

exchanging and buying shells. Fascinating sections of the book deal with shell frauds, and with the commercial exploitation of the rarest shells. Did you know, for example, that prices of certain shells at auctions have now topped the \$4,000 mark?

One of the best features of the book is the high quality of the illustrations, with a splendid series of photographs by Ian Cameron and well chosen and beautifully executed drawings by Annabel Milne. The standard of production of this book is uniformly excellent and it is pleasant to note that it was printed and assembled entirely in Britain.

Why then is my brow furrowed? Simply because I share with many other professional zoologists a frightful vision of a world in which all the molluscs are on display in skilfully designed cabinets, and the seas, lakes, marshes, streams and woods are malacologically empty. If anyone doubts that this is more than an irrational nightmare, he should ask himself how many butterflies he has seen in Britain during recent years; have lepidopterists any share of the blame for their dearth?

The author offers no balm for my anxieties about the possible depredatory effects of indiscriminate shell collecting. He advocates searching for living molluscs (so that they may be killed for their shells) rather than taking empty shells from the beach deposits, and describes in detail various unpleasant methods of torturing the animals out of their shells after capture. He describes one method which is so hideous that he says he never himself has practised it (why then lend it currency?).

About wholesale commercial conchology (reef rapping, as an Australian described it) he lamely says he does not propose to take sides or to argue the rights and wrongs. About the legitimate and calmly voiced fears of naturalists about the future of the mollusc world, wanting to keep the word 'conservation' before the shell collector, Mr Dance says only this: "For some mysterious reason, the scientific world appears to think that it has almost a divine right to Nature's products". This is unfair. Speaking personally, I do not want to conserve molluscs simply so that I and others in my laboratory can catch and experiment on them; I want to conserve them so that my grandchildren (and Mr Dance's) can see and admire them. I hate to feel that I may be living in the last generation of mollusc enthusiasts.

**T. E. Thompson**

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## Artistic impetus for scientific observation

*Bright Wings of Summer: Watching Butterflies.* By D. G. Measures. Pp. 160. (Cassell: London, October 1976.) £5.

THIS book is the work of an artist. David Measures goes out to his disused railway line in Nottinghamshire and draws and paints, describing what he sees in the butterfly world at various times of the year and in different weather conditions. He reproduces his notes and his delightful sketches, full of movement and swift life, and in the past twelve years he has collected a great deal of first-hand information on topics such as scents, courtship, mating, egg-laying and territorial boundaries in a unique way which is not to be found in the standard books.

The object is to set out the life histories and behaviour of butterflies in a way which will stimulate readers to become interested in Natural History and to make and record their own accurate observations. The unfinished paintings and the roughly written notes show how in practice conclusions are arrived at.

The book is divided into three parts. In "The Beginnings" he describes his own life history. He started with a general love of nature and then, because of his preoccupation with colour, concentrated on butterflies. "There is nothing so brilliant, or as changing and shifting as the iridescence and the pigmented colour of the butterfly's wing".

Part 2 gives the results of his observations, and lastly, "You and

Butterflies" gives practical advice as to how to follow in his footsteps.

The lesson for the pure scientist is that each insect is an individual and that, when one classifies, something is lost—although for a physician-reviewer accustomed to looking after patients this does not come as a surprise.

On the other hand, art must not be allowed to get away with it completely, and with more scientific knowledge the author's observations could have been more productively channelled. What precisely happens to our red admirals in the autumn? Burnet moths are resistant to cyanide, and cinnabar caterpillars feed on the poisonous ragwort—what are the predators of these insects? Do the black and white forms of the peppered moth actually settle on appropriate backgrounds? Similarly, where in nature do caterpillars with brown and green chrysalids actually pupate?—the colour and texture of the site are of great interest. The extent of bat predation at dusk also needs investigating.

Other criticisms are that there should be more emphasis on the difference between camouflage and warning coloration (p 72) and surely the plate opposite page 100 is not the small heath. In general, however, the photographs are superb.

The book can be strongly recommended for nature lovers with artistic inclinations, but there is no reason why imagination and science should not be brought closer. E. B. Ford's *Butterflies* (which is recommended for further reading) exemplifies what I mean.

**Cyril A. Clarke**

*Sir Cyril Clarke is a general physician with an interest in genetics which stemmed from breeding butterflies. He is President of the Royal College of Physicians.*

## Jumbo the elephant

*Jumbo.* By W. P. Jolly. Pp. 173. (Constable: London, September 1976.) £3.95.

BORN into a matriarchal society in the wild bush of Africa, captured and transported to the Jardin des Plantes in Paris, the 4-year-old elephant was then exchanged for a rhinoceros, a piece of trading which almost certainly saved him from a stewy end in the siege of Paris of 1871. A more tranquil period followed with little to do to earn an almost limitless supply of buns other than carry wide-eyed children on rides round London Zoo.

Jumbo, for this was his name, thrived in London and grew apace. Jumbo was no more than a name of African origin but one which was to come into everyday use and be synony-

mous with largeness. The period of adolescence ended in pain of two kinds, the physical pain from abscesses which formed following the breaking of both tusks and the pain and puzzlement of puberty which seems to afflict the male elephant in the constraining environment of captivity.

The physical pain was assuaged by the surgeon's lance but the latter required very pragmatic action, if the embarrassment of an Elephant amok in the Zoo was to be avoided, and resulted in Jumbo's sale to Mr Barnum, the great American showman. The bill of sale was easy; the delivery of a reluctant elephant was, however, fraught with difficulties, difficulties that resulted in enormous publicity which promoted the forthcoming arrival to the American people and increased the anguish of the British public at the loss of their animal hero.