

Royal Society of Tasmania.

ABSTRACT OF PROCEEDINGS.

APRIL, 1909.

The General Meeting of the Society was postponed for a month.

MAY 3, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, May 3, 1909.

His Excellency the Governor, Sir Gerald Strickland, K.C.M.G. (President) in the chair.

In attendance on His Excellency were Sir Charles Lucas, K.C.M.G., and Hon. A. A. Pearson, C.M.G., Dominions Department, Colonial Office, Downing-street, London.

VICE-PRESIDENTS.

The President appointed Messrs. T. Stephens, M.A., F.G.S., and R. M. Johnston, F.L.S., I.S.O., Vice-Presidents of the Society for the current year.

ELECTION OF FELLOWS.

Messrs. A. E. Blackman, F. E. Burbury, W. Burn, W. F. D. Butler, M.Sc., S. P. Crisp, A. R. P. Cross, T. T. Flynn, B.Sc., A. V. Giblin, W. S. Lake, M.Sc., E. M. Law, M. W. Simmons, C. E. Toovey, and L. K. Ward, B.A., B.E., were elected Fellows of the Society.

ADDRESS OF PRESIDENT.

The President delivered the following address:—

“ In consequence of my absence from Tasmania on leave, a period of two years is under review, but it is remarkably devoid of great and startling discoveries. The scientific periodicals are, however, full of evidence of steady progress in the improvement of previous inventions.

The Wright Brothers achieved mechanical flight several years ago. The President of the French Republic has recently expressed his regret that the invention of a Frenchman, who was really the first to make a machine fly, had been offered to the War Office, successfully tested, and officially rejected. In the present year flying machines are being made by the hundred, and they have become a substantial factor in plans of military offence and defence. But, so far, only daring and highly-trained experts can navigate them, and the difficulties of starting and

alighting make them as yet unsuitable for purposes of exploration. They are also unable to carry any considerable weight. On the other hand, the dirigible balloon has been brought to such a degree of perfection that the carrying of a dozen men and several tons of stores is merely a question of money.

When it is remembered that the unexplored portion of Tasmania is very large, that the mineral belt which probably contains many a mine of the value of Lyell or Bischoff is most difficult of access by land, I feel the time is approaching when an enterprising Government may seriously consider the hiring of a dirigible balloon to carry out preliminary aerial surveys, and facilitate and encourage the subsequent work of prospectors following the ordinary methods.

At the time of my last address to this Society, scientific men were justified in laughing at wireless telephony as the objective of visionaries; but the rapid achievements in practice of wireless telephony are already astounding. The human voice has been audibly transmitted without wires a distance of 260 miles. With regard to wireless telegraphy, there have been great improvements, of which the most remarkable is the development of automatic transmission up to the speed of 120 words a minute. With regard to land telegraphs, the operation of a line without repetition has been extended over 7,000 miles. Less than a year ago serious people were laughing at Mr. Henniker Heaton's advocacy of telegrams at a penny a word, but now, by direct overland transmission to Southern Asia, and by wireless transmission thence to the shores of Australia, the possibility of penny-a-word telegrams, or, at least, of telegrams at greatly reduced rates, has been brought within the range of practical politics.

With regard to shipping, when I last addressed you the *Mauretania* and the *Lusitania*, which have fulfilled all expectations, were considered marvellous for their size, as well as for their speed, but already ships of nearly twice their size are being built. These larger ships do not aim at a speed much above 20 knots, but it is probable that their size will offer immunity from sea sickness and a great reduction in the cost of luxurious trans-Atlantic travelling. They are being built with English capital, and will probably be propelled by an economical combination of high-pressure reciprocating engines and low-pressure turbines.

This line of development is important to Tasmania. The most enterprising shipowners have already given a warning to Melbourne and Sydney that much work will have to be done to their water-ways before really large vessels can be built for the Australian trade.

