ing together, we shall not easily believe that wing and tail white are solely features of concealing coloration. Their revealing function during flight is entirely in harmony with their concealing functions when at rest."

In conclusion, brief reference may be made to the paper by Mr. E. A. Wilson, field-observer to the Grouse-disease Inquiry Committee, in the Zoological Society's Proceedings for December, 1910, on the changes of the plumage in the grouse, a communication specially noteworthy on account of the excellence and beauty of the numerous coloured plates by which it is illustrated. R. L.

THE AUSTRALASIAN ASSOCIATION FOR THE ADVANCEMENT OF SCIENCE.

THIS year's meeting of the Australasian Association for the Advancement of Science was held at the University of Sydney on January 9–14, under the presidency of Prof. Orme Masson, F.R.S., professor of chemistry in the University of Melbourne.

The work of the meeting was divided among eleven main sections, each with its own president, vice-president, and secretary. The following is a list of sections with the name of the presidents and the subjects of their addresses, when these are stated in the official circulars which have been received.

Section A, Astronomy, Mathematics, and Physics: Prof. T. H. Laby, professor of physics in Victoria College, Wellington, N.Z. Section B, Chemistry, Metallurgy, and Mineralogy. Prof. B. D. Steele, professor of chemistry in the University of Queensland, Brisbane, who in his address dealt with inorganic solvents. Section C, Geology: Prof. P. Marshall, professor of geology in the University of Otago, Dunedin, N.Z., whose address was on the western margin of the Pacific basin. Section D, Biology: Mr. F. M. Bailey, Government botanist at Brisbane. Section E, Geography and History: Prof. G. C. Henderson, professor of history in the University of Adelaide, whose address discussed colonial historical research. Section F, Anthroplogy and Philology: Mr. Edward Tregear. Section G, (1) Social and Statistical Science: Mr. E. W. H. Fowles, the subject of whose address was unemployment. Section G, (2) Agriculture: Prof. W. Angus, late director of agriculture in Adelaide. Section H, Engineering and Architecture: Mr. Ellwood Mead, who was unable to attend the meeting, and instead of a presidential address, Prof. W. H. Warren, of the University of Sydney, delivered a lecture on irrigation in India. Section I, Sanitary Science and Hygiene: Dr. W. Perrin Norris, Commonwealth Director of Quarantine, Melbourne, who took for his subject public health ideals. Section J, Mental Science and Education: the Rev. E. H. Sugden, whose address dealt with the place of music in education

During the meeting Prof. P. Marshall delivered a popular lecture in the great hall of the University on glaciers of the southern Alps; Dr. Mawson, of Adelaide, lectured on "Antarctica," with special reference to his forthcoming expedition; and Prof. T. H. Laby exhibited a working model of Brennan's mono-rail. Numerous social functions were arranged, including a garden-party to members of the association, given by Lord Chelmsford.

There are several committees of the association which are to continue to exist during the present year. Among these may be mentioned the Solar Eclipse 1910 Committee, appointed at Brisbane in 1909. In connection with the work of this committee, the local Council of New South Wales passed the following resolution:—"That the committee appointed at the Brisbane meeting in 1909 in connection with the solar eclipse of 1910 be asked to make such arrangements as may be necessary before the meeting of the association in January for the observation of the total solar eclipse of 1911 by Australian and other astronomers, and report to the meeting." It was announced during the meeting that the Federal Government had granted 500*l.* in aid of the solar eclipse expedition of this year. Other existing committees are those on solar research, terrestrial magnetism in Australia, seismology, alkaline rocks of Australia, glacial phenomena, geological and geo-physical phenomena, deep-sea dredging off the east coast of Australia, New Zealand food-fishes, and the biological and hydrographical study of the New Zealand coast.

RECENT ADVANCES AND PROBLEMS IN CHEMISTRY.

THE subjoined lecture was delivered by Prof. Emil Fischer, of the University of Berlin, on the occasion of the inauguration of the Kaiser-Wilhelm-Gesellschaft zur Förderung der Wissenschaften, in the presence of the German Emperor, on January 11, in the Ministry of Education at Berlin.

Prof. Fischer traces the relations between science and scientific industries in Germany, pointing out that by affording facilities for the prosecution of pure scientific research, technical industry can only gain.

If only this fact were practically realised in this country as it is in Germany, we should be spared the humiliation of seeing important technical branches of commerce, such as chemical industry, transferred soon after their initiation from England to the Continent.

Prof. Fischer in his address deals fully with this subject from the German point of view, so that it is unnecessary to refer to it here in detail; the remedy, however, lies entirely with the powers that be.

Your Majesty; Gentlemen,

At the present time, more than at any other period, we are inclined critically to examine the fundamental principles of all branches of knowledge, and, when necessary, to introduce far-reaching alterations in our original conclusions. This state of mind applies also to the natural sciences. During the last decades our actual knowledge has been extended to an extraordinary degree owing to new methods of research, and in view of the more recent observations the older theories have proved in many cases to be far too narrow. Even the fundamental principles of our knowledge appear, to a certain extent, to demand revision.

Thus the progress in physical science forces us to adopt views which are incompatible with the older principles of mechanics, in spite of the fact that these were regarded as unassailable by thinkers such as Hermann von Helmholtz, Heinrich Hertz, and Lord Kelvin.

We stand in the same position with respect to the elements in chemistry. Owing to the discovery of radium and similar bodies, we have been forced to the conclusion that chemical elements are not unalterable, and hence that their atoms are not indivisible.

The same state of affairs obtains to even a greater degree in the biological sciences. In comparative anatomy, animal and vegetable physiology, theory of evolution, microbiology, and almost all branches of medical science, the rapid advance of experimental knowledge is accompanied by an equally rapid change in established theories. Even the semi-historical sciences, such as geology, palæontology, anthropology, and the venerable science of astronomy, are taking active part in the general progress.

Thus in these times of general scientific activity is founded the Kaiser-Wilhelm-Gesellschaft zur Förderung der Wissenschaften, the primary object of which is the erection and maintenance of institutions of research.

It need scarcely be said that we scientific investigators welcome this new and highly specialised creation with intense satisfaction, and I regard it as a particular honour to be permitted to be the first to give expression of our profound gratitude.

No one will be able to assert that experimental research in Germany has been neglected; exactly the opposite conclusions must be drawn on contemplating the history of science during the nineteenth century. This displays a long series of brilliant scientific discoveries made in this country. The industries closely connected with science, such as the chemical and electrotechnical industries, fine mechanical engineering, production of metals, industries connected with fermentation, and last, but not least, agriculture, have also undergone in our hands a development envied on almost all sides by other nations.

Should a criterion of the results of experimental research be desired, this may perhaps be found in the distribution of the Nobel prizes, which are awarded by absolutely independent corporations in Sweden.

Only a month ago the Nobel prize for chemistry came