

JULY, 1893.

The monthly meeting of the Royal Society was held at the Museum on July 11. Sir Lambert Dobson presided, and there was a fair attendance of Fellows, together with a number of ladies. Mr. G. E. Spencer was elected a Fellow.

CORRESPONDENCE.

A communication was received from Mr. James Barnard, Vice-president, offering for the Society's acceptance a likeness of the late Captain Montague, a former Colonial Secretary prior to the introduction of responsible government, who was eminent as a statesman and high-minded English gentleman, and who was instrumental in advancing the prosperity of the colony during his official career. Mr. Barnard said he believed the portrait to be unique, not having heard of a similar copy being in the possession of any resident in the island.

The letter and portrait were laid on the table amid applause.

PROPOSED INTRODUCTION OF SOFT WOOD TREES.

A letter from Mr. A. Harley to the Secretary was read, in which the writer asked for an opinion concerning the introduction into the colony of soft wood trees, such as the Baltic Pine, Oregon Pine (North America), and Kauri Pine (New Zealand), but especially the Baltic Pine, according to the latitudes of the countries where they grow nearly corresponding with ours, they should thrive well here. "The idea originated from noticing a tree (a species of fir) growing in the grounds adjoining St. George's Church, and near the entrance to the Sunday-school. It is over 9ft. in circumference, and has not been there quite 30 years, so that I consider if it had been attended to when young with the object of producing timber (by topping off the branches), instead of for ornament, it would have been much longer and thicker at the butt. Baltic pines are imported into Tasmania in the shape of deals, apple cases, and spars for vessels; a spar from 4in. to 6in. in diameter sells at about 1s. per running foot, and larger ones at increasing prices, and often they are not obtainable at any price, although preferable to other woods on account of its lightness. In England the spars are cut into lengths, and used for the supports for the roofs of coal mines. They might be grown here, and introduced into such places as Broken Hill for the same purpose, as our colonial timber is not used there on account of its weight, and consequent heavy freight on the railways, Oregon pine being preferred. I believe the Baltic pine would be fit for small spars a few years after planting out. Some seeds of the trees mentioned might be introduced, and a trial on a small scale made perhaps in a few private gardens, where they could be tended, to see whether it would be advisable to cultivate on a larger scale."

Hon. C. H. GRANT, M.L.C., said he thought the prices stated rather exaggerated. Baltic spars had arrived here, and were difficult to dispose of. He had known them almost given away, and did not think, with the writer, that there was a great demand for them. The spars greatly used by our builders were cut out of the bush. The growth of Baltic timber here would not be remunerative for that purpose, nor for timber. It would be a long time before forest trees would be advanced sufficiently for building purposes, therefore there was not much encouragement for anyone to start on their own account. It might be well for the Government to try them as an experiment on the waste lands for the benefit of futurity. A better timber to plant would be the larch, which was more valuable in every respect, being useful for sleepers and other purposes, for which Baltic timber was far inferior.

Mr. R. M. JOHNSTON said he had been giving attention of late to the question of the importation of soft woods into this colony. Soft wood was so easily workable for some purposes, that no matter how excellent our own woods were, and we had some, particularly stringy bark, which was very good—yet some soft woods, such as the kauri pine of New Zealand and Baltic timber, were imported here to a large extent. It had occurred to him that there was a very large amount of waste lands in our upper plateaux that if experimented on would be found suitable for the growth of such timbers as we now obtained from Europe. These lands would be of no use for any other purpose. He would like to hear the opinions of Baron Von Müeller and Mr. Abbott as regarded the proper species likely to succeed in these upland situations, and moved that both be communicated with on the subject. It occurred to him that such a planting would in the course of 15, 20, or 30 years be of great advantage to the colony. (Hear, hear.)

Hon. N. J. BROWN, M.H.A., supported the motion, and said he would especially like the matter referred to Mr. Abbott, because from time to time trees were supplied for planting in various country places, and he noticed that the *Pinus insignis* was largely used for this purpose. But *Pinus insignis* was utterly useless as a timber tree, and if Baltic and other useful timber could be grown here it would be far better for Mr. Abbott to have a supply for distribution. (Hear, hear.)

Mr. E. D. SWAN questioned whether the expense of planting the trees and carting the timber would not be against their introduction, and whether the cost would not be more than that of getting the timber from its native country.

