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A note on the occurrence of Desmanella cf. dubia Rümke, 1976 (Insectivora : Talpidae: Uropsilinae) in the Lower Pliocene of Podlesice, Poland.

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SUMMARY

This note describes a maxillary fragment of a small Shrew-mole (Uropsilinae) from Podlesice, Poland (Lower Pliocene, Ruscinian MN 14), tentatively referred to *Desmanella* cf. *dubia* Rümke, 1976. It is the first known specimen of *Desmanella* from Poland.

SAMENVATTING

Tijdens een verzamelcampagne van het Insitute of Systematics and Evolution of Animals, Krakow en het Harrison Zoological Museum, Sevenoaks werd een bezoek gebracht aan de beroemde vindplaats Podlesice. In dit artikel wordt een bovenkaaksfragment van een spitsmuismol, *Desmanella* cf. *dubia* beschreven. *Desmanella* was tot op heden nog niet bekend uit Polen. *Desmanella dubia* en de eerder beschreven *Dibolia dekkersi* zijn vormen die tot dusver bekend waren uit het Mioceen, maar nu in een Pliocene fauna gevonden zijn.

Introduction

Recent researches at the famous Lower Pliocene site at Podlesice, Poland 50.34'N 19.31'E (reference locality of Mammal Zone MN14, Ruscinian, c.5 m.y.b.p.) have revealed the presence of rare Insectivore remains belonging to species, which are essentially Miocene, but seemingly mingled in this astonishingly rich Insectivore fauna with many species of more typically Pliocene aspect. Thus we have recently noted here sparse but distinctive isolated teeth of a very small Desman, *Dibolia* aff. *dekkersi*. known previously from certain other sites of Ruscinian age in Greece and Spain (HARRISON & RZEBIK-KOWALSKA, 1992).

Extraction of small mammal remains from pieces of breccia obtained during the visit of the Harrison Zoological Museum jointly with the Institute of Systematics and Evolution of Animals, Krakow has resulted in a further find of great interest, indicative of the presence of the genus *Desmanella* also in this rich fauna.

Description

A fragment of right maxilla with the P4 and damaged M1 *in situ* (HZM.1.25230) presents such a curious and distinctive aspect that it could not be referred with confidence to any of the known Insectivores from the site, (fig. 1). The rather Desman-like aspect of the teeth led at first to consideration of reference to *Dibolia* aff. *dekkersi*, but the very small size of the teeth and incompatible dental morphology led to rejection. That it should have been considered at first to be a desman is however hightly relevant, since its true affinities appear to be with the genus *Desmanella* Engesser, 1972. This was described from six isolated molars from Anwil, at first believed by its discoverer to represent a small Desman. The real affinities of the genus were shown to lie with the primitive shew-Moles of Subfam. Uropsilinae (RÜMKE, 1974; ENGESSER, 1980).

The existing Recent forms of this once widespread group belong to three species of the genus *Uropsilus* Milne Edwards 1871, (CORBET & HILL, 1992). They are confined to relict pockets of distribution in China, where their primitive external form and variable dental formula have been well documented by ALLEN (1938).

The Podlesice maxilla described in detail here, agrees in most features with the extinct species *Desmanella dubia* described by RÜMKE (1976) from the quarry of the Pikermi Brick and Tile factory (Chomateri). The material was described from a lignitic clay with mollusc fragments of Turolian age (Upper Miocene MN 11-13).

