

Richard I. Vane-Wright

Assessing Priorities for the Conservation of Biological Diversity



Born in Kent in 1942, Dick Vane-Wright's first real interest started seven years later to the day — a fascination for butterflies. After later childhood flirtations with model engineering, astronomy, chemistry and jazz trumpet, he entered the British Museum (Natural History) as a scientific assistant working on *nematocerous Diptera* (midges, gnats, mosquitoes, crane-flies). After graduating from University College London with first class honours in zoology in 1967, he returned to the Museum and his first love, to become head of the newly-formed Butterfly Section, with a staff of five and responsibility for curating the world's most important collection of these insects (2.6 million specimens). From 1967-1984, he worked on the classification and comparative biology of tropical butterflies, culminating in two major collaborative works, *Milkweed Butterflies* and *The Biology of Butterflies* (both with P. R. Ackery). From 1984-1990, he was Deputy Keeper of the Department of Entomology. In 1990 he turned to full time research, with increasing emphasis on conservation and biodiversity, but also revitalising previous work on the systematics and evolution of milkweed butterflies and their mimics (mainly in collaboration with Professor Michael Boppré, Freiburg). — Address: Biogeography and Conservation Laboratory & Department of Entomology, Natural History Museum, Cromwell Road, London SW7 5BD, GB.

A fellow biologist once told me of an experience he had on the remote Indian Ocean island of Diego Garcia. He had been studying the island's wild life and the surrounding coral reefs for several months before the arrival of three thousand marines. These military men had the task of building a five-kilometre runway for nuclear bombers. It took them just three months, at the end of which one proud bulldozer driver said to my friend, »Say Tony, what do you think of that — when we came here three months ago, there was nothing. Now look at it !«

As biologists, our reaction to such stupefying (even if unintentional) philistinism is one of horror — we laugh to hide our anguish. But to be effective, our emotions must be channelled. To help place the conservation of biological diversity on an equal and valid footing with other uses of the land and sea, we need a rational approach, especially to the problem of setting priorities. Thus the basic objective of my year at the Wissenschaftskolleg was simple enough: to be part of the "Schwerpunkt" entrusted with writing a book about methods for identifying priority areas for the conservation of biodiversity.

Two things I have learned in life are that I am a poor judge of character (I once gave £ 3800 to a double-glazing salesman) and to be wary of expectations. Despite this, my expectations for Berlin were high, dangerously high. The first month passed in a haze, battling with supermarket trolleys and a child who hid under a chair rather than be examined by a friendly school doctor; with a language I proved incapable of mastering; and trying to entertain the kids from time to time while my wife struggled with her M.A. In between I dreamed (with Bob Pressey) about new ideas we wanted to explore and discovered some of the peculiarities of *Windows*, *Word*, e-mail, FTP and the electronic network in the office building.

Having worked together on an initial rewrite of the book outline, Bob Pressey returned to Australia at the end of October, whereupon Chris Margules and Rüdiger Wehner arrived for a couple of days. Dreams suddenly turned to sterner reality. Had we started writing yet? No, not really. Who was in charge of the project? Nobody, really. What was to be done? It was agreed that, as I was the only member of the nine-strong »Schwerpunkt« to be at the Kolleg for the entire year, the only logical step was to make me, in effect, project manager.

With some dread I accepted, having hoped until then that we could proceed, like the original genesis of the whole thing, on a more or less anarchic basis. To be a natural leader is one thing; to be a leader among equals from whom you expect to gain more than give, is another. A few days later I issued a circular to all members of the group pointing out that new research was not the primary objective — we had to pull together, largely to harmonise what we already knew, and write a book. A bleak but realistic message in relation to my original (unrealistic) dreams of academic rebirth in a German seminary. Two weeks later my wife's father fell seriously ill, rallied, and then died. Around the beginning of December, the first of two (well hidden) disputes within the group erupted. By Christmas I felt rather desperate, with little personal achievement on the main project to show, grief and adjustment problems afflicting me and my family, wondering how I would cope with another seven months. So much for expectations.

