

Entomological Society of Canada
Société Entomologique du Canada

Bulletin

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D.M. Davies

Bulletin Editor

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EDITORIAL

At Leeds last November, Stephen Sutton suggested that "it might be necessary to collect vast numbers of insects from the rainforest so that we might at least engage in a posthumous unravelling of the diversity we are about to lose" - echoing Alan Stubbs' plea for "instant fossils on a pin" (*Antenna* 1: 38). Such thoughts are understandable to collectors and systematists, even unborn palaeoecologists, but can they impress those holding the purse strings? Even major museums, whose expertise would surely be essential for documenting, preserving and ultimately studying "vast numbers of insects", are beginning to take a jaundiced view of mass collecting. Talk now, ever with a realistic eye for today's good science to justify tomorrow's grants, is of immediate 'project-oriented field work' - not filling non-existent storage space with myriad specimens for the national benefit of future generations of entomologists curious about the past. And governments the world over, encouraged by well-meaning conservationists, are doing their best to make collecting virtually illegal - although the destruction of whole ecosystems is still permitted in the cause of 'progress'. Entomologists, what would you that we do - should we ban all collecting, or collect everything before it is too late? If the entomological patient is beginning to die, should we embalm him now or bury the mortal remains later?

ex. *Antenna* 4: 37, 1980 (Bull. Roy. Entomol. Soc. Lond.)

REPORT ON THE ELECTIONS COMMITTEE

The Elections Committee of the Entomological Society of Canada met in Winnipeg, Manitoba on July 16 to open and count those ballots received by the Chairman before midnight July 15, 1980. A total of 389 were returned. The results were as follows:

<i>For Second Vice-president</i>	(3 ballots spoiled)	G.E. Ball
<i>For Board of Directors</i>	(no ballots spoiled)	P. Benoit R.D. McMullen
<i>For Fellowship Committee</i>	(no ballots spoiled)	R.A. Brust W.G. Wellington
<i>For Changes to ByLaws</i>	(no ballots spoiled)	Approved by a large majority

We hereby certify that the Elections Committee accurately counted all ballots received and that the results were as indicated above.

Patricia A. MacKay (Chairman)

P.W. Arntfield

T.D. Galloway

REPRESENTATIVE OF AFFILIATED SOCIETIES ON ESC MEMBERSHIP COMMITTEE

Acadian Entomological Society: Miss H.J. Herbert, Kentville, N.S.
Soci t  Entomologique du Qu bec: Dr. J.-C. Tourneur, Montr al
Entomological Society of Ontario: Dr. J.A. George, London
Entomological Society of Manitoba: Dr. J.C. Conroy, Winnipeg
Entomological Society of Alberta: Mr. J. Weintraub, Lethbridge
Entomological Society of British Columbia: Dr. H.F. Madsen, Summerland
Entomological Society of Canada: Dr. W.G. Friend, Toronto (Chairman)

BIOLOGICAL SURVEY PROJECT

Status of the Biological Survey

Support of the basic aims of a Biological Survey of Canada by the National Museum of Natural Sciences has led to the continuation of the project in its broad context as envisaged in the 1978 recommendations of the Pilot Study for a Biological Survey of the Insects of Canada.

On July 1, 1980, the Secretariat began a contract with the National Museum of Natural Sciences, housed in Museum premises in Ottawa, as an agency for coordination of relevant work and a clearing house for information, roles that were successfully tested in the Pilot Study. Concurrently, a contract between the National Museum of Natural Sciences and the Entomological Society of Canada provides for the continuation in the work of the Survey of the consultative and advisory role of the Scientific Committee of the Entomological Society of Canada.

The first meeting of the Scientific Committee under this new arrangement will take place on October 9-10 in Ottawa, immediately following the annual meeting of the Entomological Society of Canada in Quebec City.

