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## TWENTY-FIVE YEARS OF THE BEE RESEARCH ASSOCIATION

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The year 1974 is the 25th Anniversary of the foundation of the Bee Research Association, BRA, and this event is being marked by meetings in many countries. We are all pleased that it has proved possible to hold this Third International Symposium on Pollination, because so much important research on pollination has been done in the ten years since the Second Symposium in London in 1964. As you know, the occasion serves to mark the quarter-century of both the Bee Research Association and the International Commission for Bee Botany, two institutions which have come to work more closely together year by year.

The following account deals mainly with scientific information services, and does not cover such other BRA activities as the organization of surveys (at present of bumble bees, part of the European Invertebrate Survey) or the BRA Collection of Historical and contemporary Beekeeping Material.

It may be useful to remind you first how the Bee Research Association came to be formed. It was incorporated in London on 24th Junuary 1949, and registered under English law as a company limited by guarantee, without share capital. It's object was the advancement of bee research in all it's aspects. The original 14 signatories to the Memorandum and Articles of Association had been brought together through the activities of the Research Committee of the British Beekeeper's Association. They were working at a time when a demand for increased food production was stimulated by the disorganization of supplies caused by the Second World War, and by the need to rehabilitate much of European agriculture. The new Association was fortunate in receiving recognition and welcome at the XI International Beekeeping congress in Amsterdam in August 1949, and also immediate help and co-operation from the United States and Canada.

After the war there was a widespread desire to work together on an International basis, and indeed the first discussions on establishing Apimondia as an international federation of beekeeping associations were also held during the Amsterdam Congress. (It was in the same year, 1949, that the Council of Europe was formed.) There had been a long tradition of international beekeeping congresses, and a major link between them was the Apis Club, founded in England in 1919, whose

journal Bee World had provided an international forum for science and practice in apiculture for thirty years. The Editor of Bee World retired in 1949. I had been made Director of the new Bee Research Association, and was now appointed Editor of Bee World, from January 1950. At the end of 1951 the Apis Club was disbanded, and it's library was passed on to the BRA which, by mutual agreement, took over responsibility for Bee World.

A book shortly to be published under the title "Bee Research Association: 25 years, 1949-1974", gives a full account of the history of the Association. It is a story of growing achievement, and of co-operation between a group of people which expanded year by year and enabled the Association to provide a comprehensive service to its members and subscribers in 95 countries. Virtually every discovery or development to do with bees was reported in the Association's journals. Bee World was inherited from the Apis Club, as explained above; Apicultural Abstracts was published as part of Bee World from 1950, and became a separate journal in 1962. The Journal of Apicultural Research was established in the same year at the request of research workers in many countries for reporting their scientific research, in English.

These developments were not without their hazards. The Association's responsibilities increased much faster than the funds to do the work. Government grantaid was finally obtained in 1957, and support from the Development Commission (UK) and the international Commonwealth Agricultural Bureaux has been continued ever since.

The Association had no premises of its own; it had to work from private houses, in increasing difficulty and inconvenience. In view of the need for permanent headquarters, an International Appeal was inaugurated in 1961, but the time was one of economic depression in the beekeeping industry, and it was not until 1966 that the BRA was finally able to purchase premises. Like many other organizations in England, it found that the most economic type of building was a house built 100-200 years ago, and now too large for private occupation. Hill House which was chosen, is such a house, on the northern outskirts of Chalfont St. Peter in south Buckinghamshire, and within easy reach of London.

Today, BRA serves apiculture in the whole world as a centre for information about bees in all their aspects. These include research on bees, and technical advances in their use - for harvesting honey, beeswax, pollen, propolis and bee venom. Also the properties and chemical characteristics of these substances, and methods of handling and processing them. Last, but not least, the subject that is our concern here, the important activities of bees in pollination. This work of the BRA is supported financially by its members and subscribers, drawn from 95 different countries, by government grants and also by the sale of it's publications and services. It's present budget is 30.000 (70.000) but this is "invisibly" augmented by the enormous amount of work done voluntarily for which no payment is made.

At Hill House there is the equivalent of ten full-time staff, who co-ordinate the work done for the Association by it's many voluntary workers, prepare material for publication, and provide information and other services.

Every day, information about research work or new developments concerned with bees arrives by post at Hill House. Most of this is in the form of publications, scientific or apicultural journals, or extracts from them. These publications come from many countries, and may be in any language; we have encountered 59 different languages so far. We have published a dictionary of beekeeping terms in 13 languages, and during this Symposium a 14th has been added, when Mr. WILJANEN handed me a complete set of terms in Finnish. We are fortunate in having contact with many persons who are linguists, and willing to help with the more difficult languages that our staff may not know. Our object is first of all to get hold of all the information, so that nothing of significance escapes us; secondly, to sift it and decide to the best of our ability what really is new and likely to be useful for the advancement of apiculture and apicultural research in the world at large; then thirdly, to "process" this information into a form in which it can be distributed throughout the world, and put into use by those who will benefit from it.