After returning from a hectic Christmas and New Year visit to England, personal and professional fortunes improved. The coming and goings of »Schwerpunkt« contributors continued, and I began to live vicariously through their achievements as much as through my own. Although they all encountered difficulties of one sort or another, most made substantial progress on the basic work and also achieved growth in understanding through direct contact among members of the group and with other Fellows. Even so, in hindsight, to have quite so many contributors, with a complex pattern of arrival and departure, was not ideal (one effect of bringing the original project proposal forward a year). This was because, with each new departure and key arrival, ideas had to be re-rehearsed. This inevitably led to changes — a form of progress in itself — but it was obvious that some of the changes would have been different if the whole team had been together all the time, or if the sequence of arrivals and departures had been different. Even with our last arrival (the re-appearance of Bob Pressey at the beginning of June for his second session), further substantial changes were called for (and largely implemented or even re-introduced).

Another consequence of being `elected' co-ordinator for the group was the need to organise seminars and colloquia. It was clearly desirable to take advantage of the Kolleg facilities to run a major colloquium to provide peer group review of what we were proposing, ideally before it was too late to respond to any feedback or criticism generated. Early on we also realised that it would be helpful to get input, perhaps at the same colloquium, to our attempts to consider policy and implementation issues — the original fourth section of the book. All of our team were biologists, but this section of the book promised to stray into economics, sociology, politics and law. At the meeting with Rüdiger Weimer and Chris Margules at the end of the first month, it became apparent that we were really talking about two quite separate meetings. The first should be small, comprising mainly professional conservationists, to concentrate on ideas about policy and implementation. This was set for March, when six of the nine members of the "Schwerpunkt" were scheduled to be present, and by which time it was hoped we would be far enough ahead with the first three parts of the book to really benefit from this stimulus for the final section. The second meeting, a larger peer-group review exercise, was set for June.

Organising these two meetings, in the sense of trying to get suitable people to come to Berlin at appropriate times, became an almost inexplicably major factor in my life, right until June. Without the help of Andrea Friedrich and others, perhaps nothing would have been achieved. In the end, the March meeting, after seemingly endless uncertainty, took place on two days in April, with only two of the five people originally invited in attendance (although we did have an excellent, literally last minute

replacement for a third). However, it still had a major impact on our work*. The June meeting, for which I foolishly delayed final arrangements because of endless uncertainties over the first meeting, never reached the critical mass originally anticipated. It too, however, brought useful ideas (including some salutary suggestions from a German colleague), and introduced a number of valuable contacts. In contrast, a small series of 'Biodiversity Forum' seminars, organised with input from other fellows (notably Erhard Denninger, Ashok Desai, Sandy Mitchell, Eduardo Rabossi, Gustav Ranis and Wolfgang Streeck), not surprisingly proved much easier to organise and probably had equally significant effects on our thinking as the two set pieces. The latter, given the hospitality of the Kolleg that was on offer, proved extraordinarily difficult to get together, more so than many far larger meetings that I have organised in the past. Biodiversity is a very trendy subject, and it showed in the number of people who turned down a free trip because of 'Full-diary Syndrome'.

Over the last few weeks I tried to work as a more 'regular' member of the group, preparing some examples for the chapters on taxonomic measures and applications, assembling a unique database on Danish butterflies (see below), and trying to get on with my own textual contributions to a number of chapters. Finally time ran out all too soon.

My own contribution to the project during the year has largely been to provide continuity and stability, through the colloquia, meetings, discussion, and commenting on the work of others. My own attempts at writing the single chapter on which it was agreed I would take the lead proved erratic, and at the end of July Chapter 1 still remains incomplete. Despite this difficulty, I am totally confident that my contributions will be finished in time, and that we will all continue in effective collaboration by electronic mail over the next seven months, up to the submission date to Oxford University Press on 28th February 1995. My overwhelming impression is that, without the coming together and commitment that working at the Kolleg has engendered, and without the differences of interpretation and understanding exposed amongst the various contributors, this work would never have been undertaken, let alone completed. The book is 'in the bag', even though much still remains to be done.

During the year I also pursued a number of other activities, some directly, other only indirectly related to the main objective. Most were either pressing ghosts from the past, or unique opportunities presented during my time in Berlin.

* See reports, pp. 193 ff.

