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### **A PILOT STUDY FOR A BIOLOGICAL SURVEY OF THE INSECTS OF CANADA**

In 1974 the Society published a Brief that proposed and described a Biological Survey of the Insects of Canada (Bulletin of the E.S.C., Vol. 6, No. 2, 16 pp.). It is pleased now to report that a Pilot Study for this potentially important undertaking has been planned, funded and established.

The objectives of the survey are to develop our knowledge of the insects and other terrestrial and freshwater arthropods of Canada — their identification, systematics, distribution and biological characteristics; their ecological, including economic, significance, and how they are affected by the activity of man.

These objectives are timely and urgent, as the Brief pointed out in a variety of ways. Some 140,000 species of insects and related forms are believed to occur in Canada, although fewer than half this number have been described and named. It is often the more poorly known groups that are especially significant in modern environmental studies. For both practical and scientific purposes there is a need to know not only the name of the insect but also its place in nature. We must know them also not only species by species but in their faunistic groupings as pollinators, decomposers, vectors of other organisms, and so on, and in their relation to the characteristic features of the Canadian environment. Thus a more intimate collaboration of taxonomist and ecologist is a major requirement; and this collaboration, bringing the data of behaviour or life history into systematics, often leads to the recognition of sibling and cryptic species that nevertheless play sharply different roles in nature.

Much good work is in fact being done in these fields, both in government and in the universities. But the work of the established agencies is often becoming more precisely and narrowly defined, and their range of contributions more limited; and the goal of a knowledge of the insects of Canada commensurate with the needs of the day is receding rather than being attained. We need, therefore, an organisation that can review systematic and faunistic entomology as a whole, where necessary developments can be identified and fostered, where plans and projects can be coordinated, where information and ideas can be exchanged and refined and where data can be stored and processed.

The positions taken by the Brief were favourably received by many entomologists, and were confirmed in resolutions at a general meeting of our society and at the Biological Council of Canada. The Society felt that it would be very difficult at the present time to set up any new agency for these purposes, but found, in an enquiry distributed to entomologists and organisations across the country that there was a widespread readiness to work in voluntary cooperation towards the

needs that had been recognised. After considering the alternatives, it was decided that the best way to start would be for the Society itself, as representing almost all entomologists in Canada, to set up a committee and secretariat to guide the undertaking. It was gratifying to discover at this stage that this initiative of the Society, to examine and guide the development of an important disciplinary field, was directly in line with the recommendations of several recent studies of science policy.

The Society decided to approach the project in two stages. A *Pilot Study* of limited duration would first be attempted, to initiate and test in action the main objectives, working arrangements, and limits of voluntary cooperation, with the intention of providing a firm foundation and direct support for a continuing *Biological Survey of the Insects of Canada*. The Pilot Study was formulated and proposed to the Department of Supply and Services as an *unsolicited proposal* for contract work in science in May, 1976. The proposal was able to cite expressions of interest from the federal departments of Agriculture, Defence, Environment, Indian and Northern Affairs, the National Museum of Natural Sciences, and the National Research Council. As submitted the proposal included the development and testing of a data banking system for storage, retrieval and processing of systematic and faunistic information and this accounted for a considerable part of the total cost. It became clear, however, that funds to cover the whole proposal would not be available; and also that such an extensive project could not easily be started all at once. On August 13, DSS offered the Society a contract for a Pilot Study of 18 months, in which the data banking element was reduced to an evaluation of systems currently in use. This the Society readily accepted. As set out in the letter from DSS the contract would cover the following work:

1. To establish an interim co-ordinating centre for the Survey, consisting of a Secretariat and an Advisory Scientific Committee.
2. To assess the resources of manpower, programs and facilities required to conduct a biological survey of the insects of Canada, and to enlist voluntary participation during the trial period.
3. To give special attention to feasibility and desirability of considering National Parks of Canada as survey sites.
4. To give guidance, with appropriate consultation, on the advisability of making a biological survey all inclusive, i.e., to include plants, animals, insects and fungi.
5. To assess the present state of knowledge of the insect fauna, the important deficiencies, and relevant priorities.
6. To initiate co-operative programs of exploration, research, and publication, and to test procedures, objectives and limits of co-operative effort over one field season.
7. To report and make recommendations on the organisation, sponsorship, location, responsibilities, scope, management, staffing, facilities and funding of a continuing survey organization.
8. To evaluate existing systems for the storage of biological information (e.g. Selgem, system 2000 etc.).

This program of work is closely related to the Society's proposals. Item 3, relating to the National Parks, which between them include almost all the major insect habitats and life zones represented in Canada, is gratifying. Item 4 was not explicit in the original proposal, and the words 'with appropriate consultation' were added at our suggestion so as to recognise that these important recommendations could be formulated only in collaboration with other biologists. Finally, Item 7 indicates the readiness of the Federal Government to consider a continuing Biological Survey of the Insects of Canada given, of course, that the Pilot Study is reasonably successful.

The contract would provide for a Secretariat with two entomologists, and for a Scientific Committee that would function as a consultative and deliberative body representing the fields of systematic and faunistic entomology across Canada and ensuring continuing contact with new scientific approaches and newly emerging practical needs. It would provide also for the needs of the Secretariat office and for travel funds for meetings of the Scientific Committee and for consultations. The value of the contract was determined later at \$129,030.

The Biological Survey Committee, working with its advisory group and with the Executive Council of the Society, assembled an extensive list of possible candidates. At a late stage of the Committee's selection process, however, unforeseen and disconcerting difficulties arose on the official side, and the contract, planned to come into force on 1 October, was in fact not signed until 5 January of this year. This long delay means that Item 6 above — the organising of cooperative programs of exploration and research during the 1977 field season — can hardly be carried out as fully as had originally been hoped; but in all other respects the Pilot Study is in good shape. The Society is grateful especially to Dr. G.S. Cooper for his important work during this difficult period.

As soon as the contract was signed, Dr. H.V. Danks, formerly of Brock University, was appointed to the Secretariat as Entomologist-in-charge, and Dr. A.P. Nimmo, from the University of Alberta, as the Associate Entomologist. A suitable office has been rented and equipped at Apt. 202, 1316 Carling Avenue, Ottawa, (Tel. (613) 722-8276); it is in the building adjacent to the Society's existing office. The initial Committee and its advisory group have completed their tasks and, with several changes in membership to establish a pattern of limited terms, have been succeeded by the new Scientific Committee as follows: G.E. Ball (Edmonton), Chairman; E.L. Bousfield (Ottawa); A. Comeau (Ste. Foy); J.A. Downes (Ottawa), Vice-Chairman; D.C. Eidt (Fredericton); A. Francoeur (Chicoutimi); D.K. McE. Kevan (Ste. Anne de Bellevue); J.J.R. McLintock (Saskatoon); R.F. Morris (St. John's); E.G. Munroe (Ottawa); O.E. Saether (Winnipeg); G.G.E. Scudder (Vancouver); A.D. Tomlin (London); W.G. Wellington (Vancouver); and G.B. Wiggins (Toronto). The first meeting of the Scientific Committee took place in Ottawa on 17-18 February.

The Pilot Study for A Biological Survey of the Insects of Canada is now in being, and carries with it the good wishes of the Society for the complex and difficult work ahead, work that if successful will be of real importance to the future of entomology in Canada.

J.A. Downes  
(Chairman, (initial) Biological Survey Committee)

Additional copies of this Brief may be  
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