

## (2) THE AMHERST ECLIPSE EXPEDITION TO RUSSIA.

Although the Imperial Academy of Science at the instance of Dr. Backlund, together with the Government railways, had offered every facility in transportation of observers and instruments, the necessity of immediate mobilisation had made it impossible to deliver my cases in Kieff at the expected time. Many days of patient waiting there had convinced me that it was best to prepare if possible an entirely new set. With the help of Mr. Day, a 6 in. Dallmeyer portrait lens was found in a photographer's atelier in the Krestchatik; at the University shop, Prof. De Metz had a long tube and shutter made, which, with a new Dresden camera and plate-holders, provided an adequate outfit—everything except clockwork motion. It was necessary,



FIG. 1. Prof. David Todd with the camera contrived for the photography of the solar corona during the eclipse on August 21, 1914.

therefore, to use the tube as a stationary camera, and plates as sensitive as possible so that the diurnal motion should not blur the coronal filaments. Fortunately we put the apparatus together in time and in working order at Kieff, and with the help of Prof. Sleusarefsky found the exact focus, so that little remained to do at the station but set the camera rigidly in exact alignment towards the sun at mid-totality and make the necessary practice drill.

By invitation of Count Bobrinsky, whose estates are in Smala, about 100 miles south-east of Kieff, I was several days his guest, and had abundant opportunity, while enjoying the hospitality also of Prince Trubetskoy, to mount the camera very satisfactorily. The illustration (Fig. 1) shows the instrument in position on the portico of Count Bobrinsky's residence.

Smala proved to be exactly in the line of central

eclipse, and certainly no one could have had a better position than in the midst of this superb estate. During totality the sky was shrouded in thinner clouds than elsewhere in Central Russia; so that of the six exposures on Moscow plates, from a half-second to two seconds in length, four of them turned out better than I had expected from the drifting clouds which had in no instance permitted the corona to be seen entire. Two of the four will afford detailed estimates of the light of the inner corona. Star-trails on the plates were made by  $\alpha$  Ophiuchi on two nights after the eclipse. As the camera had remained unmoved since totality, the direction of the "parallel" gives exact location of the prominences and coronal details. Both corona and star trail were, of course, developed together on the same plate.

I have pleasure in acknowledging much assistance from Mr. Guptschefskey, president of the Society of Photographers in Kieff.

DAVID TODD.

#### THE BRITISH ASSOCIATION IN AUSTRALIA.

MANY of those who made up the "Overseas Party" of the British Association at the recent Australian meeting have now returned home. In a former article it has been stated that some members found it necessary, after the Orient liner *Orvieto* was requisitioned by the Commonwealth Government, to return a week earlier by the P. and O. vessel *Malwa*, which they were only able to catch at Adelaide by leaving Sydney the day before the conclusion of the meeting there; the number of those who did this was twenty-six. The steamer *Demosthenes*, leaving Australia earlier still, *via* South Africa, carried a few members. The following P. and O. ship, the *Morea*, a fortnight later than the *Malwa*, carried a party of more than sixty, who were in England by October 16 after a voyage favoured by beautiful weather—as, it may be added, the meeting had been.

Some forty members proceeded northward from Brisbane after the conclusion of the meeting by the Burns, Philp steamer *Montoro* for Singapore; she was reported to have arrived there safely on September 26, so that her passengers may now be nearing home. Of a number who left from Sydney to follow the Trans-American route, some are home already. Others, however, intended to visit New Zealand, in spite of the cancellation of the arrangements which had been made in that Dominion to hold a scientific meeting there. Those who had it in mind to make a stay in New Zealand if possible, either immediately after the Australian meeting or later, numbered not fewer than fifty. The official excursion to Tasmania after the meeting attracted a dozen members or more. A large number whose plans were unaffected by the European situation were carrying out their programmes for a prolonged stay in Australia or elsewhere. The next P. and O.

ship, the *Maloja*, which is due about October 30, should bring a party.

