

Animals' sticking places . . .

Biological Mechanisms of Attachment. By W. Nachtigall. Translated by M. A. Biederman-Thorson. Pp. viii+194+53 plates. (Springer-Verlag: Berlin and New York, 1974.) DM75; \$30.60.

THIS book is an oddity. As description in hard engineering terms of the ways in which creatures of all kinds attach themselves to their prey, substrate, or each other, it can have little practical value. So it must be read, presumably, for the enjoyment of seeing how nature's engineering parallels that of man.

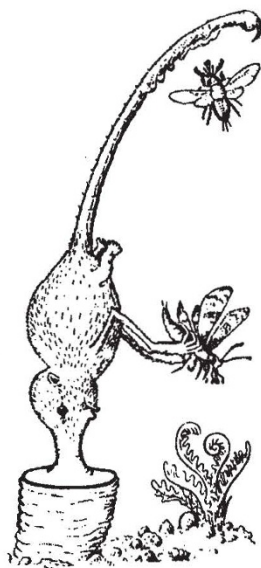
The book is not an exhaustive catalogue (Dr Nachtigall does not describe the flexible limb joints of animals, for example) but it includes devices which hook, grip, clamp, glue, suck or interlock organs or individuals together in permanent or temporary bonds. Any book of this kind is necessarily a list to be dipped into rather than a text to be read from cover to cover, so it is just as well that most of the 712 illustrations are arranged on pages which are opposite their explanations in the text. Where possible, the solutions that human engineers have come up with to meet the same circumstances are described and it is curious how alike many of them are.

Dragonflies, for example, which mate on the wing face problems similar to those of aircraft refuelling in flight, and the mating of the *Aedes* mosquito (where a perfect alignment of the reproductive tracts must be made and broken in about 14–20 seconds) resembles the 'hard docking' of spacecraft.

Suction seems to be the most widespread attachment mechanism throughout the phyla and about one third of Dr Nachtigall's book is devoted to it. Examples range from the sucking mouthparts of helminth parasites to the suction pads on the feet of the tarsier.

Although arthropods and helminths tend to dominate the book, many old favourites like the pop fastener on the mantle of the squid also appear. The head of the tapeworm, the claw of the arthropod and the Aristotle's lantern of the seurchin are also rather obvious examples. This indicates a rather subtle drawback of the book: most of the contents, although admirably explained and compared, could probably be guessed by any competent biologist.

There are some surprises—for example, the revelation that no two tissues are ever connected in nature by a third, like a nail or screw—but the merit of the book must remain its value



The fanciful monocerotid, Dulcicauda grisegurell

for directing the biologist to think of the attachment mechanisms of animals in engineering terms rather than as any sort of reference work.

The author makes two curious mistakes. The first (and most serious) is that the text describing the attachment of the sucker organ of the remora does not relate to the series of drawings used to illustrate it—indeed it describes the opposite (and wrong) sequence of events. The second is that the author has placed a charming (but unreal) member of the Monorhina in a section dealing with suction cups when, of course, it uses an adhesive.

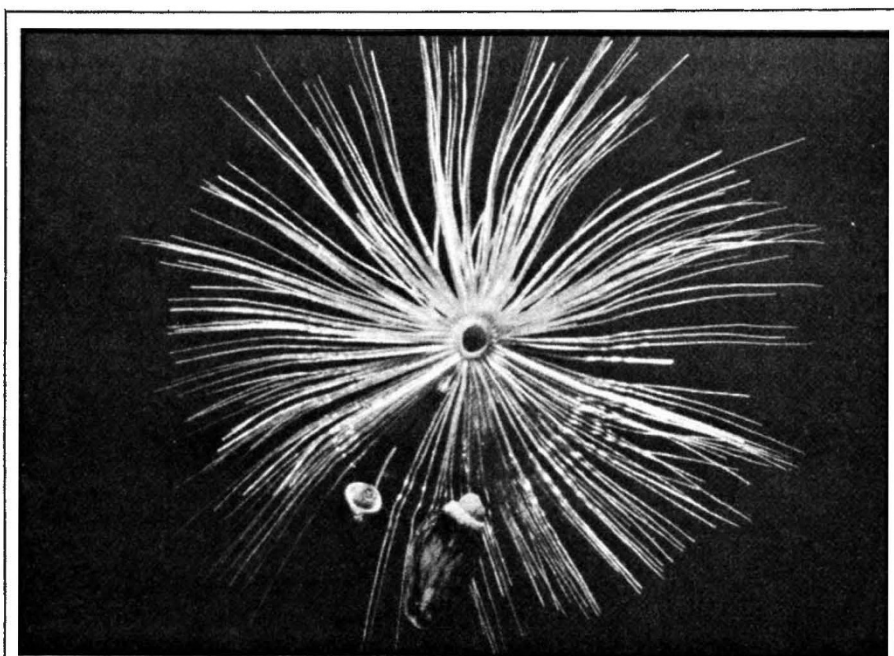
John Wilson

. . . placing sticking plants

Mycologists Handbook: An Introduction to the Principles of Taxonomy and Nomenclature in the Fungi and Lichens. By D. L. Hawkesworth. Pp. 231. (Commonwealth Mycological Institute: Kew, 1974.) £5.50; \$14.30.

MOST biologists have only a superficial knowledge and understanding of taxonomic procedures, and those with a real feeling for the subject are few in number. This book goes a long way towards bridging the gap between the many and the few. The author is to be congratulated on producing a detailed, accurate and thoroughly readable book on a subject which is often dismissed as dull and uninteresting.

Although the book is essentially a guide to budding taxonomists it has much to say to others who experiment with, and publish data on, fungi and lichens. The need to identify material correctly, often a difficult task with fungi and lichens, and the need to store specimens in accessible herbaria are particularly emphasised; in the past the frequent failure to do this properly has reduced the value of much published work. Topics covered include the collection and preservation of material; taxonomic ranks; the naming and describing of new taxa; nomenclature; information on authorities and herbaria; and information on the abbreviations of the titles of publications not quoted in the World List of Scientific Publications. B. W. Ferry



A somewhat decorative method of dispersal. The fruit and pappus of the thistle *Silybum marianum*. From *The Natural History of New Zealand: An Ecological Survey*. Edited by Gordon R. Williams. Pp. xviii + 434 + 40 plates. (Reed: Wellington, Sydney and London, 1973.) £12.95.