Sir Joseph in the round

David E. Allen

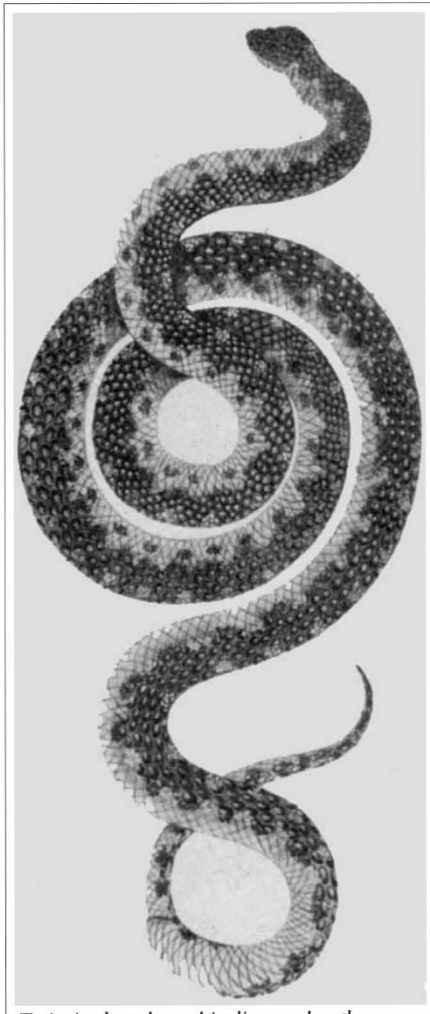
Sir Joseph Banks 1743–1820. By Harold B. Carter. *British Museum (Natural History)*: 1988. Pp.671. £45.*

VICTORIANISM is back in very truth! Here is a huge slab of biographical masonry of just the kind in which our forebears revelled, complete with the standard introductory chapter detailing the subject's ancestry, 27 appendices, an extensive bibliography and an index that runs to 54 pages.

It comes as no surprise to learn from the foreword that more than a quarter of a century has gone into the book's creation and into the massive archival enterprise that underlies it. It is the latter indeed that, down the years, has been the author's main concern. Catastrophically for later research, Banks's papers were dispersed at his death and until now all accounts of this pivotal figure of late eighteenth-century science have been based on fragmentary evidence. Mr Carter's signal achievement has been to bring together in one place — namely, the British Museum (Natural History), the primary recipient of the Banksian *reliquiae* — a collection of 15,000 documentary items, either originals or copies, tracked down from all around the globe. No one would have blamed him if he had seen his task as ending with that. But fortunately he has been moved to be more than an archivist and has produced in addition a complementary quarry for researchers that is as impressive in its mastery of detail as it is well written.

Banks was President of the Royal Society, without a break, for three-quarters of his adult life — 42 years in all. That is an extraordinary achievement in itself. But even without the advantages of that office, his farsightedness and his determination allied to his personal wealth would have been sufficient to make his life a success-story in any age. As it was, he had the extra measure of good fortune to be born into a period in which the particular branch of knowledge that took his interest was about to offer its greatest-ever scope to those prepared to pursue it. The second half of the eighteenth century was to be the great age of botany, the great age of private patronage and the great age of European exploration. Banks seized all three opportunities with aplomb.

The wealth came from landed estates, principally in Lincolnshire, the product of some shrewd investments by an ancestor of characteristic Banksian girth. Banks succeeded to these at the early age of 18, by which time he had already begun to manifest a broad interest in natural history. His years at university seem to have been in the main an irrelevance and the key event, when he was 21 or thereabouts, was probably his introduction to Daniel Solander, the British Museum official and former pupil of Linnaeus who was to become his lasting friend, employee and co-worker.



