

Deckersamphiura vitea, a new Late Campanian ophiuroid from southern Limburg (The Netherlands)

by John W.M. JAGT

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Abstract

A new species of amphiurid ophiuroid of early Late Campanian age, *Deckersamphiura vitea*, is recorded from the Benzenrade Member (Vaals Formation) as exposed at the De Wingerd quarry, south of Benzenrade (southern Limburg, The Netherlands). It is the second known member of the genus *Deckersamphiura*, the type of which (*D. inusitata* Jagt & Kutscher in Jagt, 2000) is of late Late Maastrichtian age. The decrease in the number of disc plates and plate circlets seen in *D. inusitata* is probably a paedomorphic trait characterising this lineage.

Key words: Ophiuroidea, Amphiuridae, Upper Campanian, The Netherlands, new taxon.

Résumé

Une nouvelle espèce d'ophiure amphiuridé du début du Campanien supérieur, *Deckersamphiura vitea*, est signalée pour le Membre de Benzenrade (Formation de Vaals) affleurant dans la carrière De Wingerd, au sud de Benzenrade (Province du Limbourg, Pays-Bas). C'est la seconde espèce appartenant au genre *Deckersamphiura*, dont l'espèce-type (*D. inusitata* Jagt & Kutscher in Jagt, 2000) est d'âge Maastrichtien terminal. La diminution du nombre de plaques du disque et des cercles de plaques dans *D. inusitata* est probablement un caractère pédomorphique particulier à cette lignée.

Mots-clefs: Ophiuroidea, Amphiuridae, Campanien supérieur, Pays Bas, nouveau taxon.

Introduction

Ophiuroid faunas of Campanian-Maastrichtian (Late Cretaceous) and Danian (Early Palaeogene) age have recently been described in detail by JAGT (2000), who recognised a total of 37 species. Of the new amphiurid genus *Deckersamphiura*, two species were listed in that paper, only one of which, the type species *D. inusitata* of late Late Maastrichtian age, was formally named. Material of the second species, of early Late Campanian age, not considered previously, allows that taxon to be named as well, and the name *D. vitea* is here proposed.

Deckersamphiura inusitata and *D. vitea* appear to be members of the same lineage, which is characterised by the loss of disc plates and plate circlets at comparable

disc diameters, a paedomorphic trait. The material described is housed at the Natuurhistorisch Museum Maastricht (M.J. Van Birgelen Colln, abbreviation NHMM MB).

Systematic description

Class Ophiuroidea GRAY, 1840
Order Ophiurida MÜLLER & TROSCHER, 1840
Infraorder Gnathophiurina MATSUMOTO, 1915
Superfamily Gnathophiuridea MATSUMOTO, 1915
Family Amphiuridae LJUNGMAN, 1867
Genus *Deckersamphiura* JAGT & KUTSCHER in JAGT, 2000

TYPE SPECIES

Deckersamphiura inusitata JAGT & KUTSCHER in JAGT, 2000, by original designation.

Deckersamphiura vitea n. sp. (Pl. 1)

- 1999 Amphiuridae n. gen. (? n. sp.) — JAGT, p. 200, pl. 3, figs. 12, 17, 18.
2000 *Deckersamphiura* sp. (?nov.) — JAGT, p. 22, pl. 8, figs. 5, 6; pl. 9, figs. 2-4, 6.

TYPES

Holotype is NHMM MB 865-16a; paratypes are NHMM MB 865-15b and MB 865-19.

MATERIAL

In addition to the types, NHMM MB 865-16b-f (fragmentary discs), NHMM MB 619-2b (fragment of disc, portions of arms), and NHMM MB 865-15d (portion of oral frame).

DERIVATION OF NAME

From the Latin *viteus*, in reference to the De Wingerd quarry (Dutch wingerd = vineyard).

DIAGNOSIS

Amphiurid with well-developed dorsal disc plating, with a distinct central plate and up to four additional circlets, stout arms with dorsal and ventral arm plates abutting over the entire arm length, narrow, crescent-shaped later-

al arm plates with up to 7 (or more ?) short, erect, simple arm spines, arrowhead-shaped oral shields and paired, pointed infradental papillae.

