country with training their minds by continuous study—that to go into the "Britannia" at the early age of 12½ or 13 for two years, to go away with a certain knowledge of navigation, &c., and then to go into ships where there were Naval Instructors, but where the actual school work done during the day amounted, as I was told on enquiry, generally to not more than an hour: when you compare such education as that extending over an average of not more than an hour a day—in ships where it was carefully attended to—with what is required of a boy who is being trained to make an educated man elsewhere, there was a very great hiatus in the training given in the Navy. Elsewhere it is deemed necessary, in order properly to cultivate their immature minds, that boys should attend at school for some hours every day, and that their attention should be devoted continuously to certain subjects; but the duties of a Naval Instructor on board could not be carried out in anything like the same way, because the boy himself had to be doing other things in the ship which interested him more, and could not give his whole attention even to his short school work. That being so, I think I should

not have used too strong a word had I said that the system, as a system of education, was a rotten one. They came to the College at or after the age of 19, many of them knowing no more of navigation or of nautical astronomy, or things that they had learnt in the "Britannia," than they knew when they left the "Britannia"; in fact, an appreciable time out of the six months which were supposed to be given to higher education was occupied in reteaching the rudiments of navigation. Since that time the age of entering the boys in the "Britannia" has been increased, and the question is whether it is better that a boy should pass his time from 14 to 16 in the "Britannia" or whether he had better be left in a school receiving the general education given to gentlemen's sons in this country. That is a question before us. I rather did lean to the opinion, when I was more thoroughly acquainted with the current education in the Service ten or fifteen years ago, and entries were at an earlier age, that they had better stay at school. The age of entry has been changed, and I have no doubt whatever that the education of the Navy is very much improved in these fifteen years. I hope, whatever is done, it will not be forgotten that the small boys sent into ships in more recent years were not learning their profession in the same way as our worthy Chairman and I were when we went to sea. In everything that we did, all day long, we were learning our profession; we were appointed to boats, those boats went out whether it blew high or blew low. You might see fifty boats working in or out of harbour when a squadron was at Spithead; now you see steam launches. We were stationed aloft and saw how the sails were reefed and shifted and the spars were shifted; and thus we used to learn our profession, so that when we came to keep watch we knew what was going on. These boys in the iron-clads at the present day are not learning anything that can be called their profession in the same sense; and therefore, I was, I say, of opinion that they had much better be at school. But whether at the present advanced age the school should be the "Britannia," or whether the boys had better stay at the general schools of the country, is a point that I do not feel I ought to give an off-hand opinion upon, not having an accurate knowledge of the working of the existing system.

Admiral Sir ERASMUS OMMANNEY, F.R.S.: I have listened with pleasure to the very common-sense and clear description given by the lecturer on the training course on board the "Britannia." "Things as they are are very different to things as they were," under the altered conditions of ships and the Service. If any change should now be required I am a strong advocate for restoring the College in Portsmouth Dockyard, which is surrounded with everything that is interesting connected with the naval profession. Ships are to be seen fitting out and refitting, docking and undocking, going in and out of harbour. Spithead is the resort of all classes of ships, including foreigners and yachts, shipbuilding is always in operation, there is the great steam factory where valuable information can be acquired, likewise the gunnery establishments now combining every branch of instruction in naval artillery and drill. You should bear in mind that the above establishments did not exist in the old college days, there is also an observatory which can be made available for instruction in astronomy—the sail making and rigging lofts would also be accessible to youths for instruction. I think that the age for entering the Navy afloat should not exceed 15 years. Early impressions of sea life and self-reliance I consider as being essential. Many details of the seaman are acquired in youth which in more advanced age are not easily enforced, and I believe that obedience and discipline become more deeply rooted in mind and habit in youthful days. Having entered the Service at a very early age, when in advanced rank I availed myself of the privilege to study at the Royal Naval College. I well remember the enjoyment and information which were derived when in my daily rambles about the Dockyard and its establishments, therefore I conceive that any youth possessing a natural instinct for seafaring life would imbibe ten times the amount of nautical ideas and practical knowledge at Portsmouth than from the surroundings of the "Britannia." Circumstances and early responsibility contribute materially towards the future of an Officer. When a Mate I was put with three others into a brig commanded by a Lieutenant, without any special navigating Officer, and we were employed carrying the mails between Falmouth and Lisbon, necessity compelled us to be responsible for the safe navigation of the vessel. The experience I then