Twist in the tale — this diamond python was painted by an artist who landed in New South Wales with the First Fleet in 1788. The works of this unidentified artist, sometimes called the 'Port Jackson Painter', were part of the library of Sir Joseph Banks, and are known as the Banks Ms34. The picture is taken from a colour original in The Art of the First Fleet and Other Early Australian Drawings, *a beautifully presented book edited by B. Smith and A. Wheeler and published by Yale University Press, price $125, £95 (£79.95 until September).*

Doors opened readily, and election as a Fellow of the Society of Antiquaries and then of the Royal Society occurred as a matter of course. But set on being much more than the mere *dilettante* that so many other young men of his bent and background were content to be, Banks proceeded to put himself through a rigorous five-year apprenticeship of scientific travel. The centrepiece was the epoch-making voyage of 1768–1771 to the South Seas in the *Endeavour* under Cook, with its haul of over 30,000 specimens (among them perhaps over 1,400 plant species new to science); but in addition there were journeys to Newfoundland and Labrador and to Iceland, of ten and five months respectively, on either side. Four other expeditions to distant parts got no further than the planning stage.

By the age of 30 all of Banks's travelling was done, and he settled down to the working up of his vast collections and to launching scientific initiatives, of a steadily growing variety, from his Presidential chair. Election to the Council of the Royal Society had come two years after his return in the *Endeavour*, and scarcely five years later he was firmly at its head. Even before that he had successfully persuaded George III to start financing that long series of collector–explorers whose introductions were so greatly to enrich the Royal Gardens at Kew (and Banks's personal collections as well).

His appetite whetted, he was soon off on a programme of vicarious expeditions to almost every part of the fast-expanding British Empire, organizing the despatch of breadfruit to the West Indies, of Merino sheep to New South Wales, of tea plants and cochineal insects to India. In 1783, a particularly momentous year, we find him simultaneously exploring the possibility of a white settlement in the Pacific and capturing the Linnaean collections for Britain through the surrogacy of J.E. Smith (his own finances having taken a temporary tumble from the slump in the wool trade brought on by the American War). By 1790 he was operating on a wider stage still, serving on the Board of Agriculture, dominating the Board of Longitude and, in a bizarre interlude, becoming the chosen stalking-horse of a group of Hungarian dissidents anxious to enlist the British government in its cause.

And so it went on. Despite martyrdom to gout, the initiatives were unceasing, the intercessions ever bolder and more various. There has probably never been a scientific administrator-cum-politician so widely influential and so practically effective — nor a scientist who has won

*In the United States both books (see over) are available from ISBS, 5602 NE Hassals Street, Portland, Oregon 97213. *Sir Joseph Banks Bibliography* is published by St Paul's Bibliographies, 1 Step Terrace, Winchester, Hampshire, price £45.

such lasting renown with scarcely a single publication to his name.

Mr Carter does rather overdo the detail (did we really need to have in print a list of the species caught by Banks's fishing parties?) and the decision to omit all references was an unhappy one. I remain unpersuaded by the author's excuse that the nature of the text makes these superfluous. Although we are assured that the source material is detailed in a companion volume, that comes from a different stable and is enough of a separate enterprise not to have been sent out for review concurrently (see footnote on previous page). Inclusion of that extra matter would no doubt have made for a greater bulk than could be contained within a single pair of covers, but the requirements of scholarship ought not to be overridden by conveniences of production, particularly in the case of a volume that appears under such august sponsorship.

That defect is a serious one. But, all in all, here is a book that henceforward will put the work of Banksian specialists on an altogether different footing. □

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Gloom – or boom?

Norman Myers

The Cassandra Conference: Resources and the Human Predicament. Edited by Paul R. Ehrlich and John P. Holdren. *Texas A & M University Press, Drawer C, College Station, Texas 77843: 1988. Pp.330. Hbk $32.50; pbk $14.95.*

CASSANDRA, daughter of King Priam of Troy, was empowered with the capacity of prophecy by the god Apollo, provided she slept with him. Cassandra didn't deliver, and Apollo imposed a curse on her: her prophecies, though accurate, would be spurned as beyond belief. Hence her warnings about the Trojan horse went unheeded.

So the title of this book is not so perverse as it might seem, despite the modern connotation of Cassandra as a mere doomsayer. The contents seek to demonstrate how far we are indeed paying a price for ignoring warnings about threats to the environment. It further shows how we can still change course towards ecological accord with the biosphere, generating all manner of positive payoffs. So persuasive are the prescriptions for a rehabilitated future, that the book could well have been subtitled *Environmental Gloom — Or Boom?*

The organizers of the Cassandra conference brought together a number of leading American analysts who, for a decade or more, have been telling of a series of interrelated threats to our biosphere. Especially useful is the upgrading of earlier arguments, deploying the latest data. The thematic treatments are rigorous throughout, and there is plenty of discussion of opposing opinions, notably those of Julian Simon and the late Herman Kahn.