In justice to the Australian Commonwealth and States and the official and unofficial hosts in Australia, to whom the visiting members of the British Association are so deeply indebted, it cannot be stated too clearly that the European crisis was allowed in no way to diminish, if it did not actually increase, the warmth of the reception accorded to the party, and that it did not affect the scientific work of the meeting adversely; in fact, its direct effects were scarcely perceptible in any centre. Immediately on landing at Adelaide, at the beginning of the meeting, a number of members of the Council met the principal representatives of the local organisation in order to assure them that the party would readily fall in with any modification of the programme which might be found necessary, but the question had already been carefully considered, and the answer was at once returned that local opinion was unanimous that the scientific work of the meeting should proceed, even though some slight changes might be found desirable in respect of excursions and social functions. Any such changes proved, in the event, to be negligible. A practical demonstration, however, of the visiting members' profound sense of gratitude to Australia was given when the party subscribed the sum of 611*l.* 6*s.* to the patriotic funds being raised there; this subscription was transmitted at the close of the meeting to the Governor-General, and by him divided equally between the funds in the various States.

If the immediate scientific importance of the meeting has been in some measure obscured, it is confidently felt by all concerned that its good effects will be great and lasting, and that they will become apparent in many directions. While it was inevitable that far less news of the meeting than usual should appear in the daily Press at home, the Australian newspapers reported the meetings more fully than could have been expected in the circumstances. Public interest was maintained to the end; sufficient evidence of that is found in the very large number of local members, and it was interesting to observe how, after the daily enrolment of these members had fallen off abruptly on the declaration of war, it recovered and proceeded briskly, after a few days, up to the beginning of the meetings at Melbourne and Sydney.

The organisation of the meeting could scarcely fail to be of profound interest to those who shared in it. Its ramifications were very wide; it involved, for example, negotiations more or less detailed with various departments of seven Governments (those of the Commonwealth and the States), with a dozen transport companies, and with many other public bodies. The work extended over four years, and was continuous both at home and in Australia for a full year before the meeting began. Upwards of a hundred persons were concerned more or less actively in responsible departments of the organisation; the majority of them were, of

course, in Australia, and the officers of the Association at home met with nothing but goodwill at the hands of all these willing collaborators, who have the satisfaction of knowing that the mechanism which they called into being worked splendidly, and possessed driving power sufficient to overcome the resistance set up by the unexpected circumstances in which the meeting took place.

Subjoined is a list of the Research Committees, etc., receiving grants of money, and the name of the chairman of each, appointed on behalf of the General Committee at the Australian meeting:—

*Section A—Mathematics and Physics.*

Seismological observations—		
Prof. H. H. Turner	...£60	0 0
For printing in connection with above	... 70	0 0
Investigation of the upper atmosphere—Dr. W. N. Shaw		25 0 0
Annual tables of constants and numerical data, chemical, physical, and technological—Sir W. Ramsay		40 0 0
Calculation of mathematical tables—Prof. M. J. M. Hill		30 0 0
		£225 0 0

*Section B—Chemistry.*

The study of hydro-aromatic substances—Prof. W. H. Perkin		15 0 0
Dynamic isomerism—Prof. H. E. Armstrong		40 0 0
The transformation of aromatic nitroamines and allied substances, and its relation to substitution in benzene derivatives—Prof. F. S. Kipping		20 0 0
The study of plant enzymes, particularly with relation to oxidation—Mr. A. D. Hall		30 0 0
Correlation of crystalline form with molecular structure—Prof. W. J. Pope		25 0 0
Study of solubility phenomena—Prof. H. E. Armstrong		10 0 0
Chemical investigation of natural plant products of Victoria—Prof. Orme Masson		50 0 0
The influence of weather conditions upon the amounts of nitrogen acids in the rainfall and the atmosphere—Prof. Orme Masson		40 0 0
Research on non-aromatic diazonium salts—Dr. F. D. Chattaway		10 0 0
		£240 0 0