These encouraging developments led to the unanimous adoption of the following resolution by the Second International Congress of Systematic and Evolutionary Biology (ICSEB), attended by nearly 1000 participants, in Vancouver July 17-24, 1980:

- "WHEREAS: The Second International Congress of Systematic and Evolutionary Biology, learning that a project for a Biological Survey of Canada has been initiated; and,
WHEREAS: Documentary work by the Entomological Society of Canada has yielded a comprehensive multi-author volume Canada and its insect fauna (1979), and an extensive study of northern and arctic arthropods, reported to this Congress in a Symposium paper by H.V. Danks; and,
WHEREAS: The National Museum of Natural Sciences of Canada has expressed its intention to further this project, initially by a continuation of the work on terrestrial and freshwater arthropods,
RESOLVES: That this Congress, in congratulating the Society and the Museum on these initiatives, strongly supports the development of a comprehensive and continuing Biological Survey of Canada."

Northern Contract

Arctic Arthropods, an extensive manuscript resulting from the contract Review and Synthesis of Knowledge on Northern and Arctic Insects, has been completed. It is now under review as a whole by selected reviewers from the Scientific Committee and from outside. Plans to produce the work as a book published by the Entomological Society of Canada have been confirmed. Publication is hoped for in the latter part of 1981.

Some of the results of the review were presented by H.V. Danks at the Second ICSEB (see above), in a paper entitled: "The composition, distribution and ecology of arctic insects, with some speculations on the evolution of arctic communities". This address was invited as a contribution to Congress Symposium 1, "Arctic refugia and the evolution of arctic biota".

Continuation of the Biological Survey

Following completion of the more specific Northern Contract, the Secretariat is able to continue more active national contacts with entomologists. Initially, three chief types of activity are envisaged.

1. The secretariat entomologist will travel to relevant institutions for exchange of information and ideas and for discussion. These visits will help to foster cooperation (scientific and logistic) in order to maximise use of existing resources. Avenues for additional indirect or direct support for relevant work will receive attention at the forthcoming meeting of the Scientific Committee.
2. The secretariat can respond to enquiries received about systematic and faunistic entomology, such as the possibilities of cooperation with entomologists elsewhere, including cooperation on field projects (see for example Bull. ent. Soc. Can. 11(4): 108-109). The ability of the Secretariat to react to such enquiries will be supported by update of existing inventories of Canadian personnel, projects, and facilities of various types. Everyone is encouraged to use the service that has been established. The address of the Secretariat is:

Biological Survey of Canada (Terrestrial Arthropods)
Invertebrate Zoology Division
National Museum of Natural Sciences
Ottawa, Ontario K1A 0M8 Telephone: (613)996-1690
3. The Biological Survey Project will also from time-to-time prepare scientific reviews or synopses of national scope, to act as a basis for further work on the fauna. These are expected to be initially of narrower focus than the documents Canada and its insect fauna (Mem. ent. Soc. Can. 108), and Arctic Arthropods (in manuscript).

MEETINGS OF REGIONAL ENTOMOLOGICAL SOCIETIES

Entomological Society of British Columbia: on 18-19 September 1980 at the University of British Columbia. For more information write: Dr. Bob Elliott, Department of Plant Science, University of British Columbia, Vancouver, B.C., V6T 2A2.

Entomological Society of Saskatchewan jointly with Entomological Society of Alberta: on 23-25 October 1980 at Saskatoon, Saskatchewan. For further information write: Dr. Diether Peschken, c/o Research Station, Agriculture Canada, Box 440, Regina, Saskatchewan, S4P 3A2.

Entomological Society of Manitoba: its 36th Annual Meeting on 13-14 November, 1980. The theme of the meeting will be "Predator-Prey Relationships". The Key Note Speaker will be Professor George Ball, Department of Entomology, University of Alberta. Deadline for submission of titles and 250-word abstracts, or for exhibits is 1 October 1980. For further details write to: Dr. G.R.B. Webster, Pesticide Research Laboratory, Department of Soil Science, University of Manitoba, Winnipeg, Manitoba, R3T 2N2.

Entomological Society of Ontario: on 17-19 October 1980, at the University of Western Ontario, London, Ontario, N6A 3K7.

Soci t -Entomologique du Qu bec: jointly with Entomological Society of Canada, on 5-8 October 1980 at the Chateau Frontenac, Quebec City, P.Q.

CORRECTION

It was inadvertently reported in the June Bulletin that the Norman Criddle Award for 1980 was presented by the Entomological Society of Quebec. In truth the recipient for this award "to recognize excellence in amateur entomology" is chosen by the Regional Society that hosts the Annual Meeting with the National Society, and the Award is presented by the Entomological Society of Canada.

