

tell us how or why; it assumes the reader will already know. Her paper is addressed to insiders, well-briefed on keeping zoo records in America.

We learn, for example, from her survey compiled as an intern from Portland State University, that records were kept on index cards until 1965, on McBee punch cards between 1965 and 1975, and in the computer-based International Species Inventory System (Isis) since 1975. I do not know what a McBee punch card is, and (Merriam-) Webster's *Third New International Dictionary* (the American equivalent of the *OED*) does not list it. Ms Hamman advises her readers to look up a definition in the *International Zoo Yearbook* (Vol. 8); those that do not have a copy at hand are apparently not expected to consult her booklet.

Isis and the index cards, based on acquisition and removal ledgers, are explained, with notes on their coverage and availability. Smithsonian editors have updated the *Guide* to 1988, which is fortunate but oddly not reflected in the title. The title suggests that the zoo records go back to 1887, although the zoo was only established in 1889. An "historical note" mentions that "records prior to 1889 document the animals housed on the Mall," and everyone will know where or what that is. If you do not, the *Guide* will probably be of little value anyway.

More effort could have produced a centennial booklet to animal-related records that would have been of wide interest to natural history historians in general. It is a pity that the new Smithsonian Archives' *Occasional Papers* series starts off with a publication of such narrow interest and use.

H. REICHENBACH

*Annual bibliography of the history of natural history*. Volume 3 (publications for 1984). Department of Library Services, British Museum (Natural History), London: 1987. Pp iv, 147. Price: £9.50. ISSN

In the same style as its predecessors, the third volume lists 2,881 titles, compared with 1,369 in the first and 2,041 in the second, and lists almost half as many again journals which have been scanned. One of the major reasons for the increases is the coverage, for the first time, of obituaries, a welcome improvement. New subject categories are to be added as necessary with each new issue. Gathered from such as *AGID News*, *Bat News* and *Chalcid Forum* to *Xenophora*, *Yayla* and *Zygon*, the bibliography is invaluable for getting at the less-cited literature, but a criticism of earlier volumes remains: with sophisticated computer systems, why does it take so long to get the bibliography out?

D.J. MABBERLEY

T. H. CLARKE. *The rhinoceros from Dürer to Stubbs 1515–1799*. Sotheby's Publications, London: 1986. Pp 219; illustrated. Price: not supplied. ISBN 0-85667-322-6 (hardback), 0-85667-322-9 (paperback).

The image we have of the indomitable rhinoceros owes a good deal to Pliny and then to Dürer, whose icon of a magnificent armoured beast prevailed over duller but more accurate representations for a couple of centuries. Heroic stories of the feud between rhinoceroses and elephants, with the rhinoceros charging the elephant broadside and ripping its belly with the horn, similarly suppressed the more mundane natural history of the animals. Clarke's book is a contribution essentially to the

history of art rather than of natural history; it has involved him in close study of the rhinoceros in art, not only in pictures but in statuary of serious and frivolous kinds, over nearly three centuries. It forms a case-study of the exotic in art, and is well told and illustrated.

For the natural historian, the most interesting chapters will be the early ones in which Clarke determines which particular rhinoceroses were the model, at first or second hand, for the various pictures which survive. All the illustrations he considers were of the one-horned Indian rhinoceros. It and African species had been known to the Romans, but were unknown in medieval Europe until one was landed in 1515 at Lisbon, and drowned soon afterwards on its way to Rome where it was to have been a gift to the Pope. A sketch of this one was seen by Dürer, who drew his daunting Panzernaschorn with the extra little horn between its shoulder-blades. Burgkmaier drew a more accurate but much less influential illustration of the rhinoceros probably from the same source.

Seven further live specimens were seen in Europe before 1799, some of which lived for some years and did extensive tours; and yet Dürer's powerful image only very slowly lost ground. Only in the eighteenth century, with a rhino in London in 1739, another in Holland and on tour from 1741 to 1758, another at Versailles from 1770 to 1793, and others in London in 1790-3 and 1799, did more accurate depictions come to prevail. Buffon's *Natural History* was particularly important in this process, with its engraving after Oudry from the Dutch rhinoceros. Clarke then shows that Stubbs's powerful illustration was from the London and not the Versailles beast, and thus corrects its dating.

Later chapters look at the rhinoceros (usually Dürer's) in the "applied arts", and here they are duly to be found on tapestries, pottery and glass, statuary, and then especially clocks, where a rhinoceros was felt to be a particularly suitable support for a decorative timepiece, which generally rode upon its back. Particularly interesting are allegorical pictures in which the continents are represented with characteristic creatures, because the rhinoceros is sometimes placed in the Americas. Clarke considers that this must be the effect of confusion with another armoured creature, the armadillo. He ends his entertaining tour with the export of a European error, with a rhinoceros owing much to Dürer finding its way *via* Jesuit missionaries into a Chinese encyclopedia.

DAVID KNIGHT