Garrett Hardin opens with an assessment of the population predicament. Steve Schneider looks at climate change and its links with food production. David Pimentel appraises industrial agriculture, and related topics such as topsoil and water stocks, while Anne Ehrlich examines agriculture in the Third World. Dan Luten deals with energy, Peter Raven with tropical rainforests, John Harte with acid rain and Cheryl Holdren with toxic substances. George Woodwell considers biotic services and the human estate. Ehrlich himself rehearses the putative phenomenon of nuclear winter, while Holdren presents some innovative and hard-nosed strategies to avoid nuclear war.

This list might evoke a reaction of "Here we go again. . . . What's new?". There is lots new: the book is far from a predictable account of what is going amiss. On the population front, for example, we encounter not only the usual dismal figures (and let's note that when we discount the remarkable achievement of China, the growth rate in the Third World is still 2.4 per cent per year, with no decline recorded for several years). We also find there is much scope to cut back on fertility rates, as witness the accomplishments of South Korea, Taiwan, Java, Thailand, Kerala State in India, Cuba, and urban communities in Colombia and Mexico — countries with a wide range of economic performance, political systems and cultures. The United Nation's median projection postulates establishment of 'replacement fertility' by the year 2025, leading to an ultimate total world population of well over 10 billion people. Were all developing countries to match the fertility declines of the countries cited, the two-child family could be attained by the year 2005 (a formidable but not impossible challenge), reducing the eventual total to 8 billion. Were many more countries to lose ground, as is currently the case with the Philippines, several Muslim countries and most of black Africa, the date would be deferred till 2045, with an eventual total of well over 12 billion. Thus a gap of 40 years would make a difference of more than 4 billion people.

There is similar potential for breakthroughs in the energy field. Since 1979 and the second oil shock, which was followed by an outburst of energy conservation, the United States has expanded its economy by more than 30 per cent while consuming less energy overall. Many more energy-saving technologies remain to be mobilized. The most abundantly available response to energy shortages is that which is cheapest, most widely available and least exploited — simple saving of energy. Yet following the third oil shock of recently reduced prices, the energy-conserving momentum of the early 1980s is being lost.

All of the book's contributors devote a good part of their chapters to a prescriptive analysis of how we can reduce or avert the more severe environmental problems. For instance, Schneider sub-titles his chapter "Signs of Hope, Despair, and Opportunity". In addition there is a chapter by a World Bank economist, Herman Daly, on the steady-state economy (not necessarily the same as the no-growth economy), and how it could be established.

In an epilogue, Ehrlich and Holdren emphasize that just as the problems are interactive, so our responses should be interrelated. A solution to one problem will work only if parallel solutions are addressing many, if not most (and sometimes all), of the other problems as well. The most salient instance is overpopulation, which both contributes to poverty and reflects it. Just as human poverty and environmental impoverishment compound one another, so together they compound the chances of international conflict and nuclear war; and financial resources spent on armaments and other military dispositions are no longer available to restore forests, rehabilitate watersheds, replenish soil fertility, reduce pollution, produce more food and so forth. Which of the funding options will purchase more real and enduring security? □

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New in paperback

- *The Extraterrestrial Life Debate 1750–1900: The Idea of a Plurality of Worlds from Kant to Lowell* by Michael J. Crowe. Publisher is Cambridge University Press, price is £15, $22.95. For review see *Nature* **325,** 117 (1987).
- *Odd Perceptions* by Richard L. Gregory. Publisher is Routledge, price is £8.95. For review see *Nature* **325,** 206 (1987).
- *Origins: A Skeptic's Guide to the Creation of Life on Earth* by Robert Shapiro. Publisher is Penguin, price is £5.95. For review see *Nature* **320,** 646 (1986).
- *The Discovery of Insulin* by Michael Bliss. Publisher is Faber/Chicago University Press, price is £6.95, $10.95. For review see *Nature* **303,** 261 (1983).
- *Bird of Passage: Recollections of a Physicist* by Rudolf Peierls. Publisher is Princeton University Press, price is $12.50, £7. For review see *Nature* **320,** 660 (1986).