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Société Entomologique du Canada

Bulletin

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D.M. Davies Bulletin Editor

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EDITORIAL

In this issue is correspondence concerning the federal government hiring policy, where language rather than scientific ability has been emphasized. All this agitation and publicity concerning the French Essential hiring policy in Agriculture Canada was done in the best interest of entomology in Canada with no thought of disparaging French-Canadians. The editor apologizes for the anonymous poem included in the June Bulletin, the intent of which was unfortunately misconstrued by some (see letters of J.N. McNeil and J.R. Blais in this Bulletin).

The Committee for a Study of the Cost of Destructive Insects in Canada has approval to begin this valuable project and urgently solicits contributions from members (see this issue). Also the Science Policy Committee is compiling a Dossier on important entomological subjects in need of study in Canada and is asking members for suggestions (this issue).

We should like to have more news of amateur entomology in Canada. In this issue is information concerning amateur societies in Manitoba and Ontario.

We look forward to an excellent annual meeting in Banff, Alberta on 5-9 October (see June Bulletin for details).

LOGO CONTEST FOR 1982 JOINT MEETING OF ESA, ESC AND ESO

"Students, sharpen those pencils and crayons! Plans are being made to initiate a logo-search for the 1982 joint meeting of the Entomological Societies of America, Canada, and Ontario to be held in Toronto. This contest is only open to students.

Contest prizes are still under deliberation; however, among those being considered for prizes is a generous reduction in hotel costs in Toronto.

Watch for the details, rules, and specifications in an upcoming Bulletin In the meantime, start thinking of ideas for a logo and theme."

PRELIMINARY OBITUARY NOTICE

DUPORTE, E. Melville - 24.X.1891 - 31.VII.1981. We regret to announce the death on 31 July, 1981 of Dr. E. Melville DuPorte, Emeritus Professor of Entomology, Macdonald Campus, McGill University, Ste-Anne-de-Bellevue, Province of Québec, Canada. Dr. DuPorte, the eminent insect morphologist, was in his 90th year. A native of Nevis, West Indies, he came to Macdonald College from St. Kitts in 1910 and graduated B.S.A., specializing in Entomology, in 1913. He was appointed to the staff later in the same year and remained active in research and a member of the Faculty of Agriculture until late in 1980, when his health began to fail - an unprecendent 70 years of continuous activity on a single university campus. During his long life he became internationally known in his field and in the scientific community. An outstanding scholar and gentleman, beloved and revered by his colleagues, his former students in numerous walks of life, and his many fields throughout Canada and the world.

D. Keith McE. Kevan, Professor of Entomology and Director, Lyman Entomological Museum and Research Laboratory, Macdonald Campus, McGill University

DOUGLAS KEITH McEWAN KEVAN

recipient of the 1981 ESC GOLD MEDAL for Outstanding Achievement in Canadian Entomology.

The 1981 recipient of the Gold Medal for outstanding achievement in Canadian entomology is Professor D. Keith McEwan Kevan, Department of Entomology, McGill University (Macdonald Campus).

Keith Kevan's early experience as an entomologist was gained in Britain and the tropics. Completing a distinguished undergraduate record at Edinburgh University in 1941, he was posted by the Colonial Agricultural Service to Imperial College, Trinidad, to work in tropical agriculture. There he worked on the Neotropical cornstalk borer and on soil zoology, and began his life-long studies in the systematics of Orthopteroids. In 1943 he was awarded the Associateship of the Imperial College of Tropical Agriculture, and was assigned to the Kenya Department of Agriculture. There he was quickly involved in Desert Locust reconnaissance and control in Kenya, Ethiopia and the Somalilands with the East African Anti-Locust Directorate. Lulls in Desert Locust campaigns allowed him to gain experience with East African cotton pests in Uganda, and to work with mymarid egg-parasites of Eucalyptus weevil in Kenya Highlands; and whenever time allowed he collected and continued his studies of orthopteroid insects.

In 1948, he returned to the United Kingdom, resigned from the Colonial Service, and, at the age of 27, became the first head of the new Zoology Section in the Faculty of Agriculture and Horticulture of the University of Nottingham. There he developed undergraduate teaching programmes in Entomology and other aspects of Agricultural, Forest and Veterinary Zoology; at the same time he directed graduate students in the study of aphids, cutworms and thrips. He continued his own taxonomic studies of the orthopteroids, specializing in the Pyrgomorphidae upon which he is the world authority, and completed his Ph.D. work at Nottingham in 1956 on "The Chrotogonini: A Critical Revisional Study of the Injurious Pyrgomorphine Acridid Genus Chrotogonus and its Allies (Insecta: Orthoptera)".

In 1955 Kevan organized the first international conference on Soil Zoology at the Sutton Bonington campus of Nottingham University, and edited the proceedings under the title "Soil Zoology", published in the same year. His own book "Soil Animals", also written at Sutton Bonington, was not published until 1962, after he had left Nottingham.

Thus it was not until 1958 that Dr. Kevan came to Canada as Professor and Chairman of the Department of Entomology, Macdonald College of McGill University. He was, then, at 37, one of the youngest full professors at McGill and it is thought the youngest Chairman at that time. Almost simultaneously with taking up his new duties at Macdonald he was elected a Fellow of the Royal Society, Edinburgh. He served as Chairman of Entomology from 1958 until 1971, when he relinquished the chair for health reasons. He also was Chairman of the Department of Plant Pathology from 1959 until 1964, while that department was joined with Entomology.

During his stay at Macdonald he has contributed mightily to Canadian Entomology in many different ways. As a leader he has directed the research of 17 M.Sc. and 18 Ph.D. graduates in Canada alone, and has been associated with 7 Post-doctoral Fellows. He introduced modern concepts of Soil Zoology into North America, and gave the first formal courses on that subject. He established the first postgraduate School of Soil Zoology within the Department of Entomology at Macdonald and it is still active. He has taught all aspects of Entomology except (in Canada) Insect Physiology and Economic Entomology, but including Veterinary and Medical Entomology (and at one time, Helminthology and Protozoology). Early in the 1960's he initiated the first fully student-run graduate seminar series, which has operated annually ever since.

Kevan is known as an astute administrator, who knows and uses every legitimate avenue to ensure that his group obtains the best funding and facilities available. In 1961 he was instrumental in transferring the Lyman Entomological Collections from the Redpath Museum in Montreal to their logical association with the University's

Department of Entomology. At the same time he insisted on provision for a fully qualified curator (Dr. V.R. Vickery). These moves led to the growth and development of the collections into the internationally recognized Lyman Entomological Museum and Research Laboratory, of which Kevan became the first Director in 1971. This association of the university department and the museum with the resulting emphasis on insect taxonomy has strengthened this formerly less favoured discipline.

During his tenure as Chairman, Kevan identified and remedied a deficiency in the teaching and research operations of his department by successfully establishing an academic position for a freshwater biologist. Although he is no longer Chairman of Entomology, he remains an active and effective Director of the Lyman Museum. As such, he established the Museum Memoir series, of which the 10th volume is now being prepared for press; and he initiated and co-authored the Lyman Memoir on the Orthopteroids of Quebec and the Atlantic Provinces.

His own research has been mainly in the field of systematics including experimental taxonomy and cytogenetics, morphology and biology of the orthopteroid insects. Work on the world fauna of the Pyrgomorphidae has continued, along with faunal studies of orthopteroid insects in various parts of the world, including most recently a large work on the orthopteroid insects of Canada and Alaska with V.R. Vickery. His published work on the biology of microarthropods in soil and litter goes on. In recent years he has succeeded in integrating the science of Entomology with the Humanities. He refers to this field as "Cultural Entomology" or "Ethnoentomology", and at one time he was unique in holding both National Research Council and Canada Council (Humanities) grants simultaneously. In these studies he investigated early historical and literary areas of entomology, particularly poetry and other verse of all ages and regions, in any language. His entomological research alone has resulted in more than 400 scientific publications, including a number which are of book length, and his productivity continues.

Kevan has been active in many organizations and has been honoured by a number of them. He was a Director (1963-65) and President of the Entomological Society of Canada (1972-73), and was made a Fellow in 1977. The shield bearing the insignia of the Society, presented by the Entomological Society of Quebec 1967, was of his devising. Together with J.A. Downes and E.G. Munroe he was an initiator of the drive for the Biological Survey of Insects of Canada on behalf of the Society, and he has contributed extensively to the continuation of the project, serving, up to the present, on its Scientific Committee.

Other Society affiliations he has are: The Royal Society, Edinburgh (Fellow 1958-); Royal Entomological Society of London (Fellow 1942-); Entomological Society of Quebec (President Montreal Branch 1963-64); Entomological Society of Ontario; Entomological Society of America; American Entomological Society; Entomological Society of Finland (Hon. Fellow 1975-); Acarological Society of America; Canadian Society of Zoologists; Society for Systematic Zoology; Systematics Assoication; Institute of Biology; Association of Applied Biologist; Association for Tropical Biology (founder-member); Pan/American Acridological Society (founder-member and Hon. Member 1976-); Association d'Acridologie (Council 1974-77): International Union for the Study of Social Insects; Quebec Society for the Protection of Plants; Society for the Bibliography of Natural History; Sigma Xi; Canadian Association of University Teachers; McGill Association of University Teachers; Watsonian Club of Montreal (President 1973-).

Kevan has considerable theatrical talent, having trod the amateur boards on many occasions as well as writing and directing several productions. His sense of humour is quick, although sometimes mordant, and his colleagues and students all recognize that he barks better than he bites. He claims two main regrets: that he has not had time to learn to play a musical instrument or to ride a horse; and that there is no way to acquire some of the excess time that others seem to have.

For outstanding achievement in entomological research, education and society affairs, the Entomological Society of Canada takes great pleasure in awarding Dr. D. Keith McE. Kevan the Gold Medal Award for 1981.

GEORGE HILTON GERBER

recipient of the ESC 1981 C. Gordon Hewitt Award for Outstanding Achievement in Canadian Entomology.

The 1981 recipient of the C. Gordon Hewitt Award for outstanding achievement in Canadian Entomology by an individual less than 40 years old is Dr. George Hilton Gerber, Agriculture Canada Research Station, Winnipeg.

George H. Gerber was born in St. Walburg, Saskatchewan, in 1942. He entered the University of Saskatchewan in 1960, and obtained a B.S.A. with Honours in Biology in 1964. As an undergraduate student, he worked three summers with Dr. R.H. Burrage at the Agriculture Research Station, Saskatoon, and this experience led to his decision to do graduate work in entomology and to pursue a career in agricultural research. He remained at the Saskatoon campus to study for his Ph.D. under the guidance of Drs. J.G. Rempel and N.S. Church, carrying out research on the anatomy, histology, histochemistry and physiology of the caragana blister beetle, Lytta nuttalli. A first-rate scholar, he was awarded the Entomological Society of Saskatchewan's A.R. Brooks Memorial Prize in Entomology in 1965, in addition to receiving University Graduate Scholarships in 1964 and 1965, and NRC Studentships from 1966 through 1968. Dr. Gerber received his Ph.D. in 1968 and the results of the research for his thesis were published in two papers, one on the spermatophore of Lytta nutalli and the other on the evolution of methods of spermatophore production in the Pterygota. Additional research on the reproductive systems of meloids and of Tenebrio molitor, conducted concurrently with his thesis research, led to another six publications.

When he received his Ph.D., Dr. Gerber joined the Agriculture Canada Research Institute, Belleville, Ontario, to conduct research on the reproductive physiology and behaviour of insects. Working on Tenebrio molitor, he described and published detailed information on the initiation of mating in young adults and the effects of adult density; on egg development and oviposition in young females and the effects of mating; and on histogenetic changes in the internal genitalia, mesenteron, and cuticle during sexual maturation. During this period, Dr. Gerber collaborated with other scientists in histological studies of a braconid parasite and of the site of production of an oviposition pheromone in the reproductive system of a mosquito.

In 1972, Dr. Gerber was transferred to the Agriculture Canada Research Station, Winnipeg, to become part of a research team developing integrated pest management systems for the prairie provinces. His major emphasis has been on the red turnip beetle, Entomoscelis americana, a pest of rape and mustard crops. Studies of the biology and life cycle of this insect have included coldhardiness of overwintering eggs, effects of temperature on hatching of the eggs and on larval development, factors regulating summer aestivation (assisted by a post-doctoral fellow), identification of natural enemies, histology and physiology of the reproductive systems, and reproductive biology and cycles. The role of cruciferous weeds as alternate host plants for the red turnip beetle has been assessed and the impact of larval and adult feeding on crops has been analyzed. Based on studies of the effects of cultivation on the overwintering survival of eggs and on the availability of food for the larvae in the spring, fall cultivation of rape fields has been recommended as a method of control.