Outside the Kolleg, I gave only two lectures — perhaps an all-time low for me. Both took place in Bonn, at Museum Koenig. The first was a seminar for students, the second was a plenary lecture ("The shrinking ark: can systematics contribute to the preservation of biodiversity?") for the Museum's International Symposium on Biodiversity and Systematics in Tropical Ecosystems (2—7 May). These meetings gave a useful opportunity to try out some ideas for a lecture I will give at the Missouri Botanical Garden, St Louis, at the end of September. I also made a number of valuable contacts — not least with environmental law specialist Lyle Glowka, who is working on an IUCN Explanatory Guide to the Convention on Biological Diversity. In the communication arena, I made interviews with two reporters, one together with Paul Williams for *Die Berliner Wochenpost*, the other for *Der Tagesspiegel*, both of which resulted in articles about the Wissenschaftskolleg Biodiversity Project.

Back in London, where Chris Humphries and I run the recently-founded Biogeography & Conservation Laboratory, grant applications seem an ever-present fact of life. During the year, I prepared one large and two small grant applications — the large one, made to the UK 'Darwin Initiative for the Survival of Species', was successful. In addition, I received good news of an earlier EU-Human Capital and Mobility programme application, which will bring one of the researchers from Museum Koenig to London for two years, and this also required attention while still in Berlin.

An unexpected event was a request to be a member of a four-person advisory group to review the work of the Zoologist Museum, Copenhagen. An increasing number of museums now appreciate the value of such peer-group reviews, intended to look at the quality and relevance of their research, teaching and exhibition work, the quality, maintenance, accession policy and accessibility of their collections, and the efficiency of their administrative organisation. Having been on the receiving end of such visits for two decades in London, it was a challenge to see the problem from 'the other side', especially as I was scheduled to return to London briefly at the end of June to make a presentation to yet another "visiting group" to my home institution. After wading through 10 ems of CVs and research plans for all the senior scientists at the Museum, I visited Copenhagen from 24—27th May. It proved to be a fascinating, wholly absorbing and quite exhausting visit, in which the gang of four interviewed over 30 senior staff, met with the Director on several occasions, and talked to groups of students, technicians and visiting scientists. On the last day we raced to produce a draft report, since finalised and presented to the Museum at the beginning of July.

This event, although apparently remote from my main objective, was meat and drink for a professional museum worker. It affected my own

presentation in London on 27/28 June, was a help in considering the needs of the *Museum für Naturkunde* (see next section), and quite incidentally produced one of the most interesting data sets suitable for assessing methods of priority areas analysis that I have yet seen — a doctoral thesis by Michael Stoltze completed only weeks before, which assembles historical data for Danish butterflies over two different time-spans, together with a purpose-designed survey attempting to record appropriate data for the whole of Denmark during 1990-1993. After returning from Copenhagen, Paul Williams and I made a 10 km grid for Denmark within WORLDMAP, and I entered 31,797 data points for 72 native Danish species from Stoltze's maps. I expect to see some of the results included in the book.

The *Museum für Naturkunde*, about 400 metres east of where the Wall used to cross Invalidenstrasse, holds one of the greatest zoological collections in the world. In my own field, I rank it second only to my home institution. I had hoped to make fairly regular visits during my stay, to work with the Lepidoptera collections, but apart from two brief occasions, this never materialised. However, after meeting Professor Hubert Markl (Konstanz) in June, I got drawn into discussions about the vacant position of director of zoology at the Museum. Professor Markl, together with Rüdiger Wehner and Professor Clas Naumann (Director of Museum Koenig), were all members of the search committee. I sent an open letter to Professor Markl indicating how important I thought the post was, and what a unique opportunity it represented not only to re-invigorate systematic zoology within Germany, but perhaps more widely in the rest of Europe. On 11th July I had a meeting with the Director of the Museum, the mineralogist Dieter Stöffler, a number of his staff and two members of the Humboldt University administration. Since then we have had further correspondence about the issues involved. I hope that these exchanges will prove helpful to the Museum and the search committee. Certainly, the brief behind-the-scenes tour given to me on 11th July proved intensely interesting, and gave me a much better understanding of the wide range of problems faced in trying to bring such a venerable institution up to date.

