Down on the shore

American avocets (*Recurvirostra americana*) can be identified by their upwardly curving beaks and contrasting plumage. The numbers of these gregarious shoreline birds are under threat from loss of their wetland habitat in the western United States. The avocets are just one of the 72 species of bird described in *Common Coastal Birds of Florida and the Caribbean* by David W. Nellis (Pineapple Press, $21.95).

atmosphere and the deep ocean is fast, and ranges from years to decades rather than centuries or longer. High-quality hydrographic observations of water masses over the globe have identified the variability in the ocean's interior and allowed quantification of the impact of varying atmospheric forcing. A series of chapters is devoted to the analysis of hydrographic data, which constituted the core of WOCE. From these, one can conclude that the initial WOCE goal of compiling a coherent global oceanic description has led to better documentation of the ocean's variability. The development of models for predicting associated climate change is well under way.

A third message conveyed in the book is probably as old as physics itself: that adequate observations are a prerequisite to test, accept or refute hypotheses, theories and models. Climate dynamics are highly nonlinear, and the predictive skill of any model can only be judged if adequate and long-term observations are available. The search for methods for determining long-term changes in the ocean circulation has been, and remains, the second goal of the programme. Many technical advances have been made, and the ideas about new and cheap measurement strategies are described in several of the book's chapters. Much of this has already been implemented in follow-up projects under the umbrella of the World Climate Research Programme. The necessity of extending the time series of observations relating to climate is reiterated throughout, and it can only be hoped that politicians and science administrators in funding agencies will take the opportunity to read this book and learn about the ocean.

Who else is a potential reader? The review character makes *Ocean Circulation & Climate* attractive for graduate students in Earth sciences and climate researchers in general, and of course the WOCE community itself. As an overview containing almost 100 pages of up-to-date references, this book will be an invaluable tool for those engaged in climate research and teaching. It is certainly not a book that one reads from beginning to end, but one that will be picked up readily when questions about ocean circulation arise. ■

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More on the oceans

The Oceans and Rapid Climate Change: Past, Present and Future
edited by Dan Seidov, Bernd J. Haupt & Mark Maslin
American Geophysical Union, $60

Wind Stress Over the Ocean
edited by Ian S. F. Jones & Yoshiaki Toba
Cambridge University Press, £50, $80

Great Waters: An Atlantic Passage
by Deborah Cramer
W. W. Norton, £22, $27.95

Name that plant

Guide to Standard Floras of the World
by David G. Frodin
Cambridge University Press: 2001. 1,100 pp. £150, $240

P. F. Stevens

Here, in a mere 1,000 pages or so, we have a guide to the plants of the world, past and present. David Frodin focuses on standard floras — a catalogue of plants of a defined area with descriptions, but excluding lists of weeds — past and present, and his is by far the most comprehensive treatment of the subject available.

There are, clearly, large gaps in our knowledge about the world's plants. For example, if you want to know about the plants to be found in Baluchistan, there is only I. H. Burkill's *A Working List of the Flowering Plants of Baluchistan*, published almost a century ago. Moreover, as Frodin notes, both his book and floras as a discipline in general are at a crossroads, and it is not clear what form either will take in the future. Frodin's book was current to 2000, but it is easy to imagine an online version being continually updated.

The *Guide to Standard Floras* will be invaluable as a library resource. Three introductory chapters lead to the body of the work, a geographical listing of floras. The lists of plants in the major geographical areas identified by Frodin — for example, divisions, areas often continental in size — are preceded by informative summaries of the state of our knowledge of the plants in them. The book is made navigable by several indexes — geographical names, the numbers referring to Frodin's geographical system (not pages), and authors of floras, although it is somewhat confusing because Frodin makes references to both page numbers and geography. In general, the indexes are complete, although there is no mention of the island of Bougainville, and not one of the 14 authors of the remarkable *Flora da Reserva Ducke* (one of a new breed of floras) is mentioned; this has more than 20,000 photographs for some 2,200 species, and emphasizes the use of vegetative features in identification.

The introductory chapters clearly indicate the complex institutional, national and professional constraints that have shaped the way floras have developed, and also demonstrate how web technology is straining the conventional format of the flora. In the past, floras have included identification aids, detailed descriptions of plants, lists of localities, specimens cited, literature,

guides to flowering times, maps, illustrations, and the like, all variously bundled up. Writing a flora, or working on a flora team, has in the past been a major part of the training of systematists, although in most European and North American institutions this is no longer the case. Flora writing has also been the life's work of many a senior systematist — but floras have lost some of whatever cachet they once had. Frodin does not discuss the current hegemony or predominance of molecular work. Concentrating solely on such work further decreases the likelihood of young systematists picking up a working knowledge of plants of an area. Of course, at the same time, our understanding of species-level variation can be revolutionized by molecular-based phylogeographical studies.

As Frodin mentions, there has been a long-standing tension between the writers of floras and the local botanist. Thus in the nineteenth century, many flora writers did not simply hold to a broad, herbarium-based species concept, but they deliberately dismissed the findings of local botanists, regardless of whether they were German academics or colonists. It is hardly surprising that even in the United States, 'biosystematic' information has only belatedly been incorporated into written floras. However, both the local botanist and someone studying local patterns of variation bring an additional perspective to understanding variation that can be absent in the work of a monographer. Add a molecular component, and our understanding of diversity, particularly in the tropics, may need revision.