The maxillary fragment (HZM.1.25230) described and figured here has since disintegrated but the original presence of an infraorbital foramen extending forwards on the side of the maxilla in the gutter-like depression to the level of the anterior root of the M1 is noteworthy and distinctly Talpid in aspect (fig. 1). The inner wall of two small alveoli are discernible anterior to the P4, consistent with small single-rooted P2 and P3, the latter rather larger. The P4 is intact, with its principal cusp (paracone) heavily scalloped by wear on its posterior face. A separate conical protocone lies on a projecting lingual shelf separated by a depression from the main cusp. The anterior border of the tooth is strongly curved with a distinct anterior cingulum extending round the paracone and disappearing in front of the protocone. A distinct posterior cingulum extends from the postero-lingual corner of the protoconal flange around the whole posterior base of the paracone, which was evidently strongly inclined posteriorly. Antero-lateral and postero-lateral roots are partially exposed in the specimen and are relatively massive, the former projecting well in front of the crown and sloping backwards as well as inwardly curved. A third small internal root supports the protoconal flange. The crown of the M1 is damaged on its buccal surface, with loss of what was evidently a

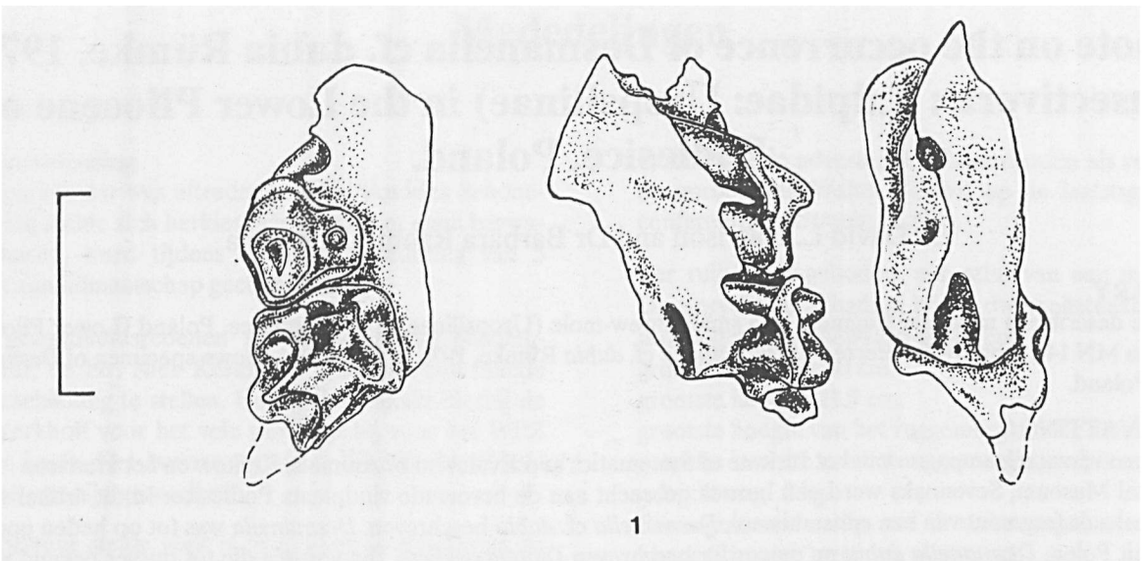

Fig. 1.Occlusal (left), buccal (centre) and dorsal (right) views of right maxillary fragment of *Desmanella* cf. *dubia* HZM 1.25230. Podlesice, Poland. Pliocene MN14 Scale = 2 mm

Fig. 1Kauwvlak- (links), wangzijde- (midden) en boven aanzicht van het rechter bovenkaaksfragment van *Desmanella* cf. *dubia* HZM 1.25230. Podlesice, Polen. Plioceen MN14. Maatstreepje = 2 mm

strongly projecting metastyle. The morphology of the tooth is otherwise reasonably clear and distinctive, although there is slight damage to the posterior cingulum round the protoconal heel (fig. 2). The lingual margin of the crown forms a subrectangular projection, the inner borders of the worn protocone and hypocone forming a crest with a gentle concavity between them. The hypococone is strongly extended posteriorly and was evidently bigger than the protocone. A small protoconule is situated mid-way between the protocone and paracone, its situation clearly indicated by a distinct indentation in the preprotocrista. The metacone clearly exceeds the paracone in size and height. A small parastylar process is separate from the paracone. The postparacrista and premetacrista are strongly dilambdodont, projecting to form a mesostyle which was clearly undivided and lacking any notch, although its posterior margin is damaged. Most of the metastyle is missing, but the remaining basal part shows that it was strongly projecting.