A collaborative study, with Mr. G.B. Neill and Dr. P.H. Westdal, was conducted on the anatomy and histology of the reproductive systems and on the reproductive cycles of the sunflower beetle, Zygogramma exclamationis. In addition to providing the most detailed description in the literature of the internal genitalia of a chrysomelid beetle, this study reviewed published descriptions of the reproductive systems of Chrysomelidae and attempted to resolve uncertainties and inconsistencies in the interpretations of the reproductive structures of this Family. Concurrently, he completed work on the reproductive behaviour of Tenebrio molitor and collaborated with other scientists on studies of insect histology and reproduction. During this period, Dr. Gerber supervised a post-doctoral fellow, and after being designated as Adjunct Professor in the Department

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of Entomology, University of Manitoba in 1976, has supervised three graduate students. During the 1979-80 academic year he was a Visiting Scientist at the Institute of Animal Resource Ecology, University of British Columbia, where he worked actively with the graduate students in insect ecology, as well as pursuing his own research interests in the reproductive biology of meloid, tenebrionid and chrysomelid beetles.

A meticulous and painstaking scientist, Dr. Gerber is already well established in the field of biology, physiology, comparative anatomy and histology of reproductive systems of Coleoptera and is developing a reputation for his work on the development of pest management strategies. He is the author of 30 scientific papers.

Dr. Gerber has also shown a concern for the development of entomology in Canada, that led to his early and deep involvement in regional and national entomological affairs. As an active member of the Entomological Society of Manitoba and the Entomological Society of Canada, Dr. Gerber has served on the Annual Meeting and Program Committees of both Societies. He has served as an ESC Director, as the Chairman of the ESC Gift Subscription Committee and is currently Chairman of the ESC By-Laws, Rules and Regulations Committee. He made a major contribution to the national Society during his term as Secretary from 1975 through 1978, when the ESC was exceptionally busy with its first three government contracts. Recently he became Editor of The Manitoba Entomologist.

In his career to date, Dr. Gerber has exhibited the ability to establish a reputation in his chosen field of expertise, to collaborate with other scientists on specific projects, and to participate fully as a member of a team research group. His forthright manner, his breadth and range of interests, his cooperative nature, and his large supply of common sense make him a valued member of his research team. Those same qualities have been quickly recognized and greatly appreciated by the graduate students and post-doctoral fellows who seek his viewpoint and advice.

In recognition of his outstanding contributions to Canadian entomology in research and in the affairs of the Society, the Entomological Society of Canada is pleased to present George Gerber with the C. Gordon Hewitt Award for 1981.

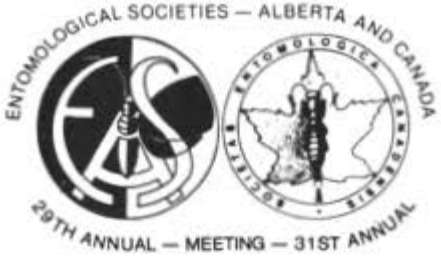
INSECT ILLUSTRATIONS IN MARCH BULLETIN

(Bull. ent. Soc. Can. 13(2): 39.)

The illustration of a locust on p. 16 of the Bulletin, doubtless came directly from the source indicated on p.39. Nevertheless The Rev. C.J.S. Bethune actually first plagiarized the illustration in the previous year (Ann. Rep. ent. Soc. Ont. 5 (1874), 1875, p. 30), where he deliberately misnamed the insect "Caloptenus spretus, Uhler" (=Melanoplus spretus (Walsh)), the Rocky Mountain locust, knowing perfectly well that the figure purported to be (though it is not a good likeness) of a European form of what is now known as Locusta migratoria Linnaeus

The unacknowledged source of the illustration was Louis Figuier's "Les Insectes", Paris, 1867 (presumably the English edition, "The Insect World", London, 1868), fig. 308 (a little vegetation was eliminated). It is just possible that Figuier was not the first to use it, for, in those days, the borrowing of other people's material was commonplace, even by clergymen. Bethune's unabashed deceit, however, was unscientific, unethical and unbecoming to his calling, for our revered former President could not plead ignorance as an excuse! The colourful C.V. Riley, who, in the same year as Bethune used the same illustration (Rep. nox. benef. & oth. Ins. Missouri, 1875, p. 133), also without acknowledgement of source, at least called it "Migratory Locust of Europe"!

D.K. McE. Kevan
Director, Lyman Entomological Museum and Research Laboratory, and Professor of Entomology Laboratory, Macdonald Campus, McGill University



JOINT MEETING
ENTOMOLOGICAL SOCIETY OF ALBERTA
ENTOMOLOGICAL SOCIETY OF CANADA
OCTOBER 5-9, 1981, BANFF CENTRE
BANFF, ALBERTA, CANADA

Theme Symposium

THE ECONOMICS OF ENTOMOLOGICAL EFFORT

Speakers representing the broad fields of Fundamental and Appled Entomological Research, Integrated Control, Goverment, Industry, and Education will show how effort and progress in their area contributes to progress in other areas of science and to the well being of the public who support them financially. Emphasis will be in terms of costs and benefits where feasible. Subject areas and speakers include:

INTRODUCTION: Dr. F. L. McEwen, Department of Environmental Biology, University of Guelph.

ECONOMICS AND ENTOMOLOGY: Dr. K. K. Klein, Agriculture Canada, Lethbridge.

FUNDAMENTAL ENTOMOLOGICAL RESEARCH: Dr. C. Gillott, Department of Biology, University of Saskatchewan.

APPLIED ENTOMOLOGIACAL RESEARCH

ORCHARD PRODUCTION IPM IN BRITISH COLUMBIA: Dr. R. J. McMullen, Agriculture Canada, Summerland.

FLEA BEETLE IPM IN THE CANADIAN PRAIRIES: Dr. W. J Turnock, Agriculture Canada, Winnipeg.

MEDICAL-VETERINARY INSECT PEST MANAGEMENT: Dr. W. O. Haufe and Mr. J. Weintraub, Agriculture Canada, Lethbridge.

GOVERNMENT ADMINISTRATION - B.C. FORESTRY PROBLEMS: Dr. R. F. DeBoo, Ministry of Forestry, Victoria.

INDUSTRY: Dr. G.B. Kinoshita, R. & D., Cyanamid Canada, Willowdale, Ontario.

EDUCATION: Dr. J. H. Borden, Biological Sciences Department, Simon Fraser University.

SUMMARY AND RECOMMENTDATIONS: Dr. F. L. McEwen, Department of Environmental Biology, University of Guelph.

SPECIAL INTEREST GROUPS

Seven Special Interest Topics (listed below with their chairman) have been tentatively scheduled for either October 5 or October 9, 1981. These sessions are open to everyone and afford participants an unique opportunity to discuss specific areas both formally and informally.

PHOTOGRAPHY FOR AMATEURS AND PROFESSIONALS: Chairman: DR. R. LEECH, 10727 -64 Avenue, Edmonton, Alberta, T6H 1T1

PRACTICAL USE OF INSECT SEX PHEROMONES: Chairman: DR. W. F. STECK, Assistant Director, Prairie Regional Laboratory, NCR, University of Saskatchewan, Saskatoon, Saskatchewan, S7H 2V1

BIOLOGICAL SURVEY OF CANADIAN GRASSLANDS: Chairman: DR. G. PRITCHARD, Department of Biology, University of Calgary, Calgary, Alberta, T2N 1N4

BIOLOGICAL CONTROL BY THE INTRODUCTION OF EXOTIC NATURAL ENEMIES: Chairman: DR. J. S. KELLEHER, Bio-Control Unit, Research Branch, Agriculture Canada, Ottawa, Ontario, K1A 0C6

BLACK FLY BIOLOGY AND CONTROL - PROGRESS AND PROGNOSIS: Chairman: DR. M. CHANCE, Manager, Canada Biting Fly Centre, Department of Entomology, University of Manitoba, Winnipeg, Manitoba, R3T 2N2

HONEYBEES: Chairman: DR. R. SHEUL, Department of Environmental Biology, University of Guelph, Guelph, Ontario, T6H 1T1

LEAFCUTTER BEES: Chairman: DR. K. W. RICHARDS, Agriculture Canada, Research Station, Lethbridge, Alberta, T1J 4B1

Suggested areas for discussion, proposals for active participation, or requests for detailed information should be made directly to the appropriate session chairman.

COMMITTEE FOR A STUDY OF THE COST OF DESTRUCTIVE INSECTS IN CANADA

Formal approval of an Entomological Society of Canada project to evaluate the economic costs of destructive insects on apple, onion, and potato production in Canada has been granted.

The objectives of the study are threefold:

1. Describe the costs for current insect control methods for apple, onion, and potato production in Canada.
2. List the potential losses (costs) if no control methods were used on insects.
3. List the present costs resulting from insect infestation for each of the three crops in terms of crop loss incurred despite control measures.

In the process of this study, a model for evaluating crop loss due to insects for other crops in Canada will be developed.

The study team is composed of one experienced economic entomologist (Dr. John A. George, Professor, University of Western Ontario), utilizing 20% of his time, a part-time secretary, and a full-time agricultural economist (Marvin Stemeroff, M.Sc.). The study team is being given guidance by a scientific committee consisting of the following:

McEwen, F.L., Dr.	Chairman Department of Environmental Biology University of Guelph Guelph, Ontario
Harris, C.R., Dr.	Agriculture Canada Research Institute London, Ontario
MacPhee, A.W., Dr.	Agriculture Canada Research Station Kentville, N.S.
Martel, P., Dr.	Agriculture Canada Research Station St. Jean, P.Q.
McMullen, R.D., Dr.	Agriculture Canada Research Station Summerland, B.C.
Pree, D.J., Dr.	Agriculture Canada Research Station Vineland Station, Ontario
Shemanchuk, J.A., Mr.	Agriculture Canada Research Station Lethbridge, Alta.

The study team is urgently soliciting submissions from society members who may possess data, (published or unpublished), that are relevant to the stated objectives. Society members' support and co-operation is needed to make this Entomological Society of Canada study a success.

Submissions and/or contacts may be addressed to:

Marvin Stemeroff, c/o Department of Environmental Biology, Graham Hall, University of Guelph, Guelph, Ontario N1G 2W1, Phone: (519) 824-4120, Extension 2776 or 2777

PERSONALIA

M. Lucien Huot assumera un deuxième mandat comme doyen de la faculté des sciences et de génie à l'Université Laval. Auteur d'une cinquantaine de publications dans diverses revues scientifiques, M. Huot a débuté à cette institution comme professeur à la faculté des sciences et de génie et à celle des sciences de l'agricuture et de l'alimentation en 1962.

M. Yvan Hardy occupe maintenant officiellement le poste de doyen de la faculté de foresterie et géodésie de l'Université Laval, poste qu'il comblait de façon intérimaire depuis octobre dernier. Professeur à cette institution depuis 1970, il a été nommé directeur du département d'aménagement et sylviculture de 1975 à 1978 et vice-doyen de la faculté de foresterie et géodésie en août 1979.

SCIENCE POLICY COMMITTEE: DOSSIER OF IMPORTANT ENTOMOLOGICAL SUBJECTS IN NEED OF STUDY IN CANADA AND LIST OF NEGLECTED AREAS OF ENTOMOLOGICAL RESEARCH

The Science Policy Committee was directed by the Governing Board at its meetings in October, 1980, to develop a dossier of important entomological subjects in need of study, so that the Society would be enabled to develop a strong factual base about problems of high entomological priority in Canada. From time to time, certain of these items, with supporting statements, will be recommended to the Governing Board as matters of high priority for elaboration as a brief by a special committee. When accepted by the Board, the brief will be brought to the attention of appropriate agencies (such as federal and provincial departments of agriculture and forestry, the National Museum, and universities) as recommendations from the focal entomological body in Canada. The intent is that ESC fulfil its role as the constructive voice of professional entomology, and as a respected partner in shaping the course of entomology in Canada.

The Society has already taken such initiatives, from which have emerged several publications in the ESC Bulletin: "Pesticides and the Environment" (1970); "A Biological Survey of the Insects of Canada" (1974); "Entomological Manpower in Canada-- Current Status and Future Projections" (1976); and "The Funding of University Research in Entomology" (1978). The report about the Biological Survey led to a pilot study, and establishment of a Secretariat that is currently associated with the National Museum. Several substantial reports have been produced by the Secretariat, including "Canada and its Insect Fauna" (ESC Memoir No. 108, 1979); publications in press by the Secretariat include one on Arctic Arthropods, and a bibliography of arctic arthropods. The Arctic Arthropods study was funded by a contract with the National Museums of Canada. Financial support for the Manpower Study and for the Pilot Study was received through contracts with the federal Department of Supply and Services. Currently another project is under way, funded by DSS, "A Study of the Costs of Destructive Insects in Canada", and a proposal is in an advanced stage of development for a second manpower study.

At its annual meeting in Winnipeg, on April 7, 1981, the Science Policy Committee considered the directive to develop the dossier. Members recognized that it would be easy for the Society to become over-committed, and with contract work already in progress, it did not seem desirable to push ahead with additional projects immediately. The Committee also recognized that a recommendation for action need not involve the Society directly, just as long as an appropriate agency agreed to take the required action. In any event, if the Society is to act in an effective, sustained manner, it must have plans for the future, and so the Committee agreed that lists of topics should be prepared now.

