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## INTERNATIONAL COLLABORATION PROBLEMS, POSSIBILITIES AND ACHIEVEMENTS

by Eva Crane

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### INTRODUCTION

When the Bee Research Association was founded in 1949 it was so constituted that future developments should not be hampered by any national restrictions. And very soon it proved necessary to do much of the work on an international basis. During the five years of its existence, the B.R.A. has gained useful experience on three points; firstly what is needed in beekeeping on an international basis; secondly what it is possible to do on an international scale; thirdly what methods are most likely to yield results of value.

I shall deal with the first two points together, under three convenient headings: Documentation, Research, and Collaboration between Beekeepers' Associations. The methods by which the work can best be done will be discussed at the end.

### DOCUMENTATION

By documentation I mean the presentation of information in such a way that it is available to those who need it. It is in a sense the most fundamental problem of all, and the one to which the B.R.A. has given most attention. Much research is of value to beekeepers not only in the country in which it is done, but also in many others. Moreover in a sense research work is a free gift to beekeepers outside its country of origin; they have been responsible neither for initiating it, nor for its publication - nor have they contributed to its cost. But in order to use it, they must know of its existence, and also have access to the results in a language which they can understand.

It is probably no exaggeration to say that in the years before 1949 the lack of adequate documentation was one of the greatest hindrances to advancement in beekeeping, and from the outset the B.R.A. decided to use part of its resources to remedy this. The work undertaken comes under three main divisions: Publications, Library, and Bibliographical work.

#### Publications

While in the past there have been perhaps too many publications designed to give information, there have certainly been too few enabling people to find information. As a result, much of the in-

formation which should have been available has been wasted. So to begin with we concentrated on helping people to find the information they needed.

Our first publication was the "Dictionary of Beekeeping Terms" in 1951. This gives the equivalents in English, French, German and Dutch of some 1000 beekeeping terms, and has made the work of translating very much easier. A supplement for Danish, Norwegian and Swedish is nearly ready for publication, and supplements for Italian and Spanish, and Russian, are being prepared.

Two other books have been published - "The pollen loads of the honeybee" by Dorothy Hodges and "The behaviour and social life of honeybees" by C.R. Ribbands; both are substantial contributions to beekeeping research, and both have made much important information available to beekeepers for the first time.

In 1953 we published the "World List of Bee Research Workers". This includes the names, addresses and interests of over 450 people doing research work on bees and beekeeping in 40-50 different countries.

This summer we published a collection of English translations, made by Mrs. M. Simpson, of ten recent Russian beekeeping papers, selected from some sixty which had been abstracted.

We have a number of other publications in preparation:

A catalogue of beekeeping periodicals of the world

A complete catalogue of English bee books published before 1850

A collection of statistics of honey and wax production of different countries and the world trade in them.

All these tasks have been undertaken in response to requests from beekeepers in different countries.

Bee World. I have left until last the international journal Bee World, because although it has been published since 1919, it only enters the present story in 1950 when I was appointed Editor. The chief innovation I made was the introduction of Apicultural Abstracts, which by now cover practically all that is published throughout the world which is of importance to beekeeping and bee research. The abstracts themselves are in English, but the titles are given also in French, German and Spanish.

### Library facilities

There has been in the past a great need for a library (1) which contained all important publications on beekeeping and bee research, (2) which was adequately catalogued so that publications required could be found, and (3) which would lend these publications anywhere in the world.

The B.R.A. has now built up such a library; it is of course not yet complete, and probably never will be, but it is by now one of the largest beekeeping libraries in existence, and the only one available to borrowers all over the world. Our records show that it is very much used by those who are advancing beekeeping in countries still poor in libraries of their own - such as Israel, India,

Pakistan and South Africa. Contrary to the predictions of our more gloomy prophets, we have not yet lost a single publication through lending it abroad.

We have gone further than most libraries in two ways. Firstly we have a Library of Translations, consisting of unpublished English translations of (so far) some 200 important publications in other languages. Secondly, in collaboration with the National Beekeeping Museum we have this year started a Beekeeping Picture Library. These pictures, like the books and translations, are lent anywhere in the world.

In addition to building up our own library, we have been able to help others in different countries to obtain books and periodicals they lacked, by exchanging their duplicate material.

