

structure, may be found to contain satisfactory evidence—such as the intestinal canal—of its animal origin. The bulrush caterpillar is to be found in New Zealand and Tasmania. Other insects that suffer the same fate are known of; but none of these afford a more interesting illustration of the process by which Nature sometimes makes an apparently retrograde step—by descending from a higher, or insect, form of life to that of a lower or vegetable condition—than we find in the case of the bulrush caterpillar. He referred to samples of the bulrush caterpillar in fruit and sections indicating the woody structure of the insect after passing through the changes described.

The Chairman and Mr. Johnston corroborated the description of the development of this interesting parasitic fungus, the former remarking that its modern generic name was *Cordyceps*, and exhibiting a very perfect specimen of *C. Gunnii*, found at Franklin Village, near Launceston.

Dr. Noethling exhibited two minerals found by him at Gad's Hill and at Barn Bluff—viz., analcime and actinolite—the former being a species of zeolite heretofore found only near Port Cygnet.

JUNE 16, 1908.

The Monthly General Meeting of the Society was held at the Museum on Tuesday evening, June 16, 1908.

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

Messrs. L. F. S. Hore, B.A., Leonard Seal, and Joseph Love, M.B., were elected Fellows of the Society.

THE FOLLOWING PAPER WAS READ:—

On State Borrowing and Sinking Funds for the Redemption of State Debts regarded from an Economical Point of View. By R. M. Johnston, I.S.O., F.L.S.

In the first part of his paper, relating to state borrowing, the author points out—(1) the unprecedented progress of all civilised countries, especially within the last forty years; (2) that this progress entirely altered the methods and instruments formerly employed in the industrial world; (3) that the introduction of the improved machinery and instruments of transport and production involved immediate, enormous, and original outlay of capital; (4) that the consequent reduction in cost of production and transport, and of prices, so affected all parts of the world that new and old countries alike were, perforce, obliged to largely invest fresh capital for such purposes; (5) that great undertakings (such as the building of the great Canadian and Pacific Railway system), could not, practically, be constructed in a piecemeal fashion, over a period of from forty to sixty years, to accommodate the burden of the

payment of the principal required immediately, and, consequently, this impracticability, and also the necessity of securing a just and equitable share of burden to all who in the future derive benefit from the original outlay, the method of only charging interest on capital to each year's current revenue has invariably been adopted in all civilised countries. He illustrated, by reference to the United Kingdom, how capital investments were developed. That Australia, latterly, has not been investing capital in this direction, either absolutely or relatively to population, at as great a rate as the United Kingdom was indicated by the fact that during the last five years invested capital of the kind referred to in the United Kingdom represented a sum of 62s. 6d. per head per year; while in Australian States, in a country nearly as large as Europe, and as yet scarcely begun to be developed, the corresponding capital investments only represented a sum of 28s. 10d. per head per year. Would the present population, with its relatively high "standard of living" and its vastly increased wealth, have existed had the "retrenchment-and-ruin" cry of the year 1870 succeeded in forcing upon the states, at the time, the retrograde advice, "no borrowing" and "retrenchment." This, though eminently prudent, from the standpoint of a private individual, might still be open to question or qualification, when applied to the economics of a corporate body. He was of opinion that the state taxpayers of the day stand, in relation to the ever-changing individuality of the state taxpayers of the past and future, in exactly the same ethical and economical relation to each other, as do the existing shareholders of a private railway corporation to past and future shareholders of the same concern; and, consequently, there is neither moral nor economical grounds why either taxpayers of the state or railway shareholders of the day should, in addition to their own equitable share of burden, mulct themselves in additional heavy taxation or expense (as by sinking fund contributions) for the purpose of lessening the fair and equitable share of burden of their future personally disconnected representatives.

The author of the paper, in conclusion, affirms as his strong opinion that sinking funds for the absolute redemption of loans invested in railways, harbours, and other great public works, should be restricted to the portion of such loans whose assets are short-lived, and, like the short terminable life of marine vessels, cannot be permanently preserved in their pristine value and utility by the ordinary yearly contributions from current revenue funds to maintenance, renewals, and repairs, by which means the whole permanent way, machinery, and other equipments of railways are ever kept up to their pristine value and utility as bona-fide state assets.

Mr. T. Stephens said that the Fellows of the Society must congratulate themselves that, although Mr. Johnston had been away on a visit to the old country, he had returned to them with no loss of that force with which he had many times previously interested them. The subject upon which he had addressed them that night was such a big one that it would be well to postpone the discussion upon it in order that the Fellows might have an opportunity of seeing it in print.

Mr. James Macfarlane also wished to have an opportunity of studying the paper in print before discussing it.

After further discussion, it was decided that the paper should be taken into consideration on a date to be fixed by the Council of the Society.

#### NOTES AND EXHIBITS.

Mr. Henry Baker gave an account of his recent visit to the Furneaux Group to study the habits of the mutton-bird. He found when he reached the islands that the birds had left about ten days previously. There appeared to be a tendency on the part of the birds to leave a little sooner every year. This was probably due to the encroachment of sheep and cattle on the rookeries, and the vast amount of eggging which went on. The Government had imposed regulations, but they did not appear to be stringent enough. He had been told that the number of young birds that escaped was much less than it used to be. Next to mutton-birding, kangarooing was the most habitual occupation of the islanders. These animals had practically disappeared from all the smaller islands, and were becoming scarce on the larger ones. Three thousand a year would be a low estimate of the number that were killed. The kangaroo were hunted by dogs, which were kept half-starved to render them savage. It seemed a pity that so many kangaroo should be killed, considering the small price the skins brought. They were an important source of meat supply to the islanders, and if the close season were strictly enforced they would be subjected to considerable suffering. It was necessary, however, that the indiscriminate destruction that went on at present should be checked. He thought it was a great pity that the islanders could not be induced to take up some other forms of earning a livelihood than those they followed at present. If the people of Tasmania would interest themselves a little bit more in the islands their future would be brighter.