The Science Policy Committee recommended preparation of two lists: one, to contain titles of problems of high entomological priority in Canada ("The Dossier"); and a second, to contain titles of neglected areas of research. Items on the second list would be available for transfer to the Dossier, as circumstances require. Recommendations to the Governing Board for preparation of a brief will depend on the priority attached to the proposal, and on the level of these activities that the Society can sustain.

Under this plan, the first subject recommended by the Science Policy Committee, and approved by the Governing Board at its annual meeting in October, 1980, for preparation of a brief is "The need for permanent Government-supported research concerned with the role of insects in development of renewable natural resources in Canada". A subcommittee of Science Policy, under the chairmanship of J.N. McNeil, is now working on this brief.

Other subjects proposed for The Dossier were:

1) Biological control of insect pests and noxious weeds (by insects) in Canada: organization and implementation of research.
2) Microbial insecticides: their registration and use in agriculture and forestry.
3) Pest Control Products Act: revision in the light of current ideas about pest management.
4) Provincial regulations for and registration of Pest Control Operators and dealers in agricultural chemicals: a comparative study.

These were discussed, but have not been endorsed unanimously by the Committee. They will receive further consideration.

Titles proposed for the list of neglected areas of research were:

1) Cold-hardiness of northern insect species.
2) Role of terrestrial arthropods in decomposition of plant litter.
3) Insect pathology.
4) Insect transmission of disease.
5) Insect resistance to insecticides.
6) Taxonomy of insect larvae.

The Chairman of the Science Policy Committee was instructed to advise members of ESC about preparation of these lists, and to solicit additional subjects for inclusion. Items sought are programs that are likely to have extensive ramifications for entomology in Canada, rather than projects of smaller scale.

The intention of the Committee in making this request is to give members an opportunity to participate in improving the information base available to the Governing Board. The better informed the Board is, the more effective it is likely to be in acting on behalf of entomology and entomologists in Canada. It is certainly not the Committee's intention to interfere in or abscond with research initiatives of individual members.

Each submitted proposal should contain a title, and a statement about why the topic is of importance. An example follows, based on statements made by J. Antony Downes in his Gold Medal address (ESC Bulletin, 1977, 9(4): 118-119) about areas of entomological research that are being neglected, or at least not receiving the attention they deserve. One of these is cold-hardiness, and the submission might appear thus:

Item for inclusion in List of Neglected Research Topics in Canada.-- Cold-hardiness in northern insects.

Importance of this program.-- Cold-hardiness is one of the major aspects of adaptation by the Canadian insect fauna to extreme seasonality of northern environments. It has important evolutionary and economic implications that serve as the basis for investigation by physiologists, ecologists, systematists, and economic entomologists.

Please send your proposals to:

George E. Ball, Chairman
Science Policy Committee, ESC
Department of Entomology
University of Alberta
Edmonton, Alberta T6G 2E3

PERSONALIA

TAUBER HEADS ENTOMOLOGY DEPARTMENT AT CORNELL

ITHACA, N.Y. - Maurice J. Tauber has been elected chairman of Cornell University's department of entomology, effective July 1981. Tauber joined the Cornell faculty in 1966. His teaching and research interests are focused on the utilization of beneficial insects, insect behaviour, and the environmental and genetic control of insect seasonality in natural populations. He is a Fellow of the AAAS. We congratulate this outstanding ESC member.

LANGUAGE VS SCHOLARSHIP IN FEDERAL GOVERNMENT HIRING

April 29, 1981

Dear Dr. Davies:

I am writing you concerning your recent Editorial in the Entomological Society of Canada Bulletin, 13(1), March 1981. Unfortunately, your Editorial is inaccurate concerning most of the professional staffing actions that you attribute to our Institute.

1. Your statements in paragraph 3, that "the positions to be filled in the future at the Biosystematics Research Institute (BRI) for example, are authorized only at the Biologist 1 level for some with a Masters degree" and that "the job position would be lost to the original unit that needed to fill a specialized vacancy" are erroneous. There are only three BI positions, all French essential, and they are undergoing staffing action at the present time. We will probably not staff any similar positions until the incumbents of these positions receive their Ph.Ds. The latest professional position under recruitment in BRI is a RES position and has a language rating of English or French.

2. Later, in paragraph 3, you stated that "Even if they (BIs) did later prove satisfactory, the unit would not have them doing the needed work until they completed their 2- or 3-year doctoral training" simply is not correct. In fact, the reverse is true. Because of a very limited source of supply, many of the taxonomists with Ph.Ds that we have recently hired in BRI were trained in one area and had to be trained in BRI to work in another. Our BIs will receive their Ph.D. training in the area that BRI needs an expertise and the BIs will be working on our problems while they are studying for their Ph.Ds.

3. Your fourth paragraph implies that the successful candidates for our positions would be poorer students then those receiving NSERC grants. I do not think that you have any factual information that would support this opinion. I certainly consider the applicants for our BI positions to be of a very high calibre.

4. The opinion expressed in your fifth paragraph is not consistent with my own experience. It appears to me that the best method of obtaining professionals with the French expertise required in BRI is to hire employees who already have a good knowledge of the French language. Not only do staff members who acquire speaking ability in French secondarily tend to lose their ability rather quickly, but they are also away from their professional activities for extended periods on language training.

We have for many years staffed positions in BRI as English essential and Bilingual. We have only recently started staffing positions with the language classifications of French essential and English or French essential. I think that there is something wrong with Science in Canada when some of its influential members protest of "politically motivated hiring of scientists" when we give three of our positions the rating of French essential but did not protest during a period when most professional positions at both the RES and BI level were classified as English essential. I also think that it is not in the best interest of Science for you to present erroneous and slanted information to back up your arguments.

G.A. Mulligan
Director
Biosystematics Research Institute
Research Branch, Agriculture Canada
Ottawa, Ontario
K1A 0C6

PERSONALIA

Professor A. Grant Robinson attended an International Symposium on Evolution and Biosystematics of Aphids from 5-11 April 1981 in Warsaw, Poland. It was sponsored by the Institute of Zoology of the Polish Academy of Sciences and was held in a "palace" of a former Polish count at Jablonna, near Warsaw. Thirty-four scientists from 17 countries attended. The presentations were in English and authors had submitted manuscripts on more lengthy topics prior to the meeting. This provided more stimulus for discussion. Dr. Robinson's paper dealt with aphids on ferns. The Symposium will be published under the auspices of the Institute of Zoology.

Mr. G.A. Mulligan, Director
Biosystematics Research Institute
K.W. Neatby Building, Agriculture Canada
Ottawa, Ontario
K1A 0C6

June 25, 1981
Your file #610.8S1

Dear Mr. Mulligan:

I find your rebuttal of my editorial in the March Bulletin (vol. 13, no. 1) of the Entomological Society of Canada aims mainly at certain details but not at the main issue implicit in the new hiring practice, namely that French Essential is being stressed rather than scholarship. However, I shall comment on the points that you argue.

1) The information received by me indicated that the next seven positions at BRI were to be advertised as "French Essential". I understand now that six of these have been filled, three at the Biologist 1 level (B.1) and three at the Research Scientist level (RES). It is possible that additional hiring in Agriculture Canada will be advertised French Essential. Agriculture Canada is only one among many federal government departments that have been instructed to file a strategy for increasing francophone hiring in science. Apparently directives from the Treasury Board and Public Service Commission reflect that federal ministers attach great importance to increasing francophone participation in such vital federal activities. In some departments a higher level of French-speaking employees may be appropriate. On the other hand among scientists, scientific expertise should be the foremost criterion. Certain individuals at BRI indicate that the language used in the laboratory is English and that there is little need for scientists to use French. Most telephone calls in French go through bilingual secretaries, and correspondence, even from overseas, is almost all in English. Your statement that BRI staff that learn French secondarily lose this ability quickly, strongly suggests that French is rarely used in BRI business. If French were spoken regularly the ability would not be lost.

2) You state that "our B-1's will receive their Ph.D. training in the area that the BRI needs expertise". Depending on how narrowly this is applied, the B-1 trainee will have his imagination and idea development inhibited at a time when these should have full play. This has shades of training a technician. But the central point here is that the two individuals in this examples are not comparable; a taxonomist who has proven his credentials for the job by completing a Ph.D. as a condition of employment is a good prospect for an assignment to a insect group that he may not have worked on previously because he has the background principles on which to proceed, and can certainly begin to do effective work in BRI in less than three years. The student employed while working on a Ph.D. still has to assimilate the principles of taxonomy and do a creditable piece of taxonomic research before he has proven himself worthy of the job, and moreover he is not available at BRI for 3 years to do any of the ancillary tasks of staff members, such as service identification.

You imply that there are no Ph.D.'s currently being trained at Canadian universities in areas specifically required by BRI. There are several, however, including three on parasitic Hymenoptera.

Why could you not find out which students were engaged in doctoral programmes in insect taxonomy at Canadian universities and select the best of these for your scholarship support for ultimate work at BRI?

The training of BRI taxonomists, knowledgable in one area, for research on a different taxon is something that occurs on a continuing basis in relation to changes in emphasis, retirements, and the lack of availability of suitable replacements at the time a position become vacant. Taxonomists that show flexibility in being able to work on several taxa are often more valuable than those with too narrow a focus.

3) In my fourth paragraph I contrasted the Ph.D. graduand, as someone highly selected in quality, with an M.Sc. applicant who may not yet have had the opportunity to be tested in doing original research. The Honorable Eugene Whelan wrote that an advantage might accrue by hiring at the M.Sc. level resulting from "access to a much larger pool of excellent candidates". One might say why not enlarge the "pool" still futher, by hiring at the Bachelor level. Your letter states that your M.Sc. applicants are of "a very high calibre". However, they still may not prove

able to do original research in the area needed by BRI. They may not even complete their Ph.D. degrees. Some M.Sc. applicants applying may have high scholarship but be attracted more by the surety of a long-term appointment with their Ph.D. studies paid for at approximately $18,000 per year, than by a love for taxonomy or even for entomology. Virtually all graduate students in science at Canadian universities apply for NSERC scholarships but only the best (with 2-year averages of A-A+) receive such an award - highly competitive! Nevertheless the best Ph.D. students in the country receive no more than $15,000-$17,000 annually (including scholarship and teaching assistantship) and usually far less. Where is the incentive for high scholarship, if possibly less qualified people are receiving greater employment opportunities and higher financial support?

4) You are probably correct in your remarks alluding to the unsatisfactory result of training anglophone scientists in French which I mentioned in my fifth paragraph. But is a speaking knowledge of French necessary in such fields as insect taxonomy? For certain disciplines, such as insect taxonomy, there has been little training available in French-speaking Canadian universities. This is why the number of francophones is low in many specialized government departments. I cannot believe your statement that there was a period "when most professional positions at both the RES and B-1 levels were classified as English essential". Surely BRI appointments in the past have been based on scientific ability rather than language. In fact, there have been good francophone scientists hired by BRI over the years.

My editorial was an honest attempt to point up a dangerous trend that appeared to be developing in hiring practices in Agriculture Canada as exemplified by cases at BRI - a trend where Treasury Board and the Public Service Commission were imposing language at the expense of scientific expertise for the hiring of scientists in federal departments.

Yours sincerely,
Douglas M. Davies
Editor, ESC Bulletin

27 May 1981

The Right Honorable
Pierre Elliott Trudeau PC MP
Prime Minister of Canada
Langevin Block
Ottawa,Ontario K1A 0A2

Dear Sir:

At the direction of the Executive Council of the Entomological Society of Canada, I am writing to express our disagreement with the "French essential" policy recently implemented for hiring scientists in the Biosystematics Research Institute of Agriculture Canada. It is our understanding that the effect of this policy for the Biosystematics Research Institute is to fill the next six vacant positions for scientists with francophone or bilingual persons; and that the intent of the policy is to increase the proportion of francophones employed in Agriculture Canada.

Let me make clear at the outset that the Entomological Society of Canada has many francophone members from many parts of Canada, and that this Society supports the principle of encouraging a higher level of participation by scientists of anglophone-francophone capability in entomology as in other professions represented in the public service of Canada. We do object, and strenuously, to the methods employed to gain this objective, in the present case in the Biosystematics Research Institute.

We object primarily because the paramount qualification for any scientist is demonstrated competence in his field of specialization. Entomology is one of the most important branches of biological science in Canada because the very large contributions to society and to the economy from agriculture and forestry depend upon sound and continuing research on our insect competitors. Recruitment of entomologists to undertake this work under a policy which places higher priority on the language spoken by the scientists than upon his scientific ability, is wrong. While such a policy may serve political ends, it is a disservice to Canada's best interests in science and resource management, and is, moreover, a questionable contribution to national unity.

The manner of implementing the "French essential" hiring policy is open to criticism on several counts. The first is that advertising for the positions was restricted, comprising visits to Quebec universities with letters to others where there was deemed a possibility of recruiting francophone candidates. Because the positions were not advertised in appropriate professional journals, not even all bilingual Canadian candidates could know of their existence.