### Bibliographical work

Under this heading I include unpublished catalogues, indexes and bibliographies, organized so that they enable us to discover what information is available on any specific subject, whether or not it is in our own Library. It would be valuable if this work could be extended, for instance to the publication of select bibliographies on subjects of current importance; however in order to do this we need more money, and more collaborators with frequent access to our own and other libraries.

## RESEARCHES

If I seem to have stressed the subject of documentation at the expense of research, it is because, as my own experience of the international problems of beekeeping has grown, it has become increasingly clear to me that the only satisfactory basis for research is the best possible documentation - past and present - on a world-wide scale and available internationally.

We have tried to give all possible assistance to those doing research work, not only in the ways I have already described, but also by helping those who had the ability, but lacked experience or training, on their way towards carrying out research work which is of value to beekeeping.

Research work actually carried out by the B.R.A. has been concerned with practical problems, and falls into two classes.

### 1. Large-scale experiments

These are experiments carried out by beekeepers under instruction - each beekeeper having two (or more) colonies "matched" as closely as possibly in every way, one being used as a control and the other receiving some special treatment, for instance being fed with syrup or pollen substitute. All beekeepers apply the special treatment in the same way; they must all be trustworthy people, and must report faithfully in the manner required. Some success has been obtained with this method (for instance on the

question of spring feeding), and we have learned enough to apply it usefully to many problems. We have not yet done so because of the difficulty of getting enough participants for statistically significant results. The quantities we measure in order to evaluate any given treatment - amount of brood in a colony, amount of stores, and so on - vary not only because of the treatment, but also because of other circumstances outside the control of the experiment. The greater this other "chance" variation is in comparison with any difference we are trying to detect, the larger the scale of the experiment necessary to isolate the effect we are interested in. Calculations based on previous experiments show that a 50% difference between experimental and control colonies might be detected with say 10 pairs of matched colonies; a 10% difference could not be detected unless about 200 pairs were used; a 5% difference would need 4 times as many again.

Between 1947 and 1949, in the wave of enthusiasm after the war, we could in England muster enough beekeepers to provide between one and two hundred matched pairs of colonies - and so to obtain useful results - but never since. And if the experiment is done with insufficient colonies, the results are meaningless because we cannot detect the difference we are seeking. We are still trying to overcome this obstacle to a very useful method for investigating problems under ordinary beekeeping conditions.

## 2. Collection and analysis of information

Most countries have a number of skilled beekeepers, who between them possess a valuable accumulation of experience in the management of bees. If only it were possible to collect and analyse this experience for each separate beekeeping problem, much would be gained. There has so far been very little objective comparative research on the management of bees, and we - like others - have found many pitfalls in carrying it out. Beekeepers are so much more willing to report their successes than their failures, and yet a full knowledge of failures is essential in assessing the value of a beekeeping operation.

In our attempts at this collection and analysis of information provided by competent beekeepers, mainly carried out by Mr. Wedmore, some success has been obtained in assessing methods of summer management (swarm control), and methods of queen introduction. Much more can be accomplished on these lines, provided that investigators can be found with the necessary skill and time, and with a capacity for self-criticism and the detection of inconsistencies and false entries in reports received. Otherwise the method is not only useless, but dangerous.

This method is not confined to problems of the management of bees, and some problems could profitably be studied on an international scale. We have already made a start with an international survey of the incidence of disease among wild colonies.

## COLLABORATION BETWEEN BEEKEEPERS' ASSOCIATIONS

I feel that with this subject before me, I have stepped from the firm ground of science and learning into the dangerous realm of human relationships, and I would leave this section undiscussed if it were not of such vital importance for all of us. Although beekeepers individually are by nature friendly folk, when they form themselves into Associations things do not always run so smoothly.

I would remind you of our subject: the needs and the possibilities of international collaboration. Each of us knows the conditions of his own country - in some, like the Scandinavian countries, a single united Association; in others a fairly friendly division according to language (as in Switzerland), religion (as in Holland) or geography (as in Britain); in others again, a not-so-friendly division. What could these national Associations gain by mutual collaboration, either with or without forming themselves into an international federation such as the projected Apimondia?

My experience tells me that such an international federation would not itself be a suitable body for getting work done. There would be too many conflicting minds and wills; and conflict, whether in an individual or a society, is a deterrent to efficient work. But there are ways in which international collaboration could be most valuable. For instance at the present time - because of conditions outside beekeeping altogether - many Associations have difficulty in holding their members, and I believe that they could derive great profit from studying the problems and achievements of Associations in other countries. Do the Associations with a membership of 20-30% know how Holland maintains almost 100% membership? Do beekeepers in countries where it is difficult to sell honey know how the Norwegian honey co-operative functions? Do Associations without insurance schemes know how they are operated by those who have them?

