number of cards contemplated was not even alluded to in the Conferences, while the methods that have given such strikingly successful results have been condemned without consideration. In their place, methods similar to those which the Concilium tried and discarded are now proposed, and plans are elaborated that forebode a complete catastrophe. In the meantime, other organizations have tried methods similar to our own and have reached valuable results. So much has been done, indeed, and so much money and labor have been expended, that an abandonment of the work is out of the question. If the new bibliography rejects these methods there is no other course possible than for the governments that have been convinced of the value of these methods to maintain a second parallel bibliography. The decision of the Conference, held under the presidency of the Swiss Minister of Interior, is clear in this regard: It makes the participation of Switzerland definitely dependent upon the acceptation of these tried methods, and gives the government freedom of action in case its conditions are not accepted. For my part, I feel that I should belie the entire character of our enterprise were I to hold aloof from the Royal Society from motives of personal interest. But it seems equally certain that I should betray the trust that was given to me were I to consent, through motives of personal interest, to render useless the work which has been so zealously built up. We owe it to the world that the work of five years should not be labor in vain.

But what necessity exists for such drastic measures? We are still ready to rally under the banner of the Royal Society. The only condition is one that will preserve the Royal Society's undertaking from catastrophe.

HERBERT HAVILAND FIELD.

ZURICH.

*THE AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.**

I NEED hardly remind you that the Australasian Association held its first meeting in Sidney, from 27th August to 5th September, of the Centennial year, 1888, under the presidency of Mr. H. C. Russell, C.M.G., F.R.S., with a roll of 850 full members. Meetings have since been held in Melbourne in 1890, with 1,162 full members, when the late Baron von Mueller, K. C.M.G., F.R.S., M.D. and Ph.D., was President; at Christchurch, N. Z., in 1891—President, Sir James Hector, K.C.M.G., M.D., F.R.S.; at Hobart, in 1892—President, His Excellency Sir Robert Hamilton, K.C.B., LL.D.; at Adelaide, in 1893—President, Professor Ralph Tate, F.G.S., F.L.S.; and at Brisbane, in 1895, when the Hon. A. C. Gregory, C.M.G., M.L.C., F.R.G.S., was President.

The government of New South Wales provided for the printing of the first volume, and the governments of Victoria, Tasmania, New Zealand, South Australia and Queensland have each in turn given liberal assistance, both by money grants and in other ways towards the expenses of the session, and by printing the volume of reports and papers.

The Association has up to the present published 6 volumes of reports, each of about 1,000 pages, containing much important matter; it has appointed committees for the investigation of the following subjects; all have furnished reports, which, being of permanent value, have been printed, viz:

1. The Establishment and Endowment of a Biological Station for Australasia.

2. Certain points in the Construction and Hygienic Requirements of Places of Amusement in Sydney.

3. A Census of Australasian Minerals.

4. Glacial Evidence in Australasia, £20 granted towards the expenses.

* From the address of the President at the Seventh Meeting, held at Sydney, 1898.