A second criticism is that where there are not sufficient numbers of qualified francophone candidates with a Ph.D. in systematic biology, recruitment is to proceed at the M.Sc. level, currently at a salary of some $17,000 the individual taking educational leave to obtain the required Ph.D. degree. In hiring an untried M.Sc., rather than a Canadian with a doctorate in the appropriate area of specialization, the BRI effectively relinquishes that person's services for a period of two to four years. Moreoever, the individual hired at the M.Sc. level will participate in the same courses, and work in the same laboratories as an employed Ph.D. student on a scholarship from the National Science and Engineering Research Council of Canada (NSERC) at a salary approximately double the maximum stipend allowed for the scholarship student, even though the scholarship was awarded in a nation-wide competition to select students of outstanding potential. The employed student on educational leave from Agriculture Canada is so privileged only because he speaks French, but he has yet to prove his ability to undertake independent research, the essence of the Ph.D. degree, and his general academic qualifications have not been subjected to a nation-wide competition. Surely the only logical way to recruit a research scientist is to choose the best qualified among candidates who have completed a Ph.D. degree and have achieved at least that minimum qualification. The hiring policy now in effect is extremely discouraging to scholarship students who are supporting their own Ph.D. studies, and is an embarassment to francophones who have achieved a Ph.D. by the same route. We have difficulty in understanding how this policy contributes to national unity and in understanding how it derives from your own statement "our language policy must never be a barrier to any Canadian wanting to work in the Federal public service" (Commons Debates, p. 4304, May 31, 1973).

A third criticism derives from the argument that all Canadians have the right to be served in the official language of their choice, and therefore each language group must be equitably represented in all segments of government (that is, roughly in proportion to numerical representation of the two groups in the Canadian population as a whole). This notion could conceivably have merit in government units that deal daily with the populace, but it is of little consequence in relation to staff of the government research institutes in Ottawa. These institutes are responsible principally for supporting other units in their respective departments where direct contact with the public is minimal. Having some staff members who are bilingual is sufficient for intragovernment communcation.

I believe there are better ways of ensuring that positions becoming available from retirements at BRI and other units in Agriculture Canada are filled by the best and most appropriate young scientists than by using a "French essential" requirement. If knowledge of French is considered essential, it would seems logical to offer employment to persons who have demonstrated research ability, with the stipulation that their French be upgraded if necessary. The competition should be at the Scientist 1 (not Biologist 1) level for the best trained Canadian available to fill the specialized position. An increase in the number of francophones available for these positions in systematic biology in the future could be achieved more effectively than with the present policy by allotting a number of NSERC post-graduate scholarships specifically for systematic biology, with selection criteria giving some advantage to bilingual students.

In closing, I remind you that the Biosystematics Research Institute of Agriculture Canada enjoys a world-class reputation because of the excellence of its scientific staff. If this reputation is to continue, the only criterion that can apply in replacing retiring staff members is that of demonstrated excellence in systematic biology for all Canadian candidates. My colleagues and I in the Entomological Society of Canada are deeply concerned that the "French essential" policy of the Federal Government will erode scientific excellence. We ask you to consider the case we have advanced and to seek alternatives acceptable to the entire scientific community in this country.

Sincerely,
S.R. Loschiavo
President

Dr. A. Francoeur, President
Société entomologique du Québec
Université du Québec
CHICOUTIMI, Québec G1W 3H5

3 June 1981

Dear André:

Attached is a copy of a letter prepared by the Science Policy Committee of the ESC and sent to the Prime Minister of Canada over my signature on behalf of the Society. We endorse the government's objective to increase the proportionate number of francophone employees in the public service. It is desirable and necessary that the people of Canada be served in the official language of their choice. In some parts of Canada the language of choice is French and in other parts it is English.

Our Society and other scientific societies strongly support the fundamental principle that research ability and scientific competence be the primary criteria for hiring scientists in the public service or elsewhere. I am sure that you support this basic principle. A scientist whose mother tongue is French and who is seeking employment would wish to be hired on the basis of his or her ability as a scientist.

Our Society is concerned also about the Public Service Commission's method of recruting people for the positions in the Biosystematics Research Institute, Agriculture Canada. Contacts have been restricted to one area thus eliminating from competiton qualified bilingual Canadians from other areas.

A third area of concern is the inequality created by allowing recruitment at the M.Sc. level if qualified francophone Ph.D. candidates are not available. Our concern is detailed in paragraph 2, page 2 of the attached letter. Strikingly similar concerns have been expressed by the President of the Biological Council of Canada in his letter to the federal Minister of Agriculture.

I invite your comments on the position taken by the Entomological Society of Canada.

Personal regards,

Sincerely,
S.R. Loschiavo, President

Le 17 août 1981

L'Editeur, Bulletin de la SEC

Cher Monsieur,

La politique présente du gouvernement Fédéral concernant l'engagement des scientifiques (French Essential) a suscité beaucoup de réactions et la S.E.C., ainsi que d'autres Sociétés scientifiques ont pris position contre cette approche. Personnellement j'accepte difficilement que la compétence scientifique ne soit pas la raison principale de l'engagement d'un scientifique et je conçois aisément que la qualité scientifique pourra en souffrir si on engage quelqu'un principalement sur une base linguistique. Récemment un de mes étudiants a été invité à présenter sa candidature pour une position en taxonomie malgré le fait que sa formation soit en étho-écologie. A mon avis ce jeune scientifique sera un atout formidable pour une équipe qui travaille dans son domaine mais je ne crois pas qu'il fera avancer énormément nos connaissances taxonomiques. Cet étudiant était également de cet avis et a dit non merci. Cependant je connais deux étudiants qui ont été engagés récemment et j'appuie entièrement leur sélection. Ce sont des candidats très bien qualifiés mais en raison de la politique gouvernementale plusieurs personnes les considèrent comme des scientifiques de deuxième classe qui ont été acceptés uniquement parce qu'ils parlent français. En conséquence ils devront offrir un meilleur rendement pour prouver qu'ils sont aussi qualifiés que les collègues engagés sous d'autres conditions. Une telle situation est injuste et inacceptable et tous les scientifiques responsables, et je crois que nos membres le sont, doivent faire preuve de sympathie et de compréhension pour les jeunes hommes et jeunes femmes qui se trouvent dans une position aussi désagréable. Les étudiants que je connais veulent être engagés pour leur compétence scientifique et non pas pour satisfaire les quotas gouvernementaux. En conséquence on ne doit pas faire en sorte

qu'ils payent pour une politique gouvernementale qui les touche mais dont ils ne sont aucunement responsables.

J'ajoute enfin, que je ne crois pas que des poèmes anonymes tels que celui publié dans le Bulletin de juin 1981 constituent le moyen le plus a propos pour exprimer des opinions dur le sujet. Si quelqu'un a une opinion qu'il veut émettre qu'il le fasse, mais qu'il la signe. Plusieurs personnes non parfaitement bilingues m'ont demandé d'expliquer le poème afin de s'assurer que ce n'était pas une attaque contre les Québécois surtout que le poème est anonyme. Je suis convaincu que la plupart des membres de la S.E.C. auraient eu la même question si la poème avait été écrit en français. Tout malentendu qui pourrait détériorer les liens entre la S.E.Q. et la S.E.C. doit être évité car nous avons un but commun, c'est l'avancement de l'entomologie.

Jeremy McNeil
Professeur agrégé
Université Laval, Québec

The Editor, ESC Bulletin 17 August 1981

Dear Sir:

The present "French Essential" hiring policy of the Federal Government has received considerable attention and the E.S.C., together with other Scientific Societies, has taken a firm position denouncing such an approach. I personally find it hard to accept that scientific competence is not the major criterion for hiring and can forsee that such a narrowminded process could affect the scientific quality within government laboratories. Recently one of my students was asked if he wished to be considered for a position in taxonomy when his training is in behavioural ecology. While he is, in my opinion, an excellent young scientist that would be a valuable addition to a research group working in his area of expertise he would not have helped advance our taxonomic knowledge by leaps and bounds. He was of the same opinion and said no thanks. However I do know two students who have been hired under this policy and I would have no hesitation in giving wholehearted approval to their selection. They are most qualified candidates yet due to this hiring policy will be regarded by many as second rate scientists who got in by the "back door". Under such conditions they must be better in order to be considered as good as those colleagues who were admitted through the "front door". Such a situation is not only unjust but unacceptable, and responsible scientists, and I like to believe our members are, should be sympathetic to and have an understading for the young men and women who find themselves caught in such a position. The students, I know, wish to be hired for their scientific abilities and not to balance some government quota, and they should not be forced to pay for a policy that they did not initiate.

I would also add that I do not believe that anonymous poems, such as the one published in the June 1981 Bulletin, are the most effective way to express opinions relating to this policy. If one has an opinion to express, do so openly and sign your name. Anonymity is often misconstrued. Several people, not completely fluent in English, have contacted me for an explanation as they were not sure if it was funny or a cheap shot particularly as the poem was unsigned. I am sure that most members would have similar problems of interpretation if it were written in French. Such misinterpretations do nothing to maintain good relations between the E.S.Q. and the E.S.C. As a member of both Societies, I feel that such situations should be avoided as both Societies have a common goal, the advancement of the science of entomology.

Yours sincerely,
Jeremy McNeil
Professeur agrége
Université Laval

Dr. D.M. Davies
Editor, ESC Bulletin

Dear Dr. Davies:

I was suprised and chagrined by the tone of the poem that appeared on the editorial page of the June 1981 issue of the Bulletin. The poem, albeit couched in rather clever wording, is prejudicial, and, to say the least, in very poor taste. No Francophone can read this without taking offence, and I suspect this sentiment would be shared by many Anglophones. I am in full agreement with the principle that scientific competence be the primary criteria for hiring scientists, but a satirical poem by an anonymous author (quel courage) is hardly the way to press the point.

J.R. Blais
Laurentian Forest Research Centre
P.O. Box 3800, Ste. Foy, Qué., G1V 4C7

RETIREMENT

M. Ellen MacGillivray

Ellen MacGillivray retired from her position as a research scientist at the Research Station, Agriculture Canada, Fredericton, in December 1980.

She was born in South Devon and after earning a Bachelor's degree at the University of New Brunswick went on for a Master's at the University of Michigan and a Ph.D. at the University of Leiden in the Netherlands under the supervision of Dr. Hille Ris Lambers. Her association with the Fredericton offices of Canada Department of Agriculture began during her undergraduate years and after graduation she combined graduate studies with agricultural research posts.

At first Ellen's research interests were centered primarily on the taxonomy and the ecology of aphids. This work earned her a worldwide reputation. Scientists here and abroad are still requesting and welcoming her advice.

Later on, as the concept of pest management gained momentum in the entomological world, she was asked to initiate and develop a pest management program for aphids and plant viruses of potatoes in New Brunswick. She took to the task with her characteristic true commitment. Not only did she succeed in establishing a strong management program but she also worked hard at convincing her fellow agrologists that cooperation between governments, universities, and the various scientific disciplines was necessary to the survival of such programs. Ellen has written some 75 scientific papers.

Dr. MacGillivray's apparently unlimited energy still left her enough time to be active in many professional and non-professional societies. In 1977 she became the first female President of the Entomological Society of Canada. She was named a Fellow of the Society in the following year. She has also served on several committees of the ESC and the Acadian Entomological Society. She received the 1981 New Brunswick Seed Potato Growers' Association Award for her contribution to pest control. Her excellence as an agricultural researcher, her contribution to the science of entomology, her constructive influence on extension in N.B., and her dedication were further recognized on May 21, 1981 when she received an Honorary Degree from the University of New Brunswick.

Since her retirement Ellen has been busier than ever as a consultant for the "Aphid Alert" program and serving the Fredericton community as a member of various committees. Ellen and her husband George hope to be able to find more time to enjoy their favorite sports, promote their Scottish heritage with the St. Andrews Society, and take care of their dogs.

G. Wood

G. Boiteau

ACTIVITIES OF THE PUBLIC EDUCATION AND YOUTH ENCOURAGEMENT COMMITTEE OF THE ENTOMOLOGICAL SOCIETY OF MANITOBA

Displayed here is a picture of the membership button being made for the "Young Entomologists" Club by the Entomological Society of Manitoba. This excellent design by Carol Galloway incorporates the local tiger beetle, Cincidella formosa manitoba. These are available for 25¢ per button.

The first workshop put on by the Public Education and Youth Encouragement Committee on 26 April 1981 featured "how to make collecting equipment". Twenty-five Young Entomologists attended and because of their enjoyment suggested a workshop every week.

Since January, talks have been given to seven Beaver groups with children aged 5-7 years. They enjoy coloured slides of insects and the box of pinned insects. Field trips are planned for "Young Entomologists" and an Entomology display was held in June at St. Vitas Shopping Centre with collections, pictures, and posters.