LONGFELLOW'S PLEA AGAINST WANTON KILLING OF "PESTS"

Submitted by Dr. D.C. Herne, Vineland Station, Ontario, who writes:
"While perusing a copy of Henry Wadsworth Longfellow's", "Tales of a Wayside Inn", I found in the poet's tale, "The Birds of Killingworth", the enclosed stanzas - very pertinent in these days of integrated pest control":

"Think of your woods and orchards without birds!
Of empty nests that cling to boughs and beams
As in an idiot's brain remembered words
Hang empty 'mid the cobwebs of his dreams!
Will bleat of flocks or bellowing of herds
Make up for the lost music, when your teams
Drag home the stinging harvest, and no more
The feathered gleaners follow to your door?"

"What! would you rather see the incessant stir
Of insects in the windrows of the hay,
And hear the locust and the grasshopper
Their melancholy ^ohurdy-gurdies play?
Is this more pleasant to you than the whirr
Of meadow-lark, and its sweet ^oroundelay,
Or twitter of little ^ofield-fares, as you take
Your nooning in the shade of bush and brake?"

"You call them thieves and pillagers; but know
They are the winged wardens of your farms,
Who from the corn-fields drive the insidious foe.
And from your harvests keep a hundred harms;
Even the blackest of them all, the crow,
Renders good service as your man-at-arms,
Crushing the beetle in his coat of mail,
And crying havoc on the slug and snail.

"How can I teach your children gentleness,
And mercy to the weak, and reverence
For Life, which, in its weakness or excess,
Is still a gleam of God's omnipotence,
Or Death, which, seeming darkness, is no less
The selfsame light, although averted hence,
When by your laws, your actions, and your speech,
You contradict the very things I teach?"

With this he closed; and through the audience went
A murmur, like the rustle of dead leaves;
The farmers laughed and nodded, and some bent
Their yellow heads together like their sheaves;
Men have no faith in fine-spun sentiment
Who put their trust in bullocks and in bees
The birds were doomed; and, as the record shows,
A bounty offered for the heads of crows.

There was another audience out of reach,
Who had no voice nor vote in making laws,
But in the papers read his little speech,
And crowned his modest temples with applause;
They made him conscious, each one more than each,
He still was victor, vanquished in their cause
Sweetest of all the applause he won from thee,
O fair Almira at the Academy!

And so the dreadful massacre began;
O'er fields and orchards, and o'er woodland crests,
The ceaseless fusillade of terror ran.
Dead fell the birds, with blood-stains on their
breasts,

Or wounded crept away from sight of man,
While the young died of famine in their nests;
A slaughter to be told in groans, not words,
The very °St. Bartholomew of Birds!

The Summer came, and all the birds were dead;
The days were like hot coals; the very ground
Was burned to ashes; in the orchards fed
Myriads of caterpillars, and around
The cultivated fields and garden beds
Hosts of devouring insects crawled, and found
No foe to check their march, till they had made
The land a desert without leaf or shade.

°Devoured by worms, like Herod, was the town,
Because, like Herod, it had ruthlessly
Slaughtered the Innocents. From the trees spun
down
The canker-worms upon the passers-by,
Upon each woman's bonnet, shawl, and gown,
Who shook them off with just a little cry;
They were the terror of each favorite walk,
The endless theme of all the village talk.

The farmers grew impatient, but a few
Confessed their error, and would not complain,
For after all, the best thing one can do
When it is raining, is to let it rain.
Then they repealed the law, although they knew
It would not call the dead to life again;
As school-boys, finding their mistake too late,
Drew a wet sponge across the accusing slate.

PERSONALIA

Dr. E.H. Smith has been selected to receive the 1980 L.O. Howard Distinguished Achievement Award by the Entomological Society of America Eastern Branch Special Awards Committee. Dr. Smith, one of the outstanding entomologists in USA, served at the New York State Agricultural Experiment Station at Geneva, N.Y. from 1949 to 1964, as Head of the Department of Entomology, North Carolina State University, as Director of Cooperative Extension at Cornell University, and since 1972 has been Chairman of the Department of Entomology at Cornell University, N.Y. We extend congratulations to one of the distinguished members of ESC.

