

character, as, for example, the series of papers in the "Records of the Indian Museum" for April. If any of these are to be chosen for special mention it must be the profusely illustrated "Contribution to a Knowledge of the Terrestrial Isopods of India," by Mr. W. E. Collinge, describing a collection of species new to science from the Madras Province of Southern India.

The *Journal* of the Federated Malay States Museums for March contains a valuable paper on the zoology of Koh Samui and Koh Pennan by Messrs. H. C. Robinson and C. Boden Kloss, and another on the plants therefrom by Prof. H. N. Ridley; while the April number contains a most interesting summary of Malay filigree work by Mr. I. H. N. Evans.

The thirteenth report of the Sarawak Museum contains a complete list of all the mosquitoes known from Borneo. The material for this was collected by the curator, Mr. J. C. Moulton—now on active service in France—and determined by Mr. F. W. Edwards, of the British Museum.

The Report of the South African Museum contains a brief summary of the acquisitions of the Geological Department, some of which are of considerable importance, as, for example, the remains of a small dinosaur from Bushmanland, apparently allied to the Cretaceous dinosaurs, and which throw light on the age of the old land surface in the north-west of the Cape Province.

The Records of the Albany Museum for May contains seven papers, one of which, on the fleas infesting various wild South African mammals, may prove of more importance than would appear at first sight.

All these institutions appear to be in a flourishing condition, but this is evidently far from true of the Rhodesia Museum, Bulawayo, which, in its thirteenth annual report, complains bitterly of the lack of funds. So seriously has its income fallen off that it has been necessary not only to reduce its staff, but to suspend even work necessary to ensure the well-being of the collections. We trust that better days are in store for the Albany Museum.

#### ENTOMOLOGICAL WORK IN CANADA.

RECENT publications of the Entomological Branch of the Canadian Department of Agriculture illustrate the wide field of the activities of Dr. Gordon Hewitt and his staff and the advances they are making in our knowledge of the control of insects.

In the *Canadian Entomologist* for March, 1915, Dr. Hewitt discusses the hibernation of the house-fly in a paper that is of very great topical value at the moment in this country; he finds that the maggots pupate at depths up to 2 ft. below and away from a manure heap, where this is situated on sandy loam; he finds also that the flies emerge from this situation. Discussing the hibernation of the insect, he reiterates his belief that it is as the adult that they live over the winter in northern latitudes.

In the *Transactions* of the Royal Society of Canada for September, 1914, Dr. Hewitt describes observations on the feeding of the stable-fly, *Stomoxys calcitrans*, which will be of value to those seeking to fix the rôle this insect plays in the dissemination of disease, notably of infantile paralysis.

A circular of the Department of Agriculture contains the instructions to importers of trees, plants, and other nursery stock into Canada; it explains clearly and simply what the importer has to do, and reprints the text of the Act. Another circular deals with the control of locusts in eastern Canada; the author, A. Gibson, uses the term locust for grasshopper, whereas

it is better restricted to the migratory grasshoppers; but the circular is for popular use, and the term is probably so used in eastern Canada.

The most interesting point is the value of adding lemon juice to the poisoned bait for killing the insects; the method originated in Kansas, and works well in Canada.

In Bulletin No. 9 Mr. Gibson deals with the Army worm *Cirphis unipuncta*, an insect which caused a loss of 50,000l. in Ontario alone. He emphasises the great importance of co-operation among farmers in dealing with outbreaks promptly and thoroughly by means of trenching, poisoning, and rolling. It is possible that something better could be done with moth trapping on the "Andres Maire" system, which has proved successful elsewhere. The bulletin is a thoroughly practical, useful piece of work, and the Department evidently has the confidence of the farming community in Canada. H. M. L.

#### THE SUPPLY OF OPTICAL GLASS.

THE subject of the supply of optical glass and the needs and opportunities offered to the optical trade, by war and after-war conditions, still continues to attract the attention which it deserves. On July 16 an important conference was held at the London Chamber of Commerce between the Court and representatives of the Spectacle Makers' Company and representatives of the chamber and of the trade. The conference was convened by the company, and the chair was taken by the master, Sir J. F. L. Rolleston, M.P. There were also present Lord Southwark, president of the Chamber of Commerce, Viscount Hill, Sir William Hart Dyke, Sir Marcus Samuel, Dr. R. M. Walmsley, and others. The chairman opened the proceedings, and in the course of his speech explained how the debate in the House of Commons on optical matters which was initiated by Sir Philip Magnus on May 19, and in which several well-informed members, including the chairman, were prepared to take part, was interrupted and practically closed by the Prime Minister's very important announcement on "Coalition Government." He also referred to various matters to which we have directed the attention of our readers as they arose.

Lord Southwark, in opening the discussion, referred to the fact that he was not only the president of the chamber, but also a past-master of the Skinners' Company, which is so closely associated with the Northampton Polytechnic Institute and its work. He emphasised the importance of concerted action and the help which the City companies could give, and referred also to the valuable assistance which could be rendered by the chamber. In the discussion which followed, it was understood that the remarks made by trade members should not be reported. Dr. Walmsley, who was called upon to speak early in the debate, explained the points referred to in his letter to the *Times* of April 28, and indicated the importance of the opportunities which have now arisen for the recapture of those branches of the optical instrument trade which were so heavily handicapped before the war. He pointed out that this was worthy of a very earnest effort, and he referred particularly to the value of the trade in the employment of highly skilled labour, which forms so important an item in the production of complicated optical instruments, such as microscopes, etc. He also dwelt upon the necessity for training designers and computers. The importance of the spectacle-making branch of the trade was fully insisted upon, and eventually it was decided, on the motion of Lord

Southwark, at the suggestion of Sir William Hart Dyke, to appoint a joint committee of the Spectacle Makers' Company and the London Chamber of Commerce to study the questions at issue in all their bearings.

