

INSTITUTE OF MARINE ENGINEERS.

EXCURSION OF THE BRISTOL CHANNEL CENTRE.

SATURDAY, JULY 17, 1897.

One of those pleasant outings for which the Bristol Channel Centre of the Institute of Marine Engineers has become deservedly popular took place on Saturday. A party numbering about one hundred, about half of whom were ladies, who were admitted to the festivities for the first time, embarked on board the *Scotia* for Porlock Weir, which delightfully picturesque village was reached about two o'clock in the afternoon. Brakes were in waiting, and a short and pleasant drive introduced the visitors to the quaint, old-fashioned hamlet of Porlock, where lunch was provided at the Lorna Doone Hotel. The outer man, as Professor Elliott, D.Sc., aptly put it, having been refreshed, the party adjourned to an adjoining field, where the inner and intellectual man was entertained to an interesting paper by Mr. J. F. Walliker, Vice-President, on "Some Impressions of the Spithead Naval Review."

SOME IMPRESSIONS OF THE SPITHEAD NAVAL REVIEW.

BY MR. J. F. WALLIKER (*Vice-President B.C.C.*).

When our Secretary asked me to prepare some notes to be read before this meeting I felt that I was about to be placed in a rather invidious position. In

the first place this excursion was planned for enjoyment, and the pleasures of the sea and country; and in the second, the time was too short for me to submit to the members a paper which might be considered worthy of their consideration or discussion. It was suggested that I might say something with regard to the recent Naval Review, and the lessons to be learnt from it, and the subject is such an interesting one that although I can certainly add nothing new to the reams that have been written about it still the reiteration of some well-known facts should tend to deepen our interest in what is so truly regarded as our first line of defence. It is a far cry from the time of Alfred the Great, who was the real founder of our Navy, to the present day, and I understand there are no plans extant at Whitehall of the material, scantling and dimensions of any of the vessels of the former time; still it would have been a curious contrast if we could have had even a man-of-war steamer of 1837 to show against one of our modern leviathans of to-day. At that time, viz. 1837, paddles were universal, and a picture which I saw recently of H.M.S. *Tiger* evidenced in a remarkable way the great strides which have been made. When our Queen began to reign we had about 26 steam men-of-war, all paddle-boats, nearly full rigged; but the other week at Spithead there were 150 armed vessels with a tonnage of over 560,000, carrying 895 guns of large size, and this but a portion of the fleet needed for the protection of our country and commerce. All of these were propelled by screws, and with few exceptions without sail power at all. Looking at the rams at the bows also reminds us that we are really reverting to ancient practices, when all fighting ships were fitted with *beaks*, and sought by manœuvring and seamanship to strike and sink each other with this weapon; we read also that the Persian fighting ships had 200 rowers and 30 fighting men, and here surely the change to the many hundreds employed in one ship has been a radical one indeed. Contrast also the cost in

even a few hundred years: the *Great Harry*, built in 1496, cost £15,000, while a torpedo gunboat will cost £74,000; a *Majestic*, £914,000; and if we go abroad for a comparison, we have the Italian *Lepanto* standing at a total of £1,151,000. These latter and many more were to be seen at Spithead, including what it is anticipated will be of great assistance in the possible future war, and that is the swift armed merchant steamers to be fitted and used as cruisers as occasion may require. I should not like to omit, when mentioning types, the presence of the Hon. C. Parson's *Turbinia*, because she seems to have inaugurated a new departure in speed, and the sight of this small boat cleaving the water like an express train was by no means the least remarkable of a remarkable assemblage. I see this boat has done over 32 knots under favourable conditions, and learn that this speed has been considerably exceeded (37 knots, I am informed).

Those of the Members who were privileged to be present must have been struck forcibly with one fact, and that was the enormous quantity of men needed to man even the portion of the fleet we saw at anchor, and those with any knowledge of the many and intricate duties to be performed were fully cognisant that these could only be properly carried out by men trained to the business and acquired after long service. I regard the duties appertaining to an ordinary man-of-war's man to be often of a difficult, and, even in these times of peace (and forced draught), a dangerous one, as witness the occasional accidents in stokeholds, etc. Many of our hysterical friends (pardon the phrase) talk of the decadence of the British mercantile seamen, and say we have no feeders now for the Navy when our cargo boats are more than half full of foreigners. With this complaint I have only a certain amount of sympathy, as very limited experience and the most cursory glance through a man-of-war will inform the veriest tyro that the duties of the two services are widely apart; that