*Section C—Geology.*

To investigate the erratic blocks of the British Isles, and to take measures for their preservation—Mr. R. H. Tiddeman		5 0 0
To consider the preparation of a list of characteristic fossils—Prof. P. F. Kendall		10 0 0

The Old Red Sandstone Rocks of Kiltorcan, Ire- land—Prof. Grenville Cole	10	0	0
Fauna and flora of the Trias of the western midlands— Mr. G. Barrow ... ..	10	0	0
To excavate critical sections in the Lower Palæozoic rocks of England and Wales —Prof. W. W. Watts ... ..	15	0	0
	£50 0 0		

*Section D—Zoology.*

To investigate the biological problems incidental to the Belmullet Whaling Station —Dr. A. E. Shipley ... ..	45	0	0
Nomenclator animalium genera et subgenera—Dr. Chalmers Mitchell ... ..	25	0	0
An investigation of the bio- logy of the Abrilhos Islands and the north-west coast of Australia (north of Shark's Bay to Broome), with particular reference to the marine fauna—Prof. W. A. Herdman ... ..	40	0	0
To obtain, as nearly as pos- sible, a representative col- lection of marsupials for work upon (a) the reproduc- tive apparatus and develop- ment, (b) the brain—Prof. A. Dendy ... ..	100	0	0
	£210 0 0		

*Section E—Geography.*

To investigate the conditions determining the selection of sites and names for towns, with special reference to Australia—Sir C. P. Lucas	20	0	0
The hydrographical survey of Stor Fjord, Spitsbergen, by Dr. W. S. Bruce—Mr. G. G. Chisholm ... ..	50	0	0
To aid in the preparation of a bathymetrical chart of the Southern Ocean between Australia and Antarctica— Prof. T. W. Edgeworth David ... ..	100	0	0
	£170 0 0		

*Section F—Economic Science and Statistics.*

The question of fatigue from the economic point of view, if possible in co-operation with Section I, Sub-section of Psychology—Prof. Muir- head ... ..	30	0	0
	£30 0 0		

*Section G—Engineering.*

The investigation of gaseous explosions, with special reference to temperature— (chairman not appointed), vice-chairman, Dr. Dugald Clark ... ..	50	0	0
To report on certain of the more complex stress distri- butions in engineering materials—Prof. J. Perry ... ..	50	0	0
	£100 0 0		

*Section H—Anthropology.*

To investigate the lake vil- lages in the neighbourhood of Glastonbury in connec- tion with a committee of the Somerset Archæological and Natural History Society —Prof. Boyd Dawkins ... ..	20	0	0
To conduct explorations with the object of ascertaining the age of stone circles— Sir C. H. Read ... ..	20	0	0
To investigate the physical characters of the ancient Egyptians—Prof. G. Elliot Smith ... ..	34	16	6
To conduct anthropometric investigations in the Island of Cyprus—Prof. J. L. Myres ... ..	50	0	0
To excavate a Palæolithic site in Jersey—Dr. R. R. Marett ... ..	50	0	0
To conduct archæological in- vestigation in Malta—Prof. J. L. Myres ... ..	10	0	0
To prepare and publish Miss Byrne's gazetteer and map of the native tribes of Aus- tralia—Prof. Baldwin Spen- cer ... ..	20	0	0
	£204 16 6		

*Section I—Physiology.*

The ductless glands—Sir E. A. Schäfer ... ..	35	0	0
To acquire further knowledge, clinical and experimental, concerning anæsthetics— general and local—with special reference to deaths by or during anæsthesia, and their possible dimini- tion—Dr. A. D. Waller ... ..	20	0	0
Electromotive phenomena in plants—Dr. A. D. Waller ... ..	20	0	0
To investigate the physio- logical and psychological factors in the production of miners' nystagmus—Prof. J. H. Muirhead ... ..	20	0	0
The significance of the electro- motive phenomena of the heart—Prof. W. D. Halli- burton ... ..	20	0	0
Metabolism of phosphates— Prof. W. A. Osborne ... ..	20	0	0
	£135 0 0		