Our main method for presenting the information we assemble is the quarterly journal *Apicultural Abstracts*. It consists entirely of summaries of the new developments, with precise bibliographical details of the full original publication. An indication is also given as to whether the publication (or an English translation) can be obtained from our headquarters.

In BRA we have always worked through English. It is one of the major scientific languages of the world; many scientists can read English even though they do not speak it, and we try to publish in a clear style of English what is most likely to be understood widely. To have good quality translations into other important languages is not easy, and would have been beyond our means.

This journal Apicultural Abstracts has now been issued for 24 years, and the publications reported in it represent virtually the whole of apicultural research since 1949 - some 17 000 items. From the beginning, these publications were indexed according to author and subject, using a card index system that was enlarged year by year. A standard numerical system was used for subject classification, which is independent of language. This made it possible recently to take advantage of collaboration with the Institute of Computer Science in the University of Guelph in Canada, trough Professor G.F. TOWNSEND, head of the Apiculture Department in Guelph and for some years also Chairman of the BRA. We now have complete subject and author indexes to Apicultural Abstracts on magnetic tape, with on paper and on microfilm. These are leased or sold to institutes such as the French Station at Bures-sur-Yvette, and Cornell University in the USA. They enable a user to find out what new things have been published since 1949 on any subject related to bees, also where a summary can be located in Apicultural Abstracts, and if the BRA has a copy of the full original publication or an English translations. The subject might be to do with honeybee foraging, pollination of sunflower, morphological characters such as tongue length, or the rearing of some species of wild bee.

Since 1973 Apicultural abstracts has been printed by a large international organization, the Commonwealth Agricultural Bureaux or CAB, on a computer system. CAB publishes 19 other journals covering the whole of agriculture, and containing

altogether 100 times as much material as ours on bees. CAB is linked with the FAO information system, in what is known as AGRIS.

Our BRA computer-based data bank now consists of three magnetic tapes, produced in the University of Guelph in Canada. Tape 1 contains simple details of publications reported in *Apicultural Abstracts* from 1949 to 1972, together with the reference number in the journal. Tape 1 was closed when we entered the CAB system, and a new Tape 3 was started for *Apicultural Abstracts*, similar to Tape 1, but including also the complete journal reference, so that the printouts of subject and author indexes are self-sufficient as bibliographies. This is made possible by direct transfer to Guelph of a copy of the CAB tape used for printing each issue of the journal.

The subject and author indexes printed from Tape 1 constitue a powerful bibliographical tool covering bee research from 1949 to 1972, and it is intended that these should be printed - this would be done directly from the magnetic tape. One task throughout 1973 has been the "proof correction" of the 23 year indexes, and the completion and organization of the subject entries (descriptors). Production of the 23 year indexes has been possible only because the Universal Decimal Classification, a numerical system, was used from the outset. But when it was started, computers hardly existed, and it is little wonder that adjustments are necessary before a unified subject index for the whole period can be perfected.

Tapes 1 and 3 have been explained; Tape 2 deals similarly with publications before 1949, and those since 1949 that were missed in Apicultural Abstracts; in the early years these were fairly numerous. Because of the interest in our system on the part of documentation centres in various countries, arrangements have now been made to enrich the entries on Tape 2 to match those on Tape 3, and to produce a complete self-standing bibliography to bee research before 1949, as and when funds can be found to get the outstanding publications classified by subject.

The BRA publishes two other journals besides  $Apicultural\ Abstracts$ . One is Bee World, started in 1919 by the Apis Club, and continued by the BRA in 1950 after the Apis Club collapsed; Bee World is sometimes nowadays referred to as "the journal for the thinking beekeeper", and this is true in that Bee World is a medium for presenting new ideas and new advances and developments, for discussion and for trying out in beekeeping pratice.

The third journal is Journal of Apicultural Research. It was started in 1962 at the request of bee scientists in a number of countries, who wanted to be able to report their research work in a journal specializing in bees and published in English, so that it would be read by the largest number of other bee research workers in the world. It is similar in style to Apidologie, and we have always had good connections with this journal.