A posterior cingulum is present behind the metacone, but is damaged behind the hypoconal heel. There is no internal cingulum, but a broad antero-labial cingulum connects the protoconule to the parastyle. On the buccal margin of the tooth a narrow cingulum margins the paracone, but the mesostylar projection lacks any cingulum. The buccal margin of the metastyle is missing (fig.2). A single broad flattend root supports the internal lobe of the crown, slanted inwards. A long cylindrical antero-labial root supports the paracone and is strongly curved inwards. Probably a postero-labial root beneath the metacone is missing. Two typically Talpid accessory rootlets are present - a small rootlet on the labial margin beneath the mesostyle and a minute rootlet in the centre of the crown. The measurements (in mm) of the P4 and M1 so far as they are ascertainable are given below compared with those of *Desmanella dubia* (after RÜMKE, 1976).

P4 crown length 1.34 (1.26) crown width 1.28 (1.19)

M1 external crown length (L1) 1.73 estimated (2.05)
internal crown length (L2) 1.18 (1.29)
Anterior crown width (Paracone - Protocone) 1.18
Median crown width (Mesostyle - Hypocone) 1.66.

Since the preparation of this note a further specimen referable to this taxon was obtained from Podlesice in June 1993. This is a better preserved left maxillary fragment with P4 - M2 (HZM 2.26330; fig. 3). It confirms the presence of an infraorbital foramen, the posterior border of which is situated above the mesostyle of M1, separated from the orbit by a narrow bar of bone.
A strongly projecting metastyle in M1 is also confirmed. Although the occlusal surface of the teeth has been rather eroded by wear and the action of acid used in extraction it is clear that the morphology of P4 and M1 was essentially as described in the previous specimen. The M2 was trapezoid in shape, and the buccal margin of the toothrow strongly convex. The measurements of the specimen, given below are only marginally larger, and clearly compatible with the first specimen.

P4-M2 4.1 mm

P4 Crown length 1.41 mm
Crown width 1.2 mm (estimated)

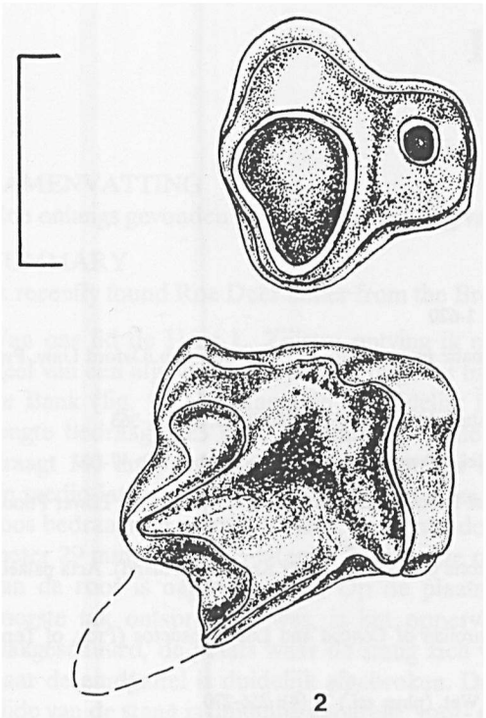

Fig. 2: Occlusal views of P4 dex. and M1 dex. of the same specimen. 25 x magnification. Scale = 1 mm. Note damage to metastyle of M1 and posterior cingulum behind hypoconal heel.

Fig. 2: Kauwvlak van de P4 en M1 van hetzelfde exemplaar. Vergroting 25 x, Maatstreepje = 1 mm. Metastyl en achterste cingulum van de M1 zijn beschadigd.