Moreover each national Association will offer as one of the benefits of membership that it has the power to represent the beekeepers' interests and to bargain with the Government to their advantage. But how many Associations know what assistance others have succeeded in obtaining from their own Governments? I believe that much would be gained by pooling information on this important subject of Government relations. For instance there are the problems of:

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| Legislation on:                        | beekeeping<br>registration<br>bee diseases<br>spray poisoning<br>honey marketing<br>exports and imports |
| Tariffs on:                            | beekeeping materials<br>imported honey and other bee products   |
| Price support schemes for bee products |   |
| Provision for research and education.  |   |

When I speak of "pooling information" I realize that this implies a job of work - indeed long and painstaking work. I honestly believe that this work would be done better, more quickly, and more cheaply by methods we have found successful for other tasks (which I am now going to describe), than by a Committee representing national Associations.

### METHODS OF OPERATION

I have left this section until last, because in a sense it sums up my own experience of the last five years.

We have a saying in England 'First catch your hare', and before any job is done, the money must be raised for it. The greater proportion of B.R.A. work is done voluntarily, but some money is still needed. We have had to work very hard to raise our funds, but we have not met with such difficulty as some Associations, probably because it very soon became clear that the money provided was being well spent. Our total income has increased steadily each year, but it is of some interest that the proportion of it which comes from abroad has increased much more rapidly. These are the figures:

|      |     |
|------|-----|
| 1949 | 2%  |
| 1950 | 3%  |
| 1951 | 5%  |
| 1952 | 25% |
| 1953 | 29% |

We now get some financial support from thirty countries (nearly fifty if we include Bee World subscriptions), but in spite of the fact that over two-thirds of our work is of international value, only one-third of our money comes from outside Britain. Beekeepers' Associations in several countries, and research departments in many, contribute to our funds, and if only all could do so, the work could be greatly extended.

Now we come to the work itself - and you will notice that to me it is always the work that is important. We have tried various methods of collaboration, both within our own country and internationally. In our experience of the beekeeping world, a committee is an excellent body for preventing malpractices, but not for getting work done, nor even for controlling it. It is so easy for one member - especially a newcomer with little knowledge of what has been done in the past - to turn a committee against some action. Moreover continuity of policy is essential, and there must be a sense of responsibility, which comes more readily to a person than to a group. Our most successful method (especially when money is short, as it always is) has been to have one person to be in charge of each job, with the greatest possible freedom of action, and advisors and helpers brought in as necessary for that job. It is important to include a good critic among the collaborators so that all possible faults can be dealt with before the work is accounted finished. But good critics are very hard to find.

The advantages of this method are that an individual in charge of a job can not only feel responsible for it, but can also get from its completion some sense of achievement which is in itself a reward. Moreover collaborators will only be those who have an urge to get the job done, and there will be no "sleeping partners"; unless they are willing to work they will soon drop out altogether, and not act as a drag on the others. It is also essential that the person in charge fully realizes his responsibilities to his collaborators, and not only inspires their confidence, but makes them feel that their work is needed and appreciated.

Of course the collaborators for each job must first be found, and this does need a first-hand knowledge of people in all the countries concerned. But in practice it has not presented great difficulties, nor indeed has the general problem of collaboration between people in different countries. Language certainly has not, and here - as elsewhere - much can be accomplished by those willing to learn. Any collaboration must be based on trust and good faith; agreement is not so vital as the willingness to co-operate in something one disagrees with, because one trusts the other side. There must also be a capacity for hard work. There are many who will tell you that a job should be done - and some to tell you how to do it - but few who will actually help you to do it. (We have found a curious sex distinction here: in so many cases the men have proved to be the talkers and the women the doers. I do urge those in charge of Beekeepers' Associations to get more women into important jobs.)

In conclusion, I do want to emphasize that what we have achieved in the Bee Research Association during the past five years is not my own work; it is an example of what can be done in practice by free and informal - sometimes very informal - collaboration on an international scale. And I myself have been working under virtually ideal conditions - with much freedom of action and many willing collaborators. As Alexander Pope said of his work in translating Homer, "When I felt myself deficient I sought assistance", and to this Dr. Johnson added, "Men of knowledge did not refuse to help him".