gained gave me a delight in navigation, which proved of inestimable benefit to me after I was in command, especially in parts of the world where skilful navigation was required. Taking all the advantages which are to be found at Portsmouth, I consider it the most desirable locality under the altered conditions for training our Cadets. It appears that the "Britannia" system of training has fulfilled its object up to present times, but now that we have entered into such a complete transition in all naval matters afloat, I think it necessary that the locality for the training of naval Cadets should be altered. Much credit is due to the Admiralty for the excellent arrangements provided at Greenwich College, where Officers of advanced rank acquire a good amount of scientific knowledge which has contributed materially in creating the high standard of Officers now on the Active List of the Navy.

Rear-Admiral P. H. COLOMB: We have had a great deal of talk on the manufacture of the pudding; I wish to say a word or two as to the eating of it, because one has always understood that that is the proof. The point is, it seems to me, what sort of Officers does our system turn out? I do not know any better Officers turned out under any naval system than our own, judging from what I see. I know this, that our own naval Officers are not so much men of the world, perhaps, as those who have spent a longer time at school, and possibly, also, a longer time on shore; but I think the lecturer rather inferred, and I am inclined to agree with him, that that is something which we ought to preserve, because it means simplicity of manners and that simplicity of character which always has been the mark of the English naval Officer. I do not know, really, that our Officers at the present time have any marked defect except that one which has been dwelt upon by the lecturer—the want of acquaintance with foreign languages. But then we have to recollect that of late years the Admiralty have given such opportunities for Officers to study foreign languages as young Lieutenants, that we do not rightly know what they will be when the system gets thoroughly into work. At present, the number of Lieutenants is so small that Officers are kept continuously at sea; they have not the opportunities which presently, when the lists get larger, they will have, and I suspect we shall see the arrangements of the Admiralty put to very good use indeed, and that the character of the English naval Officers' knowledge of foreign languages will be proportionately raised. A great deal is said about the question of nomination *versus* open competition for entry; I do not believe myself it matters very much. I do not quite go with the lecturer in thinking that there are many men in the world too proud to write to the First Lord and ask for a nomination; I have never come across them yet, though there may be such people, and I believe the pressure upon the First Lord has never been great, and is not great at this present moment, and that, practically, every parent who is in a situation to put his son into the Navy, and keep him there, can get him in if he is fit. Therefore, my mind is open upon the question of nomination or open competition. I do not think if you had open competition to-morrow it would make very much difference; I do not think it is really a question of importance. I have two sons, one who passed in the days when the test was restored, and another who passed in by competition. So far as I can judge, it was exactly the same with each of those boys, and I gather, generally, that the numbers who fail to pass the test in those competitive examinations are so great that afterwards there is really very little competition; and that when we talk of a strain upon boys, a strain in competing which does not exist when they are passing the test, we are using words of no real force. Preparation for the Navy is most of all done by the crammers, and if you had open competition people would send their sons to the crammers just the same as they do now, and there would not be any very great difference. In regard to training for engine work—mechanical training—that is greatly on the increase. If I am not mistaken, it is part of a Midshipman's examination that he must know something about it now, and that they are bound to spend a certain time in the engine-room, and to understand how to run steam launches' engines. The real weak point of the whole of our system at present is that which has been touched upon—the naval instruction system—and I frankly own that I do not know how we are to get out of it. At present, a boy goes to sea in a ship to learn principally his duties as an Officer on board ship. For a good part of his time he is shut up in

a bad schoolroom learning what he would learn much better in a good schoolroom. Again, the naval instruction system tells very much against some boys, because there are Naval Instructors and Naval Instructors. If a father knows enough of the Service to find out where a good Naval Instructor is, and is sufficiently skilful in diplomacy to get his son there, the boy has a great advantage over another boy who happens to get with a bad one, which would not be the case if there were any general system of training. Boys, at present, do lose a certain amount of early charge of a watch that we used to get in a small vessel. I myself had charge of a watch from my third year of service. I got that advantage, but I lost the great advantage which exists from serving in large vessels. I have been very pleased to find that that which so many of us felt so much, viz., that pure mathematics had been raised to too high a standard and too much made of it, seems to be passing away. I understand that now, at Greenwich, for a young man preparing to become a Gunner or a Torpedo Lieutenant, the examinations are so arranged that all those who have a capacity for very high mathematics may make their marks in that way, but that others who have not that high capacity can make their marks in the allied sciences—physics and chemistry. I think that the conduct of those Lieutenants who were in charge of torpedo-boats in the late manœuvres is very strong presumptive evidence that we cannot be very far out in our education. We had examples of dash and pluck and go in the command of those torpedo-boats, which we do not find anywhere else, as far as I know. Possibly one is getting old and does not like change; but my own feeling is that I would leave well enough alone, simply turning it from point to point, slightly raising the age as it has been done, in introducing the chance of studying languages, and again in the reduction of the great standard that mathematics originally took.