we have, in the broad sense of the term, no sailors in our Navy, and consequently it is not to this source only that we must look for the trained men necessary in this advanced age. In my opinion the reserve supply of men for the fleet must *be specially prepared*, and every facility and encouragement should be given to men to volunteer for this branch. Taking the bulk of the men employed on board, and these will include gunners, stokers, etc., it will be easily understood that only a long course of instruction can make them thoroughly valuable and able to do their work in all emergencies, and that the ordinary type of sailor (green from a fore-castle or a stokehold) would be of no more use than other men, taken haphazard, and equally ignorant of the specific duties they would be called upon, in their everyday course, to perform. Our sympathies are, as a matter of course, naturally given to the engine department, and here also we are informed that men of all classes are wanted to make the full complement, both on the active list and in the reserve, so necessary to keep our Navy where it always should be, and—I beg to emphasise the statement—in a position to take action at any time. The inducements as to pay and pension, although not on a very lavish scale, appear to be sufficient to tempt a great many, and it is to be hoped that these, with the privileges of our advancing times, will be further enhanced and made more and more attractive. Regarding the engineers, I have heard it stated by irresponsible and possibly ignorant men, that almost any engineer out of the mercantile marine could take charge of the engine-room of a man-of-war and give a good account of himself, and it is not uncommon to hear remarks with regard to the engineers of the service, which are neither generous nor true. The training of a naval engineer I believe to be most thorough, and maintain we have a very efficient body of men; still I hold that a large leaven of our mercantile engineers might, with advantage to all concerned, be incorporated with them, and also

that these could be easily enough obtained, were proper inducements held out. I see that there are more engineers on our N.R. list than there were some few years ago, but I fear that these men would be of very little use without a specified period of training, and for which, I understand, no arrangements have so far been made. I remember making an application myself in the R.N.R. (for obvious reasons I withhold the date!), and being informed that they did not intend enrolling any more, although at the time men were as scarce as they are now. This has, of course, been partially changed, and the admission of engineers made more easy, still the number registered in the *Navy List* is absurdly small, and, I understand, quite inadequate for possible needs. I certainly am not an advocate for conscription in any form, at all events just now, but I should like to see every suitable seagoing engineer, when he takes his certificate, be eligible, on volunteering and without a lot of unnecessary forms, for a commission in the R.N.R., and believe that very few but would take advantage of such a privilege, thus placing themselves on an equal footing with their fellow countrymen who have in such large numbers undertaken the duties and even hardships of artillery and rifle volunteering. Our society is now a large and influential one, and I can see no nobler (because patriotic) aim for the executive than to use its influence by helping to place our fleet, in this special regard at all events, in a thoroughly efficient state, and, by promoting a scheme such as I have sketched out only too briefly, obtain a fuller supply of good men in our reserve, and earn the gratitude of all men wishing for the welfare and prosperity of their country. It is hoped that the ground traversed in this short paper will not be considered wide of the subjects interesting to us as an Institute, and the "Impressions from Spithead," as they appealed to me, and as now expressed, it was thought might stimulate us in some way to take action to bring about a scheme whereby the engineers

of the mercantile marine may be incorporated with the Royal Navy, and so further strengthen our reserve forces. We know well that our power of production is enormous; we can place in the water vessels quicker and better than any of our rivals, but the men to man them must be trained, and without a reserve kept up on a sound basis we might find ourselves in a very serious position if it came to a struggle for our existence as a nation.

At the conclusion of the paper Dr. Elliott, President, briefly commented on the subject, referring in appreciative terms to the manner in which Mr. Walliker had dealt with it. A hearty vote of thanks to the author was proposed by Mr. Walker, seconded by Mr. Campbell, and carried by acclamation. "The President" was proposed by Mr. W. Scott, to which Professor Elliott responded. The party then dispersed for a few hours to inspect the places of interest in the vicinity. They subsequently continued the drive in brakes to Minehead, where they re-embarked for the up-channel cruise to Cardiff. This pleasant evening sea trip concluded a most enjoyable day.

GEORGE SLOGGETT,

Honorary Secretary,

Bristol Channel Centre.

IMPRESSIONS CONTRIBUTED BY ANOTHER
MEMBER WHO WAS PRESENT AT THE
NAVAL REVIEW.

