



Underwater sex change

Wrasses, members of the Labridae family, are abundant inhabitants of the coral reefs around the Arabian Peninsula. The many species range from a few centimetres in length to more than 2 metres in the case of the largest, the humphead wrasse, *Cheilinus undulatus* (above). Some members of the family can change sex, their

coloration altering gradually during the transformation. From *Desert Sea: Fauna of the Saudi-Arabian Red Sea Coast* by Hagen Schmid (distributed in the United Kingdom by Gazelle Book Services, £28.99). The book contains many fine photographs but only a brief text.

The data day

The Illustrated Almanac of Science, Technology, and Invention: Facts, Figures, and the Fanciful

by Raymond L. Francis

Plenum: 1997. Pp. 376. £17.55, \$28.95

John Heilbron

Did you know that in 1994 an okapi at Copenhagen Zoo died of an overdose of Wagner? So says Raymond L. Francis, who reports that the delicate animal preferred death to listening to local singers rehearsing Tannhäuser. It thus showed greater discrimination than Francis, who, as the report suggests, stuffs his almanac with bits as foreign to it as opera to an okapi.

Every day in the year has its own page, with a dozen or so entries from various years and, usually, an apt figure or cartoon. The death of the okapi appears on 5 August and, again, on the sixth — an achievement made possible, it must be assumed, by the author's unwillingness to read through his finished work, for which he can scarcely be blamed. Other double entries occur for J. J. Silvester and W. F. Libby, in each case including a full repetition of information and anecdotes. No doubt there are many more.

The want of method indicated by this repetition and irrelevance can be further illustrated. There are four entries on the McDonald's hamburger chain, two on singing telegrams, and one each on the abdication of the last Queen of Hawaii, the establishment of the Swiss Guard at the Vatican, the first scalping of an Indian by a white man, the beginning of the Pony Express and the foundation of the city of Rome. Also mentioned are the opening of the first hotel in the United States with indoor toilets, the thousandth known suicide from the Golden Gate Bridge, the highest high jump of a dog, and the sale of the skull of Emanuel Swedenborg.

The entries dealing with science and technology come largely from the most obvious sources: notices of scientists (mainly Nobel prizewinners) and engineers; accounts of discoveries, especially ones with several datable episodes (Galileo's career, the travels and writings of Darwin and Wallace, the discovery and follow-up of X-rays and Becquerel rays, the announcements of nuclear fission); patents; voyages, notably Columbus's and NASA's; and modern almanacs, conspicuously those for 1993 and 1994. In ransacking this material, Francis has given particular attention to conservation and the envi-

ronment, which generated the most interesting and useful entries in his book.

One cannot cover so large and amorphous a field without making mistakes. A few may be signalled as indications of the level at which the entries are written and their occasional shortfalls. Heisenberg did not receive the Nobel prize for the uncertainty principle nor Blackett for "his (atom) smashing research"; Planck did not say in 1900 that radiant energy comes in quanta; Marat, murdered 13 July 1793, did not arrange for the execution of Lavoisier, guillotined 8 May 1794; the 'feud' between Galileo and the Roman Catholic Church was not about sunspots; and John Dee did not make the English translation of Euclid to which he contributed his famous preface.

Francis's jumble is worth dipping into for a moment's amusement. It may be useful to editors needing fillers for columns on "this day in history" and to seekers after odd coincidences, such as the almost simultaneous (modulo 365) cessation of the longest sneezing fit in history and the shooting of *The Sneeze*, the first film copyrighted in the United States. True anniversarilists will gain little from the almanac, however, because it has no listing by year (though a good index of names). Only by slogging through it can information relevant to centennials be gathered. What has been culled in this laborious manner for anniversaries due for celebration next year will appear in the first number of *Nature* for 1998. □

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Duke of hazards

Perils of a Restless Planet: Scientific Perspectives on Natural Disasters

by Ernest Zebrowski

Cambridge University Press: 1997. Pp. 306.

£16.95, \$24.95

Bill McGuire

Whether it is because it is the International Decade for Natural Disaster Reduction, as designated by the United Nations, or a result of the approaching millennium, natural hazards are once again in vogue. As a consequence, the 1990s have spawned a plethora of texts on the subject, many to underpin the growing numbers of environmentally based degree courses across the world. Unfortunately, most of these texts are much less exciting than their subject matter, with stock hazards addressed in a dry, descriptive and unimaginative way, and often recycling fact and fiction from similar texts of earlier generations. It is therefore refreshing to come across a new

approach to natural disasters, especially one written in an easy yet informative style.