Chief Engineer J. LANGMAID, R.N.: I gathered from Admiral Cleveland's remarks just now that, besides doing away with the "Britannia," he would like to do away with the Engineer Students' College at Keyham. I think that would be a very great mistake. The system was tried about forty years ago of training Engineer Officers in the engine-rooms of sea-going ships, and proved a failure.

The CHAIRMAN: This paper does not propose to do away with the Engineer College.

Chief Engineer LANGMAID: I was referring to what Admiral Cleveland said. I do not think an expression of opinion from an Officer of Admiral Cleveland's rank should go without some notice. The system of training Engineer Officers in sea-going ships was tried, and was found to be very unsatisfactory, as it must be. I consider that our system of training Engineer Officers at Keyham is about the best you can possibly have. It is impossible to give them the education in an engine-room that they get in a factory, where they are taught all the details of engineering trades in separate shops by competent instructors. They go into the drawing office; they learn engine design and machine construction, and are thoroughly taught in all branches of engineering science that could not be done at sea in any possible way. This instruction lasts for five years, and the Engineer Officer then goes to sea as an Assistant Engineer. His instruction in the engine-room then begins. The Chief Engineer takes the Officer as his assistant and trains him in such a manner that after three or four years he is competent to take charge of a watch, or possibly of a small vessel's machinery. I should be very sorry indeed to see that system altered.¹

Admiral CLEVELAND: My objection to Keyham College was based upon this, that you can get exactly the same men out of a private workshop. I do not think the training given there is part of naval education.

¹ Besides the really good engineering education an engineer student gets at the college at Keyham, he learns other things which may not show in an examination paper, but which make him likely to become a good naval engineer Officer in a much shorter time than a privately trained student. He learns habits of discipline, company drill, rifle and cutlass exercises, boating, swimming, ship construction, torpedo and other fittings of war-ships which cannot possibly be learnt in any private establishment.—J. L.

Admiral Sir J. CORBETT, K.C.B. : I was four years in command of the "Britannia," and, during three years out of that time, Admiral Bowden-Smith was commander of the ship. I had not the paper that he has just read before me until I came into this room, and I can hardly undertake to make any remarks specially upon it. I am, however, perfectly willing to say that I entirely agree with what Admiral Bowden-Smith has placed before us. There is one question about the extra age at which Cadets leave the "Britannia." I was always of opinion whilst in the "Britannia" that Cadets when they left the ship were quite old enough, and I think if you increase the age you should do away with the "Britannia," and put them on shore at a college. I do think young Officers before they go to sea ought to have some sort of training of the same kind that they get now to qualify them to be on board ship, and enable them to be of some use when they get there.