Mr. A. O. GREEN said the question attracted a good deal of attention 40 or 50 years ago in England, where there were large tracts of healthy land with a hard pan underneath. This land was useless, but it was found to be reclaimable by the planting of fir trees, which in 30 years became remunerative. In 15 years they were thinned out and the spars sold. The timber we got here was cut from trees not more than 1ft. in diameter. Trees would grow to that extent in this climate within 15 or 20 years, and would probably be planted by many people round their homesteads and become very remunerative. The timber obtainable here was very good, but the soft timber, if good, was expensive, and the want of good soft timber was felt by every builder in the colony. Timber native to this colony would not, with few exceptions—keep its form when planed. This was a disadvantage against our hardwoods. Something might be done here as was done with the waste lands in Denmark, where very large wastes had been brought under cultivation for the growth of fir trees, and this had also been done in England. Waste lands that would not keep a sheep, scarcely a kangaroo, might be utilised for these purposes. (Applause.)

Sir LAMBERT DOBSON said we had one very good soft wood in this colony—Huon pine. But that was very rapidly dying out, and soon there would be none in the country. There was no doubt that if the button-grass plains could be made to grow Baltic timber, or anything else it would be turning into the useful what was now useless. At any rate, if the experiment were made it would be a step towards the solving of the question, and it might bring out, in one way or another, the way how the proposal might be carried out hereafter. (Hear, hear.)

The motion was carried unanimously.

THE GEOLOGY OF THE LAKE ST. CLAIR DISTRICT.

Mr. GRAHAM OFFICER, B.Sc., Melbourne University, contributed a paper on "The Geology of the Lake St. Clair District, Tasmania."

It was an attempt to give some account of the main geological features of the district, from observations made during a recent visit to the lake by a party, including Professor Spencer, of Melbourne University, the writer, and several others. The inclement weather prevented extensive observations; therefore the present account purported to be nothing more than a geological sketch. Lake St. Clair is situated on the great central greenstone plateau of Tasmania, near the western boundary of the plateau, and a little to the north of the central part, its northern shore being cut by the parallel 42deg. S lat. The elevation of the Queen of Tasmania lakes is about 2,400ft. above sea level, and it lies in a long, deep, narrow valley, bounded on the east by the Traveller Range, and its off-shoots Mount Ida and the Rugged Mountains between it and the Ducane Range; and on the west by Mounts Olympus, Byron, and Manfred. The lake is 11 miles long, and its greatest breadth about two miles, with a recorded depth of water of 590ft. At the north end the valley extends to the foot of the Ducane Ranges, some 10 miles beyond this extremity of the lake. The southern shore shelves up to a succession of low greenstone ledges and button-grass flats. The shores of the lake are remarkably regular, and at the southern end occur the only indents of importance—Cynthia Bay on the west and the Lake Basin on the east. The latter is almost landlocked. From it the Derwent starts on its way to the south. The lake is fed by numerous streams and torrents, the principal ones being the Narcissus (Hamilton), on the north, flowing from the Ducane Mountains; on the east a stream from Lake Laura, and another from the mountains behind Mount Ida; while Cynthia Bay receives the Cuvier. The latter river rises from Lake Petrarch, a small sheet of water just under Olympus on the opposite side from Lake St. Clair, and about 560ft. above it. The Cuvier flows down a broad, undulating valley, known as the Vale of Cuvier. This valley runs in a S.E. and N.W. direction, and is bounded on one side by the Olympus Range, and on the other by Mount Hagley. The most important point at present in the geology of this district is the relation of the greenstone to the carboniferous rocks. It may be said that Mount Olympus affords the key to the geology of the district. There seems to be no reason to doubt that the sedimentary beds extend right along to the N.W. extremity of the mountain, occupying the same position relative to the greenstone at this side that they do on the other. This is indicated by the numerous and often very large blocks of sandstone and conglomerate that occur mingled with masses of greenstone towards the upper end of the Cuvier Valley. The summit of Mount Olympus is much like that of Mount Wellington. A noticeable feature was the presence of several large fissures, but as to their origin he did not care to speak definitely. Perhaps they were due to dislocations, perhaps to the undermining action of water in wearing away the underlying rock. The appearances seemed to him to point clearly to the greenstone being of later date than in the sandstone. No sign was seen of the older palæozoic rocks represented in Mr. Johnston's map as occurring in the Cuvier Valley. The origin of the lakes of the great central plateau, continued the writer in summing up, is a question which affords ample scope to any geologist who will undertake their investigation. Lake St. Clair was first supposed to be a crater lake, but of this there is no evidence. As Tasmania is undergoing a movement of upheaval the rivers must, geologically speaking, be rapidly lowering their channels. The course of the Derwent affords ample evidence of this. And thus the level of the Lake St. Clair waters must be gradually being reduced. From the top of Mount Olympus we counted about 30 lakes and tarns on the opposite plateau, occupying undoubted rock basins in the greenstone. We did not find the slightest trace of glaciation. I am much inclined to the opinion that most of the basins of the Traveller Plateau lakes will be found to