Dr. Robin Leech has been elected to the membership and designated a Fellow of The Explorers Club. He joins Professor W.G. Wellington as one of the few Canadians who have been invited to join this select group. Founded in 1904, The Explorers Club originally honoured polar explorers and now includes such figures as Sir Edmund Hillary, Neil Armstrong, Richard Leakey, Konrad Lorenz and Nikko Tinbergen.

RECENT DEATH

"We learn with regret of the passing of Dr. Johan George Betrem on 16 July 1980, at his house in Deventer, Netherlands. He was in his 81st year. A specialist in Hymenoptera, he was formerly a member of the Entomology Staff of the School of Tropical Agriculture at Deventer. He is survived by his widow Mrs. C.J.E. Betrum-Spoek, to whom, and to whose family we extend our condolences." (per D.K. McE. Kevan, 31 July 1980).

MEETING ANNOUNCEMENTS

Canadian Society of Zoologists are meeting on 27-30 December 1980 in the Seattle Center, Seattle, Washington with the American Society of Zoologists, American Microscopical Society, American Society of Limnology and Oceanography, Animal Behaviour Society, Ecological Society of America, Society of Systematic Zoology and Western Society of Naturalists. The programme includes a "Symposium on Fish Reproduction: Behaviour and Endocrinology". For more information write: Dr. J.M. Lawrence, American Society of Zoologists, Box 2739, California Lutheran College, Thousand Oaks, CA, 91360, U.S.A.

Entomological Society of America, National Meeting from 30 November - 4 December 1980 at Atlanta Hilton Hotel, Atlanta, Georgia. For information contact Sam S. Fluker, Pesticides Branch, EPA Region IV, 345 Courtland Street, Atlanta, GA 30308, U.S.A.



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Organismos Patrocinantes



SECRETO PANAMERICANO
DE ENTOMOLOGÍA



FOR AMERICA
ENTOMOLOGICAL SOCIETY
P. A. A. S

IV CONGRESO LATINOAMERICANO DE ENTOMOLOGÍA
VI CONGRESO VENEZOLANO DE ENTOMOLOGÍA
III CONGRESO DE LA SOCIEDAD PANAMERICANA DE ACRIDILOGÍA
I SIMPOSIO DE LEPIDOPTEROLOGÍA NEOTROPICAL

Dear Colleague:

It is a pleasure to inform you about the joint meeting of the IV Congreso Latinoamericano de Entomología, VI Congreso Venezolano de Entomología, II Congreso de la Sociedad Panamericana de Acridiología and the I Simposio de Lepidopterología Neotropical, which will convene in Maracay, State of Aragua, Venezuela, from July 5-10, 1981.

An extensive scientific program is being planned which will include several paper sessions alternated with symposia and conferences. In addition to these activities, there will be educational, artistic and commercial exhibits related to insects.

The Organizing Committee invites all persons interested in entomology to participate in and contribute to this scientific event.

Further information may be requested from: Secretaria General. IV Congreso Latinoamericano de Entomología, Instituto de Zoología Agrícola, Apartado 4579, Maracay 2101-A, Estado Aragua, Venezuela.

Sincerely yours,

EDUARDO OSUNA A.
Presidente Comité Organizador

CONTRAVERSY WITH "PESTICIDE CONSPIRACY"

Dear Sir,

28 February 1980

The prominence given to the review of The Pesticide Conspiracy (Antenna 4(1): 3-5) suggests some satisfaction in promoting a controversial issue, though I would have thought that this one was getting stale. However, there are still some of the Victorian 'muck and magic' persuasion who consider all artificial fertilizers an abomination.

Perhaps it is unfair to judge a book from its review; but from Dr. Gutierrez's account, either there is something rotten in the state of the USA, or Professor van den Bosch suffered from a persecution neurosis. Assuming that pesticides are as harmful as he suggests, it would seem that little can be done about it, since all commercial experts and most US government advisers are crooked, and the farmers and growers mere simpletons. More probably, however, he is merely taking advantage of the still prevalent distrust of science and technology, readily fostered by the media. A current example is the case of 2,4,5-T, a crude sample of which was used in Vietnam, containing considerable and probably dangerous quantities of TCDD or 'dioxin'. In recent years, however, the 2,4,5-T used in Britain, Australia, Canada, France, Germany and the USA has contained less than 0.1 ppm of this impurity, which is accepted as safe by the WHO and FAO. Nevertheless, some newspaper articles and television commentators refer to "the weedkiller 2,4,5-T, which contains dioxin", thus giving the impression that dioxin is the active ingredient. The whole matter was repeatedly brought before the Pesticides Safety Committee, on which I served for some years. Despite the opinion of our experts that, as used in Britain, this herbicide presented no danger, I would not be surprised to hear that political pressure will ensure its banning.

