

Book review

WOŁOWSKI K. & HINDÁK F. — *Atlas of Euglenophytes*. Bratislava, VEDA Publishing House of the Slovak Academy of Sciences, 2005, 136 pp. (Ordering: contact ed-office@ib-pan.krakov.pl, ISBN: 80-224-0836-0, price EUR 49.00).

Euglenophytes (also referred to informally as euglenoids or euglenids) are a large group of photosynthetic, heterotrophic and mixotrophic microalgae/protists with some 44 recognized genera and 2000 taxa at or below the species level. They include some of the most species-rich genera known to microphytologists and protistologists

the classic example is *Trachelomonas*, a genus so speciose that eminent past scientists have founded their entire academic careers on it. They are widely distributed in the biosphere, especially in small, organically-rich freshwater bodies which they are able to colonize very effectively, often producing sufficiently rich growths for causing obvious discolourations of the water column. Their species-level taxonomy is rich and complex owing to several reasons – the high degree of cell metaboly found in many genera, the natural morphological variability with an underlying genetic basis, and the fact that they are often able to respond to changes in environmental parameters with subtle phenotypic (morphological) changes that make them all that more difficult to identify correctly.

In spite of their notoriety to anyone who has attended a first-year university course in botany or zoology (who cannot recall *Euglena viridis*, the classic “prototype” of the flagellate cell in so many lectures and practicals?), the intricacies of their taxonomy are reserved to very few specialists worldwide. It is very unfortunate that, irrespective of their chosen group of organisms, taxonomic specialists are a breed in constant danger of extinction¹. Therefore, it is now an even greater pleasure to realize that a recognized euglenophyte specialist K. Wołowski, in collaboration with F. Hindák) has conceived and produced a user-friendly book aimed, in his own words, at introducing this taxonomic group “to as wide an audience as possible”.

The layout of this lavishly printed and hard-bound book is both intuitive and informative. Following a brief general Introduction, there is information on the general features of the group, its high-level systematics (including references to more recent molecular phylogenetic investigations), structure, reproduction, locomotion, nutrition and ecology, together with practical hints on environmental sampling and microscopical observation. There is then a Taxonomic section, which begins quite rightly with dichotomous identification keys to Orders and selected Genera, and then a detailed description of each genus included in the key. This is followed by a key to species, varieties and forms within each genus. There follows a useful Reference list and the bulk of the book itself – the micrograph section. There are 417 micrographs in total, illustrating 160 taxa belonging to 15 genera (= ca. one-third of all known euglenophyte genera), based on material collected in Slovakia and Poland. The emphasis is clearly on the photosynthetic taxa but a number of heterotrophs are included as well. Most illustrations are colour light-micrographs but there are several views in SEM too, mostly in relation to

1. Valdecasas A.G. & Camacho A. I., 2003 - Conservation to the rescue of taxonomy. *Biodiversity and conservation* 12: 113-117.

loricate taxa for which the SEM is the observation tool of choice. Finally, there is a comprehensive Index to all the taxa illustrated in the book.

The micrograph section is where the book confirms that it is exactly what it intends to be, nothing more and nothing less: a richly illustrated atlas aimed at introducing this group of organisms to non-specialists, whilst at the same time providing an authoritative and very useful aid to taxonomic identification. The quality of the micrographs is excellent and every one of them shows all the necessary morphological details very clearly.

There is much need for books of this kind not only for the euglenophytes but many other groups of microalgae and protists as well. When will a book of this kind appear for cryptomonads? Or choanoflagellates? Or chrysomonads? Or green flagellates? Or...? The widespread perception that morphologically-based taxonomy attracts less and less interest in the biological community both from the point of view of teaching and research should not act as a pretext to not publishing books of this kind, for it is exactly books such as this one which may act as a much-needed stimulus to observing and studying the amazing diversity of life visible with a microscope.

I am delighted that Wołowski and Hindák have shown that it is possible to produce a book which is at the same time scientifically exact, useful and user-friendly, and aesthetically appealing too. The colourful oil painting of a *Trachelomonas* cell reproduced opposite the title page of this atlas is a gentle reminder that science – especially morphological taxonomy – need not be a dry dusty subject, but one that can also please other senses in addition to our intellect.

In summary, I have no hesitation in recommending this book for purchase. The price is rather good value when the luxurious editorial production is also taken into account, so I would expect it to find a place not only in institutional libraries but in personal ones as well.

Gianfranco Novarino
Natural History Museum
London SW7 5BD, U.K.