Mr. ANDREW CUNNINGHAME, M.N. : I was not aware of this lecture until this morning. It is a subject in which I take great interest, as I spent two sessions at the Royal Naval College, Greenwich, in the course of my career. I have always felt, both in my observations of the Merchant Service and of the Royal Navy, that the age at which boys went to sea was far too young. I have a very strong feeling that way. The lecturer, I think, mentions that one of the reasons is that it is necessary to catch a youngster in time, or else you would not get him at all if he knew what he was going to. That looks to me very like "falsehood, fraud, and wilful imposition," or, in other words, taking advantage of a youngster's ignorance and inexperience before he can judge for himself. I feel very strongly it would be much better to let the boy continue his general education until he was several years in advance of the 14½ limit, and then he will be better able to judge whether he is fitted for the sea or not. The lecturer mentions the American Navy, that after four years about 52 per cent. of the youngsters resign or give it up altogether. I think from the tone of the remarks made here, it has been assumed too much that a sailor can be made. I say that he is born; that you cannot make a sailor. I think he should be allowed to carry on his general education until he is seventeen or eighteen years old before he goes to sea, and if he has a desire then to go to sea he would probably make a good sailor, because he knows he has no time to lose, and he will apply his mind to his work much better than he would coming in at an earlier age. It appears that under the present regulations a young man of twenty can get qualified to take charge of a ship's deck. I should be very sorry to see any man of that age in charge of my ship's deck; because, considering the value of the property which is now committed to the Officer on watch, I think it requires a man of very mature mind, with all his wits about him, to be able to take that in hand. Another point, which is not brought out so much as I expected it would have been from the title of the paper, is with regard to the training of Officers. It has always seemed to me a weak point that there is so much time spent on half-pay in the Service. Only the other day I saw in the newspapers that the Commander of the ill-fated "Serpent" had been two years on half-pay before he received his appointment in June last. I think that is a serious difficulty in the training of an Officer, and I have often thought it might, with advantage, be arranged for an Officer under such circumstances to take or get some experience in the Merchant Service. I think there would be no difficulty in making arrangements whereby an Officer should be allowed to see something of the conditions of Service on board a merchant ship. It would qualify him very much better for undertaking the work of commanding in store for him in his own branch of the Service afterwards. With regard to our engineering friends, I do not think that they need be under any apprehension of being "abolished" by the Captains. The tendency, I think, both in the Merchant Service and the Royal Navy is the other way, that the Engineer will "abolish" the Captain, that is, the Captain of the ship will have to be an Engineer. As a sailor myself, I always felt that the Captain ought to be the best man on board his ship, and for that reason I do not see that a Captain of a steamship can be properly qualified unless he is a thorough Engineer, and, more than that, the man who can pass an engineering examination can certainly qualify himself to handle a ship of any description.

Admiral G. S. BOSANQUET : I should like to make a few remarks that practically bear upon this question, without entering into details. It appears to me that the

able lecture we have heard from Admiral Bowden-Smith had somewhat of an apologetic turn. His argument appears to be to let things drift as they are until we can find out something better, and he has given us a good many quotations from the details of foreign navies, as to what is their particular system. But I will argue the question thus: I will go back to the Navy of our own time—that is of the time when I entered it—there are many Officers older than myself, and of my own standing, also here present. Let us compare the training of Officers and their capabilities under the old system with what now exists. Admiral Bowden-Smith says, "Surely you cannot wish to see young Officers go straight on board ship from school at the age of sixteen or seventeen, and take their place as Officers without any preliminary training." He says they would not know signals, they would not know the management of boats, &c. Now, in the ironclad that I commanded, a great number of cadets passed through my hands every year; a large number being drafted straight from the "Britannia"; and what did I find amongst the boys? They all said, "The conditions of life are perfectly novel to us, we did not expect it, nor did we know anything about it." After so many months of training there were periodical examinations that I used to hold, and I found that their knowledge of seamanship, which I presume is the *raison d'être* of the "Britannia," was absolutely *nil*. I do not mean to say that they could not turn into a hammock, although even in that case they found it was twice as high to reach as on the "Britannia." Still there was nothing as regards practical seamanship which they had acquired, and I ask how is it possible that boys can learn what you call seamanship in a ship of that kind? When they got on board ship they did not understand what a real rope was, or anything else real. The consequence was, you may say, there was very little to show for their education as regards practical seamanship. Then let us take the Officers of my own standing, of whom there must be a large number here, as well as many older Officers. Take myself for instance. I entered at the age of thirteen. I knew positively nothing. I went on board: the first night I kept my watch. The next day I had to go away in a boat to the flagship to copy orders, but I knew no more about steering a boat than the man in the moon. But having to do it, the result was, that in a month's time, I was perfectly capable of handling a boat, and could sail her perfectly well. Therefore, I may say, I was quite as efficient an Officer as any boy who comes from the "Britannia" at the present time, after his two years' so-called seamanship training. Then, I ask, what are we in the Navy for, what is the object of our profession? The object is to handle your ship (or a fleet) and carry her into action; to handle your ships as I believe they never are handled elsewhere. Has it not been so from the earliest ages? Is it not the fact that the Admiralty in past times were able, whenever it was necessary, to select Officers for any specialty, scientific or otherwise, even apart from seamanship, with the very highest attainments? Many Officers have now passed away, having the very highest scientific attainments—men like Admirals Shadwell, Shortland, Ryder, and many others, and some such are present now. Therefore, the question is, are we getting any better material now, or attaining our object better than we did before? No doubt there were faults in the past system, and they could be corrected, but it appears to me, and in that I find myself in agreement with what has fallen from Admiral Cleveland, that when an Officer joins the Service he should go straight to sea. I take it that a great deal of Admiral Bowden-Smith's paper does agree with what Admiral Cleveland has said, and that, although he says, "Keep on the 'Britannia,'" his argument is against it. It was not until I actually knew that I had to learn languages that I did apply myself to them. I was too young to learn them at first at all, and so it is now. Admiral Bowden-Smith told us himself that the British boy won't learn French, and yet you see that as very recently certain advantages have been held out, by the Admiralty, to those Officers who will take the position of interpreter, and that Officers must qualify for these things, that many do so and many more will in course of time. Let every Officer have the standard set before him, and he will acquire it in time. There is no doubt about that. It has been so in the past, and it will be so in the future. Give the standard, and do not stop examinations at that for Sub-Lieutenants at the time when the brain power is just beginning to be at its best; but follow up your examination in the higher ranks, either by passing through a