DESCRIPTION

Disc slightly elevated, pentagonal with indented interradial margins; highest point centrally, sloping gently towards margins. Disc diameter (holotype) 5.3 mm; dorsal surface with smooth plates and scales, and primary circlet of radially arranged, large abutting plates with straight lateral margins and broadly convex distal margin (Pl. 1, Fig. 1). Second circlet plates separated by smaller, irregularly shaped scales, positioned interradially and slightly smaller than those of primary circlet; quadrangular/rectangular with straight lateral and distal margins. Both laterodistal corners show indentations for abutting scales; two of these separate proximal portion of radial shields (Pl. 1, Fig. 1), distal one with pointed end, to about halfway. Radial shields fairly large, abutting, except proximally (Pl. 1, Fig. 1), but only their distal portion is free. Interradially, two larger plates flanked by smaller scales reaching indented margin (Pl. 1, Fig. 1). Two small, rectangular plates abut distal margin of radial shields as well as dorsal and lateral arm plates.

Ventral disc surface rather poorly preserved in all specimens available, showing four arm segments to occur within disc, and many small scales interradially (Pl. 1, Fig. 2). Oral frame shows stout oral plates, teeth (Pl. 1, Figs. 2, 3) and first vertebrae with wing-like processes (Pl. 1, Fig. 3). Size and shape of adoral shields, and first ventral and lateral arm plates cannot be made out satisfactorily; oral shield arrowhead shaped, small. Two infradental papillae, block like. Arm spines within disc short, simple, rapidly tapering and pointed. Genital scale sickle shaped(?); genital plate thin and club shaped, with widened, flattened distal end.

Arms stout (Pl. 1, Figs. 4, 5) with very slight taper; width and length of ventral arm plates almost equal, slightly sloping lateral margins, indented distal margin

and pointed proximal margin, apparently abutting along entire arm length. Dorsal arm plates (Pl. 1, Fig. 4) more or less tumid, broadly rounded triangular in outline, with proximal overlap and straight dorsal margin rounding into lateral margins; apparently also abutting along entire arm length. Lateral arm plates narrow (Pl. 1, Fig. 5), widest ventrally, dorsal portion partially covered by dorsal arm plates; distal margin with barely visible row of small spine tubercles (poorly preserved, exact number cannot be determined, but 7 or more ?). Plates slope gently towards thin proximal margin, which was covered in skin during life (Pl. 1, Fig. 5). Vertebrae of the zygospondyl type (Pl. 1, Fig. 2).

DISCUSSION

The present species differs from its latest Maastrichtian congener (see JAGT, 1999, pl. 3, fig. 15; JAGT, 2000, p. 20, pl. 8, figs. 7-11; pl. 9, figs. 7-9) in having more dorsal disc plates and scales, slightly wider lateral arm plates, more tumid dorsal and ventral arm plates, with convex margins, and apparently also small scales on the interradial ventral disc surface. Both forms would seem to belong to the same lineage which is characterised by the loss of certain disc plates in the younger species at comparable diameters, a paedomorphic trait.

DISTRIBUTION

Deckersamphiura vitea is confined to the glauconitic, sandy Benzenrade Member (Vaals Formation, lower Upper Campanian; correlatives of the Zeven Wegen Member, Gulpen Formation), as exposed in the Ubachsberg-Heerlen/Benzenrade area (southern Limburg, The Netherlands).

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References

- JAGT, J.W.M., 1999. Ophiuroid diversity in the type area of the Maastrichtian Stage. *Geologie en Mijnbouw*, **78**: 197-206.
- JAGT, J.W.M., 2000. Late Cretaceous-Early Palaeogene echinoderms and the K/T boundary in the southeast Netherlands and northeast Belgium – Part 3: Ophiuroids. With a chapter on Early Maastrichtian ophiuroids from Rügen (northeast Germany) and Møn (Denmark) by Manfred Kutscher & John W.M. Jagt. *Scripta Geologica*, **121**: 1-179.
- LJUNGMAN, A., 1867. Ophiuroidea viventia huc usque cognita enumerat. *Öfversigt af Kongelige Vetenskaps-Akademiens Förhandlingar*, **29** (1866): 303-336.
- MATSUMOTO, H., 1915. A new classification of the Ophiuroidea: with descriptions of new genera and species. *Proceedings of the Academy of Natural Sciences Philadelphia*, **67**: 43-92.