**THE GOVERNMENT SCHEME FOR THE ORGANISATION AND DEVELOPMENT OF SCIENTIFIC AND INDUSTRIAL RESEARCH.**

WE gave in our issue of May 20 a detailed report of speeches made in the House of Commons when the Government scheme for the formation of an Advisory Council concerned with industrial and scientific research was outlined by Mr. J. A. Pease, then President of the Board of Education. Since that time Mr. Arthur Henderson has succeeded Mr. Pease at the Board, and he has just issued as a White Paper (Cd. 8005, price  $\frac{3}{4}$ d.) a statement of the need and nature of a scheme which will secure scientific foundations for national industries in the future. The paper is here reprinted.

(1) There is a strong consensus of opinion among persons engaged both in science and in industry that a special need exists at the present time for new machinery and for additional State assistance in order to promote and organise scientific research with a view especially to its application to trade and industry. It is well-known that many of our industries have since the outbreak of war suffered through our inability to produce at home certain articles and materials required in trade processes, the manufacture of which has become localised abroad, and particularly in Germany, because science has there been more thoroughly and effectively applied to the solution of scientific problems bearing on trade and industry and to the elaboration of economical and improved processes of manufacture. It is impossible to contemplate without considerable apprehension the situation which will arise at the end of the war unless our scientific resources have previously been enlarged and organised to meet it. It appears incontrovertible that if we are to advance or even maintain our industrial position we must as a nation aim at such a development of scientific and industrial research as will place us in a position to expand and strengthen our industries and to compete successfully with the most highly organised of our rivals. The difficulties of advancing on these lines during the war are obvious and are not under-estimated, but we cannot hope to improvise an effective system at the moment when hostilities cease, and unless during the present period we are able to make a substantial advance we shall certainly be unable to do what is necessary in the equally difficult period of reconstruction which will follow the war.

(2) The present scheme is designed to establish a permanent organisation for the promotion of industrial and scientific research.

It is in no way intended that it should replace or interfere with the arrangements which have been or may be made by the War Office or Admiralty or Ministry of Munitions to obtain scientific advice and investigation in connection with the provision of munitions of war. It is, of course, obvious that at the present moment it is essential that the War Office, the Admiralty, and the Ministry of Munitions should continue to make their own direct arrangements with scientific men and institutions with the least possible delay.

(3) It is clearly desirable that the scheme should operate over the kingdom as a whole with as little regard as possible to the Tweed and the Irish Channel.

The research done should be for the kingdom as a whole, and there should be complete liberty to utilise the most effective institutions and investigators available, irrespective of their location in England, Wales, Scotland, or Ireland. There must therefore be a single fund for the assistance of research, under a single responsible body.

(4) The scheme accordingly provides for the establishment of:—

(a) A Committee of the Privy Council responsible for the expenditure of any new moneys provided by Parliament for scientific and industrial research;

(b) A small Advisory Council responsible to the Committee of Council and composed mainly of eminent scientific men and men actually engaged in industries dependent upon scientific research.

(5) The Committee of Council will consist of the Lord President, the Chancellor of the Exchequer, the Secretary for Scotland, the President of the Board of Trade, the President of the Board of Education (who will be vice-president of the Committee), the Chief Secretary for Ireland, together with such other Ministers and individual Members of the Council as it may be thought desirable to add.

The first non-official members of the Committee will be:—The Right Hon. Viscount Haldane of Cloan, O.M., K.T., F.R.S., the Right Hon. Arthur H. D. Acland, and the Right Hon. Joseph A. Pease, M.P.

The President of the Board of Education will answer in the House of Commons for the sub-head on the Vote, which will be accounted for by the Treasury under Class IV., Vote 7, "Scientific Investigations, etc."

It is obvious that the organisation and development of research is a matter which greatly affects the public educational systems of the kingdom. A great part of all research will necessarily be done in universities and colleges which are already aided by the State, and the supply and training of a sufficient number of young persons competent to undertake research can only be secured through the public system of education.

(6) The primary functions of the Advisory Council will be to advise the Committee of Council on:—

(i) Proposals for instituting specific researches;

(ii) Proposals for establishing or developing special institutions or departments of existing institutions for the scientific study of problems affecting particular industries and trades;

(iii) The establishment and award of research studentships and fellowships.

The Advisory Council will also be available, if requested, to advise the several Education Departments as to the steps which should be taken for increasing the supply of workers competent to undertake scientific research.

Arrangements will be made by which the Council will keep in close touch with all Government Departments concerned with or interested in scientific research and by which the Council will have regard to the research work which is being done or may be done by the National Physical Laboratory.

(7) It is essential that the Advisory Council should act in intimate co-operation with the Royal Society and the existing scientific or professional associations, societies, and institutes, as well as with the universities, technical institutions, and other institutions in which research is or can be efficiently conducted.

It is proposed to ask the Royal Society and the principal scientific and professional associations, societies and institutes to undertake the function of initiating proposals for the consideration of the Advisory Council, and a regular procedure for inviting and collecting proposals will be established. The Advisory Council will also be at liberty to receive