Kathy McGinnis, Chairman
Peter Arntfield — Terry Galloway
Vladimyr Burachynsky — Sharon Leonard

REPORT ON OTTAWA NATURAL HISTORY COLLECTION WORKSHOP

The National Museum of Natural Sciences sponsored a workshop on the care and maintenance of natural history collections during 27-28 May 1981 at Marion Hall on the campus of the University of Ottawa. Over 90 participants were present from all provinces except Prince Edward Island and Newfoundland. Keynote speakers were Dr. Caesar Romero-Sierra of Queen's University discussing the Potentials of Diapirology and Dr. Don McAllister of the NMNS presenting Microcomputer Cataloguing System. Eighteen other contributed papers of varying subjects were presented during the two mornings. In the afternoons guided tours were conducted to the National Herbarium, the Paleobiology Division of the NMNS, the National Collection of Beetles and the Zooarchaeological Identification Centre's Reference Skeletal Collection. Six poster papers on various subjects, and publications and books having to do with the care and maintenance of natural history collections were displayed. Two commercial firms showed their storage systems for collections and members of the University Women's Club of Ottawa were responsible for the registration desk.

The proceedings of this Ottawa Natural History Collection Workshop will be published at a future date. It was generally felt that such a gathering of collection-oriented people was useful and the participants agreed that another workshop should be held during 1983.

Dan J. Faber and Jerry Fitzgerald
National Museums, Ottawa

RESEARCH GRANTS AVAILABLE

The Xerces Society, an international non-profit scientific organization, offers modest grants to support scientific research related to conservation of terrestrial arthropods. Proposals explicitly focused on the biology of potentially endangered species or management of terrestrial arthropod populations and their habitats will be given preference. Grants will usually be several hundred American dollars. Young investigators and those without formal professional affiliation are encouraged to apply. Proposals will be evaluated on the basis of scientific merit, feasibility, and relation to conservation of terrestrial arthropods. Deadline for receipt of 1982 proposals is 30 January 1982. For further information, write to Dr. Francie Chew, Xerces Grants Committee, c/o Department of Biology, Tufts University, Medford, Massachusetts, 02155, U.S.A.

AMATEUR ENTOMOLOGY IN ONTARIO

The E.S.O. was spearheaded in 1863 by a young divinity student from Toronto (Charles Bethune), and a pharmacist from London (William Saunders). The society's rooms in those early days were open to interested youngsters as well as adults, and meetings took place around tables covered with notebooks, reports, and cigar boxes full of insects. The people at these meetings were mostly amateurs. Even after 25 years the society only had two professional entomologists (Baker 1939).

Things have changed, however, and the amateur entomologist, with his cigar box full of insects and notebooks full of observations, has a hard time fitting into the society of jargon-spewing professionals that we seem to have become. This is a deplorable state because interested amateurs cannot only make important contributions in their own right, but help promote public interest in entomology.

The inclusion of a session for amateurs at annual meetings, such as the very successful one at the 1980 London meetings, is an important step towards rectifying this situation. A further step we are currently taking is the initiation of a newsletter for amateurs called The Ontario Insect Collectors' Newsletter. Editing and preparation of the newsletter is a joint undertaking of E.S.O. and the Toronto Entomologists' Association. Hopefully, it will serve to unite Ontario amateurs and serve as a vehicle for notes on collecting, natural history, exchanges, and other material of general interest.

If you wish to be on the mailing list or submit an article, please contact Steve Marshall, Dept. of Environmental Biology, University of Guelph, Guelph, Ontario, N1G 2W1 or Allan Hanks, Toronto Entomologists' Association, 34 Seaton Drive, Toronto, Ontario, L4G 2K1.

Reference

Baker, A.W. 1939. A short history of the Entomological Society of Ontario. Can. Ent. 71: 14-24.

(from Proceedings of the Entomological Society of Ontario. Vol. 111: 2, 1980)

AMATEUR INSECT COLLECTION COMPETITION

Amateur collectors whether members of the Entomological Society of Ontario or not are invited to submit insect collections for competition and exhibition at the Society's 118th annual meeting, from 13-25 October, 1981, at Kingston, Ontario.

Collections should be made with a common taxonomic, environmental, or ecological theme that should be stated and included with the collection. Insects should be identified as best as possible. Judging will be completed by noon, Saturday, 24 October. Award certificates and ribbons will be presented to the winners. The best overall entry will be awarded a best in the competition certificate. If finances permit, cash awards will also be presented. There will be a public showing of all submitted collections. Further information with regards to collecting and the competition can be obtained by writing to the programme committee.

Conditions of Entry:

A completed entry form, or facsimile, must accompany each entry and be sent to the programme committee, c/o Heather McBrien, Biology Department, Queen's University Kingston, Ontario K7L 3N6. All entries should be in the hands of the programme committee by Friday, October 23rd, 1981. Entries will be returned only if accompanied by a self-addressed envelope and return postage. Entries will receive every possible care but neither the Entomological Society of Ontario or the programme committee can be held liable for loss or damage.

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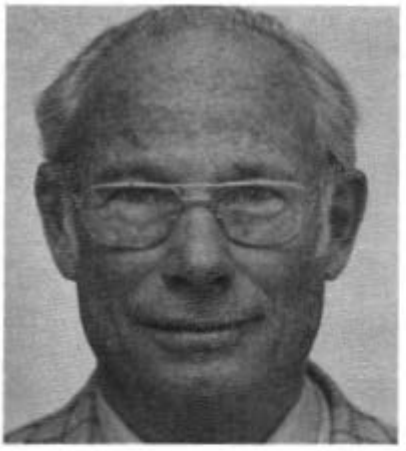

RETIREMENT

M. D. PROVERBS

Dr. M.D. 'Jinx' Proverbs retired from the Entomology Section, Research Station, Summerland, in December 1980 after 33 years with Agriculture Canada.

Jinx received his PH.D. in Entomology from McGill University and joined Agriculture Canada at the Summerland Station shortly thereafter. He worked on a number of insect pests of tree fruits and gained an international reputation for his initiation and development of the sterile male technique for control of codling moth. The final phase of the programme was the release of sterile moths in apples and pears in the Similkameen Valley during the 1978 season. Unfortunately, even though the programme achieved excellent control, the cost of rearing and releasing the moths forced abandonment of the programme in 1979.

Jinx was frequently consulted by entomologists from many countries on the sterility technique and spent a year with the International Atomic Energy Agency in Vienna, Austria during 1965. He was a member of the Board of Governors, Canadian Entomological Society and was Chairman of the Fellowship Selection Committee. He received a number of honours, among them Fellow of the Entomological Society of Canada, Merit Award of the Public Service of Canada, Canadian Silver Jubilee Medal and the Lougheed Memorial Prize in Entomology. During his career, Jinx published 42 scientific papers and 28 miscellaneous papers.

On the nonprofesional side, Jinx was well known as an enthusiastic trout and salmon fisherman. This will be continued during his retirement and perhaps his production will rise to meet his enthusiasm in the years to come.

Harold F. Madsen
Summerland, B.C.

COURSES SPONSORED BY U.S. PUBLIC HEALTH SERVICE

Course No. 2310-L: CONTROL OF MOSQUITO-BORNE DISEASES
April 19-23, 1982 (Registration closes February 26, 1982) Savannah, Georgia
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Course No. 2011-L: EPIDEMIOLOGY AND CONTROL OF VECTOR-BORNE DISEASES
January 25-29, 1982 (Registration closes December 4, 1981) Atlanta, Georgia

Course No. 2012-L: ADVANCED EPIDEMIOLOGY AND CONTROL OF VECTOR-BORNE DISEASES
March 1-5, 1982 (Registration closes January 8, 1982) Atlanta, Georgia

Course No. 2240-L: SURVEILLANCE AND IDENTIFICATION OF MOSQUITOES OF PUBLIC HEALTH IMPORTANCE
May 17-21, 1982 (Registration closes March 26, 1982) Atlanta, Georgia

Tuition fees will be charged for training personnel of private entities.

For application forms and information about the courses, please contact: Centers for Disease Control, Attention: Vector Biology and Control Division, Center for Infectious Diseases, Building 23, Chamblee, Atlanta, Georgia 30333, U.S.A., or phone (404) 452-4055.

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BOOK REVIEWS

SECOND REVIEW

J.F. McAlpine, B.V. Peterson, G.E. Shewell, H.J. Teskey, J.R. Vockeroth, and D.M. Wood (Coordinators). Manual of Nearctic Diptera, Volume 1. 1981. Agriculture Canada, Research Branch, Ottawa, Monograph 27, pp. vi + 674, frontispiece, 2026 figs. $40 in Canada, $48 (Canadian) in other countries.

At last we have the long-awaited first volume of a two-volume project that has been known among dipterists as a "a revision of Curran's Manual". Manuals usually build on predecessors, but this volume goes so far beyond the earlier ones on North American Diptera, the three by Williston and Curran's of 1934, that it is a monumental work in its own right.

The volume contains 48 chapters, of which five (147 pages) are general (introduction, morphology and terminology of adults and larvae, and family keys for adults and larvae), and 43 (490 pages) on families (24 of Nematocera, 19 of orthorrhaphous Brachycera). An extremely detailed Index occupies 34 pages. Volume 2, expected about 1983, will contain the remaining 65 families, including the Muscomorpha (Aschiza and Schizophora Acalyptratae and Calyptratae). Like the manuals by Williston and Curran, the keys are to families and genera, but not to species. The Manual is coordinated by the dipterists of the Biosystematics Research Institute, who have written the general chapters as well as a number of those on families. Forty-four other specialists are participating, for a total for both volumes of 50 authors from seven countries.

The general chapters on the morphology and terminology of adults and larvae, especially the detailed and copiously illustrated review of female and male terminalia, constitute a major contribution to the study of Diptera. The comprehensive and thorough reviews of anatomy and anatomical terms attempt to harmonize terminology throughout the order by application of morphologically correct terms. In a few instances, the authors did bow to usage. For example, the morphological frons extends from vertex to frontoclypeal suture, but here "frons" is used for the postfrons, dorsal to the antennal insertions, and the term "face" is used for the prefrons, below the antennae, thereby also saving such well known terms as parafacials and facial ridges. Some will no doubt wish that other equally pragmatic decisions had been taken. For those like myself, who have worked a lifetime in families of the Muscomorpha, adoption of such terms as katepisternum for sternopleuron and postpronotum for humeral callus will not be easy. Knowledge of the other terms will still be needed because a vast literature is built on them, especially in chaetotaxy. A complete synonymy was not attempted, but fortunately common synonyms are cited and also indexed, so that one can quickly find such terms as epaulet or remigium or hypopleuron, and find out what they are called in the Manual. In view of the attention given to citing synonyms, it is surprising that there is no mention whatsoever of the system of wing venation that uses numbered veins (1st vein, 2nd vein, etc.), which was used in the manuals of both Williston and Curran, and commonly in cyclorrhaphous flies.

The well constructed keys to the 108 families (for both volumes) are welcome, especially because of less commonly known families such as the Axymyiidae, Synneuridae, and Aulacigastridae. Only time and use will reveal how well the keys will work. It is not unlikely that occasional odd genera will be hard to place; e.g., I note that the odd asteiid genus Loewimyia, which lacks an arista, cannot be placed to family, stopping at couplet 75, page 105. It is great to have a key to larvae that ventures into the acalyptrate families, even though this must be used with caution, as the author warns, because larvae of fewer than 5% of all Nearctic Diptera have been described, and none at all for 13 families, 12 of them acalyptrates.

Each family chapter follows an established format: first an overview, with descriptions of adults and immature stages, followed by sections on "Biology and Behavior" and "Classification and Distribution", the latter with notes on the size of the family, varied kinds of classifications, and fossil record. Then follows a key to the genera, and finally the references cited. For each genus and subgenus there is an abbreviated statement of the number of described Nearctic species and general distribution, and reference to any published key. If only one Nearctic species is known, its name is given.

The superb illustrations, mostly by Ralph Idema, are an outstanding feature of the Manual. Each family is headed by a habitus drawing, and the keys are fully illustrated by figures of heads, wings, genitalia, etc. The uniformity of style

is particularly pleasing. The habitus figure is said to be "usually a species belonging to the type genus", but I note that other genera were used for 14 families. Most of these are small families and the type genera may not have been available, or not Nearctic, but it is surprising to find such families as Culicidae and Asilidae not represented by the common Culex and Asilus.

No work as massive as this is ever completely without mistakes, but this book seems astonishingly free of them. I saw only three trifling typographical errors. Other errors also seem few: p. 16, Johnson's organ should be Johnston's; p. 194, the tribe Paltostomini, based on Paltostoma, should be Paltostomatini; p. 291, the original spelling of Brachyneura was Brachineura; pp. 497 ff., Stratiomys is of masculine gender and the specific name should be barbatus; p. 504, Clariopsis is of feminine gender and the specific name should be decemmaculata; pp. 544, 548, Painter's revision of "Apioceratidae" was actually published in 1938, not 1936 (cf. Diptera Catalog).