Staff College or elsewhere, and let these examinations be continued from Lieutenant up to the rank of Commander. That appears to me to be what the argument of Admiral Bowden-Smith would lead to, because he says that at the immature age of the boys they won't qualify as regards languages, and as it is with languages, so, as regards everything else. I am strongly in favour of throwing the whole into open competition at the age of sixteen. I do not see why, at the age of sixteen, there is something peculiar in a boy, so that he should not be able to adapt himself to his profession as well as coming from the "Britannia," at the age of sixteen, when he has a very rude smattering and nothing well grounded, as regards seamanship. With regard to the system of educating young Officers on board their present ships, it appears to me that it is an endeavour to put into a pint bottle the contents of a quart bottle. They are driven from pillar to post. It is incessant grind, and nothing thorough is done. Our Officers attain to their qualifications, and become as good Officers as they are, and I have no doubt they are in many respects as good as those of the past; but they do so in spite of the system and not because of the system.

LORD ROBERT MONTAGU: Admiral Mayne has told us that a boy should go straight from a public school on board ship; that is to say, he should have no naval education. He may learn what everyone learns at a public school; but he is to have no naval education until he goes on board. Another speaker, who, I believe, was also an Admiral, because he spoke with authority, said that in no ship can a boy get more than an hour's education a day, and that in most ships they do not even get that. Now, we seem to be here in a sort of difficulty. Admiral Mayne says, give boys no naval education until they go to sea; the other Admiral says, that when they go to sea they will not get an hour a day, and nothing like it. How then are they to get any naval education at all? To get out of that difficulty I think some change is required, and I would like to mention a change that has been tried. I daresay you remember Commander Hoskyns, a brave man who jumped overboard to save a poor Indian girl in the Pacific from being eaten by sharks; the result being that he got rheumatic fever and died. Before he went to sea in the "Swiftsure," he went to the Admiralty, and said that boys should not keep watch, that it stopped their growth; but that they should attend school instead, and he would like to try the experiment. The result was that they kept no watches, until their homeward voyage this year, and had four hours of schooling a day. My boy was on the "Britannia," under Admiral Bowden-Smith, and he came home with the highest admiration for Admiral Bowden-Smith. Yet I suppose he learned a good deal on the "Britannia," as he came away having gained five months of sea service. Then he went to sea, having had a naval education before he joined the "Swiftsure"; and while at sea he had four hours schooling a day. It seems to me that is a great deal more to the purpose, under the present system, than to accept Admiral Mayne's principle. I thank you very much for having listened to these few remarks, and I thank Admiral Bowden-Smith for his extremely instructive paper.

Admiral LE HUXTE WARD, C.B.: I desire to express my entire concurrence in, I think, everything which has fallen from Admiral Mayne on this subject. I am told that unless I am prepared with a cut and dried system I ought not to express objections to the system now existing, that is to say, I ought not to pull down unless I am prepared to build up. This principle is right if that which now exists cannot be shown to be positively vicious, but I consider this to be the case in the "Britannia" at present, and that it is so by the showing of its own advocates. Its own advocates tell us that they could not obtain Officers for the Navy except under the false pretences now in vogue, that is to say, that young gentlemen be required to enter the Service at an age when they are incapable of judging for themselves whether they are in any way fitted for the Navy or not; and the result has always appeared to me to be eminently unsatisfactory, and I believe that they would turn out far better Officers if they were allowed to continue in their schools and to gain the advantage of what I consider to be the very best education in the world—that of our public schools. And, moreover, I cannot think for one moment we should find any difficulty in filling up the ranks of Officers of the Navy. For where are our young Officers to go if they do not enter the Army or Navy, or any of the

learned professions? If they find themselves stranded on the nothing-to-do bank, they have to go to the Colonies. And we can all judge which would be the hardest life, making their way with their back to the wall in the Colonies, or entering Her Majesty's Service; I am quite sure that the hardships which they would have to endure on board the ships in the Navy are nothing to be compared to the hardships, coupled with uncertainty of result, which they have to put up with when they go to the Colonies.

