

Book review

A. Kroh

Catalogus Fossilium Austriae, Band 2. Echinoidea neogenica

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I would not have dreamt it possible ... not in this day and age! But here it is, right in front of me: volume 2 in the series, *Catalogus Fossilium Austriae*, entirely devoted to Neogene echinoids known to date from Austrian territory. Central Europe's chequered history has seen to it that this volume also includes data on echinoid distribution in extra-Austrian countries as well, notably Hungary, the Czech Republic, Slovakia, Italy, Romania and Bulgaria, but also in nations which we have become familiar with only in recent years. This coverage of the volume makes it even more worthwhile. The use of the English language ensures easier access to an international readership, as explained in the foreword; a decision applauded by many, I am sure.

To be brutally honest, I could just leave it at this, and advise you to purchase your own copy: I feel extremely fortunate to have been sent this one to review. But: let us go into detail a bit, and do the volume proper justice. It is a well-produced book, containing a wealth of information, supplied in two-column print, with clear font and well-rendered illustrations, both line drawings and photographs. The inside and back covers show 'Reference sheets for explanation of used terms', highlighting, in neat line drawings and photos, terms used for apical discs, test plating, tubercle structure, spine morphology and even lantern elements. A very good idea, in particular for readers less familiar with echinoid descriptive terminology. The introductory part appears disproportionately long (56 pages in all, pp. i-lvi), but this is because of the fact that the list of references (exhaustive and highly useful) precedes the systematic descriptions – a deviation from common practice. But: it does work here.

Kroh also discusses his species concept, which is of importance in dealing with dissociated material in particular, and

how he has treated the material studied systematically. This is followed by a stratigraphic overview (Table 1), in which eastern Paratethys stage names (and historical ones!) are linked with standard and central Paratethys units. Additionally, a list of Hungarian names for localities in Burgenland (Austria), in use during the late nineteenth and early twentieth centuries is given – chequered history, once more. Following this are neat maps (Figures 2-9), showing all localities mentioned in the text, some names in Cyrillic transliterated, a compact distribution chart (Table 2) illustrating the ranges of the species accepted by Kroh, three pages of doubtful records, and Table 5 (2.5 page length) of rejected names, and the reasons why they were rejected – truly a successful attempt to condense data. In the 'Acknowledgements', every living echinoid worker is listed, or so it seems – lots of names have a familiar ring to them; next is a glossary of terms (matching the illustrations on inside and back cover) and the list of references which comprises just over 25 pages!

All echinoids are listed in systematic order, all records with (near-)full synonymy and reference to the original description, explanatory notes on type material, to-the-point descriptions, discussions and notes on stratigraphic range and localities which have yielded the material studied. Foreign material is also listed where this was used for comparative purposes – mostly this concerns specimens housed in the collections of the Naturhistorisches Museum Wien. Whenever possible, the material is identified to the species level, but, of necessity, quite a number of forms are considered indeterminate (and justly so), being based on isolated spines or test plates. In this way, true diversity is captured and enough is left for subsequent studies and/or later generations to sink their teeth into. Of particular importance are additional records from the literature, not substantiated

by the present work and/or collections, as well as doubtful records and/or misidentifications.

One new genus and two new species are erected, one of these being the echinothuriid *Retzneiosoma* (type species: *R. jasseneki*), a beautifully preserved, yet flattened, test from the marls of Langhian (middle Miocene) age at Retznei (Styria). More or less articulated finds of this type of echinoid are exceedingly rare in the fossil record; Kroh supplies a highly informative cladistic analysis (with cladograms) to justify his assignment – it all makes perfect sense. The other new species is *Linthia? summesbergeri* from the Egerian (Chattian-Aquitania) of Weikerlsee (Linz), and one new substitute name is introduced, *Echinolampas schultzi* for *E. laurillardi acuminata* Schaffer, 1912 (non *E. acuminata* Abich, 1882).

Diademata spines (Figure 12) are illustrated in admirable detail, with a direct comparison to Recent forms – much more work along these lines is needed, in particular for Neogene species. Next follow well-known taxa such as *Echinometra mathaei*, *Schizechinus hungaricus*, *Tripeustes planus* and *T. cf. ventricosus* as well as long lists of clypeasterids, with lucid notes on their morphometry and taxonomy. Kroh accepts *Clypeaster calabrus*, *C. campanulatus* [with 7 formae!], *C. folium*, *C. intermedius*, *C. latirostris*, *C. neudorfensis* and *C. scillae*. A comparable treatment is favoured for species of *Echinocyamus* and *Echinolampas*, two additional notorious forms for which a plethora of names have been introduced in the literature. All specific assignments are backed up with clear descriptions, some longer than others, and biometric data (in figures or listed).

For spatangoids (genera *Ditremaster*, *Pericosmus*, *Schizaster*, *Aliaster*, *Prenaster*, *Pseudobrissus*, *Brissus*, *Brisopsis*, *Meoma*, *Spatangus*, *Mariania*, *Lovenia*, *Echinocardium* and *Hemipatagus*), nice plate drawings and schematic representations of fascioles are given, and direct comparisons of closely related forms are very informative. A systematic index, with entries according to both species and genus names, concludes the text portion of this volume, to be followed by high-quality plates (82 in all) with b/w pictures of all taxa discussed. If you fail to identify your own echinoids with this volume before you, I am afraid you are in the wrong line of business.

I guess the only point of (minor) criticism now, before having started to use the book in depth, is that two subspecies of *Psammechinus dubius* are listed, and both are of Badenian (Langhian-early Serravallian) age. That, according to modern standards, is unacceptable; this becomes even more poignant with the record of a third form, *P. sp.*, of similar age.

In short: this work is a bit of an anachronism. It rivals (and to be honest, surpasses) earlier substantial descriptions of echinoid faunas by such illustrious workers as Cotteau, Lambert and de Loriol. Anyone with an interest in echin-

oids, especially those living and working in the whole of Europe (North Sea Basin inclusive), should make sure to have a copy of this book. The price of 149 Euro is a bit high, but the data presented (and the beautiful pictures to marvel at), will be valid for another century, at least.