Admittedly, pesticides pose dangers (mainly, I think, to wild life rather than to man) but in all advanced countries there are vigilant official committees, assessing the risks and imposing sanctions where necessary.

What ought to be refuted is Rachel Carson's assertion, repeated by van den Bosch, that there are many equally effective non-chemical means of pest control. Both WHO and FAO have been anxious to promote any such means for at least a decade, partly because of environmental pollution (which is being overcome by non-persistent compounds) and partly because of pest resistance (which is more difficult to overcome). None of their international expert committees, however, has suggested that chemical control can be replaced by other means, though the principle of 'intergrated control' (keeping pesticides to a minimum) has long been generally accepted.

Yours faithfully,

James R. Busvine, 26 Braywick Road, Maidenhead, SL6 1DA, England

ex. Antenna 4(2): 38, 1980. (See also Book Review by R.W. Stark in ESC Bulletin 11(1): 20-22, 1979)

PERIOD OF REDUCED SERVICE IN ENTOMOLOGY ROYAL ONTARIO MUSEUM

As part of the renovation and expansion programme of the Royal Ontario Museum, the Department of Entomology will be moved next year to improved facilities. During the period Jan. 1 to July 1 of 1981, however, we regret that we will be unable to honour requests for loans of specimen material or to accommodate visiting scholars wishing to examine the Research Collection of Arthropods. For further information, write D.W. Barr or G.B. Wiggins, Department of Entomology, Royal Ontario Museum, 100 Queen's Park, Toronto, Ontario, Canada M5S 2C6

BOOK REVIEWS

Knight, F.B. and H.J. Heikkinen. 1980. Principles of Forest Entomology. Fifth Edition. McGraw-Hill. 461 pp.

This fifth edition of the Principles of Forest Entomology is dedicated to Samuel A. Graham, primary author of the original versions which have served as a text for undergraduate foresters since 1929. The major emphasis continues to be on the place of forest entomology in forest management and protection. Some of the stress on pest control has been replaced by a broader pest management perspective.

A new chapter on insect development and classification rectifies what some saw as a major omission and it provides the needed taxonomic framework for the diversity of insects covered in the last nine chapters. A second addition is the chapter on forest insects of importance to humans and it will be especially meaningful to the field foresters who, in the most direct way, experience black-flies, no-see-ums, and mosquitoes. The early chapters of the book give an introduction to the economic importance of forest insects and to the development of the science and practice of forest entomology. The inclusion of a section on Canadian Forest-insect activity gives balance that could help to promote the use of this book in Canadian Universities, Colleges, and Institutes. While the account of the major role of the Canadian Forestry Service was accurate in 1977 when the Chapter was written, there have been significant changes since then with some Provinces becoming much more active in this area as federal participation has been reduced.

The text also gives good coverage of major forest insect pests in the east, south, and west of the North American continent and provides a general framework from which teachers can draw specific examples that best fit their areas. The text is easy to read with relatively few typographical errors. The text sometimes appears somewhat superficial but a carefully compiled bibliography that accompanies each chapter gives guidance for extra reading to student and teacher alike. Figures, tables and half-tones are clear and provide interest points. Tables 1-1 and 1-2 could have been improved by inclusion of metric equivalents for units used.

Overall, the text is a welcome and useful update for those who teach Forest Entomology at the undergraduate level in Canada and the United States. It also provides a good introduction for general entomologists who are interested in what is going on in the forest.

J.A. McLean

The Douglas-fir Tussock Moth: A Synthesis, by M.H. Brookes, R.W. Stark and R.W. Campbell (eds.) Douglas-fir Tussock Moth Research and Development Program, Forest Service Science and Education Agency, Technical Bulletin 1585. XVII + 331 pages, illustrated. United States Department of Agriculture, Washington, D.C. 1978. No price.