The CHAIRMAN (Sir Houston Stewart): Ladies and gentlemen, as it is now more than half a century since I entered the Navy, a boy in my fourteenth year, I do not think any opinion of mine as to what system is the best suited to the present requirements of the Navy would be of any value. But my own experience is always present to my mind when I look back upon my early days afloat. I came to sea, without any examination, direct from school, in the previous years being educated by a tutor at home. It is due to a father who attached the greatest importance to education himself, and who, having had but little education in his early days in the Navy, attended the college classes at Edinboro' when he was spending that time which has been characterized by one of our speakers here as the rather "idle time" of half-pay, and had his education completed in its higher branches, to state that I was, for my age, very well educated, a good classical scholar, very well grounded and advanced in history, geography, English composition, and astronomy, fairly well acquainted with Euclid, fair knowledge of arithmetic, and of mathematics nothing. In the same ship I had two young messmates who came from the Royal Naval College: to my mind it appeared that they knew everything that was necessary to know about a ship. My position was very much what Admiral Bowden-Smith says in paragraph 3. I knew nothing of signals or the management of boats, and for the first year I must say I think I was rather useless, certainly compared to these young collegians, who at once took part in the active duties of the ship. I am not comparing the system of the "Britannia" now. I do not know what the boys know in seamanship when they leave the "Britannia," but I can clearly recollect what these two messmates of mine knew of seamanship when they left the Royal Naval College and joined the "Tweed" with me. They were perfectly acquainted with knotting, splicing, the names, leads and uses of all ropes, rigging, reefing and furling, tacking, wearing, working anchors and cables, taking meridian altitudes, taking sights for the chronometers and working them out, and taking lunars, with the management of boats under sails and oars. Soon after we left England, in the chops of the Channel we carried away the fore topsail yard, which had to be shifted, and we three youngsters were ordered into the fore top. I shall never forget holding on by the main topmast stay, a bewildered observer of what was going on around me, while these two youngsters were skipping about like monkeys, and taking an active part in the shifting of the yard. It was a constant subject of regret and humiliation to me that I found my messmates acquainted with things of which I knew nothing, and often did I wish that instead of passing direct from school to the ship, I had had some previous professional training, the same as these youths had, in the College. Among other things, they sketched well, and were good in making track charts. That is all I have to say on the subject. Looking back on my past career, which has been a singularly fortunate one, I still regret that I had no professional training before I entered the Navy.

Captain JOHNSTONE, R.N.: Will you tell us the age of your messmates who were at the College?

The CHAIRMAN: They must have been 15; they had passed two years at College.

Admiral MAYNE: They were three years older than you when they showed this proficiency?

The CHAIRMAN: Yes.¹

¹ Here I am wrong: instead of 12, I should have stated that I was in my 14th year when I joined H.M.S. "Tweed," at Portsmouth in April, 1835.—W. H. S.

Admiral BOWDEN-SMITH: Before attempting to make a few remarks on the observations that have been so kindly made, I should like to say I feel I ought to apologize for asking you to come here to listen to what many of you must think a very meagre paper on a very important subject, but I have been misunderstood, as I never intended to go into the engineer questions or into the consideration of the higher education of naval Officers. When Admiral Mayne kindly read his paper here, I thought it well that some Officer on the active list should reply, and having been Captain of the "Britannia," and having personally visited several of the foreign training establishments, I rather hurriedly wrote this paper, which I hoped to get in during the season, but I was too late, and that is the reason it comes out now. Had I known it would have been so long delayed, it possibly would not have been written at all. I am very glad Admiral Mayne says he does not object to the "Britannia" as a school, but only to the system. I am much obliged to him for saying so publicly here, because if naval Officers speak disparagingly of the school, it tends to dishearten the permanent staff of the "Britannia." He says he does not object to the "Britannia," he thinks it is a fairly good school.