Mr. R. M. Johnston said he had visited the islands in 1874, and related some of his experiences. He agreed in the necessity for the preservation of native birds and animals, and hoped that Mr. Baker's reference to the matter would result in good.

Mr. T. Stephens thought the matter ought not to be allowed to rest. He suggested that the Council of the Society should address a letter to the Government, asking them to cause inquiry to be made as to the extent to which the existing regulations were carried out, and as to the wholesale destruction of kangaroo and wallaby. He moved a resolution to that effect, which was carried.

JULY 13, 1908.

The Monthly General Meeting of the Society was held at the Museum on Monday evening, July 13, 1908.

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

THE FOLLOWING PAPER WAS READ:—

On a recent visit to the River Gordon, illustrated by lantern slides, with remarks on the need of reservation of land along the banks of the River. By J. W. Beattie.

The visit was made in the middle of April last, eight days being spent in exploring the River Gordon. Unfortunately, for six days the weather was very wet, less than two days being available for the photographic work of the trip. Photographs of Macquarie Harbour Heads were displayed, showing the dispositions of the various harbour works. The outer and inner islands, and their lights, the breakwater, and the wreck of the s.s. Kawatiri, were shown, and gave a clear idea of the character of this wild western port of Tasmania, the "open door" of the West Coast mineral fields. The late Mr. Napier Bell's scheme for the removal of the bar was referred to, and another scheme, with a similar objective, but antedating Mr. Bell's by some seventy years, was mentioned. This early scheme, however, appears to have never gone beyond the presentation of a report by the originator—Captain James Hobbs—to the then Governor, Colonel George Arthur, in 1824. The discovery of Macquarie Harbour by Captain James Kelly was dealt with. Illustrations of the Port of Strahan were given, and also a fine series portraying the beautiful natural reserve of 70 acres called "The People's Park." These serve to emphasise the value of the forethought of the Strahan residents in obtaining one of a series of what have been aptly termed Natural Monuments, which will remain an abiding type of the indigenous flora. The historic places en route to the River Gordon were next dealt with—Phillip Island, Sarah Island, etc., being historically treated, and the beautiful and impressive mountain backgrounds overlooking the entrance to the river fully described, with some of the historical associations attached to them. The grandeur of the different reaches and bays of the Gordon was well illustrated, and served to emphasise the unique beauty of the river, and the urgent claims for its protection from the ruthless hand of present-day utilitarianism. The scenery at Gould's Landing, the various rapids in the upper reaches of the river, the River Franklin, and the scenery at the Great Bend, 65 miles from Macquarie Harbour, were well represented, the characteristics of the river being minutely described where illustration was not available. A brief sketch of the pine industry in the vicinity of the Gordon was accompanied by several illustrations of pine forests and logging.

In conclusion, the author urged most strongly that immediate and vigorous action be taken to thoroughly protect the banks of the River Gordon from Macquarie Harbour to a mile beyond the Franklin, a total distance of 26 miles, the area of reservation to extend to the line of hills running on either side of the river from the water's edge to at least one chain beyond their summits. On level river flats, where no hills

obtain, five chains from the river to be reserved. These reservations, in the opinion of the writer, should effectually prevent the destruction of the beautiful foliage, and retain not only an aesthetic asset of unique character, but an asset of great value from the tourist standpoint, which, if protected from the axe and fire, will undoubtedly become of great monetary value to the state.

Dr. Noetling said that there was the finest scenery on the Gordon that he had ever seen in his life, and it would be a great pity if the insatiable timber merchant was allowed to destroy it. It was the duty of the Government to try and preserve that scenery and he favoured the land on each side being reserved up to the tops of the hills.

Mr. R. M. Johnston said that no one had done so much to make the scenery of Tasmania known as Mr. Beattie. It was due to his hard work and careful selection of subjects that the world knew so much of the beauties of Tasmania. They were all very much indebted to Mr. Beattie for the work he had done, not only in making the beauties of our state known, but in the patient and careful researches he had made into its old history.

Dr. Noetling said that if it was a fact that the Gordon ran for two miles under the Wilmot Range, as had been reported to Mr. Beattie, it would be the most extraordinary geological wonder in the world.

The Chairman said that he fully endorsed all that Mr. Beattie had said in regard to the necessity for the preservation of the scenery on the beautiful Gordon River, and he sincerely recommended everyone who had not had the privilege of visiting that part of the country to do so as soon as possible. The time would come when the West Coast would prove most attractive from a tourist point of view; and it therefore behoved the Government to preserve, as far as they could, these beautiful scenes from destruction.

Mr. Beattie said that he had had that day received a telegram from Mr. Robert Sticht, manager of the Mount Lyell mine, supporting all that he had said in regard to the necessity of preserving the scenery along the Gordon, and stating that the present reservation made by the Government was inadequate. Nothing less than the whole range visible to the eye should be reserved. The interests of the pine-getters were paltry compared with the preservation of natural scenery.

#### NOTES AND EXHIBITS

Mr. R. M. Johnston exhibited some specimens of timber which had been treated with Captain M'Fie's white-ant specific, and pointed out that it not only preserved the wood from the attacks of insects and fungi, but enabled it to take a beautiful polish.