Probably none of the many events which have taken place to commemorate the sixty years' reign of Queen Victoria is calculated to send home to us with greater effect the immense progress which has been made during that period than the magnificent

spectacle witnessed on Saturday, June 20th, off the Isle of Wight, whether viewed by day or by night. We were privileged to occupy a good position, with all the requirements indispensable to the full enjoyment of such a scene as was displayed before thousands of admiring eyes, when His Royal Highness the Prince of Wales (Admiral of the Fleet) reviewed the portions of our navy represented at the pageant at Spithead.

Portsmouth, even on Friday, was filled with visitors, and to the decorations of the town their gay dresses added a charming effect; while on Saturday trains following trains from all parts poured in their hundreds, and gave a bustle and vivacity to the Harbour and Dockyard, in and around which quarter were gathered representatives of nations and of classes, kings, lords, and commons. Leaving the Dockyard in the morning, we steamed out among craft of every description, from the Royal yacht *Victoria and Albert* to the humble cobble, which rose and fell to the undulations caused by our progress through the water. The *Victory* and *St. Vincent* passed, we came in sight of the smaller Government vessels. Casting a glance at the forts as we steam on, we look along the lines, respectively, of torpedo boats, destroyers and gun-boats, third-class cruisers and gun-vessels; battleships and cruisers in two lines: the one headed by the flagship *Sanspareil* (Rear-Admiral Hugo L. Pearson)—the *Benbow* in the same line—the other by the flagship *Magnificent* (Rear-Admiral John Fellowes, C.B.); the latter ship of 14,900 tons displacement, 12,000 horse-power, the former of 10,470 tons and 14,000 horse-power, the complement of the two being 1,340 men, and costing about £1,800,000. We now turn in between the outside line of battleships, and that made by the foreign men-of-war, passing the *Wien* (Austria-Hungary), *König Wilhelm* (Germany), *Viscaya* (Spain), *Lepanto* (Italy), *Brooklyn* (United States), *Rossia* (Russia), *Amiral Pothuanu* (France), *Evertsen* (Netherlands), *Vasco de Gama* (Portugal), *Heligoland*

(Denmark), *Gota* (Sweden), *Frithjof* (Norway), *Fuji* (Japan), and the *Maha Chakra* (Siam). Turning now we reach an outside line composed of special merchant vessels, headed by the *Teutonic*, armed as a fast reserve cruiser and manned by Royal Naval Reserve men, and in this line we take up our position and gaze with admiration upon the scene before us.

The merchant navy was represented by the White Star Line (*Teutonic*), P. and O. (*Caledonia*, *Paramatta*, and *Carthage*), American Line (*New York*), International Navigation Company (*Paris*—the latter chartered by the Navy League), British India Company (*Avoca*, *Goorkha*, and *Dunera*—the latter having just returned from the Cape as an Imperial transport), Union SS. Company (*Scot*—a fine looking steamer, recently lengthened and improved thereby), Cunard Line (*Campania* and *Bothnia*), Sir Donald Currie and Co. (*Dunvegan Castle*), Royal Mail (*Orinoco* and *Danube*), Orient Line (*Ophir*), Glen Line (*Glenartney*), Hamburg-American Line (*Columbia*), Compagnie Transatlantique (*Normandie*—with French Government officials), Wilson Line (*Eldorado*), and a host of smaller steamers, representing the General Steam, the railway companies, river steamers, tug boats, etc.

The total number of battleships and special service vessels was about 165, and the officers and men numbered close on 39,000, while the money value represented by the ships alone would be about £30,000,000. When we consider that this turn-out has been accomplished without disturbing vessels on stations, or even bringing out all those available in reserve at the dockyards and round the coast, we realise the force ready to take part in safeguarding our island home and its interests. Few of the vessels which took part in the review ten years ago are present now—indeed, out of the total number only twenty-eight were built previously to 1887. Where are they gone? Foreign stations, dockyards, harbour defences.

hold them in service. Some of those now present will shortly proceed to foreign stations to relieve others.

The rich full-dress uniforms of the officers gave a pleasing relief to the massive appearance of the vessels on deck. The regular lines of seamen around the rails—an innovation, among others, born of the progressive march of the half century—in place of the old manning of the yards, bring to our mind the fact that, wonderful as are the alterations in the appearance of the fleets of 1897 and of 1837, more amazing still is the alteration in and within the hull. The wooden walls have been superseded by iron and steel. First came iron plates, fixed to the wood as a protection; then gradually, but surely, the metal formed the skeleton of the structure as well as the protective bodyguard. The waves now wash upon iron instead of wood, and no longer does the wind play upon the receptive canvas, wooing it to press forward the structure directed by the steersman.