*Section K—Botany.*

The structure of fossil plants —Prof. F. W. Oliver ... ..	15	0	0
Experimental studies in the physiology of heredity— Prof. F. F. Blackman ... ..	45	0	0
The renting of Cinchona Botanic Station in Jamaica —Prof. F. O. Bower ... ..	25	0	0
To carry out a research on the influence of varying per- centages of oxygen and of various atmospheric pres- sures upon geotropic and heliotropic irritability and curvature—Prof. F. O. Bower ... ..	50	0	0

The collection and investigation of material of Australian Cycadaceæ, especially <i>Bowenia</i> from Queensland and <i>Macrozannia</i> from West Australia—Prof. A. A. Lawson ... ..	25	0	0
To cut sections of Australian fossil plants, with especial reference to a specimen of <i>Zygopteris</i> from Simpson's Station, Barraba, N.S.W.—Prof. Lang ... ..	25	0	0
			£185 0 0

*Section L—Educational Science.*

To inquire into and report upon the methods and results of research into the mental and physical factors involved in education—Dr. C. S. Myers ... ..	30	0	0
The influence of school books upon eyesight—Dr. G. A. Auden ... ..	5	0	0
To inquire into and report on the number, distribution and respective values of scholarships, exhibitions and bursaries held by university students during their undergraduate course, and on funds private and open available for their augmentation—Sir Henry Miers ...	5	0	0
To examine, inquire into, and report on the character, work, and maintenance of museums, with a view to their organisation and development as institutions for education and research; and especially to inquire into the requirements of schools—Prof. J. A. Green ... ..	20	0	0
			£60 0 0

*Corresponding Societies.*

Corresponding Societies Committee for the preparation of their report—Mr. W. Whitaker ... ..	25	0	0
			£25 0 0

Total ... .. £1634 16 6

The following research committees, not receiving grants of money, except in a few cases from the Caird Fund, were also appointed:—

- Radio-telegraphic investigation—Sir Oliver Lodge.
- To aid the work of establishing a solar observatory in Australia—(chairman not appointed).
- Determination of gravity at sea—Prof. A. E. Love.
- Research on the utilisation of brown coal by-products—Prof. Orme Masson.
- To report on the botanical and chemical characters of the Eucalypts and their correlation—Prof. H. E. Armstrong.
- The collection, preservation, and systematic registration of photographs of geological interest—Prof. J. Geikie.
- To consider the preparation of a list of stratigraphical names, used in the British Isles, in connection with the lexicon of stratigraphical names in course of preparation by the International Geological Congress—Dr. J. E. Marr.

To consider the nomenclature of the Carboniferous, Permo-Carboniferous, and Permian rocks of the southern hemisphere—Prof. T. W. Edgeworth David.

To aid competent investigators selected by the committee to carry on definite pieces of work at the Zoological Station at Naples—Mr. E. S. Goodrich.

To investigate the feeding habits of British birds by a study of the contents of the crops and gizzards of both adults and nestlings, and by collation of observational evidence, with the object of obtaining precise knowledge as to the economic status of many of our commoner birds affecting rural science—Dr. A. E. Shipley.

To defray expenses connected with work on the inheritance and development of secondary sexual characters in birds—Prof. G. C. Bourne.

To summon meetings in London or elsewhere for the consideration of matters affecting the interests of zoology or zoologists, and to obtain by correspondence the opinion of zoologists on matters of a similar kind, with power to raise by subscription from each zoologist a sum of money for defraying current expenses of the organisation—Sir E. Ray Lankester.

To nominate competent naturalists to perform definite pieces of work at the Marine Laboratory, Plymouth—Prof. A. Dendy.