5. Town Sanitation.

6. The Seismological Phenomena of Australasia, (£10 granted in aid of this research).

7. A Bibliography of the Australasian and Polynesian Races.

8. The Question of Antarctic Exploration.

9. The State and Progress of Chemical Science in Australia, with special reference to Gold and Silver Saving Appliances.

10. The Question of Rust in Wheat.

11. The Location and Laying-out of Towns.

12. The Improvement of Museums as a means of Popular Education.

13. The Fertilization of the Fig in the Australasian Colonies.

14. The Unification of Colors and Signs of Geological Maps.

15. The Tides of Australia (The Tides of the coast of South Australia).

16. Polynesian Bibliography, with special reference to Philology.

17. The Protection of Native Animals.

18. Glacial Action in Australasia during Tertiary and Post-tertiary Eras.

19. The Photographing of Geological Surveys.

20. The best means of encouraging Psychophysical and Psychometrical Investigation in Australia.

It has also granted the sum of £25 towards the ascertainment of movements of New Zealand glaciers, and £10 towards the cost of the erection at Timaru of the seismological instruments, presented by Dr. Von Rebeur-Paschwitz. It has secured (1) from the New Zealand Government the reservation of the Little Barrier Island, and Resolution Island, Dusky Sound, as suitable localities for the preservation of native flora and fauna. (2) In response to a recommendation from the 1891 session, it was agreed by the Lords of the Admiralty, that the sea between New Zealand, and the islands to the northwest of New Zealand, on the one hand, and Australia and Tasmania, on the other, be known as the Tasman Sea, and that the name is to be entered on the Admiralty charts. (3) Further, through the instrumentality of the Association, the New Zealand Government has set apart Stephen's Island, Cook Strait, as a reserve for the Tuatara Lizard, and (4) Correspondence has been received from the Governments of Tasmania, New South Wales, New Zealand and Victoria, in which sympathetic acknowledgment is expressed towards the wishes of the Association in regard to resolutions, passed at its last Session (in Brisbane), viz., to bring before the Australasian Governments that it is desirable:

a. That a system of compulsory notice of infectious diseases be introduced.

b. That a system of federal quarantine be introduced.

c. That stock, the milk or flesh of which is intended for consumption, be examined by duly qualified men, and slaughtered, if found tuberculous or cancerous.

At the last session (Brisbane, 1895) a number of research committees were appointed, some of which will report during the present session. Chief among these may be mentioned:

1. For the investigation of Glacial Deposits. (Reappointed.)

2. The Seismological Committee, to investigate earthquake phenomena in Australasia. (Reappointed.)

3. To consider and report upon the Thermo-dynamics of the Voltaic Cell.

4. The geology, land flora, land fauna, and natural resources of the islands and islets of the Great Barrier Reef.

5. The habits of the teredo, and the best means of preserving timber or structures subject to the action of tidal waters.

6. The Committee to give effect to the suggestions contained in Sir Samuel Griffith's paper entitled 'A Plea for the Study of the Unconscious Vital Processes in the Life of a Community.'

AUSTRALIAN BENEFACTIONS TO SCIENCE.

In connection with the efforts made for the advancement of science in Australia we should not overlook the recent generous gift made by Mr. P. N. Russell of £50,000 for the support of our Engineering School, for instruction in pure and applied science. This is, perhaps, one of the best ways of supporting the objects of this Association, *i. e.*, by providing a scientific training for

students, who may develop into men of science.

Then there is the bequest made by Sir Thos. Elder to the Adelaide University, of which a large portion goes to support the mining and other scientific schools.

Also the scientific expedition to Central Australia, which was despatched by Mr. Horn from Adelaide at great expense. We shall have the pleasure of hearing of some of the results of this act of public-spirited generosity from Professor Spencer, who is kindly giving our members a lecture upon Central Australia.

Next there is the expedition from the Royal Society of London, under Professor Sollas, to investigate the structure of a coral reef by boring, to which this colony contributed liberally in men, money and material.

During the past year this has been supplemented by another expedition from Sydney under the charge of Professor David, largely at the cost of residents in this colony and the new South Wales Government. The Royal Society of London has again provided a large portion of the requisite funds.

I do not propose to go into the matter, as I have no doubt a full report will, in due course, be issued by Professor David; meanwhile, I think we should express our pleasure at the safe return of the expedition and our gratification at the success which has so far been achieved, especially as the operations had to be carried out under considerable difficulties.

PROVINCIAL SCIENTIFIC SOCIETIES AND INSTITUTIONS.

Outside the capital of New South Wales scientific societies and institutions are practically non-existent, and I think this is also the case with respect to the other colonies of Australasia, except New Zealand.