Officers and men, whose departmental training and traditions caused them to pride themselves in many things which have become obsolete in the modern types, have had to adapt themselves to altered conditions and circumstances—no doubt unwillingly at first, as they saw undisciplined hosts of iron and coal men entering their gangways, soiling their spotless decks and gear with grimy dust. But as time passed on, educated, trained, and disciplined engineer officers and men have entered to take their places, and prove that the metal of science can be fittingly allied to the mettle of the Briton, giving a combination which it is the interest of everyone who has the good of the nation at heart to foster and encourage. The head of the engineer department of the Navy is Sir A. John Durston, R.N., K.C.B., whose name most fittingly appeared in the Jubilee list of honours, and under whose superintendence great advances have been made both in the *matériel* and *personnel* of his department.

What is wanted now, to crown this year of Jubilee, in connection with the administration of the Navy, is the appointment of a representative from the engineer department, in whose charge is the machinery and mechanical appliances with which our ships are filled, and upon which so much depends that we cannot afford to allow any doubt or doubtful matter to remain in abeyance unsolved. Hence the importance of having the machinery department represented in the inner circle of the Admiralty. The articles in the *Navy and Army* on the Navy are very pleasant and thought-inspiring reading, and the illustrations are excellent. But when we recur to other letterpress elsewhere, dealing with the *personnel* of the fleet, and especially the engineering portion, we are led to wonder how a trained and disciplined mind can utter expressions so at variance with a sense of the fitness of things, as that the stokers and engineers for the Navy can be picked up in time of emergency from those who might happen to be then unemployed in the mercantile marine!

Our cogitations on this subject are interrupted by the signal announcing the coming of the Royal yacht. As the guns shot forth their fire and smoke from section to section, the representative of Majesty and Empire passed between the lines, the air now stirred by the roar of cannon, now by the cheering of men, and so it continued until the Prince of Wales had concluded the review and returned to Portsmouth, followed by yachts and steamers conveying princes, ambassadors, premiers, and colonial troops. As if disturbed by the vibrations due to the firing of the guns, the clouds lowered and prepared to discharge their contents, and as we reached the jetty the lightning burst forth with its forked and vivid flame, and peal on peal of thunder rent the air, while the rain fell in sheets, flooding the ground as by a tropical shower. Soon, however, the elements ceased their fearsome play, and with the lull in the storm there came forth, clad in gay and festive garments, the

reliefs, held back from the day review by domestic and other reasons, whose willing feet now sped towards the waiting vessels, bound for the night review.

The fleet by day was splendid; by night it was gorgeous, and no less fruitful of reflection as to the advancement of scientific and mechanical ingenuity and design. The ships, outlined by electric lamps, looked like a phantom fairy fleet; stretched far as eye could reach, towards Southampton Water, masts, yards, and fighting tops surmounting the belt of light, flags shaped by light and devices, all combined to make the scene a spectacle for a lifetime. Not behind the ships of our navy were those of foreign navies, the U.S. *Brooklyn* especially making a fine show of light and devices between the masts; while the ships of the mercantile navy showed illuminations which must have tested their electric light machinery to the full. Cords of lighted lamps stretched from stem to stern, around the hull, dropped down to the water's edge at either end, up the masts, and along the gaffs, round and down the funnel the fire ran. Writing as we do from the *Dunera*, whose hospitality—under the auspices and by the courtesy of the Admiralty—the Press enjoyed, we are surrounded by evidences of our Colonial and Imperial extensions, in the presence of representative officers from East and West, while the foreign Press representatives in large numbers show the widespread interest taken in the review.

The fleet will remain for a few days longer, and the illuminations are to be continued, but Commerce has already summoned away the merchantmen to continue their work of advancement and progress in the interests of trade and expansion.

Portsmouth should be named ere we close. It is finely decorated by day and illuminated by night. The Town Hall is a splendid building, and lends itself

well to an effective show, and it showed itself worthy of the occasion.

Another scene has closed in the Jubilee celebrations. May the military review, which is due in the course of a few days, be no less brilliant.

J. A.

VISIT OF THE BRISTOL CHANNEL CENTRE TO MELINGRIFFITH TIN WORKS AND CASTELL COCH.

