

one of the difficulties to be overcome was the absence of direct shipping, which necessitated the transport of material through the tropics by way of Panama. However, the British Consular Service rendered invaluable assistance and willingly undertook the shipping of consignments from Chile and their transhipment to New Zealand boats at the Panama Canal; this system has worked admirably. The researches in Chile were carried out in collaboration with Bro. Claude Joseph (who had been undertaking researches on behalf of New Zealand for some time), at Temuco and in the surrounding Araucanian territory. Bro. Joseph has taken a supply of *Elaphroptera dimidiata* to France in the hope that it may prove effective in the control of the European cockchafer (*Melolontha melolontha*).

### Correlation of Meteorological Data

IN a recent publication, Sir Gilbert Walker discusses certain meteorological and solar statistical relationships worked out by E. W. Bliss (*Mem. Roy. Met. Soc.*, 4, No. 36). Many years have elapsed since the work of Teseirene de Bort and Hildebrandsson showed that there are regions where the changes of certain meteorological elements are correlated with the changes in the same or different meteorological elements in places so far distant that the discovery of the connexion came as a surprise, and seemed to open up prospects of a greatly increased understanding of the workings of the general circulation of the earth's atmosphere. The work has had practical results in seasonal weather forecasting, for example, in the predictions of the character of the Indian monsoon organised by Sir Gilbert Walker, but has thrown very little light on the physics of the general circulation. So far from providing important generalisations such as would simplify the study of world meteorology, it has resulted in an enormous number of statistical relationships from which cause and effect can seldom be disentangled.

Sir Gilbert's present paper is an attempt at arriving at more definite ideas about the relationships of three important groups of action centres which have been called the North Atlantic, the North Pacific and the Southern oscillations. Each oscillation is defined as the algebraic sum of the deviations of meteorological elements at a number of places in or near the area from which it derives its name. For the North Atlantic, the pressure difference between the Azores and Iceland, and consequently the intensity of the 'westerlies' of that ocean, is an important ingredient in the oscillation. Tables of correlation coefficients are given between the values of the oscillations in individual seasons and pressure, temperature and rainfall at places widely distributed throughout the world, and between the oscillations themselves. As sunspots are believed to be related to the energy radiated by the sun, and it is this energy that maintains the general circulation of the earth's atmosphere, coefficients are also given between the figures for sunspot activity and those for the three oscillations.

The tantalising nature of the results obtained in such studies is well illustrated by the existence of a correlation coefficient of +0.84 between the winter and subsequent summer values of the Southern oscillation. This degree of connexion is remarkable for meteorological conditions separated by an interval of half a year, but the result has not so far been explained on any physical basis.

### University and Educational Intelligence

CAMBRIDGE.—The Rockefeller Foundation has given £500 to the Molteno Institute of Parasitology for the purchase of instruments and for assistance in connexion with investigations to be carried out by Prof. D. Keilin.

The Goldsmiths' Company has presented £12,500 to increase the endowment of the Goldsmiths' professorship of metallurgy. The original offer of £10,000 has been increased to the larger sum in view of the fall in rates of interest.

The Gordon Wigan prize for chemistry has been awarded to Mr. T. P. Hoar, Sidney Sussex College, for a thesis entitled "On the Mechanism of the Corrosion of Iron and Steel".

THE twelfth annual vacation course in spectroscopy, interferometry, nephelometry and refractometry will be held on March 30–April 5, at the Zoological Institute of the University of Jena. Further particulars and a syllabus of the course can be obtained from Messrs. Carl Zeiss, Ltd., Mortimer House, 37–41, Mortimer Street, London, W.1.

THE Board of Education is prepared to consider applications for full-time studentships from teachers with at least five years' teaching experience, who desire financial assistance to follow courses of advanced study at universities or other institutions at home or abroad. Particulars of the awards and application forms are obtainable from the Board of Education, Whitehall, S.W.1.

THE sixth annual list of holiday courses in Europe has been prepared and recently published by the League of Nations' Institute of Intellectual Co-operation, acting under the recommendation of the Directors of National University Offices. The list is very comprehensive but only includes those courses which are open to foreigners. Such details as are available are given with each course, together with descriptions of certificates, etc., awarded, facilities for travelling and residence, and names of officials to whom to apply for further information. The pamphlet is published in English, French and German. The English edition can be obtained from Messrs. George Allen and Unwin, Ltd., 40 Museum Street, London, W.C.1 (price 2s.).

### Calendar of Nature Topics

#### Spring Wheat

Great Britain expects at least twice the yield per acre of wheat that the great producing areas of the world obtain, and distinctly more than the average yield of France and Germany, because the climate is admirably suited to the production of heavy yields. Only Belgium and Denmark obtain greater returns per acre. High yields in Great Britain are associated with the distributed rainfall and long period of growth obtained by autumn sowing. Spring sowing, on the other hand, is the practice in countries having severe winters and hot summers, while elsewhere the use of quickly maturing varieties is necessary when only a few months of the year are really favourable to the growth of wheat. A short growth period is associated with a low level of yield. In the ordinary