Long before any other Australian port is fit to receive them, 40,000-ton vessels may be built, able to come to Australia at 20 knots by the Cape, and if the passenger traffic should warrant the experiment, Hobart may expect to enjoy its natural claims to be the port of transhipment and coaling for the Commonwealth terminus.

The providing of mechanical aids for the rapid coaling of vessels has received successful attention at Fremantle, Western

Australia, as well as in South Africa and Japan. Even under present conditions there are vessels leaving Melbourne that could profitably be loaded down two or three feet if the depth of water allowed. If sufficient capital were expended to provide facilities for the rapid and cheap mechanical coaling of such vessels in Hobart, Tasmanians might obtain work and profits in return for the depth of water in the Derwent.

Another practical achievement tending to lower freights in the future has been the successful test of the internal combustion engine, worked with producer gas on a scale suitable for ocean-going vessels. This invention is more remarkable for the great economy in wages of stokers, trimmers, and engineers than in the already well-known economy in fuel obtainable by using producer gas. Nevertheless some years must elapse before this system is adopted commercially to any great extent. It is suggested that the gas engines running at high velocity in one direction should produce electricity to be redeveloped by motors, reversible and adjustable, operating propellers at an efficient rate of revolution.

The control of water resources for the purpose of generating power and of irrigation is receiving all over the world the keen attention of sagacious men, eager to appropriate unearned increments now going to waste.

In countries long settled and thickly populated, riparian rights, catchment areas, and land values complicate and impede this line of progress. In a new country, rapidly developing, and gifted with high tablelands and ample rainfall, such as this State of ours, the sooner the level of lakes is raised, and new lakes are created by damming rivers, the better for the future prospects of large manufacturing development created by the application of water power.

Another possibility of the regulation of water for irrigation purposes may be illustrated by reference to the Derwent. If this river were provided with a lock this side of Bridgewater, steamers could pass freely, while the salt water would be prevented from contaminating many miles of river bank, along which fresh-water irrigation would become available.

With reference to minerals, the transmutation of metals has been achieved, or at least there is very weighty scientific authority for this assertion. Rubies and sapphires have been manufactured on a commercial scale in absolute equality with the natural stones as regards chemical composition, and mechanical tests of hardness and of refraction of light.

But it is still cheaper to mine silver than to produce it by transmutation from copper, and Tasmanian miners need have no anxiety by reason of this great discovery, even if it be all that is asserted of it. Sapphires are found in Tasmania; they are distinguished from manufactured sapphires by showing flaws and other defects, well known to those who possess genuine stones. The manufactured sapphire has the peculiar fault of being absolutely uniform and flawless. Tasmanian copper may suffer from the great development of aluminium, which is now being produced so cheaply that it has become, for a given price, a much cheaper conductor of electricity than copper.

The art of extracting minerals from refractory ores is making rapid progress. It is always an open question whether scientific results obtained in the laboratory, even on a very large scale, will prove commercially practical in the immediate future. Nevertheless, it may be taken for certain that, in a future not very remote, the success of the laboratory experiment will become the success of the enterprising capitalist, and I look forward with confidence to the future of the vast low-grade propositions on the west of Tasmania.

This Society has done much to draw attention to the need for the scientific regulation of forestry, and the economic introduction of rapid-growing timber from the Northern Hemisphere. I have taken an active interest in this movement, and I am glad to be able to congratulate Tasmania that at last the Government has made a satisfactory beginning in the direction of one of the most profitable and most necessary of State industries, namely, forestry, in a country where the State alone can at present be tempted to this form of investment at moderate compound interest.

The principal feature with regard to transportation on land is the rapid conversion of railroads from steam to electric traction. It is safe to say that in this line mechanical and technical difficulties have been overcome; it is only a question of having sufficient traffic to justify conversion financially. Sooner or later this day will come for Tasmania. It behoves the representatives of the people to guard against any wasteful alienation of the water power now belonging to the State. The running of a train on a monorail evoked widespread interest, but the risks and complications involved prevent its being a competitor with narrow gauge lines for the commercial handling of ordinary goods traffic.