The book is handsomely bound in red hard cover with gold lettering. The pages are large, 8 1/2 X 11 inches, with double columns, and the typography is clear and easy to read.

This Manual should tremendously stimulate and assist in the study of the order Diptera. The combination of the Manual and the "Catalog of the Diptera of America North of Mexico" (Stone et al. 1965) gives a modern basis for students of Nearctic flies. For the present and the immediate future there will of course be some difficulties of coordination between the two, especially because of the great changes in generic classification that have taken place in some families. Two examples will suffice: (1) the Manual's key to Cecidomyiidae includes 65 genera not found in the Catalog; and (2) Tipula, subgenus Beringotipula Savtshenko is said in the Manual to contain "22 spp.; widespread", but this subgeneric name is not in the Catalog and one is without a clue as to which species belong. Obviously, as soon as possible after Volume 2, a new edition of the Catalog is a must!

Regardless of errors noted or morphological terms disliked or any other criticism, I can summarize the Manual with a single word: Magnificent!

Curtis W. Sabrosky
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(see also review by G.C.D. Griffiths in Bulletin 13(2): 49-55, June 1981)

Corrections

Book Review: Manual of Nearctic Diptera. Volume 1. J.F. McAlpine et al., by G.C.D. Griffiths in ESC Bulletin 13(2): 49-55.

Page 53, line 11 - insert at end of line
"structures. I suggest that it is the ontogenetic process, not the final"
Line 47 - insert at end of line
"misleading precedents, it is not surprising that McAlpine too gives"

Hinton, H.E. 1981. Biology of Insect Eggs. Pergamon Press, 1125 pp. in 3 vols. $400.00 U.S.

"It proved very difficult to decide what should or should not be included in a work on the biology of insect eggs, and in the event I ended by pleasing myself" (p.1, ll. 1-2). This is surely a fair statement, and much of the text relates to questions of special interest to Howard Hinton, and to which he made basic contributions in his own researches. But overall, I think, what he had in mind was to discuss the egg stage in its form and functioning as an organism related to its environment, a biology of the first period of the life of an insect. It is the only work that makes this attempt; in any sustained and reasonably comprehensive way. The development of the embryo within the egg is excluded, as adequately treated elsewhere.

The work is in three volumes. The first discusses general subjects and themes: fecundity; oviposition; the structure of the egg shell, and respiratory systems; a chapter on the respiratory efficiency of egg plastrons; water relations; cements and protective jellies; the biochemistry and fine structure of egg shells and oothecae; predators of eggs; defensive devices; and parental care. It concludes with an impressive series of 155 plates of SEM photographs of the detailed structure of eggs of many orders, virtually all taken by Hinton himself. The second volume consists of chapters on the eggs of the various orders, one by one, from Ephemeroptera to Diptera. The third volume is mainly an extensive bibliography of over 6,000 titles; this is followed by the indices and a bibliography of Professor Hinton's publications, 1930-1977.

Overall, it is a valuable but imperfect contribution to entomology. Valuable in bringing together the author's unrivalled knowledge of the eggs of insects, the fruit of curiosity, insight and industry sustained over many years. Imperfect, because there is little attempt at a balanced or comprehensive treatment - in some places haphazard would not be too strong a word. The chapters on the orders are notably unequal, with Hemiptera treated in 80 pages and the Hymenoptera and Lepidoptera in 5 and 8 respectively. The individual chapters tend to mix important and original discussions with lists of details gathered from a scattered and uneven literature and often not leading to any well defined conclusion.

Against this must be set the long and valuable sections that relate more strongly to Howard Hinton's own researches, and often indeed to areas of knowledge that he himself was the first to open up. First and foremost is the chapter on the respiratory systems of the egg shell, with his theory of the important adaptive value of the egg plastron in microhabitats that are alternately dry and flooded. As he points out, the study of the aquatic adaptations of terrestrial insects had been almost entirely overlooked. But whenever it rains heavily a large number of terrestrial insects are submerged beneath a layer of water; and this happens inevitably to eggs attached to a substrate. This section on the egg shell is supplemented and illustrated by the magnificent atlas of SEM photographs already mentioned. His competence in biochemistry and biophysics appears in many places, but especially interesting to the ordinary entomologist is his ability to range from this level to functions and adaptations as encountered in the field. Other significant chapters with a substantial contribution from Hinton's own work include those on parental care of eggs and on the Hemiptera.

The volumes are very well produced on heavy glossy paper, and correspondingly (or perhaps indeed unreasonably) expensive. There is a scattering of accidental mis-spellings of proper names, e.g. Henning (for Heming), p. XXIV; Pentatomorpha; Nonnochoristidae; Arctias (for Actias); and so on, though nearly all of them are given correctly elsewhere in the book; and at least one accidental mis-statement of fact - the curious non-functional eggs known as repagula are not produced by Mantispidae (see p. 240) but by Ascalaphidae (as on p. 647). Sadly, the work was not quite complete when Professor Hinton died in August 1977, and two potentially very interesting chapters, on the reproductive system (and presumably the formation of the egg) and on the micropyle are represented by short lists of references only.

But in spite of the unevenness, it must be said in conclusion that the work is filled, page after page, with interesting and thought-provoking ideas and observations. Some few of these, perhaps, are too hasty; many of them are sure to prove insightful and fruitful in the future. All this was characteristic of Howard Hinton, and forms part of a legacy that few entomologists have left in such variety and abundance.

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BOOK RECEIVED

Bangsholt, F., O. Biström, S. Lundberg, J. Muona, H. Silfverberg, and A. Strand (1979). Enumeratio Coleopterorum Fennoscandiae et Daniae. Helsingin Hyönteisvaihtoyhdistys Helsingfors Entomologiska Bytesförening, Helsingfors. 79 pp. $US. 8.00. Available from Helsingfors Entomologiska Bytesförening, Zoologiska Museet, N. Järnvägsg. 13, SF-00100 Helsingfors 10, Finland.

BOOK REVIEWS

Kelton, L.A. 1980. The Plant Bugs of the Prairie Provinces of Canada. Heteroptera: Miridae. In The Insects and Arachnids of Canada. Part 8. Biosystematics Research Institute, Ottawa, Ontario. Publication 1703: 1 - 408. Canadian Government Publishing Centre, Supply and Services Canada, Hull, Quebec, Canada K1A 0S9. Price: in Canada, $9.95; in other countries, $11.95

As noted by the author in the Introduction, until recently, the only publications on North American Miridae to aid in species identification were two monographes by H.H. Knight (The Miridae (or Capsidae) of Connecticut (1923); The plant bugs, or Miridae, of Illinois (1941)), and the book by W.S. Blatchley (1926, Heteroptera of Eastern North America). Yet the plant bugs are of great economic importance. Hence, this first handbook on the Miridae of Canada, covering the 314 species known to occur in the Prairie Provinces, will be welcomed by many entomologists.

The early sections of the monograph give brief descriptions of collecting and preserving specimens, biology, morphology and classification. The systematic treatment of the various taxa constitutes the major portion of the volume, 369 of the 408 pages; there is a list of scientific and common names of plants mentioned in the text, as well as a glossary and a good index.

The volume has the characteristic and special imprint of the author, being clear and concise, accurate, with excellent figures and with emphasis on the author's own collecting. The few errors detected have been listed on a loose Errata sheet available with the volume. It may be noted that Lygus shulli Knight is compared with the important pest L. hesperus Knight, but the latter is not included in the text for comparison, as it does not occur in the prairies.

The illustrations in the first part of the book are ideally placed opposite descriptions of the same species. This is true for the treatment of the Pithanini species and those in the Stenodemini, although the figure of Teratocoris discolor Uhler (Fig. 25, p. 36) is placed in the middle of the genus Trigonotylus: it would have been better placed with the genus Teratocoris between pages 44 and 47. The illustration of Prepops zonatus (Knight) (Fig. 40, p. 51) is nicely placed opposite the description of this species on page 50, but after that, the illustrations are frequently far removed from the appropriate description: the contents of pages 57 and 58 could have been reversed and this would have placed the illustrations of Neurocolpus nubilus (Say) and Taedia pallidula (McAtee) opposite the appropriate text. The illustrations of Poecilocapsus lineatus (Fab.), Polymerus unifasciatus (Fab.) and Salignus distinguendus (Reuter) are quite out of place. The illustration of Poecilocapsus lineatus could have been placed on page 79 opposite the description of this species, but insead there is an illustration of Dichrooscytus alpinus Kelton, which is not treated until page 143 of the text. This detailed citation of such inappropriate composition could be extended to include the figures on pages 198 - 202, and 206 - 208. One hopes that in future handbooks such "planning" can be avoided or, if not, at least cross-references to pages and figures inserted: surely the author did not arrange it this way.

The reviewer would have liked more reference to other studies on the species occurring in the prairies. For examples, there is no reference to A.G. Wheeler's paper on the Miridae on prairie alfalfa crops (1974, Can. Ent. 106: 1267 - 1275), or the earlier paper by C.E. Lilly and G.A. Hobbs on the biology of Adelphocoris superbus (Uhler) (1956, Can. Ent. 88: 118 - 125). While Lygus lineolaris (P. de B.) is recorded as collected on a great variety of plants, and is noted to be a pest of alfalfa, readers might like to know that this species is known as the Tarnished Plant Bug in the economic literature, and is a key insect pest of cotton in the South, where it has been found that the nectariless character in cotton has reduced reproduction in this mirid (C.R. Parencia, 1978, U.S.D.A. Agric. Handb. 515: 52-53). The life cycle of the Fourlined Plant Bug (Poecilocapsus lineatus) has recently been reviewed by A.G. Wheeler and G.L. Miller (1981, Great Lakes Ent. 14: 23-35), and many of Lygus pest species in Canada have been noted to harbour tachinid parasites in the U.S.A. (Arnaud, 1978, Misc. Publ. USDA 1319). While it is recorded that Hyaliodes harti Knight and Deraeocoris fasciolus Knight are predaceous, such a note is not included as a recorded habit for Diaphnocoris provancher (Burque) (= pellucida Uhler) inspite of the findings of MacLellan (1977, Can. Ent. 109: 797-806) in Nova Scotia.

It is a pity that the notes on the biology of species are so sparse. It is to be hoped that in future, the editors of the Handbook series will encourage authors

to include more than just taxonomy and systematics when additional information is available.

However, there is no doubt that this handbook will, as the author hoped, "help the economic entomologists and other field workers in the Prairie Provinces and elsewhere to identify the species of this important group of plant bugs so often encountered in field surveys and control programs." Entomologists to the east look forward to the follow-up handbook on the Miridae of Eastern Canada. A handbook on the Miridae of British Columbia and the Yukon is urgently needed. The fauna to the west of the Rocky Mountains in many respects is very different to that to the east. The publications by Knight (1923, 1941) and Blatchley (1926) are hardly applicable to the west.

The more recent publication by Knight (1968, Taxonomic Review: Miridae of the Nevada test site and the western United States, Brigham Young Univ. Sci. Bull. (Biol.Ser.) 9(3): 1-282)) helps a little with the western fauna, but it actually only mentions 15 species from B.C. This handbook on the Miridae of the Prairie Provinces of Canada, in fact treats 122 species that are known to occur west of the Rockies. Hence it is a valued publication to the reviewer, and will certainly become one of the most often used volumes in this Handbook series.

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Harbach, Ralph E. and Knight, Kenneth L. 1980. Taxonomists' Glossary of Mosquito Anatomy. Plexus Publishing Inc., Marlton, N.J. (xi + 415 pp, 83 plates), US $24.95.

Mosquitoes have presumably been the subject of intense interest throughout the history of the human species but even so, it is surprising that over 5,000 terms have been used to describe their anatomy.

Harbach, Knight and their associate, the late J.L. Laffoon, are to be congratulated on selecting, distilling, defining and abbreviating some 1,000 unequivocal terms from what, in the foreword, de Meillon justifiably calls a mixed pickle - in fact some of the names date back to Linnaeus. Because we can now boast a definitive work on the Mosquitoes of Canada[1], it is useful to compare the 200 or so terms defined by Wood, Dang and Ellis (1979) with those in the index of the glossary. There are about a dozen differences but few of them are sufficiently distinct to mention here - for example, Wood et al.'s basal and apical lobes of the male terminalia are strictly defined as 'basal dorsomesal' and 'apicodorsal' lobes respectively in the glossary; the gonopods as 'gonocoxopodites'. The an- and katepisterna of the adult thorax are specified as 'mesan-' and 'meskatepisterna' and in the feeding apparatus of the larva, the labral brush, is divided into two 'lateral palatal brushes'. Perhaps the most disturbing difference is that the hypostomial plate of the larva, illustrated and so labelled for all species in The Mosquitoes of Canada, is not included in the glossary. With my Immsian background, I have always referred to this sclerite as the mentum so that I am not too concerned at its inclusion as 'dorsomentum' but there should at least have been a cross-reference. Having written the word hypostomial I must plead for consistency in the rendering of adjectives from latin and greek. Harbach and Knight, for example, use -stomal and ecdysial whereas Wood et al. use -stomial and ecdysal.