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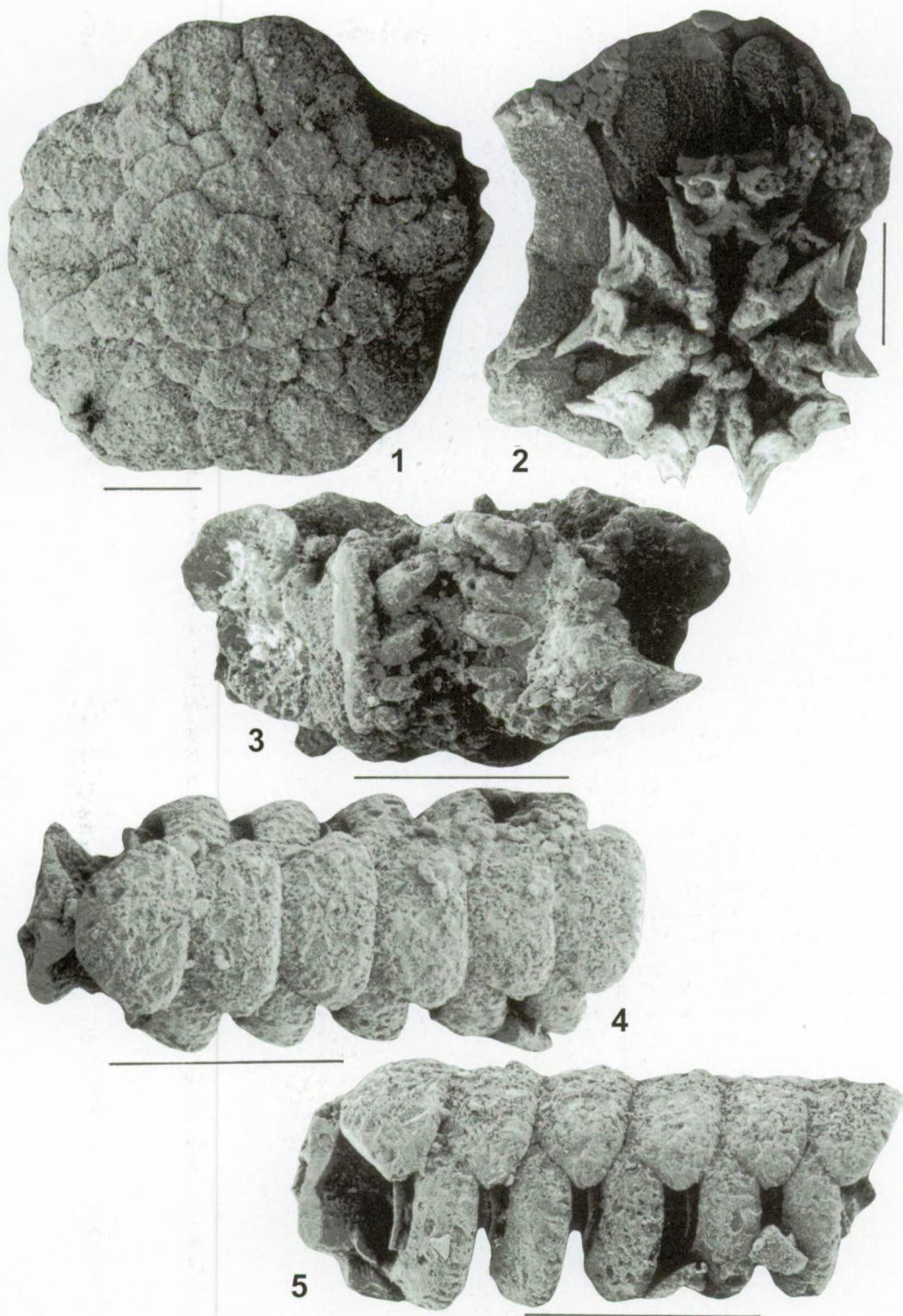


Plate 1

Deckersamphiura vitea n. sp.

lower Upper Campanian (Vaals Formation, Benzenrade Member) of De Wingerd quarry, near Benzenrade (southern Limburg, The Netherlands)

Fig. 1 — NHMM MB 865-16a (holotype), dorsal view of disc.

Fig. 2 — NHMM MB 865-15b (paratype), oral frame and portions of disc.

Fig. 3 — NHMM MB 865-15d, portion of oral frame preserving teeth.

Figs. 4, 5 — NHMM MB 865-19 (paratype), dorsal and oblique lateral views of portion of arm.

Scale bars equal 1 mm.