The great interest taken by the Australian Government, and by Australian explorers, in the recent successful Antarctic expedition, recalls to mind that Sir John Franklin was the founder and first president of this Society. Meetings were then held at the old Government House, where Franklin Square and the Public Buildings now are. It has often been said that the value of the old site to-day more than covers the cost of the present Governor's establishment.

The Government Statistician, Mr. Robert Mackenzie Johnston, was deputed by us last year to represent Tasmania at the foundation of the celebration, in London, of the one hundredth anniversary of the Royal Geographical Society. The records of this Society contain a series of most valuable papers on geology, including the extensive and brilliant contributions of Mr. Johnston, who has also read papers on economic and statistical questions, of exceptional originality and worth. This leads one to express a hope that the Royal Society of Tasmania will continue to welcome papers on an ever-increasing variety of scientific subjects, and aspire more and more to the breadth of view of its great founder.

The opportunities before this Society are very promising; there is a yearning in a community such as this for a common meeting-ground for men of culture, who are devoted to study and research, and for those anxious to elevate their knowledge;

it is to these that the Royal Society of Tasmania can offer golden opportunities for the free exchange of ideas, for mutual assistance, and for the publication of original discoveries.

Nowadays, science advances with increasing rapidity, and the newly-discovered specialist should always be heartily welcomed, and never discouraged. May the future of the Royal Society be ever marked with the cordiality and friendship between members, which have added joy to my term of office; may its governing body be progressive and on the alert to move with the growing demands of learning; may added membership and renewed energy make this an attractive centre to men of genius and men of leisure, to the hard-worked official, and to the rising amateur, and may the splendid work accomplished by the establishment of these useful rooms, of this noble museum, and of this valuable library, be an incentive to yet more successful efforts."

THE FOLLOWING PAPERS WERE READ :

(1) Records of Tasmanian Botanists. By J. H. Maiden, F.L.S., Director of the Botanic Gardens, Sydney. (Corresponding Member.)

This paper is part of a series of records relating to the several States of the Commonwealth, most of which have been already published, and is especially interesting as giving an account of the life and work of Mr. Ronald Gunn, the father of Tasmanian Botany. In addition to the memoirs of local botanists, the paper also contains notes of the work in Tasmania of men who are more properly styled Australian Botanists, among whom may be mentioned Labillardiere, Robert Brown, Backhouse, and Von Mueller.

(2) A peculiar group of Tronattas. By Fritz Noetling, M.A., Ph.D., etc.

In reference to the stone implements of the Aborigines of Tasmania, the "tronattas," the author remarks that they represent the typical archaeolithic stage somewhat modified, as noted in his first paper on the subject. Comparing them with a large collection of European specimens, he concludes that they represent the highest stage of the archaeolithic civilisation. The group of implements forming the subject of the papers and the mode of construction, are described in minute detail, and they are compared with European specimens.

(3) Red Ochre and its uses by the Aborigines of Tasmania. By Fritz Noetling, M.A., Ph.D., etc.

The author points out that the early records prove that the males smeared hair and beard with a mixture of red ochre and grease, and that he had found pieces of red iron ore at their camping grounds. He enumerates from different vocabularies the terms used in describing the process, and concludes that it was an exclusive male adornment.

JUNE 14, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, June 14, 1909.

Mr. Bernard Shaw, I.S.O., in the chair.

ELECTION OF FELLOWS.

Messrs. K. Norman, LL.B., J. Black, N. K. Ewing, LL.B., A. Pedder, and A. Wertheimer, were elected Fellows of the Society.

THE FOLLOWING PAPERS WERE READ:

(1) The Minerals of Tasmania. By W. F. Petterd, C.M.Z.S.

Dr. Noetling remarked that the paper was not one that could be dealt with in detail, but it would furnish ample material for interesting discussion after being printed, and the Society was deeply indebted to Mr. Petterd for contributing so valuable a paper to its records.

(2) Tasmanian Onagraceae. By L. Rodway, Government Botanist.