A party of the Members and their friends, including several ladies, left Cardiff on Saturday, September 18th, 1897, about one o'clock, and travelled by means of brakes direct to Melingriffith Tin Works. They were met by Mr. Evans, the works manager, who conducted them through the works and with great courtesy explained the entire process of tin-plate manufacture as carried on there. From the steel bar to the finished tinned sheet, cut and packed ready for the market, each stage of the process was witnessed, the works being specially kept running for the party after one o'clock.

The drive was continued to the Garth Mine Pits at Pentyrch, and, under the guidance of Mr. S. W. Allen, these interesting old workings were inspected; a subterranean passage about a third of a mile in length had to be journeyed through in single file into the heart of the mountain, and when the enormous cavities were illuminated by means of a magnesium light the effect was most weird and fascinating.

Castell Coch was next visited, and, by the kind permission of the Most Noble the Marquess of Bute, the party was conducted through this interesting old mountain stronghold. It has been entirely restored,

and is now used as an occasional residence by Lord Bute.

An adjournment was made subsequently to the Lewis Arms Hotel, Ton Gwynlais, where high tea was partaken of. The President, Professor A. C. Elliott, D.Sc., presided, while Mr. S. W. Allen (Member) here read a paper on Castell Coch and Neighbourhood, as follows :

CASTELL COCH AND NEIGHBOURHOOD.

I have been asked to contribute a brief commentary upon the places visited by our Society to-day.

The ground traversed abounds with historic interest and beauty, and deserves a more leisurely investigation than is possible upon such an occasion; and, to be as brief as possible in my remarks, let us suppose that we have ascended the hill upon which Castell Coch, or the Red Castle, stands, and from there the whole of our pilgrimage will be, as in a panorama, right around and beneath us.

This venerable seat was for a long time the residence of Ivor Bach, who so gallantly headed the inhabitants of Glamorgan for the purpose of forcing Fitzhamon to restore to their country its ancient laws and privileges. This is a most characteristic spot, and, as it were, the gateway of the vale. It derives its appellation from the high rock of red stone on which it stands.

Its elevated position and the contour of its walls, together with the superb restoration effected by the Most Noble the Marquess of Bute some few years back, render it a magnificent addition to the beauties collected on this luxurious spot.

It must have been nearly impregnable in ancient times, from its height and steep ascent.

Within my own recollection the castle was nothing more than a picturesque ruin, and from within the stately apartments trees of considerable size grew and flourished, whilst upon the enormous walls grew wild flowers in abundance and various kinds of fruit trees.

One would scarcely believe that the beautiful decorated apartments that we have inspected to-day were so recently a veritable wild garden.

From the almost inaccessible places on the top of the ramparts I have myself picked raspberries, gooseberries and blackberries in abundance.

The view from the top windows of the castle, the rocky summit of the Craig-yr-allt Mountain on the right, which is of a bluish tint, forms a fine contrast with the warm tints of the surrounding soil and the thick foliage to be seen in every direction as far as the eye can reach; then on turning round and looking towards the sea the effect is indescribable—Penarth upon the right, with the flat and steep Holmes right away in the centre of the Bristol Channel, and the Somersetshire coast beyond.

From this magnificent standpoint we can trace the course of our pilgrimage this afternoon and see the Cardiff of to-day, the premier coal-exporting port of the world, and we cannot help feeling proud we are members of the Institute of Marine Engineers, who probably have more to do with the use of coal than any other profession.

From here in imagination we may look back into antiquity and picture Ivor Bach with his army rushing down the hillside and attacking the walls of Cardiff Castle, who, as we are told, placed ladders by stealth against the walls to gain possession, and carried off the Earl of Gloucester with his Countess and their only son

and held them prisoners in Castell Coch till he had not only recovered that of which he had been unjustly deprived but wrung from them concessions besides.

Coming then into more modern times, and allowing to pass unnoticed the various historical incidents connected with this interesting locality, we will glance for a moment at the water way beneath us and picture the Glamorganshire Canal as it was when opened in the year 1794.

Previous to this the mineral productions from the hills were brought down to Cardiff on the backs of mules, who discharged their loads at the old quay near the back of the present Town Hall, where vessels of about 400 tons burden took in their cargoes.

The Glamorganshire Canal has just about completed a century of its existence.

I had hoped that we might have taken a voyage up the Canal, but owing to circumstances we were obliged to forego this pleasure.

