

THOSE OTHER BEES: CHANGING THE FUNDING CULTURE

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ABSTRACT

This paper discusses the problems surrounding the conservation of native bee populations and suggests possible approaches to solving the current problem.

INTRODUCTION

We are creating this book because there are perceived problems with the conservation of wild pollinators. The range of expertise represented in this book allows me to take for granted that we are in broad agreement with the following statements centred on these problems:

Statement 1: the pandemic of varroaosis throws into sharp relief the need to understand better the ecology and conservation needs of non-*Apis* bees because it is from among these bees that we need to recruit manageable pollinators as an alternative to the honeybee.

Statement 2: native bees are under ever-increasing threat because of habitat destruction and reduced floral diversity associated with intensive agriculture, over-grazing, de-forestation and building development.

Statement 3: native bees are of vital importance not only as potential managed pollinators of crops, but also as pollinators of native floras: they occupy keystone positions and without them, ecosystems would eventually collapse.

The above problems are discussed in detail by, for examples, Kevan 1975, 1987, 1991; Parker *et al.* 1987; Kevan *et al.* 1990; O'Toole 1991, 1993, 1994; Richards 1993; Buchmann and Nabhan 1996; Kearns and Inouye 1997.

The Solutions

If we can be in broad agreement about the nature of the problems which confront us, can we also agree on the necessary range of solutions? Well, if we think of these problems simply as nice, academic, practical exercises, then the answer has to be yes. We all know now roughly what to do. If the World Bank gave us a blank cheque, we could get on with the job. We could probably do it for the cost of one NASA space project or even less.

You can detect the drift of my argument: it is all a matter of priorities, of what priority our government funding agencies give to the research projects competing for attention and investment. Of course, we should be sending probes into deep space, but if we can afford to do this, can we afford *not* to fund the necessary research on wild bees? The future health of our planet may well depend on it. In the meantime, we have to accept that biology will always suffer from physics envy!

So if the first step is to get governments and other funding agencies to re-adjust their funding priorities, then this step is, by definition, a political one. We must be assertive and get on to the propaganda and lobbying bandwagon.

Immediately, though, we are confronted with a fact of political life: politicians and senior bureaucrats are not interested in issues *per se*: they are interested in perceptions and how these affect them in the brokerage of power and influence.

Moreover, my experience in the European political arena is that people are almost totally ignorant of the existence of bees other than honeybees. They see bee issues as those relating to apicultural practice and the control of honeybee diseases.

We need, therefore, a propaganda exercise which raises the profile of native bees, to help politicians and other decision-makers put a spin on wild pollinator issues that they can feel

comfortable with, one which is sufficiently novel to attract and keep their attention. We are, after all, competing with the very powerful lobbies which, quite legitimately, represent the conservation needs and interests of, say, birds and star species such as the Siberian Tiger and Giant Panda.

One way of changing the culture is to promote bees as rather more than just another bullet point in the biodiversity crisis: we need to get politicians and other decision-makers to see our native bee faunas as important natural resources.

In this context, an economic value can be put on bees as pollinators not only of crops, but as keystone mutualists which are vital management agents in the conservation of habitats and therefore, of floras and faunas.

If we succeed in changing perceptions in this way, then we have another weapon in our armoury.

This brings me to a particular problem we have in Europe with bee conservation. In Britain, for, example, although 25% of our native bees are on the *Red Data Book* list of endangered or threatened species, bees are specifically excluded from the Berne Convention. This is the result of an accident of bureaucratic history. When the Berne Convention was being drawn up, a consortium of European biologists was contracted to produce lists of either endangered species or species of special ecological importance worthy of conservation. None of these biologists were entomologists with any interest in knowledge of bees. As a result, no bees were submitted to the Convention authorities.

We now have a situation in Europe where funding bids to European Union agencies to support research or meetings on the conservation of non-*Apis* bees are automatically refused on the grounds that no bees are covered by the Berne Convention. We must change this and I appeal to this meeting to support a resolution which can be sent to the appropriate authorities in Brussels, calling for a change in this ludicrous policy. I would like us to call on the appropriate authorities to ensure that those bees listed in the various national *Red Data Books* and their conservation needs be recognised by the Berne Convention.

This brings me to my final point, which is one which I have laboured on other occasions, at other venues and one which I make no apologies for labouring once again.

Assuming that we are successful in persuading Governments and other agencies that bees and their pollination services are a vital natural resource and that their ecology and conservation biology be placed high on the funding agenda for research funding, we are immediately faced with yet another problem to overcome.

We are now in the embarrassing situation that our understanding of pollination biology is accelerating faster than our understanding of bee taxonomy. For much of the Old World, there are few modern revisionary monographs which make it easy to identify bees.

We also find ourselves in a logically indefensible position: if bees are a vital natural resource, then they need to be inventoried. How else are we to manage them to our best advantage? But without much greater investment in taxonomic research, how can we make the necessary inventories of our resources?

This really is an acute problem. We don't even have an agreed list of bee species for western Europe. Then, in the Old World, the average age of practising bee taxonomists is 50+ (O'Toole, 1996) and we are not training a new generation of specialists in this field (Daly, 1995). Despite the fig leaf of academic respectability conferred by Cladistic Theory, for most universities in the Old World, taxonomy is still regarded a "merely a branch of descriptive natural history" and it is still difficult to get academic authorities to foster post-graduate studies

in pure taxonomy, especially in projects which result in practical benefits such as identification keys.

What does this mean for those of us who are concerned with the ecology, conservation and faunistics of bees? Researchers are ill-served by the current state of bee taxonomy. Moreover, while we can devise the most beautiful projects in these fields, without sound bee taxonomy, they are simply not viable.

It is highly desirable, therefore, that we encourage people planning to do this research to include in their funding applications, provision for taxonomic support. It is even more desirable that we foster a grant-aiding culture that is sympathetic to providing core funding for major revisionary work in bee taxonomy.

The punch-line, then, is this: without more serious investment in bee taxonomy, we are in danger of not really knowing what it is we are trying to conserve.

I will finish, therefore, with a list of suggested solutions to the problems I have outlined:

1. Set up an electronic network of active bee systematists: who is doing what and where.
2. Survey the bee material held by the larger national museums: this is a major resource for any concerted effort in bee systematics.
3. Organise co-ordinated surveys of bee faunas of major threatened habitats.
4. Seek funding for revisions of bee genera that are major pollinators of native floras and/or crops species.
5. Work towards a world inventory of bees.
6. Set up a world database of bee-flower visitation records.
7. Change the funding culture, so that core funding is available for basic research in bee taxonomy.
8. As a long term objective, set up centres of excellence in bee taxonomy where training can be given at the post-graduate level.
9. Establish more partnerships along the lines of PCAM (Programa Cooperativo sobre la Apifauna Mexicana; Michener *et al.* 1994; Michener 1996).

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