I implied earlier that the terms were extremely precise and this makes it difficult to describe patterns because the position of individual scales is specified - for example, what most of us would call a submedian stripe on the scutum becomes a stripe of 'inner dorsocentral scales'. This may in fact be necessary for studying mosquitoes from all parts of the world, but my preference is to retain the familiar stripes, bands and patches where they seem to have been used unambiguously at least for North American species.

The glossary, as is claimed on the cover, defines many terms common to all insects and as such is a valuable addition to the library of any insect taxonomist. Technically, the drawings and scanning electron micrographs are of excellent quality, beautifully reproduced and reason alone to buy the book.

There are a few proof-reader's slips - for example, the opposite of singular is 'pleural' (p. 17), and ocelli occur 'singlely' (p. 30) and in some places the lower case bold letters blot together forming m's from rn's and solid blobs from e's and s's. Offsetting these minor defects are some terms guaranteed to delight etymologists and entomologists alike. Where else could one find definitions of 'spindle osselet', 'Strudel apparat', 'cibarial bar' or 'dorsal arc of sigma'?

[1]reviewed in ESC Bulletin Vol. 12(1): 13-14, 1980

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Kalmakoff, J. and Longworth, J.F. (Comp.). 1980. Microbial Control of Insect Pests. New Zealand D.S.I.R. Bull. 228. 102 pp. Available from: Science Information Division, Department of Scientific and Industrial Research, P.O. Box 9741, Wellington, New Zealand, price $28.50 N.Z.

This book contains a record of the lectures and practical classes presented at a joint United Nations Educational, Scientific and Cultural Organization (UNESCO), International Cell Research Organization (ICRO) and United Nations Environmental Programme (UNEP) training course held in Dunedin, New Zealand in 1977. There were 14 contributions to the course, 12 from New Zealand and one each from Australia and Canada. To quote from the preface, "The emphasis given to each subject area reflects the efforts of individual contributors to the training course; hence this publication was not designed to be a comprehensive manual of techniques in insect pathology". Although some of the practical aspects of insect control with pathogens are described, this book is principally a guide to identifying, handling and purifying insect pathogens in the laboratory.

The book is divided into three parts, the first dealing with economic insect problems, current theories and techniques in pest management, an evaluation of methods used to determine the impact of diseases in insect populations and problems encountered during large-scale insect rearing for pathogen production.

Part two deals with pathogens of insects with a strong emphasis on viruses. Comparisons are made between viruses found in insects and viruses found in other animals. Baculoviruses (nuclear polyhedrosis viruses and granulosis viruses), the group of viruses most widely developed as biocontrol agents, have been found to infect only invertebrates and are considered safe to non-target organisms. There is an interesting section on Wiseana cervinata which is a major lepidopteran pest of pasture in New Zealand. The soil-dwelling larvae are subject to infection with a nuclear polyhedrosis virus and cultural practices are described which allow the build-up of this virus. Other viruses described are cytoplasmic polyhedrosis viruses, entomopoxviruses, iridescent viruses, parvoviruses and picornaviruses.

The laboratory exercises with viruses include the purification of a nuclear polyhedrosis virus and serological detection of infection using immunodiffusion, various methods of counting and standardizing virus preparations, diagnosis of infection using staining methods, a bioassay procedure, titration of cricket paralysis virus (picornavirus) in a Drosophila cell line and a check of the identity of this virus using a serum neutralization test.

Following viruses, bacteria, protozoa, rickettsias, fungi and nematodes are reviewed as potential biocontrol agents. Two species of bacteria, Bacillus popilliae and B. thuringiensis, both commercially available, are described with B. thuringiensis being the biocontrol agent most widely used around the world. Several species of fungi are cited as examples of biocontrol agents with Entomophthora spp. for aphid control, Nomuraea rileyi for phytophagous lepidopterous larvae, Mitarrhizium anisopliae for soil-inhabiting insects and Coelomomyces spp. for mosquitoes. Laboratory exercises involving diagnosis and identification of all these groups of pathogens, with the exception of nematodes, are included.

The third section of the book concerns safety and is quite brief, but throughout the book an appraisal of the potential hazard of different agents is given. It is pointed out that, at present, there is no direct evidence that any microorganism proposed as a biocontrol agent presents a hazard to vertebrates or

other non-target invertebrates, although in many cases, thorough investigations on safety are lacking. It is also noted that there may be no problem with the agent itself, but contaminating microorganisms or host insect material may constitute a hazard.

This book is not intended as a comprehensive manual. Nevertheless, some experienced insect pathologists who read it are almost certain to have criticisms that their particular field has not been adequately covered. Two minor points which I noted were that cytoplasmic polyhedrosis viruses, which have been applied as biocontrol agents, were glossed over and protozoa were dismissed as being potentially hazardous until further testing has been accomplished. However, a microsporidan in a bait formulation has been developed in the U.S.A. for control of grasshoppers.

For both teachers and students of insect pathology, this book is a useful acquisition. Particularly for those wishing to obtain a basic groundwork and understanding of insect pathogens, the book is easily readable, lucid and contains up-to-date information which has been condensed and summarized. For those wishing to pursue specific topics in more detail, the references are well selected. The laboratory exercises are clearly explained and those teaching courses in insect pathology should certainly consider utilizing some of them.

Normally, U.S., Canadian and British government publications are very reasonably priced and represent excellent value. However, at $28.50 N.Z. it appears that the New Zealand government is selling this book, which is on good quality paper and has a hard cover, at a price which I consider comparable to commerically published material (the $N.Z. is almost on a par with the $Can). If there is a further printing, a soft cover might bring the price more into line with a student's purchasing power.

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BOOK NOTICES

Linsley, E.G., J.W. MacSwain and C.D. Michener. 1980. Nesting biology and associates of Melitoma (Hymenoptera, Anthophoridae). University of California Publications, Entomology, Vol. 90: 45 pp. University of California Press: Berkeley, Los Angeles, London.

The publication presents a detailed account of the life styles of four species of Melitoma distributed from Argentina to North Dakota. Numerous field observations provide a broad base for descriptions of habitats, nest construction, provisioning of the cells, oviposition, and larval development. Additionally, 1900 intact cells were examined for the development of associated organisms, resulting in the emergence of a vast diversity of parasites, predators, nest destroyers and inquilines, bacteria, and fungi that have adapted to living upon the resources provided by Melitoma. Twenty-one photographs of the nesting sites or cells, along with a diversity of organisms which emerged from the cells, support the detailed descriptions.

Discussions on the diversity of habitats, ranging from wet, tropical lowland to semidesert plateaus, signify that environmental conditions are more important in determining the kind and frequency of organisms associated with the host, than a difference in the species of Melitoma attacked.

M. Ivanochko
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Murphy, Frances. 1980. Keeping spiders, insects and other land invertebrates in captivity. John Bartholomew and Son Limited, Edinburgh. 96 pp. Soft bound.

This book on the keeping of living terrestrial invertebrates comes from one of the best British amateur entomologists. It contains a wealth of accurate, organized, and indexed information for a variety of potential users including householders

(like the author) who wish to start a miniature zoo in the sitting room, technical assistants who must start and maintain cultures of maggots, caterpillars, locusts, or whatever, and even researchers who need to make an intelligent choice of research animal.

The book is effectively illustrated with more than 30 half-or whole-page water colours by Denise Finney.

C.D. Dondale
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Hall, J.C. 1981. A review of the North and Central American species of Paravilla Painter (Diptera: Bombyliidae). Univ. Calif. Publ. Ent. 92: 1-190, 8 pl.

A brief introduction outlining the systematic placement of Paravilla and its past taxonomic history is followed by a key and descriptions to the 53 species that occur north of Colombia. Of these species, 27 are described as new. Simple and accurate illustrations of features of the male terminalia of most of the species areincluded.

The descriptions are well arranged and thankfully as complete for the previously described species as the new ones, thus permitting accurate comparisons. Some difficulty was experienced in using the key usually related to interpretation of colour and placement of tomentum on the abdominal tergites. This is a common problem in the identification of Bombyliidae which are so subject to loss of pubescence.

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Grigarick, A.A. and R.O. Schuster. (1980). Discrimination of Genera of Euplectini of North and Central America (Coleoptera: Pselaphidae). University of California Press, Berkeley. 56 pp. Soft cover. Price not stated.

Anatomical characters are used to define the Tribe Euplectini and to make a new classification of 83 genera from North and Central America. Inferences are drawn regarding phylogenetic relationships among the genera. Both tabular and bracket keys are given, and the work is illustrated by an abundance of clear line drawings made from slide preparations.

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Ottawa, Ontario

McGinley, R.J. (1981). Systematics of the Colletidae based on Mature Larvae with Phenetic Analysis of Apoid Larvae (Hymenoptera: Apoidea). University of California Press, Berkeley. 307 pp. Soft cover. $14.50.

This study is an attempt to use both phenetic and cladistic approaches to the phylogeny of larval colletids, and to determine the position of these insects among the families of Apoidea. An appendix gives a key to larvae of the world subfamilies, tribes, and genera of apoids. Amendments to the existing classification are noted but not formally proposed.

C.D. Dondale
Biosystematics Research Institute
Ottawa, Ontario

Berrios-Ortiz, A. and R.B. Selander. (1979). Skeletal Musculature in Larval Phases of the Beetle Epicauta segmenta (Coleoptera, Meloidae). Dr. W. Junk, Publishers, The Hague. 35 pp. Hard bound.

"Although it has long been known that larval Meloidae undergo marked modifications of external anatomy, behaviour, and ecology in progressing through the various larval phases (hence the name hypermetamorphosis), little or no attention has been paid to differences among phases with respect to internal anatomical characters." This book is an attempt to described in detail the skeletal muscles in three successive phases (first grub, coarctate, and second grub). Results are illustrated by 184 high quality black and white drawings.

C.D. Dondale

Grüne, S. (1979). Handbuch zur Bestimmung der europaischen Borkenkäfer. Brief Illustrated Key to European Bark Beetles. Verlag M. & H. Schaper, Hannover. 182 pp. Hard bound. DM 38.40.

The aim of this book is to permit "simple" identification of the 154 species of European bark beetles. The keys, which appear in both German and English, seem to work fairly well. Some questionable features include unclear drawings, use of unexplained abbreviations for anatomical terms, use of outdated generic names (e.g., Phloephthorus and Phthorophloeus for Phloeotribus; Cryphalops for Europorus), and omission of key works from the list of references (e.g., Pfeffer's 1976 revision of European Pityophthorus and Nunberg's 1954 paper on Polish bark beetles).

D.E. Bright, Jr.
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BOOKS RECEIVED

Sollers-Riedel, Helen. 1981. A Worldwide Look at Mosquitoes and Disease in 1978. Suppl. Proc. 66th Ann. Mtg. N.J. Mosq. Control Assoc. P.O. Box 19009, Washington, D.C. 20036, U.S.A.

Insecticides for the Control of Insects of Public Health Importance. Revised 1981. U.S. Dept. Hlth. and Human Serv., Publ. Hlth. Serv., Centers for Disease Control, Center for Infectious Diseases, Vector Biol. and Control Div., Atlanta, Georgia 30333, U.S.A.

Sterner, T.E. and Davidson, A.G. (compil.). "Forest Insect and Disease Conditions in Canada 1980". Forest Insect and Disease Survey Canadian Forestry Service, Ottawa. Available free from: Distribution Centre, Environment Canada, 131 Greber Boulevard, Pointe Gatineau, Qué., J8T 3R1.

Cette publication est aussi disponsible en françois sous le titre "Insectes et maladies des arbres au Canada 1980".

Note: Technical difficulties have delayed production of Annual Reports of the Survery for 1977, 1978 and 1979.

Biotechnology in Canada: Promises and Concerns, proceedings of a workshop sponsored by the Science Council of Canada and Institute for Research on Public Policy that was held in September 1980 at Aylmer, Quebec. They report that Canada is 3-4 years behind western competitors in biotechnology and obstacles to improvement are lack of highly qualified manpower, need for venture capital, and absence of an information network linking universities, government and industry. The report is available from the Science Council of Canada, 7th floor, 150 Kent St., Ottawa, Ontario K1P 5P4.

MEMOIRS OF THE ENTOMOLOGICAL SOCIETY OF CANADA

No. 115. "The polyphyletic nature of Apanteles Foerster (Hymenoptera: Braconidae): A phylogeny and reclassification of Microgastrinae." W.R.M. Mason 147 pp. Issued 3 June 1981. $8.75 ($6.10 for new E.S.C. members)* plus postage and handling. Copies from Entomological Society of Canada, 1320 Carling Avenue, Ottawa, Canada K1Z 7K9. *Based on a previous commitment Memoir 115 is available free to 1981 members upon request to the above address, but subsequent Memoirs can be obtained for an annual subscription of $25 (30% discount for members) or by purchase of individually priced separate Memoirs.