Another of the problems created by coming to Berlin a year earlier than originally planned was the number of projects in progress that I had been unable to finalise before arrival. Some of these came to haunt me, it seemed, and occupied much time at the computer or going through proofs. The most important involved reworking a long chapter on the classification of butterflies for a forthcoming double volume on Lepidoptera, to appear in the famous *Handbuch der Zoologie* series (published, incidentally, in Berlin). In the weeks following arrival I re-drafted, edited, faxed and e-mailed my two co-authors, as we struggled to respond both to

referees' comments and the need to reduce our over-long contribution to an acceptable size. The latter was achieved by excising a major portion, preparing that for a journal, and then re-organising the remainder, all in a race to meet the 'final' deadline. As the day approached during November, we were still one critical review short. On the day I was poised to print the final version, the missing review arrived — 12 single-spaced pages of criticisms and suggestions ! We could not ignore this, so we missed the deadline and returned wearily to e-mails and faxes. Eventually the main text went to our long-suffering editor (Niels Peder Kristensen, Copenhagen) in February, and the journal article to *Entomologica Scandinavica* only in May. At the time of writing, we still do not know if the latter has been finally accepted !

The classification of butterflies and our ideas about the biology of these creatures that depend on a natural classification have formed the backbone of my career in zoology. World-wide, there are about twice as many species of butterflies as there are birds, and globally they are the best-known insect group of any real magnitude. For me and my colleagues in the Biogeography and Conservation Laboratory, the first steps in our ideas about priority areas analysis were set down in *Milkweed Butterflies* (P. R. Ackery & R. I. Vane-Wright, 1984). Currently I am applying the technology refined in Berlin to the two newly-funded projects, the Darwin Initiative work on the Western Ghats and the EU-HCM project, the first with strong, the latter with total emphasis on butterflies as biodiversity surrogates. In future I hope to continue further collaborative research on the classification and biology of butterflies, to resolve some of the many problems identified while preparing the *Handbuch* chapter. Thus the time taken up in reworking this material, although unwelcome and largely unexpected, was very much in the mainstream of my work.

Other publications worked on extensively while in Berlin include two papers on Moluccan butterflies, both in press and both redrafted to take account of referees' comments and new information. A final version of a paper by Dr Paul Eggleton and myself on principles of phylogenetics and their implications for comparative biology was agreed, and the proofs for the edited volume to which it belongs (*Phylogenetics and Ecology*, Eggleton and Vane-Wright, in press) were read at great speed — as were proofs for Forey, Humphries and Vane-Wright (*Systematics and Conservation Evaluation*, OUP, 1994). First proofs for a third book, edited by Phillip Ackery, Campbell Smith and myself (*Carcasson's African Butterflies*, CSIRO, in press) were also handled, together with re-writes of part of the introductory material for this annotated catalogue for all of the butterflies of Africa — 3600 species, one fifth of the world total. This last work was the greatest dinosaur of the lot, having been started literally two

decades ago. We hope to see publication of this *magnum opus*, the first modern catalogue of all the butterflies of an entire zoogeographical realm, later this year.

The one and only personal butterfly project that I originally *planned* to pursue in Berlin, an Action Plan on milkweed butterflies for IUCN Species Survival Commission, did not progress by a single jot. Many years ago when struggling to understand Piaget and theories of cognitive development in childhood so I could design and write text for an exhibition on human biology, I was once told that my indecision was holding up production at Brazilian bauxite mines necessary to make Aluminium required for the exhibition cases. During my year at the Kolleg, I learned that South American economies were not to be counted alongside those of the miracle economies of Asia. A feeling of *déjà vu*, of personal failure, and of sympathy for the metal workers of Brazil sweeps over me again.

Despite this and other problems alluded to earlier, the year has been a mind-altering experience. Is there life after Berlin? I believe our project will make a significant impact on efforts to save more of life's diversity for the enrichment and benefit of future generations. A request to produce a working paper based on our methods for the German Department of Economic Co-operation and Development, in relation to their needs for assessing biodiversity projects to be funded by the World Bank's Global Environment Facility, gives me positive encouragement in this. In terms of my own existence, my life has undoubtedly been enriched — not only through contact with colleagues, other Fellows, visitors and many other new acquaintances, but also by the remarkable staff of the Kolleg, the remarkable institution that they run, and the curious and equally wonderful city of Berlin.