To formulate a definite system on which collectors should record their captures—Prof. J. W. H. Trail.

A natural history survey of the Isle of man—Prof. W. A. Herdman.

To provide assistance for Major G. E. H. Barrett-Hamilton's Expedition to South Georgia to investigate the position of the Antarctic whaling industry—Dr. S. F. Harmer.

To inquire into the choice and style of atlas, textual, and wall maps for school and university use—Prof. J. L. Myres.

To consider and report on the standardisation of impact tests—Prof. W. H. Warren.

The collection, preservation, and systematic registration of photographs of anthropological interest—Sir C. H. Read.

To conduct archæological and ethnological researches in Crete—Mr. D. G. Hogarth.

To report on the present state of knowledge of the prehistoric civilisation of the western Mediterranean with a view to future research—Prof. W. Ridgeway.

To conduct excavations in Easter Island—Dr. A. C. Haddon.

To report on Palæolithic sites in the west of England—Prof. Boyd Dawkins.

The teaching of anthropology—Sir Richard Temple.

To excavate early sites in Macedonia—Prof. W. Ridgeway.

To report on the distribution of Bronze-age implements—Prof. J. L. Myres.

To investigate and ascertain the distribution of artificial islands in the lochs of the Highlands of Scotland—Prof. Boyd Dawkins.

To co-operate with local committees in excavations on Roman sites in Britain—Prof. W. Ridgeway.

The dissociation of oxy-hæmoglobin at high altitudes—Prof. E. H. Starling.

Colour vision and colour blindness—Prof. E. H. Starling.

Calorimetric observations on man in health and in febrile conditions—Prof. J. S. Macdonald.

Further researches on the structure and function of the mammalian heart—Prof. C. S. Sherrington.

The binocular combination of kinematograph pictures of different meaning, and its relation to the binocular combination of simpler perceptions—Dr. C. S. Myers.

To consider and report on the advisability and the

best means of securing definite areas for the preservation of types of British vegetation—Prof. F. E. Weiss.

The investigation of the vegetation of Ditcham Park, Hampshire—Mr. A. G. Tansley.

To take notice of, and report upon changes in, regulations—whether legislative, administrative, or made by local authorities—affecting secondary and higher education—Prof. H. E. Armstrong.

The aims and limits of examinations—Prof. M. E. Sadler.

#### NOTES.

DR. A. SMITH WOODWARD will exhibit the new model of the Piltdown skull at the conversazione of the Geologists' Association, to be held on November 6 at University College.

A DESTRUCTIVE earthquake occurred in Asia Minor on October 3, of which brief reports were published shortly afterwards. Fuller accounts have now arrived by letter. The epicentre was in the neighbourhood of Burdur and Isbarta, the chief manufacturing towns of the district. It is stated that both these towns, which lie about 165 and 185 miles east-south-east of Smyrna, are completely ruined. The line of the Ottoman railway from Smyrna to Aidin was damaged, but less seriously than was at first supposed, for through running was resumed in less than twenty-four hours.

THE Paris correspondent of the *Morning Post* says that a committee of representatives of leading learned societies has been formed in Paris to consider the position of German and Austrian men of science and letters who have been admitted fellows of these societies in France. Since the beginning of the war there has been a movement in favour of the removal of all such fellows from the ranks of the societies to which they have been admitted in recognition of the value of the original work done by them, and on October 19 the Académie des Sciences held a meeting *in camera* to consider its position in the matter.

AMONG the results of the war will be noticed the obliteration of a large part of the usual weather information over land and sea. In the meteorological charts of the North Atlantic Ocean for November, issued by the Meteorological Office, this is particularly noticeable, and the U.S. Weather Bureau has pointed out that its useful charts of the northern hemisphere have had to be discontinued temporarily. The chart for November above referred to states that under normal conditions the North Atlantic is free from fog in that month, with the exception of a narrow zone between Cape Cod (Providence, U.S.), and Ushant, but that even in the fog zone the frequency is not more than 5, as compared with 40 per cent. in July.