Admiral MAYNE: A very good school.

Admiral BOWDEN-SMITH: I am obliged; but what he does object to is that Officers are not now efficient.

Admiral MAYNE: No.

Admiral BOWDEN-SMITH: Then I am very much puzzled. The "Britannia" is a good school, the Officers are efficient, then why do away with the "Britannia"? I suppose Admiral Mayne's argument is that if youngsters came straight from school, instead of going to the "Britannia," they would be more efficient than they are now?

Admiral MAYNE: Yes, I think that they would be, as a general rule, more efficient. They would come in with every kind and variety of early training, and would be more what they used to be without this waste of time and money on the "Britannia."

Admiral BOWDEN-SMITH: It has been said by Admiral Mayne and Admiral Cleveland that I referred to foreign navies as if I wished to adopt their customs and principles. It was not at all so; I only gave those facts thinking they might interest my brother Officers. I say, by all means, compare foreign systems with our own, and if any are better than our own, adopt them. I should like to show you, however, how impossible it is, in some sense, to compare our training with that of foreign Officers,—our habits are so different. If I may compare the "Britannia," for instance, with our good friends' and neighbours' ship the "Borda" at Brest: during the hours of recreation, we permit our cadets to have access to all the leading newspapers, periodicals, and books. On the "Borda" they do not allow any newspapers on board. Should we approve of that sort of education? I think not. On the "Britannia" we oblige the cadets to go on shore every day for recreation, hoping that they will go in the boats, or play at cricket, or football, or other manly games. On the "Borda" the French cadets are only allowed on shore every alternate Sunday, and do not always take advantage of that. Admiral Cleveland says I am apologizing for our system, and that I am of his way of thinking, because I said the real place for training naval Officers is the sea itself. I do say so, but not till they are sixteen, and before they do go to sea it is a great advantage to them to have some preliminary training to know how to handle nautical instruments, to know something about boats and various other things. My friend Admiral Bosanquet says that they do not know anything. Well, perhaps I may be pardoned for saying if they do not know anything it is partly the fault of my brother Officers. When a batch of cadets come on board ship and really do not know anything, if the Captain of that ship would only write to the Admiralty and say "That a batch of cadets did not know anything," the Captain of the "Britannia" would hear of it, and, possibly, the next batch might know more. I protest against that statement made by Admiral Bosanquet. The boys, of course, do not know how to handle a ship, but they know how to manage a boat, are well up in signals, and know many other useful matters. When I went to sea I went straight from home, and knew nothing. On board the ship was a master's assistant from Greenwich who was able to take his

place at once and make himself useful. It is a great advantage to boys before going to sea to have this education, and with regard to the "Britannia" as a school, if you except the classics, you get an exceedingly good general education on board, and several gentlemen have told me that even though they did not intend to send their sons to sea, they would choose that as a school in preference to many others. The cadets are really made to work, when at public schools they are not made to do so. Admiral Mayne referred to the question of expense. There is a great misconception, I think, on that point. The estimate for the "Britannia" was 20,000*l.* this year, and the contributions by parents 16,000*l.*; but that estimate does not cover the wages of the crew nor the maintenance of the ship. The wages of the crew should not be taken into consideration, because the Officers, seamen, and marines are all available for the fleet; if they were not there, they would be at Portsmouth or Plymouth; so that really the ship is not such an extravagant establishment as some people imagine, but even if she were, I think England can afford to pay for it. One gentleman says, take the American Navy as referred to in my paper, and say there are 52 per cent. resign. Why? Because they have to. They enter 100 boys in their training ship when they only want 25, and the other 75 have to go. It is not a matter whether they like it or not.

MR. CUNNINGHAME: I misunderstood you; I thought that referred to those who felt themselves unfitted for the profession.

ADMIRAL BOWDEN-SMITH: Admiral Bosanquet says my idea seems to be to let things drift. Not at all. I always advocate any change if for the better, but I do not think the change recommended of boys going straight to sea from school would be a good thing, and with regard to the Officers of the present day, I have no hesitation in saying the Lieutenants are far better now than they were in my young days, far better in every possible way. I have now only to thank you for your kind attention and criticism, and you, Mr. Chairman, for so kindly presiding.

THE CHAIRMAN: There has been a difference of opinion on this subject, as on all others. I do not exactly know which has the majority, but I am sure you will all be in accord in giving our best thanks to Admiral Bowden-Smith for his very clever and interesting paper.