The author notes the circumstance that only two genera of the family, *Oenothera* and *Epilobium*, are represented in Tasmania, and of the former only one species, which was found by Ronald Gunn near Marlborough in 1841. He describes the characteristic features of this plant, and of the six species of *Epilobium*, and compares them with their representatives elsewhere.

(3) The Speech of the Tasmanian Aborigines. By Hermann B. Ritz, M.A.

The author says that from a careful examination of the words and practically all the connected phrases recorded, the Tasmanian language represents the most primitive form of articulate speech, and he concludes that essentially there were only two ideas expressed by the Tasmanian language, viz., rest and motion. On this basis the whole vocabulary was probably constructed—except perhaps the purely onomato-poetic sounds—either directly or with the aid of simple metaphors. Some 600 words are quoted in support of this view, want of space and time alone hindering the adduction of at least twice as many additional examples.

After the reading of this paper, through the courtesy of Mr. Horace Watson there were given on the phonograph specimens of the songs of the Aborigines sung into the instrument by the late Mrs. Fanny Smith, a half-caste born and bred up at the Settlement on Flinders Island among the Tasmanian Aborigines.

JULY 12, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, July 12, 1909.

Sir John S. Dodds, K.C.M.G., Lieutenant-Governor, in the chair.

ELECTION OF FELLOWS.

Messrs. H. R. Hutchison and G. Weindorfer were elected Fellows of the Society.

HONORARY MEMBER.

On the recommendation of the Council Lieutenant (now Sir Ernest) Shackleton was elected an Honorary Member of the Society.

Mr. Stephens said that the office of Honorary Member was restricted by their rules to persons not resident in Tasmania who had distinguished themselves as promoters of the objects of the Society and other kindred institutions, and the Council were gratified on learning from the leader of the recent Antarctic exploration that it would give him great pleasure to be associated with an institution founded by Sir John Franklin.

THE FOLLOWING PAPERS WERE READ:

(1) Notes on the occurrence of a Fossil Tree embedded in Drift on the North-West Coast of Tasmania. By T. Stephens, M.A., F.G.S.

The author describes the locality as being about half-a-mile east of the glacial drift previously described as occupying the coast line between Woody Hill and Table Cape, and states that further exploration would be required before the true relations of this comparatively recent drift and the moraine matter farther to the west could be positively determined. Specimens of the fossil wood, and of the drift in which it was embedded, were laid on the table for the inspection of Fellows.

Mr. R. M. Johnston, in the course of the discussion which followed, said that no other part of the world that he knew of was so rich in the fossil remains of forests of past ages as Tasmania.

Dr. Noetling spoke of the opalised specimens of fossilised wood, mentioning remarkable instances he had observed in India.

(2) Rocks used in the manufacture of Tronattas. By Fritz Noetling, M.A., Ph.D., etc.

The observations recorded in this paper are based on the examination of more than 5,000 tronattas, but as the important microscopical examination is still outstanding, the results are considered as preliminary only. Four classes of rocks only were used in the manufacture, viz., Chert or Hornstone, Porcellanite, Breccia, and other silicious rocks such as Chalcedony, Wood-Opal, Fossil Wood, Quartz. Volcanic rocks were never used except as hammerstones. Each class of rock is separately described, and a large number of observations regarding the specific gravity were made. The hornstone is the heaviest of all, having an average spec. grav. of 2.678, and it could be proved that 56.6 per cent. of the tronattas have a spec. grav. above 2.600; that is to say, the Tasmanian stone implement is considerably heavier than those found in Europe. A table of frequency shows that on the average tronattas were made of hornstone from 78.35 per cent., porcellanite following next with

11.93 per cent., while breccia and others form 4.78 per cent. and 4.91 per cent. respectively.

Mr. R. M. Johnston emphasised the immense amount of trouble that Dr. Noetling must have taken in preparing such voluminous notes. His admirable classification of the Tasmanian rocks used by the Aborigines would be most valuable to members of the Society and students generally. The Society was much indebted to Dr. Noetling.