There are several points of interest along the route, such as the various factories for the manufacture of patent fuel, that now forms a very large item in the exports from Cardiff.

Then, after passing the dismantled ironworks near Llandaff, known as the College Works, and probably having refreshed ourselves, as the late Lord Beaconsfield did, at the "Cow and Snuffers," we proceed to the Melingriffith Tin Works, which is one of the largest of its kind in the country.

Here, bars of steel, specially prepared, are rolled out into the form of thin metal plates.

These plates are doubled and folded over many times and repeatedly passed through the rolling mills until they are of the required thickness.

They are then cut to the necessary sizes and then separated and passed through a system of cold rolls.

They are then washed in an acid solution to remove the scale or oxide from the surface, and then immersed in molten metallic tin.

In this manner the steel plates are coated with a brilliant surface of tin, the appearance of which is known to everyone.

At this works in the early sixties a very large portion of the wire used in the first Atlantic telegraph cable was rolled.

Melingriffith is not of recent growth. I might inform you that at the beginning of the century not less than 13,000 boxes of tin plates (225 plates in each box) have been known to be sent to Bristol in one year. At present the works still holds its own, and, unlike many other of the tin works in the neighbourhood, has not been crushed out of existence by foreign competitors.

Looking further up the valley we see the Pentyrch Iron Works almost at our feet.

Here the iron bars were rolled, from which the tin plates were made before the introduction of steel for that purpose.

All the old charcoal fires, puddling and balling furnaces have disappeared, and their place occupied by rolling mills for the manufacture of thin steel plates to be afterwards covered with tin.

Right almost in front of us, and to the right, almost hidden by foliage, stands the stately Cathedral of Llandaff, one of the most ancient ecclesiastical sites in the whole country, and perhaps the most ancient; and, if the tradition be true, a church has existed upon this spot from the sixth century.

Looking up towards the Garth Mountain, and almost in the bed of the river Taff, is a peculiar well, known as Taff's well, much esteemed for its medicinal properties; the water is tepid, and has a reputation for the cure of rheumatism. There used to be a collection of invalids' crutches kept in the neighbourhood to testify that the owners had been cured, and had left these relics behind them as being of no further use.

Right beneath us are the vineyards established by the Marquess of Bute, and from which wine of a superior character is annually made. These vineyards have no successful rivals in Great Britain.

From this spot, also, we have almost in view the historic porcelain works of Nantgarw, where possibly the most beautiful china and porcelain work that has ever been manufactured in this country was produced, specimens of which are prized by connoisseurs, and a fine collection of which can now be seen at the Cardiff Museum.

The majestic Garth Mountain stands right in front of us. Here is the outcrop of the coal basin; and I find it recorded in the year 1807 that one of the coal mines here had been on fire for many years, and the spot could be traced by smoke rising from the surface of the ground, and sometimes flame issuing as from a miniature volcano.

To our left is seen what is known as the Lesser Garth, and within which is contained the wonderful mine pits that we have visited.

Iron ore was extracted from these mines early in the present century, and has been worked continuously until the year 1884, when the mines were abandoned.

The original method of working was to extract the iron ore by means of quarrying it from the surface, and working downwards.

A tunnel was afterwards made in the side of the hill, and is of about a third of a mile in length.

Afterwards a pit was sunk below the tunnel, and the ore extracted from below, leaving an immense cavern, the roof being supported in the centre by a great column of rock.

An opening through the roof sent a faint beam of light from the cavern above into the regions below.

The beauty of the scene in this subterranean vault, dimly lit by the workmen's lamps or candles, was a scene never to be forgotten. At the present time the whole of the lower portions are filled with water.

At the bottom of the pockets, just prior to the closing of the works, I am informed that Red Hæmatite was met with, giving 54 per cent. of metallic iron.

In this short paper I have only endeavoured to call your attention to some of the points of interest we have seen this afternoon, and which lie immediately beneath our gaze within the region of Castell Coch.

A very hearty vote of thanks was accorded Mr. Allen for his paper and kind services as guide to the party. A vote of thanks was also passed to Mr. Evans, of the Melingriffith Tin Works. The remaining time was devoted to a musical programme,

and the return journey in the brakes was made in time to reach Cardiff about 9 p.m. The weather was fine, and the whole time was very enjoyable.

GEORGE SLOGGETT,

Hon. Secretary,

Bristol Channel Centre.