Douglas-fir Tussock Moth--Program Accomplishments Report. Combined Forest Pest Research and Development Program, Agriculture Information Bulletin No. 417. 20 pages, illustrated. United States Department of Agriculture, Washington, D.C. 1978. No price.

In 1973, the southern pine beetle, the gypsy moth and the Douglas-fir tussock moth were causing extensive damage in the southern, northeastern and western United States respectively. In August, 1973, steps were taken to intensify research into problems associated with these three insects, and the necessary legislation was enacted in August 1974. The Expanded Douglas-fir Tussock Moth Research and Development Program began in late 1974 and was completed in September 1978.

Bulletin No. 417 gives a brief background of the problem, lists its 10 major objectives, and outlines the progress made towards meeting them. They include: detection and assessment of tussock moth populations; evaluation of sex attractants; prediction of outbreaks and damage; evaluation of natural control factors; field and safety of microbial insecticides; registration of microbial and chemical insecticides; field and safety tests of chemical insecticides; evaluation and improvement of aerial spray technology; development of an integrated control programme; and assembly of an integrated pest management system. The bulletin is written in a popular style, and serves as a summary of the major publication.

Bulletin 1585 represents a major contribution of the tussock moth programme. It is written by over 40 scientists, and is based on the research of over 100 individuals. The bulletin is intended to provide information to a wide audience, and is written in non-technical language. It is divided into two major sections: biology and ecology, and management. It summarizes all known information on the Douglas-fir tussock moth in an excellent manner, and the editors are to be complimented on the degree with which they have standardized the styles of so many authors.

Most of the research conducted under the auspices of the tussock moth programme was done while populations were at their peak or declining, and relatively few earlier studies had embraced a complete population cycle. Consequently, the authors relied very heavily on computer simulation to establish the probable course of events leading to outbreaks, and to establish management strategies. It is obvious that much time and effort of some highly qualified scientists have gone into the development of the models used in these simulations, but the end results were rather unconvincing. So many simplifying assumptions had to be made in the development of the models, and so many factors were considered, that it seems unlikely that the simulations will bear much resemblance to reality in future outbreaks. In addition, the amount of input data required for the models would seem to be beyond the capability of the resource manager to provide. I have the feeling that the authors tended to get carried away with the modelling concept.

The main danger, as I see it, is that the models imply a degree of sophistication that the available data do not appear to support. I would have preferred to see more emphasis placed on a written description of the probable outcome under a number of different conditions, and somewhat less on mathematical modelling, but this is only my personal opinion. Perhaps subsequent events will justify the author's approach.

Apart from my reservations concerning the value of mathematical models based on such meagre information, I believe that this bulletin will be a very useful document for anyone concerned with the management of Douglas-fir tussock moth populations. In spite of its limitations; it clearly demonstrates what a concerted research effort can accomplish in a relatively short period of time.

W.G.H. Ives

CORRECTION OF ANNOUNCEMENT IN JUNE BULLETIN
JOINT MEETING OF ESC AND ESA 1981

The Entomological Society of Canada and the Entomological Society of Alberta will meet together on 5-9 October 1981 at the Banff Centre, Banff, Alberta. Further details are available from Dr. Wm. A. Charnetski, Agriculture Centre, Agriculture Canada, Lethbridge, Alberta T1J 4B1

BOOK NOTICE

Maxwell, F.G. and Jennings, P.R. (Editors) 1980. *Breeding Plants Resistant to Insects*. John Wiley and Sons, Toronto XIV + 683.

There cannot be an entomologist or insect pest manager whose heart does not beat a little faster at the thought of breeding plants resistant to insects. This is the subject matter and title of a new multi-author and multi-disciplinary volume which successfully projects an overview of modern concepts and methods in its field. Breeding plant resistant to insects may not be the perfect solution to insect pest problems, but in this less than perfect world it comes closest to being an ideal approach.

The editors have organized their subject material into three sections. Part One deals with plant resistance to insects. Concepts, types and classifications of resistance are established early in the first two sections. Following sections then deal with biochemical and morphological bases of resistance, genetic factors, environmental factors, insect behaviour, plant and insect models, pest management systems and germplasm resources and needs. Part Two deals with breeding for resistance in specific crops: alfalfa, cassava, cotton, maize, rice, sorghum, wheat and forest trees. Part Three contains an extensive bibliography, a glossary (useful, so that entomologists and plant breeders will not misunderstand each others terminology), a list of insect and mite species, a list of vascular plant species and an index.