The international organization Apimondia, which has become increasingly valuable in recent years, differs from the BRA in several ways, and it may be helpful if I explain these. First, BRA is an association of individual scientists and beekeepers, and institutes and university departments etc..., where as Apimondia is a federation of national beekeeping organizations. Secondly, BRA does most

of it's work through the printed word, and it's publications and indexes provide a permanent "world information bank" for bees and beekeeping. Apimondia, as you know is continously active in arranging congresses and meetings where communications are by word of mouth, whereas BRA only does this in special cases - like our Symposium here. Thirdly, the Bee Research Association - as it's name implies- is the primary link between scientists and research workers. On the other hand the first concern of Apimondia is beekeeping itself. Happily, many bee scientists are linked with Apimondia, and many scientifically minded beekeepers with BRA, so there is good and useful cross-fertilization, and both organizations have their own important part to play which could not be done as effectively by the other.

In closing I should like to mention the BRA Libary. This includes the older Apis Club Library, and many bequests, and is without doubt one of the most important bee libraries in the world, with some 3000 books, 18.000 reprints of scientific papers, and 6000 volumes of periodicals. A vast amount of knowledge is accumulated in its information bank, with computer storage at the University of Guelph. Computer printouts give subject and author catalogues, and there are some 100.000 index cards. We are however, lacking a number of beekeeping books and pamphlets from countries in continental Europe, and should welcome any that anyone here can pass on to us. It does not matter if they are out of date - in fact the older they are the more difficult it is for us to obtain them. We have many of the long established journals - 1'Apiculteur, Rheinische Bienenzeitung, Pchelovodstvo, Vcelarstvi and others - but even here we need some of the early numbers. We often find that some of the older beekeepers are willing to pass such publications on to BRA, where they will be permanently stored and used.

Founded at a time of world food shortages, the Association reaches its 25th Anniversary at a time when apiculture - whether for honey production or pollination of food crops - is once again of recognized importance. The next 25 years will certainly see an increasing use of bees in honey production, in agriculture, in education, and in environmental studies. And so long as honeybees, and the many species of wild bees, continue to attract man's attention, the services of the Bee Research Association will be needed.

#### ZUSAMMENFASSUNG

### 25 Jahre Bee Research Association

E. E. CRANE, B.R.A.

Dieser Bericht skizziert die Geschichte der Bee Research Association (BRA) seit ihrer Gründung im Jahre 1949 in London; Ziel der Gesellschaft ist die Förderung der Bienenforschung in all ihren Aspekten. Sie entstand dank dem Interresse und der Tätigkeit der Mitglieder des Forschungs-Komitees der British Beekeepers Association. Eine der ersten Aufgaben war die Herausgabe der Apicultural Abstracts, die seit 1950 einen integrierenden Teil der Zeitschrift Bee World bildeten, als deren Herausgeber E. CRANE, Direktor der BRA, verpflichtet wurde. 1952 übernahm die BRA, vom Apis Club,

die Verantwortung für die Herausgabe von Bee World.

Der vorliegende Bericht gibt eine Übersicht über die Entwicklung des wissenschaftlichen Informationsdienstes, den die BRA während der letzten 25 Jahre auf weltweiter Basis geboten hat. Im Jahre 1962 wurden die Apicultural Abstracts von der Bee World getrennt, und gleichzeitig wurde eine neue Zeitschrift, Journal of Apicultural Research, für die Publikation wissenschaftlicher Originalarbeiten geschaffen. Zusammen bilden die drei Zeitschriften eine umfassende Darstellung der Bienenzucht und Bieneforschung auf allen Ausbildungs-und Forschungsstufen.

Zur Unterstützung der Zeitschriften wurde eine umfassende Bibliothek angelegt, mit angegliedertem Dokumentationsdienst. Ausserdem wurden neue Bücher publiziert, wie C.R. RIBBANDS "The behaviour and social life of honeybees", D. HODGES "The pollen loads of the honeybees" und die mehrsprachigen Wörterbücher bienenzüchterischer Fachausdrücke, die heute in 13 Sprachen vorliegen.

Seit 1966 besteht ein gemeinsames Komputerprogramm mit der Universität Guelph (Kanada), das zur Herstellung vollständiger Autoren-und Sachregister für die Jahre 1950-1972 führte. Eine neue Registerserie wurde 1973 begonnen, als die Apicultural Abstracts dem System des Commonwealth Agricultural Bureaux angegliedert wurden; Die Zeitschrift wird jetzt mit Hilfe eines Komputer-Verfahrens gedruckt, und die Informationen werden auf Magnetband regelmässig an Guelph und AGRIS (FAO) gesandt.

RÉSUMÉ

# La «Bee Research Association» a 25 ans.

Eva CRANE

Cet exposé raconte l'histoire de l'Association pour la Recherche Apicole (BRA) depuis que celle-ci fut créée à Londres en 1949. Le but de l'association est l'avancement de la recherche apicole sous toutes ses formes. Elle prit naissance grâce à l'activité de membres du comité scientifique de l'Association des Apiculteurs britanniques. Une de ses premières tâches en 1950 fut la publication des Apiculturals Abstracts dans le journal Bee World. Le Dr. Eva CRANE, directrice de la BRA, fut chargée de sa direction. En 1952 la BRA remplaça l'"Apis Club" en se chargeant de la publication de Bee World. En 1962 les Apicultural Abstracts furent séparés de Bee World et une nouvelle revue Journal of Apicultural Research, fut créée pour publier les communications scientifiques originales. Les trois journaux intéressent le domaine de l'apiculture et de la science apicole, Ils touchent des lecteurs de tous les niveaux.