Ernest Zebrowski's brief — or at least one of them — is to highlight the science behind natural hazards and their disastrous consequences, rather than simply describing their effects. So the chapter on, say, the impact of earthquakes introduces the reader to concepts of both material strength and forces. Discussion of tsunamis is underpinned by a consideration of wave characteristics and their propagation, and that of hurricanes and windstorms by variations in the forces transmitted to buildings owing to their shape.

The opening chapter provides the reader with a real feel for the awesome power of nature. In a fascinating account of the great earthquake that devastated Lisbon in 1755, we learn that the city was not only battered by a magnitude 8.75 quake — one of the largest known — but that it later succumbed to a devastating tsunami and then to a conflagration. Then comes a description of the demise of the Minoan civilization as the island of Santorini blew itself apart during the great eruption of 1640 BC.

After this exciting opening, however, the author changes tack dramatically, dedicating the next chapter to explaining — in some detail — the history and philosophy of science from Aristotle onwards. Although a good read, this chapter sits slightly uneasily in the text as a whole, and explicit links with natural disasters are tenuous to say the least.

Returning to the principal theme of the book, the third chapter examines the problems of living in buildings in earthquake zones and illustrates how their safety is a function of the nature and strength of the materials used in their construction, the way the buildings are put together, and the forces applied during a quake. Strangely, this does not lead into a look at some of the main earthquake events and their effects, but into a second, idiosyncratic chapter that

focuses primarily on the characteristics of population growth. In essence, the message is clear: the more people there are, the more who are likely to die in natural disasters.

The author then goes on to provide informative and scientifically based accounts of destructive waves and important earthquakes and their effects. Surprisingly, in the treatment of destructive waves, he pays little attention to the scale of tsunami generated by large collapses from island volcanoes, probably the largest and potentially most destructive waves possible, barring those caused by impact events in the oceans.

Which brings me conveniently to the next chapter. For some reason, the author deals with volcanoes and asteroid impacts together, leading to a dilution of coverage of these two most devastating of natural hazards. Despite the destructive power of floods, earthquakes and windstorms, only volcanic eruptions and impact events have the power to cause catastrophe on a global scale. The absence of any reference to major volcanic eruptions is therefore surprising. After all, the eruption of Toba some 74,000 years ago lowered temperatures in some parts of the world by more than 10 °C, and has been proposed as the final straw that launched an already cooling planet into full ice age.

Following an account of windstorms and their effects, the closing chapter addresses the concept of the planet as a chaotic system and the inevitable scenario of a flitting butterfly ultimately generating a hurricane half a world away. Intuitively, such a situation still fails to convince me. Surely, the buffering effect of countless other atmospheric disturbances would drown out such an infinitesimally small event well before it led to the mass destruction of Miami?

With its strong personal perspective, this book stands out from the recent clutch of disaster tomes. Although idiosyncratic from time to time, and perhaps a little illog-

ical in organization and construction, it provides an original insight into natural disasters and their causes. It will be a refreshing read for hazard scientists and students, as well as the world at large. □

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Methods and madness

Mental Ills and Bodily Cures: Psychiatric Treatment in the First Half of the Twentieth Century by Joel Braslow
University of California Press: 1997. Pp. 240. \$40, £30

John Burnham

“Mother has received a letter about this new brain operation. She has asked me to write to you as you prowlley [sic] know how old folks feel about any new operation they can't seem to believe will do any good.” In *Mental Ills and Bodily Cures*, Joel Braslow, who holds a doctorate in history and is a practising clinical psychiatrist, tells the story of how one somatic therapy succeeded another in psychiatry during the heyday of the insane asylum in the United States — and why. Although he draws specifically on material from two hospitals in California, the treatments and issues he discusses were international.

On the face of it, this book appears to be a modest historical monograph on the application of various therapies to certain patients in a relatively local setting. But the issues it explores address fundamental questions — even about the standards of what is scientific and how science should be applied, especially in medicine. For some critics of science, the development of psychiatric ideas and practices has provided a vulnerable target for their attempts to discredit the application of any naturalistic approach to human problems. Generations have grown up thinking that Ken Kesey's *One Flew Over the Cuckoo's Nest* — and in particular the film version — provides an accurate picture of psychiatric treatment in the first half of this century; and tendentious histories of psychiatric treatments provide examples that show why science and medicine are bad.

Braslow's account will therefore reverberate far beyond the bounds of medicine and history. Moreover, it is not only remarkably understandable, but also contains many case histories with often dramatic dialogue to grip the attention. And if ever an account deserved the currently clichéd accolade of ‘nuanced’, this one does: no individual instance, used to make a point, is separated



Goodbye waves: the destructive power of water as demonstrated in Johnstown, Pennsylvania, in 1889.