NOTES AND EXHIBITS.

Mr. L. Rodway exhibited a branch of a black currant tree, which carried the winter spores of a destructive disease to black currant and gooseberry trees, called *Nectria cinnibarina*. The spores were distinctly visible. The summer spore, he said, is called *Tuberculana vulgaris*, and appears in ochre-like nodules, whilst the winter spore is in the form of bright red sacs.

AUGUST 9, 1909.

A special General Meeting of the Society was held, after due notice, at the Museum on Monday evening, August 9, 1909.

Mr. Bernard Shaw, I.S.O., in the chair.

The Chairman stated that the meeting had been convened to consider a recommendation from the Council that the last paragraph of Rule 44 should be repealed, and explained that the object of the proposed alteration of the rules was that in the interval between the courses of the ordinary Monthly Meetings of the Society an informal meeting or conversazione should be held, attended by the Fellows and their friends, at which His Excellency the President should be invited to address them on any matters connected with the objects of the Society.

The motion for repeal was carried on the voices.

The Monthly General Meeting of the Society was then held.

Mr. Bernard Shaw, I.S.O., in the chair.

ELECTION OF FELLOWS.

Messrs. Claud Clerk and E. H. Pearce, and Mrs. R. W. Fereday were elected Fellows of the Society.

THE FOLLOWING PAPERS WERE READ:

(1) On the applications of Multenions to Metageometry. By Professor Alex. McAulay, M.A.

In the absence of Professor McAulay, Mr. E. L. Piessé gave a concise explanation of the purport of this paper, and said that the researches in Multenions were a development of his previous work on Quaternions and Octonions. The properties of Multenions were first described by Professor McAulay in a paper read before the Royal Society of Edinburgh, 1907-8, entitled "Algebra after Hamilton, or Multenions." The present paper described the application of Multenions to non-Euclidean Geometry.

Owing to the difficulty of printing some of the mathematical characters used, it has not been possible to publish the paper in the Proceedings of the Society.

(2) Notes on the Names given to Minerals and Rocks by the Aborigines of Tasmania. By Fritz Noetling, M.A., Ph.D., etc.

The author gives an elaborate description of all the substances of the nature of rocks that were known to or used by the Aborigines, with a comparison of the various terms applied to them by the several tribes, and the meaning of such terms. He concludes by calling attention to the progress of the human race since archaolithic times, as exemplified by the thousands of names by which modern science distinguishes the minerals and rocks found on our earth.

SEPTEMBER 13, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, September 13, 1909.

Mr. Bernard Shaw, I.S.O., in the chair.

ELECTION OF FELLOWS.

Mr. Russell Young, jun., was elected a Fellow of the Society.

THE FOLLOWING PAPERS WERE READ:

(1) A Contribution to the Geology of Tasmania—Systematic Geology—The Pre-Cambrian. By L. Keith Ward, B.A., B.E.

The main object of the paper is to present a succinct account of the recent advances in the knowledge of the oldest rocks developed in Tasmania, their stratigraphical relationships, and their present physiographical features and distribution. The evidence upon which a Pre-Cambrian age has been assigned to the group is discussed. Some account of the lithological characters of the altered sediments is given, but the description of the igneous members of the series awaits further more detailed examination. The author notes the probability of the existence of two different horizons, the upper of which shows a greater freedom from contortion than does the lower, the two horizons being separated by an unconformity. A brief account is given of the probable origin, growth, and decay of the Pre-Cambrian rocks. The distribution of the rocks is indicated by an outline map, with a short description of the known boundaries of the areas in which these rocks outcrop. The nomenclature of Pre-Cambrian rocks in extra-Australian areas is discussed, and it is shown that the Tasmanian series belong to the Algonkian division, although no more definite classification is justifiable.