At the annual meeting of the Royal Society of Edinburgh, held on October 26, the following officers were elected:—*President*, Prof. J. Geikie; *Vice-Presidents*, Prof. T. Hudson Beare, Prof. F. O. Bower, Sir Thomas R. Fraser, Dr. B. N. Peach, Prof. Sir E. A. Schäfer, and Right Hon. Sir J. H. A. Macdonald; *General Secretary*, Dr. C. G. Knott; *Secretaries to Ordinary Meetings*, Dr. R. Kidston, Prof. Arthur Robinson; *Treasurer*, Mr. J. Currie; *Curator of Library*

and Museum, Dr. J. S. Black; *Ordinary Members of Council*, Dr. J. G. Gray, Prof. R. A. Sampson, Prof. D'Arcy W. Thompson, Prof. E. T. Whittaker, Principal A. P. Laurie, Prof. J. Graham Kerr, Dr. L. Dobbin, Dr. E. M. Wedderburn, Dr. W. B. Blaikie, Dr. J. Horne, Dr. R. S. MacDougall, and Dr. W. A. Tait.

THE exhibition at the Royal Photographic Society's house (35 Russell Square) of Mr. Lewis Balfour's photographs of "Bird Life on the Bass Rock," is well worthy of a visit by all those who are interested in either the birds or the photography of birds. We believe that Mr. Balfour's special aim in the work was to illustrate the life-history of the gannet. After general views of the rookeries on the rock there follow on a large scale some pairs of gannets on nests, and a series of the young bird chipping its way out of the shell until it is fully hatched out. The growth and progress of the bird is shown almost day by day up to the fourteenth day, and then at frequent intervals up to the twelfth week, when it is ready for flight. Immature birds of their second, third, fourth, and fifth year's growth are shown with adults, and in various attitudes, such as enraged, fighting, carrying sea-weed, flying, arriving at the nest, and so on. These constitute about three-quarters of the whole number of the photographs, the remainder being similar but smaller series, showing black-backed, herring, and kittiwake gulls, guillemots, and puffins. The photography is almost uniformly excellent, the details of the birds showing crisp and clear. The exhibition closes on November 28.

IN addition to the awards announced in April for papers read at meetings of the Institution of Civil Engineers, the council has made the following awards for papers published in the Proceedings without discussion during the session 1913-14:—A Telford gold medal to Mr. J. V. Davies (New York); Telford premiums to Messrs. W. C. Popplewell (Manchester), A. J. Knowles (Cairo), H. Gaskell, jun. (Widnes), P. Rothera (Trichinopoly); the Crampton prize to Mr. H. F. Carew-Gibson (London); and the Manby premium to Mr. W. M. Griffith (Bareilly, India). The Webb prize for the best paper on railway machinery published during the past three years has been awarded to Mr. Henry Fowler (Derby), and the Indian premium for 1914 to Mr. P. Rothera (Trichinopoly). The council has made the following awards in respect of students' papers read during the session 1913-14:—The "James Forrest" medal and a Miller prize to Mr. J. E. Swindlehurst (Birmingham); and Miller prizes to Messrs. T. C. Grisenthwaite (Glasgow), H. J. C. Harper (Bristol), W. P. Nevett (Birmingham), J. M. L. Bogle (Manchester), E. A. Cross (Birmingham), S. Brassey-Edwards (Manchester), G. T. Cotterell (Bristol), D. D. Stanier (Newcastle), W. E. Gurry (London), H. Taylor (Birmingham), and R. C. Ratray (Manchester).

IN *Man* for October, 1914, Mr. A. L. Lewis discusses the standing stones and stone circles of Yorkshire. No dolmens or large non-sepulchral circles seem to be found in the county, but there are numerous