M1 External crown length (L1) 1.79 mm
Internal crown length 1.22 mm
Anterior crown width (paracone-protocone) 1.28 mm
Median crown width (mesostyle - hypocone) 1.25 mm

M2 External crown length (L1) 1.22 mm

Internal crown length (L2) 1.15 mm
Crown width 1.41 mm

Discussion

Desmanella is known from a number of European and Asiatic sites and several species have been described. Although a certain specific determination of the Podlesice specimen clearly cannot be made on such sparse material the following points suggest affinity with *D. dubia*:

1. Small size (*D. amasyae*, *D. sickenbergi*, *D. cingulata*, and *D. crusafonti* are all larger).

2. The morphology of the P4 agrees closely in shape and in the development of the cingula (see ENGESSER, 1980, Fig. 38, p. 100).

3. The morphology of the M1, although damaged, agrees closely with the excellent description of this tooth in *D. dubia* given by RÜMKE (1976, p. 259 and Plate 2, Fig. 13 of the holotype).

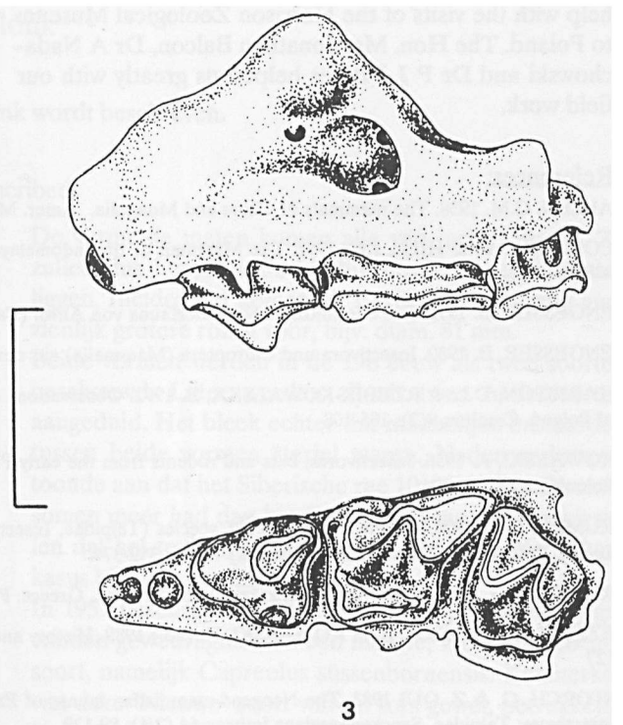

Fig. 3: Buccal (above) and occlusal (below) views of left maxillary fragment of *Desmanella* cf. *dubia* HZM 2.26330. Podlesice, Poland, Pliocene MN 14. Scale = 2 mm

Fig. 3: Wangzijde (boven) en kauwvlak (onder) aanzicht van linker bovenkaaksfragment van *Desmanella* cf. *dubia* HZM 2.26330. Podelesice, Polen, Plioceen MN 14. Maatstreepje = 2 mm

Although the generally considered lower Pliocene age of Podlesice (Ruscinian MN 14) is rather younger than the upper Miocene (Turolian) age of Pikermi, it is certainly possible that *D. dubia*, like *Dibolia dekkersi* may be a relict Miocene species in the fauna, rapidly dwindling to extinction in the face of new competition. The genus *Desmanella* is known to have survived from the Miocene into the younger Ruscinian MN 15, (ENGESSER, 1980). Rather scarce remains of true Talpids, (subfam. Talpinae) from Podlesice have been identified as belonging to three species, *Scaptonyx ? dolichochir*, *Scapanulus agrarius* and *Talpa minor* (RZEBIK-KOWALSKA in KOWALSKI, 1989). Desmans (subfam. Desmaninae) known from the site include *Desmana nehringi* (KOWALSKI, 1956) and *Dibolia* aff. *dekkersi* (HARRISON & RZEBIK-KOWALSKA, 1992). Further research on this Lower Pliocene Talpid fauna is clearly desirable, as it is still rather poorly known. STORCH & QIU (1983) consider that *Scaptonyx ? dolichochir* from Podlesice is most likely *Urotrichus* sp.

Acknowledgements

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