be satisfactorily explained by the ordinary process of subaerial weathering and denudation. We found no fossils *in situ* in the sandstone of this region, but on the beach about the boathouse pieces of silicified wood are not uncommon. Colonel Legge gives a very clear and accurate description of this region, and his paper was of much assistance.

NOTES ON THE GEOLOGY OF LAKE ST. CLAIR AND ITS NEIGHBOURHOOD.

Mr. R. M. JOHNSTON, F.L.S., read an elaborate paper under this title "together with a brief review of the probable origin of our numerous lakes and tarns." He dealt especially with the previous paper, and said it would have been better if Mr. Officer had given new work rather than what had already been better contributed 33 years previously by Mr. Gould. Apart from the unrivalled beauty of the scenery, there was nothing peculiar in the geological features of Lake St. Clair and its immediate neighbourhood which was not common to, and far more perfectly represented by, nearly all the elevated greenstone mountains and plateaux, forming the most familiar physiographic features of the greater part of Tasmanian landscape. From long observations he had arrived at the conclusion that our larger lakes on the higher levels of greenstone plateaux, such as Lakes St. Clair, Sorell, Echo, Arthur, and the Great Lake, together with innumerable lakelets and lagoons, had been mainly determined by the original irregularities of surface, produced partly by the anastomoses of successive flows of greenstones during their eruption, and partly by the unequal contraction due to the lack of homogeneity of the cooling surfaces of the more massive horizontal flows of greenstone magnia so characteristic on the mountain plateaux of Tasmania, and which cover continuously, or in an anastomosing network of ranges, so large a portion of the superficial area of eastern Tasmania. This conclusion had again and again been forced upon his mind by the closer study of our upland lake systems, as it seemed to account satisfactorily for all the known facts, and, moreover, it was in harmony with the views of leading physicists when contemplating the causes which produced the initial and universal irregularities of surface on our globe, and which in their turn determined the limits of land and sea.

NOTES ON SOME NEW AND RARE FISH.

Mr. A. MORTON described a new fish, found at Bruny Island. Dr. Ramsay, Curator of the Australian Museum, considered the Bruny Island specimen very similar to *Centrina salviani*. Mr. Ogilvy, however, after a special examination, came to the conclusion that the Tasmanian specimen might fairly be differentiated from the Mediterranean and Eastern Atlantic *C. salviani*. Mr. Morton, therefore, proposed to call the local specimen *C. bruniensis*.

Mr. MORTON also drew attention to six rare fish that had been recently caught off Tasman Island, in 70 fathoms, by some fishermen, while fishing for trumpeter. On examination they proved to be *Euremetopos johnstonii*, the type specimen he (Mr. Morton) had described in 1887.

MISCELLANEOUS.

The SECRETARY laid on the table the fourth volume of the "Journal of the Australasian Association for the Advancement of Science," and said that as editor of the journal he considered it his duty to ask for the thanks of the Society to Messrs. Strutt, Grahame, and Hogg, of the Government Printing Office, and the department generally, for the

valuable assistance they had rendered in its production. The volume was greater than the three preceding ones, and contained a great number of valuable papers.

Mr. JAMES BARNARD seconded the vote of thanks, which was carried.

The SECRETARY laid on the table "The Proceedings of the Royal Society of Tasmania for 1892," and a volume lent by Messrs. Walch and Sons on "The Great Barrier Reef," by Mr. Saville Kent.

Votes of thanks were accorded the contributors of papers and donors to the Society, and the meeting terminated.