Dr. Noetling said that the paper was a valuable contribution to the literature of Tasmanian geology. All the rocks found on the surface of the earth were divided into two periods—those which had no fossil remains of creatures, and which were the earlier rocks, and those which contained such remains, and these two groups were again subdivided into different periods. The Pre-Cambrian rocks belonged to that earlier period in which there was no trace of life, and which must represent millions of years. When life first originated on the earth was not yet decided. Mr. Ward dealt with the structural features of the

Pre-Cambrian system. Those rocks had a thickness of two miles. What enormous eras of time it must have taken to deposit such a depth of rock! Mr. Ward was inclined to think that the present natural features of Tasmania were already outlined in the deposits of those Pre-Cambrian rocks. He (Dr. Noetling) thought that was rather a bold theory. Mr. Ward had taken a great deal of trouble in describing these rocks.

Mr. R. M. Johnston, I.S.O., enlarged on the paper, and stated that it was a very valuable one. It was believed that life existed on the earth prior to the Cambrian period, though we had no trace of it. The speaker dwelt on the very interesting enquiry of what has been the sequence of life on this earth.

Mr. T. Stephens said that Mr. Ward's paper was a valuable contribution to the geological literature not only of Tasmania but of the whole Commonwealth, but it could only be discussed in detail by those who had some personal knowledge of the country described. Mr. Ward remarks that the term Pre-Cambrian is merely a temporary title, and that it is probable that these rocks will eventually have to be subdivided into a number of separate systems as in North America. As an instance of one of the rocks specially mentioned in the paper, he called attention to the block of schistose conglomerate from Goat Island, near Ulverstone, now on the table, which he had placed in the Museum some two years ago, and which showed quartz pebbles drawn out and twisted under intense pressure. Mr. Stephens added that Mr. Ward's remarks to the effect that the diabase capping of most of the mountains of Tasmania was once more widely distributed, and that "it postulates a cover of sedimentary rocks since removed by sub-aerial denudation," will be welcomed by those who support the theory put forward by himself in 1892.

Mr. Lyndhurst Giblin moved that the discussion of the paper be adjourned until it had been printed, and after some debate the motion was carried.

(2) Notes on *Brachycome melanocarpa*, Sonder. By L. Rodway.

The author describes this daisy, specimens of which were placed on the table, and remarks that he had found it on the eastern slopes of Mount Wellington. It had been found on the mainland, but not previously in Tasmania.

NOTES AND EXHIBITS.

Mr. T. Stephens drew attention to a specimen of the fruit of the Baobab tree, from the River Limpopo, South Africa, presented to the Museum by Miss Beatrice Adams. He said that the Baobab tree was in girth the largest tree in the world, ranging from 20 to 30 feet in diameter, but not lofty. The pulp of the fruit was used for various medicinal purposes.

He also exhibited specimens of a black shaly rock containing graphite, which occurred in the bed of the River Kermandic, beyond Geeveston, and had been forwarded by Mr. James Thompson, of Hospital Bay. Whether it was pure enough to be of any commercial value has not yet been ascertained.

Rev. A. H. Mitchell exhibited a pebble of chalcedony with one side polished, and showing beautiful concentric rings. It was found at Bellerive.

OCTOBER 18, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, October 14, 1909.

Mr. R. M. Johnston, F.L.S., I.S.O., in the chair.

Mr. T. Stephens (V.P.) reported that, in response to an invitation from the Council, His Excellency the Governor (Sir Harry Barron) had informed them that it would give him great pleasure to assume the office of President of the Royal Society.

THE FOLLOWING PAPER WAS READ :

Notes on the Glacial Beds of Freestone Bluff, near Wynyard. By Fritz Noetling, M.A., Ph.D., etc.

The author gives a historical summary of the papers which had been previously written on this interesting and important subject, and describes in detail the glacial drift and the fossiliferous sandstone of Freestone Bluff, with remarks on the basalt capping which overlies the latter. Attention is called to the intermingling of what appear to be portions of the glacial drift with the fossiliferous sandstone, evidence of which is shown by Plates illustrating the lowermost strata of Freestone Bluff. The general conclusion arrived at is that there is no sufficient evidence to prove that the glacial drift was deposited at or near the base of the Permo-Carboniferous series, and that it really belongs to the same epoch as the *Turritella* sandstone.