Une bibliothèque importante associée à des services de documentation fut assembleé. On peut y trouver des livres comme "le Comportement et la Vie Sociale des Abeilles" par Dr. C.R. RIBBANDS, "les pelotes de Pollen des Abeilles" par Dorothy HODGES et aussi des dictionnaires multilingues comprenant 13 langues.

Dès 1969 un programme, effectué en association avec l'Université de Guelph au Canada, a fonctionné sur ordinateur produisant des listings cumulatifs d'auteurs et de sujets de 1950 à 1972. Une nouvelle série fut commencée en 1973, lorsque les *Apicultural Abstracts* furent incorporés au projet effectué par le "Commonwealth Agricultural Bureaux". A présent le journal est imprimé par des procédés utilisant un ordinateur et des informations sur bandes magnétiques sont transmises régulièrement à Guelph et à AGRIS. (F.A.O.).

#### CHRONOLOGICAL LIST OF BOOKS PUBLISHED BY THE BEE RESEARCH ASSOCIATION

- Dictionary of beekeeping terms with allied scientific terms, Volume 1: giving translations from and into English-French-German-Dutch, with Latin index edited by E.E. CRANE 74 pages.
- The pollen loads of the honeybee by Dorothy HODGES 58 pages + 34 plates + 7 pages colour charts
- World list of bee research workers. edited by Eva CRANE 40 pages; Supplement, 1954 (8 pages); Supplementary list, 1958 (30 pages)
- 1953 The behaviour and social life of honeybees by C.R. RIBBANDS 352 pages
- Some recent Russian researches on bees and beekeeping translated by Marie SIMPSON 36 pages
- Dictionary of beekeeping terms with allied scientific terms Volume 2: giving translations from and into English-Italian-Spanish edited by Eva CRANE; chief collaborabors; M.A. ALBER; G. GIORDANI; P.A. VAGLIASINDI; A.G. de VINUESA y Rodriguez 64 pages
- 1958 History of beekeeping en Britain by H.M. FRASER 106 pages
- 1962 Anatomy and dissection of the honeybee by H.A. DADE 158 pages + 20 plates
- The Bee World: Index to Volumes 1-30, 1919-1949 by D.J. CAMPBELL et G.P. HENDERSON 120 pages
- Dictionary of beekeeping terms with allied scientific terms Volume 3: giving translations from and into English-French-German-Czech-Polish-Russian, with Latin index edited by Eva CRANE; Slav languages edited by A. DEMIANOWICZ and L. BORNUS published by Panstwowe Wydawnictwo Rolnicze i, Lésne, Warsaw, in association with Bee Research Association 204 pages
- Pollen grain drawings from "The pollen loads of the honeybee" by Dorothy HODGES 14 pages + 31 plates

- John Evelyn's manuscript on bees from "Elysium Britannicum" edited by D.A. SMITH 40 pages.
- 1966 Bee research directory edited by Eva CRANE 144 pages.
- 1966 Proceeding of the Second International Symposium on Pollination (held in London July 1964) edited by E. AKERBERG and Eva CRANE 216 pages.
- 1968 English alphabetical subject index to Universal Decimal Classification numbers used by the Bee Research Association in Apicultural Abstracts and in subject indexes (EASI) 144 pages.
- Dictionary of beekeeping terms with allied scientific terms Volume 4: giving translations from and into English-Danish-Norwegian- Swedish edited by Eva CRANE; Scandinavian languages edited by G. KOLISKO 108 pages.
- Second enlarged edition of English alphabetical subject index to Universal Decimal Classification numbers used by the Bee Research Association in Apicultural Abstracts and in subject indexes (EASI) 144 pages.
- 1971 Survey of a thousand years of beekeeping in Russia by Dorothy GALTON 90 pages
- 1972 Pollination of seed crops. A summary of research reported in Apicultural Abstracts 1959-71 edited by Eva CRANE 166 pages.
- 1973 World list of films on bees and beekeeping (provisional edition) 67 pages.
- 1973 Bumble Bee Distribution Maps Scheme: Guide to the British species by D.V. ALFORD 48 pages.
- 1973 Bumble Bee Distribution Maps Scheme: Preliminary bumble bee atlas 32 pages.
- 1974 Addenda to EASI 2 (1971) 52 pages.