Indeed, one can easily see how the web and well-organized databases may help us to cut loose from the shackles of conventional floras; most of us do not want to see listings of specimens, literature, lengthy descriptions, and so forth, all together. Similarly, those who want to place their flora in the context of the most recent phylogenetic studies will simply opt to refer to the Angiosperm Phylogeny Group's consensus classification, whereas others will prefer an alphabetical arrangement. These and other preferences could be catered for in a web-based system. Such developments could even bring some *de facto* uniformity and standards to botanical subdisciplines that are noted for their insane idiosyncracies (often hidden under the refrain of 'the expert always knows best'). More importantly, the different needs of users of botanical information could be addressed, and the study of plants stimulated at the same time. ■

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Science in culture

Cool for nerds

***SEED* — a new magazine.**

Josette Chen

Adam Bly wants people to stop thinking that scientists are frizzy-haired men in lab coats, with pocket protectors and bubbling purple flasks. As founder and editor-in-chief of a new, ultra-cool 'science couture' magazine called *SEED*, he sees his mission as redefining the way science is seen in popular culture.

His inspiration was fired when, at the tender age of 18, he attended the 1999 UNESCO World Conference on Science in Budapest. He perceived there a discrepancy between the popular science media — as portrayed by the likes of *Scientific American* and *Discover* — and the evolution of science in popular culture. The media needed to evolve, he concluded.

So, with this in mind, Bly built up a media group, called SEED Group, with its headquarters in Montreal and with the magazine as its main focus, funded by private investors in Canada from the worlds of business, science and fashion.

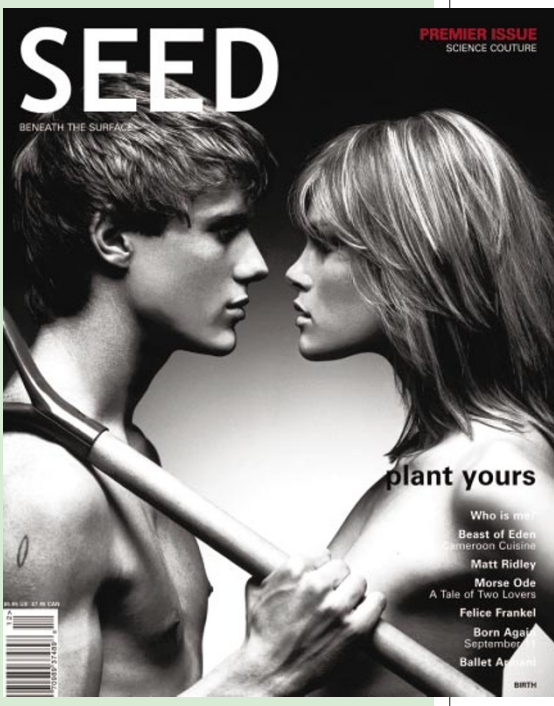
SEED looks like a cross between *Vogue* and that monthly bible of cool, *Wallpaper*. Its first issue was launched in November, with a distribution of 100,000 across North America. Six issues a year are planned, along with a doubling of distribution.

The 176-page premiere issue, with a theme of birth, is filled with evocative imagery interspersed with factoids and a few longer essays, all in some way pertaining to science or technology. Topics range from the seductive powers of chocolate, to the bushmeat trade, to the demise of Starlab in Brussels.

The contributor list is impressive, leading with popular-science writer Matt Ridley — he of *Genome* fame — on the wonder and strangeness of human birth. The work of Felice Frankel, an MIT researcher and science photographer, and Karl Ammann, environmental photographer, also grace the pages. In between, male and female models in states of undress decorate fluffy sound-bites on consciousness and the language of lovers. Even the advertisements are sexy; there are no be-goggled biochemists showing off their favourite PCR in these pages — instead, pouty-lipped models promote fashion designers and alcohol distillers.

The written science is low level, although *SEED*'s description of why the sky is blue — "blue waves agitate the elements of the sky, imparting their zeal" — can at least be said to depart from the typical scientist's mumblings about Rayleigh scattering and one over lambda to the fourth.

Priced below both *Nature* and *Vogue*, *SEED* is aimed at the science professional and "image-conscious science aficionados". "We are targeting a sophisticated and affluent demographic," says Bly. "The reader is a scientist who is looking for entertainment, to diversify his or her interests, and to learn how to influence culture." Even the more conservative of *Nature*'s readers are image-conscious, he believes. Any scientist who wants to get his experiment on the cover of *Nature* (or *Science*) shows his desire to produce aesthetically pleasing scientific imagery.



The magazine seeks to redefine the way science is seen in popular culture.

In the future there will be new sections devoted to the current icons of science — people who are part of Bly's vision of redefining science — the role the media plays in conveying science to the public, and the role of science in business and politics and vice versa. Top writers are continuing to sign up. According to Bly, the next issue will have contributions ranging from Nobel laureates and Pulitzer prizewinners. Why? Ridley, for one, strongly believes in the cause of making science more hip, and more appealing to young people: "Science has no need to be wordy with huge wodges of text."

Bly set up a media group to leverage his vision into other ventures. He says that the next two years will be devoted to the magazine, but that they are also looking into book publishing and television projects in 2003.

At least with the magazine, scientists everywhere at last have a venue where they may find advice on de-frizzing their hair and replacing their scruffy lab coats with the latest Hugo Boss fashions. ■

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European distribution of *SEED* will begin in March.