Mr. T. Stephens said that all who had any personal knowledge of the locality would be greatly interested in the new theory that had been broached by Dr. Noetling as to the probable contemporaneity of the glacial drift and the fossiliferous sandstone. For his own part he did not yet see any reason to modify the opinion expressed in a paper that had been quoted by Dr. Noetling, to the effect that the "inlayers" of drift intermingled with bands of the fossiliferous sandstone were really moraine matter that had been dislodged from the surface of the glacial drift and re-deposited at the time where the lower beds of the sandstone formation were being laid down.

The Chairman, in complimenting Dr. Noetling on the interesting and valuable paper read by him, stated that, notwithstanding the new puzzle of the interstratification of the elements of glacial erratics with what Dr. Noetling describes as "small lenticular layers of fossiliferous sandstones . . . undistinguishable from the sandstones above" (*Turritella* beds), he, Mr. Johnston, was still firmly of opinion that the prevailing conglomerates, unconformably underlying the Table Cape marine tertiaries, were, as originally suggested by Mr. Stephens, of truly Permo-Carboniferous age, and of the same horizon as the numerous glacial drift conglomerates everywhere abounding in the lower

beds of that age in Tasmania, notably Brown's River, Blackmans' Bay Heads (East Coast), Blackmans' Bay (near Brown's River), One Tree Point, North Bruny, and Lindisfarne. In the Derwent, notably overlying the basalts at Lindisfarne, similar conglomerates occur in lenticular patches among sandstones. The most of the harder materials in these sandstone conglomerates have been derived by disintegration and redistribution of the older glacial erratics of the adjacent Permo-Carboniferous rocks. He therefore inclined to the idea that the reconciliation of apparently conflicting evidences at Table Cape was to be found in accepting the hypothesis that two distinct conglomerate formations containing glacial erratics occur at this place. The older conglomerate is undoubtedly of Permo-Carboniferous age, the later conglomerate deriving the most of its harder materials from the disintegration of the older glacial conglomerates either at the earlier stages of the formation of the Tertiary Marine beds (Palaeogene), or towards its close. Further evidence will be necessary before this last point can be settled satisfactorily.

NOVEMBER 8, 1909.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, November 8, 1909.

Mr. Bernard Shaw, I.S.O., in the chair.

ELECTION OF FELLOW.

Mr. H. Stuart Dove was elected a Fellow of the Society.

THE FOLLOWING PAPERS WERE READ;

(1) Geological Notes on the country traversed by the Derwent Valley Railway Extension. By T. Stephens, M.A., F.G.S.

The paper gives a general description of the basaltic sheet once extending continuously from Macquarie Plains to Glenora, and the occurrence in it of one of the new railway cuttings of masses of opal with traces of fossil wood. The intensely hard and brittle character of the neighbouring diabase is noted, and the evidence of its existence as an intrusive sill, or laccolite, under the sandstone formation illustrated by a Plate. The presence of numerous erratics in the neighbourhood and along the course of the new railway is mentioned, as affording evidence of glacial action in not very remote times.

Dr. Noetling said that he had long suspected glacial action in the Derwent Valley, and was glad to hear that such circumstantial evidence of it had been discovered.

Mr. Piesse remarked that other mountain ranges in Eastern Tasmania, instancing Ben Lomond and its outliers, showed unmistakable evidence of glaciation, and hoped that the matter would be more fully investigated.

(2) Points in the Morphology and Anatomy of certain Megapodes. By T. Thomson Flynn, B.Sc.

The author describes the results of his examination of specimens of two genera represented by the Scrub Turkey and the Mallee Fowl, and treats separately of the Pterylosis, or feather arrangement, and the Myology of the hind limb. The paper is illustrated by descriptive figures.