No. 116. "Revision des Trichoptères canadiens. I. La famille des Rhyacophilidae (Annulipalpia)." F. Schmid. 87 pp., 16 cartes, et 245 figs. Issued 24 August 1981. (Available in French only). $5.50 (30% d'escompte pour membres, $3.85). Frais de poste et de traitement en plus. (Payable en fonds canadiens).

MEETING ANNOUNCEMENTS

A Symposium and Workshop on Dutch Elm Disease will be held on 5-8 October 1981 at the International Inn in Winnipeg. It is being sponsored by Environment Canada, Canadian Forestry Service and Manitoba Natural Resources. The hope is to bring together persons concerned with all aspects of elms and Dutch Elm Disease and provide researchers an opportunity to present long-term projects and latest results to their international peers from North America, The United Kingdom, Europe and Asia. Further information available from Dr. E.S. Kondo, Great Lakes Forest Research Centre, Canadian Forestry Service, Box 490, Sault Ste Marie, Ontario P6A 5M7 (705)949-9461 or C.A. Jeffrey, Manitoba Department of Natural Resources, Box 10, 1495 St. James Street, Winnipeg, Manitoba R3H 0W9.

La 108^{e} réunion annuelle de la Société Entomologique du Québec se tiendra du 14 au 16 octobre 1981 à l'Université du Québec à Montréal. Les thèmes débattus seront la Pollinisation par les Insectes et "La lutte intégrée". Une soirée de vulgarisation scientifique est aussi prévue. Nous invitons tous les membres de la SEQ et le public en général. Pour information additionale écrivez vous: Dr. J.-C. Tourneur, Departement des Sciences Biologiques, Université du Québec à Montréal, Case postale 8888, Succursale 'A', Montréal, P. Q. H3C 3P8.

First North American Conference of the Society for the Bibliography of Natural History will be held on 21-23 October 1981 at the Academy of Natural Sciences of Philadelphia. The theme of the Conference is "North American Natural History Bibliography - Research, Needs and Prospects". There will be papers on aspects of the history and bibliography, and three panel discussions on the topic "North American Natural History Bibliography - Imperfections, Urgent Needs and Prospects for Betterment". Registration is $60.00 U.S. For more information contact Nina J. Root, American Museum of Natural History Library, C.P. West at 79th Street, New York, N.Y. 10024, U.S.A. (phone: (212) 873-1300 ext. 381).

The Entomological Society of Ontario will hold its 118th Annual meeting at the Donald Gordon Centre, Queen's University, Kingston, Ontario from 23-25 October 1981. This is a joint meeting with the North-Eastern Branch of the Animal Behaviour Society. The meeting will emphasize insect behaviour with symposia on insect aggression, behaviour of biting flies and foraging behaviour. A special symposium will discuss recent advances in experimental and theoretical biology and their implications to the field of pest management and general entomology. As well as opportunity for submitted papers and posters, graduate students may compete for the President's Prize. From Sunday evening through Monday morning, a trip is planned to the Queen's University Biology Station in Lake Opinicon, that will include moth collecting Sunday night and a field trip to research sites Monday morning. For registration and further details contact Heather McBrien, Department of Biology, Queen's University, Kingston, Ontario K7L 3N6.

The Entomological Society of Manitoba is holding its annual meeting on 5 and 6 November 1981 in the seminar room of the Freshwater Institute on the University of Manitoba campus. The guest speaker will be Professor Freeman L. McEwen from University of Guelph who will discuss "Pest Management". This is also the theme of the symposium on the following day. For further information contact Dr. F.A. MacKay, Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

The 148th American Association for the Advancement of Science annual meeting and exhibit will be held 3-8 January 1982 in Washington, D.C. For information about specific symposia, speakers, and registration contact Elisabeth Zeutschel, Meeting Manager (202) 467-4488. For information on poster sessions contact Grayce Finger (202) 467-4486. The AAAS office is located at 1776 Massachusetts Avenue, NW, Washington, D.C. 20036, U.S.A.

The 2nd National Symposium on Forest Parasitology will take place 17-19 February 1982 in Cuernavaca, Morelos, Mexico. This is sponsored by Sociedad Mexicana de Entomologia and Departamento de Bosques de la Universidad Autonoma Chapingo. Sessions will include taxonomy, biology, ecology, and pest management with emphasis on Mexican insects and diseases. Workshops and a field trip will follow formal papers. Proceedings will be published. Titles and abstracts of proposed papers should be received before 1 November 1981, addressed to Biol. David Cibran Tovar, Lab. de Entomologia Forestal, Departamento de Bosques, Universidad Autonoma Chapingo, Estado de Mexico. (905) 585-4555 or 5542.

EMPLOYMENT — EMPLOIS

POSITIONS AVAILABLE/DISPONIBLES

RESEARCH ENTOMOLOGIST: (Position number 10-300-0013C). DUTIES: Reporting to the Director of the Fredericton Research Station initiates and conducts a programme of research as part of the Potato Management Programme. Investigates biochemical, phytological, and agronomical mechanisms regulating insect-host plant relationships in the potato agroecosystem; develops behavioural information on aphid vectors of potato viruses; implements laboratory and field research programmes for the management of insect pests of potatoes; and advises Michaud Experimental Farm research personnel on matters related to entomology with vegetable and berry crops. ESSENTIAL QUALIFICATIONS: Education - Graduation from a university with recognized standing with a major in entomology and related disciplines; training through formal courses and/or on-the-job experience equivalent to the doctoral degree. Language Requirement - Bilingual Imperative. Experience - Experience in the pursuit of original research related to agricultural entomology. RATED REQUIREMENTS: Knowledge - Knowledge of agricultural entomology, of insect-vectors of plant viruses and of management of insect pests in crops. General familiarity with agricultural productions and techniques, and some specialized knowledge of horticultural crops. Abilities - Ability to plan, organize and conduct original research. Ability to evaluate data using appropriate statistical methods and techniques. Ability to conduct meetings and briefings, and prepare scientific papers and reports, and correspondence. Ability to analyze pest situations from the standpoint of direct economic injury or role in the epidemiology of plant disease. Personal suitability - Effective interpersonal relationships, particularly in liaison with individual scientists in the research and university community.

Apply to: C. Bernard, Director, Research Station Agriculture, P.O. Box 20280, Fredericton, N.B., E3B 4Z7.

POSTDOCTORAL POSITION - INSECT PHYSIOLOGY. A postdoctoral position is available to study the reproductive physiology of insects (tenable for one year in the first instance, renewable for a second, and possibly a third year). Salary based on NSERC rates. Ph.D. with biochemical expertise required. Send curriculum vitae and names of three referees, or write for further information, to Dr. Cedric Gillott, Department of Biology, University of Saskatchewan, Saskatoon, Saskatchewan, S7N 0W0.

Assistant Professor in Entomology. The University of Manitoba invites applications for a tenure-track position at the level of Assistant Professor. The successful candidate will be expected to teach undergraduate courses in either or both insect biosystematics and plant protection, and to supervise one or more graduate students in at least one of the above-mentioned fields of research. Applicants must have a Ph.D. degree, preferably university teaching experience, and the ability to develop an active research program. The University encourages both women and men to apply for this position and especially invites applications from Canadian citizens, permanent residents, and others eligible for employment in Canada at the time of application. Applications will be accepted until November 1, 1981, or until a satisfactory candidate has been identified. Applications, curriculum vitae, and the names of at least three referees should be sent to: Dr. A.G. Robinson, Head, Department of Entomology, The University of Manitoba, Winnipeg, Manitoba R3T 2N2.

Research Associate/Insect Physiology. Research associate or postdoctoral fellow is required as soon as possible to conduct research on hormonal control of reproduction in male insects. Experience with surgical and protein separative techniques desirable. Applications to: Dr. K.G. Davey, Department of Biology, York University, Downsview, Ontario. M3J 1P3.

ENTOMOLOGISTS AVAILABLE
ENTOMOLOGISTES DISPONIBLES

Temporary or permanent position in Canada required, preferably in Agricultural/Extension entomology, on or after 31 May 1981. B.Sc. 1977, Ph.D. expected May 1982. Experience in rearing of Heteroptera, Lepidoptera and Coccinellidae genetic studies and SEM work. Please send any information to: Caroline Dent, Zoology Department, University College, Cardiff. CF1 1ZL. Wales. U.K.

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

A.N.(S.) 118 — 12 May 1981

The Commission hereby gives six months' notice of the possible use of its plenary powers in the following cases, published in Bull. zool. Nom., Volume 38, part 2, 30 April 1981, and would welcome comments and advice on them from interested zoologists. Correspondence should be addressed to the Secretary, c/o British Museum (Natural History), Cromwell Road, London, SW7 5BD, United Kingdom, if possible within six months of the date of publication of this notice.

Case No.

1450 Tyrophagus Oudemans, 1924 (Acarina): proposals to clarify name of the type species and to conserve name of an important pest species.

2144 Nepa cinerea Linnaeus, 1758 (Insecta, Heteroptera, Nepidae): proposed conservation.

2125 Coccus Linnaeus, 1758 and Parthenolecanium Šulc, 1908 (Insecta, Homoptera, Coccidae): proposed designation of type species.

2290 Eutermes exitiosus Hill, 1925 (Insecta, Isoptera): proposed conservation.

I.T.Z.N. 59 — 12 May 1981

The following Opinions have been published recently by the International Commission on Zoological Nomenclature in the Bulletin of Zoological Nomenclature, Volume 38, part 2, 30 April 1981.

Opinion No.

1170 (p. 95) SATURNIIDAE Boisduval, 1837 (Lepidoptera): placed on official list.

1173 (p. 102) The type species of Hiltermannicythere Bassiouni, 1970 (Crustacea, Ostracoda) is Cythereis turbida Müller, 1894.

1174 (p. 105) The type species of Atractocera Meigen, 1803 (Diptera) is Tipula regelationis Linnaeus, 1758.

1175 (p. 107) Monstrilla intermedia Kriczagin, 1877 (Copepoda): suppressed.

1178 (p. 114) Megasternum Mulsant, 1844, and Cryptopleurum Mulsant, 1844 (Insecta, Coleoptera): type species determined.

1179 (p. 117) Polydrusus Germar, 1817 and Phyllobius Germar, 1824 (Insecta, Coleoptera): conserved in accordance with current usage.

The Commission regrets that it cannot supply separates of Opinions.

R.V. Melville
Secretary

PERIODICAL PUBLICATIONS OF ENTOMOLOGICAL SOCIETIES AND ASSOCIATIONS IN CANADA

Proceedings of the Acadian Entomological Society. (mimeographed).
Editor: (1980-1981) K.H. Sanford, Research Station, Agriculture Canada, Kentville, N.S. B4N 1J5.

Annales de la Société entomologique du Québec.
Editor: Dr. Jean-Guy Pilon, Département de Sciences biologiques, Université de Montréal, C.P. 6128, Succ. "A", Montréal, Qué. H3C 3J7.

"Fabreries" - Association des Entomologistes amateurs du Québec: 2400 Chemin Ste - Foy, Ste - Foy, Quebec G1V 1T2.

Proceedings of the Entomological Society of Ontario.
Editor: Dr. C.R. Ellis, Department of Environmental Biology, University of Guelph, Guelph, Ontario N1G 2W1.

Occasional Publications Toronto Entomological Association, c/o Department of Vertebrate Paleontology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario M5S 2C6.

"Manitoba Entomologist": Entomological Society of Manitoba.
Editor: Dr. G.H. Gerber, Research Station, Agriculture Canada, 195 Dafoe Road, Winnipeg, Man. R3T 2M9.

The Entomological Society of Manitoba Newsletter.
Editor: Dr. T.D. Galloway; Department of Entomology, University of Manitoba, Winnipeg, Manitoba R3T 2N2.

Proceedings of The Entomological Society of Manitoba
Editor: Dr. P. S. Barker, Research Station, Agriculture Canada, 195 Dafoe Road, Winnipeg, Manitoba. R3T 2M9

Proceedings of the Annual Meeting of the Entomological Society of Saskatchewan.
Editor: Dr. F. Burgess, Research Station, Agriculture Canada, 107 Science Cres. Saskatoon, Saskatchewan S7N 0Y2.

Proceedings of the Entomological Society of Alberta (Annual Meeting).
Editor: Dr. Bruce Heming, Department of Entomology, University of Alberta, Edmonton, Alberta T6G 2E3.

Proceedings of the Entomological Society of British Columbia.
Editor: Dr. H.R. McCarthy, 4026 West 38th Avenue, Vancouver, B.C.

"The Canadian Entomologist". Entomological Society of Canada.
Editor: Dr. D.C. Eidt, 1320 Carling Avenue, Ottawa, Canada K1Z 7K9.

NOTE: The editor would appreciate hearing of any additional Canadian entomological periodicals and any correction of the above list.

ELECTION RESULTS

Second Vice-President	Ray F. Morris
Fellowship Selection Committee	A. W. MacPhee B. J. R. Philogène
Directors-at-Large	G. H. Gerber A. D. Tomlin

Ballots received - 315 - None spoiled

Further details regarding this years election will be published in the next bulletin.