Breeding Plants Resistant to Insects is well suited for use by university teachers and their students - hopefully, gathered together from departments of entomology and plant science under a single roof! Part One forms a natural and logical course outline in itself. Teachers may select practical working examples from Part Two according to their students' needs. Entomologists and botanists whose primary interest is not crop protection will also enjoy this fascinating account of the unending interaction between insects and the plant world.

Robert P. Bodnaryk

MEMOIRS OF THE ENTOMOLOGICAL SOCIETY OF CANADA

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| No. 111. "Revision of the genus <i>Hydrochara</i> Berth. (Coleoptera: Hydrophilidae)". Alés Smetana. 100 pp. Issued 16 July 1980. |
| No. 112. "A revision of the systematics of <i>Acalymma</i> sensu stricto Barber (Coleoptera: Chrysomelidae) from North American including Mexico". D.D. Munroe and Ray F. Smith. 92 pp. Issued 16 July 1980. |
| No. 113. "Key to genera of Scelionidae of the Holarctic Region, with descriptions of new genera and species (Hymenoptera: Proctotrupoidea)". Lubomír Masner, 54pp. Issued 18 July 1980. |

INTERNATIONAL COMMISSION ON ZOOLOGICAL NOMENCLATURE

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 37, part 2, on 19th June 1980, 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.

- 1054 Nettastomella Carpenter, 1865 (Mollusca, Bivalvia: PHOLADIDAE): proposed conservation.
- 1175 Heterelis Costa, 1887 (Insecta, Hymenoptera): proposed procedure for concluding the case.
- 2048 Leptinotarsa Chevrolat, 1837 (Insecta, Coleoptera): revised proposals for conservation.
- 2257 Cyphaspis Burmeister, 1843 (Trilobita): proposed designation of type species.
- 2278 Sternotherus Gray, 1825, correct spelling; and Pelusios Wagler, 1830 (Reptilia, Testudines): proposed conservation.

The following Opinions and Direction No. 108 have been published recently by the International Commission on Zoological Nomenclature in the Bulletin of Zoological Nomenclature, Volume 37, part 2, 19th June 1980.

Opinion No.

- 1149 (p. 69) Blanus Wagler, 1830 and Amphisbaena ciperica Vandelli, 1797 (Reptilia Squamata) conserved.
- 1150 (p. 72) Chilodus Müller & Troschel, 1844, and Caenotropus Guenther, 1864 (Pisces) placed on the Official List.
- 1151 (p. 75) Lingulops Hall, 1872 (Brachiopoda) conserved.
- 1152 (p. 78) Ophiura Lamarck, 1801 and Ophioderma Müller & Troschel, 1840 (Ophiuroidea): ruling on application of these names.
- 1153 (p. 81) Galaxias platei Steindachner, 1898, given nomenclatural precedence over Galaxias delfini Philippi, 1895 (Pisces) by the use of the plenary powers.
- 1154 (p. 85) Drupella Thiele, 1925 (Mollusca, Gastropoda): designation of a type species by the use of the plenary powers.
- 1155 (p. 89) Saperda inornata Say, 1824 (Insecta Coleoptera): designation of a neotype by the use of the plenary powers.
- 1156 (p. 94) Terebra variegata Gray, 1834 (Mollusca, Gastropoda): conserved by the use of the plenary powers.
- 1157 (p. 96) Sphex viatica Linnaeus, 1758 (Insecta Hymenoptera): designation of lectotype.
- 1158 (p. 99) Litomosa viteae ruled under the plenary powers to be the correct original spelling of Litomosa wite Krepkogorakaya, 1933 (Nematoda).
- 1159 (p. 103) Littorina (Mollusca, Gastropoda): author and date of this generic name, and type species of this nominal genus determined by use of the plenary powers.

Direction No.

108 (p. 107) Correction of Name No. 2087 in the Official List of Specific Names in Zoology: For Murex striata Gmelin, 1791, read Voluta striata Gmelin, 1791.

The Commission regrets that it cannot supply separates of Opinions or Direction.

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