New Zealand sets Australia a good example, for although its population is only about one-half that of New South Wales, it has comparatively large and active scientific societies in Auckland, Christchurch, Dunedin, Napier, Nelson, Wellington and Westland. All of these are separate and independent societies, but collectively they form the New Zealand Institute, centered in Wellington. Papers read before the local societies, if of sufficient merit and importance, are published in the Transactions of the New Zealand Institute; this is an exceptionally wise plan, for the smaller societies could not afford the expense of publishing separate annual volumes; further, the papers are distributed more widely and a better standard can be maintained. If there were similar local societies in Bathurst, Broken Hill, Goulburn, Newcastle, and other towns in New South Wales, which are quite as large as some of the New Zealand towns, they could do much for the advancement of science, and assist the aims and objects of this Association.

I have spoken more particularly of this Colony, but of course the remarks also apply to the larger towns of the other colonies, where there are no local societies. Such societies could probably, if they existed and so wished, be affiliated to the Royal Society of New South Wales or of Victoria, South Australia or Queensland, and to this Association. The British Association has a system of corresponding societies, who send delegates to its meetings.

It is a very great pity that such societies do not exist in our provinces, not only for the benefit of the local residents but also for the cause of science generally.

At present this Association has to depend very largely upon the members of the staffs of the universities, observatories, museums, the geological surveys and certain other government departments, and most of these, with the exception of those resident in the

capital in which the session is held, have to undertake a journey of 500 or 600 miles, or even 1,200 miles, as in the case of those who attend from New Zealand, or who, living in Brisbane, attend a meeting in Adelaide, or *vice versa*.

These very long distances are a great disadvantage to the Association, for they mean a considerable expenditure of time and money, and many are thereby debarred from attending. It is largely due to these causes, as well as to the limited number of working members, that we have had most reluctantly to substitute biennial for annual sessions. If we had more working members, and I think we should get them if there were local scientific societies scattered through the Colonies, we should be able to resume our annual meetings, and before very long we ought to be able to hold our sessions in towns like Ballaarat, Bathurst, Bendigo, Goulburn and Newcastle.

For the formation of local societies it is not necessary to start with a large membership—the Royal Society of London began with five or six only.

It is, however, very gratifying, under the circumstances, and with our comparatively limited population, that our meetings are as well attended and successful as they are.

A. Liversidge.

THE RED COLOR OF THE SALT LAKES IN THE WADI NATROUN.

In an article published in the *Zoolog. Anzeiger** I have given a report on the biology of the Natron Valley, the Wadi Natroun, in the Libyan desert, about 170 kilometers from Cairo. It seems that my remarks concerning the red color of the water of the salt lakes of the valley have interested readers of the article. I, therefore, wish to add here some researches I was able to make on the same subject owing to the kindness of Mr. Prochaska, head of the chemical survey of the soda company.

When I came to the Natron Valley the red water of the lakes excited at once my curiosity, and I tried to ascertain the reason for the redness of the liquid. Most people to whom I spoke about the matter told me that *Artemia* lives in the lakes, and that the red color of this Crustacean is communicated to the water. During my stay in the Wadi the *Artemia salina* was not to be seen, the animal appearing only at certain periods of the year. It is impossible to believe that the colored mass of these small creatures is sufficient to stain such immense quantities of water as the Wadi Natroun lakes. These lakes, about fourteen in number, lie rather close to each other and extend over a space of about 40 kilometers. No number of *Artemia salina* would be great enough to give the water the deep purple color which it has. If there were frogs in the lakes and those frogs were red, and some one should say that the red color of the water came from the red color of the Amphibia, this explanation, I think, would not be much inferior to the *Artemia* theory. Besides *Artemia* there are other red animals in the lakes. I obtained, for example, a red culicid larva. This shows that animals living in the water may take the color from it, and not the water from the red animals. Finally, *Artemia salina* disappears in the lakes for the greater part of the year without causing a change in the coloration of the water.

But, if it is not *Artemia salina*, what is it that gives the red color to the water? In my investigations I treated the red water with different chemicals, among them acetic acid. When the acid is poured into the red water a powerful development of carbonic acid takes place, and at the same time a red soft mass rises to the surface of the liquid, while the latter loses more and more of its color. From a large quantity of

* Das Wadi Natroun in der libyschen Wüste und seine niedern Thiere. Bd. 22, p. 53–61, 1899.