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A New Species of *Pseudachorutella* Stach, 1949 (Collembola: Neanuridae) from Poland

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Abstract. A new species of the genus *Pseudachorutella* Stach, 1949, *P. bescidica is* described from the Polish Carpathians. It is related to *P. assigillata* (Börner, 1901) and *P. balcanica* Cassagnau et Peja, 1978 described from Germany and Albania respectively. The new species is characterized by moderate plurichaetosis on dorsal side of the body, elongated labium, the presence of the male ventral organ and four teeth on claws.

Keywords. Entomology, taxonomy, Collembola, Neanuridae, *Pseudachorutella*, new species, Poland.

1. INTRODUCTION

The genus *Pseudachorutella* was established by STACH (1949) with *Pseudachorutes assigillatus* Börner, 1901 as the type species. Till now ten species have been described as *Pseudachorutella*, including four from Europe (MARI MUTT & BELLINGER 1990; MASSOUD 1967; NAJT & WEINER 1997; NAJT et al. 1990; WEINER & NAJT 1991). Morphologically, *Pseudachorutella* refers to *Arlesia* Handshin, 1942 (North and South America) and *Cephalachorutes* Bedos & Deharveng, 1991 (Asia, Africa). It differs from them by the set of subtle features in chaetotaxy of antennal segments III and IV (BEDOS & DEHARVENG 1991). According to Deharveng (pers. comm.) it seems most probable that *Pseudachorutella* species occurring outside Europe belong to two mentioned genera or a new undescribed genus.

During investigations in the Polish Carpathians we have found specimens of the genus *Pseudachorutella* very similar to two European species, *P. assigillata* (Börner, 1901) and *P. balcanica* Cassagnau et Peja, 1978 described from Germany and Albania, respectively. Examination of the material of the mentioned taxa from Börner's and Cassagnau's collections has enabled us to ascertain that the Polish specimens represent a new species. Its description is presented below.

2. MATERIALS AND METHODS

Litter and rotting wood samples collected in the Polish Carpathians were extracted using a Tullgren apparatus. Obtained specimens of the new species were cleared in potassium hydroxide and chloral phenol and finally mounted on slides in Swan's medium (distilled water, chloral hydrate, glacial acetic acid, glucose, Arabic gum) and observed using a phase contrast microscope Nikon Eclipse E 600. All drawings were prepared using a camera lucida. In order to compare morphology of related species the following material was examined: *P. assigillata*: 4 adult males, 2 adult females, Rotenburg, Germany, 27.03.1927, det. Börner (Börner's collection, housed in Staatliches Museum für Naturkunde Görlitz); *P. balcanica*: subadult male, Greece, det. Cassagnau (Cassagnau's collection, housed in Museum National d`Histoire Naturelle, Paris).

3. TAXONOMY

***Pseudachorutella bescidica* sp. n.** (Figs 1–10, 16–21)

Types. Holotype: adult female on slide, litter and fine debris, deciduous forest, ca. 400 m a.s.l., N slope of the summit Ostra in the "Przełom Jasiołki" reserve near Tylawa village (Beskid Niski Mountains, Carpathians, SE Poland), 16.06.2001, leg. A. Smolis.

Paratypes. Adult male, subadult male, 4 juveniles on slides, same data as holotype. Other material: adult female, in piece of rotting wood, deciduous forest (*Tilio-Carpinetum*), ca. 500 m a.s.l., "Obrożyska" reserve near Muszyna, (Beskid Sądecki Mountains, Carpathians, S Poland), 03.05.2004, leg. A. Smolis, D. Skarżyński. The material is deposited in the collection of the Department of Biodiversity and Evolutionary Taxonomy, Wrocław University, Poland.

Description. Habitus as in Fig. 2. Body length (without antennae) 1.02–2.15 mm (holotype: 1.5 mm). Colour of

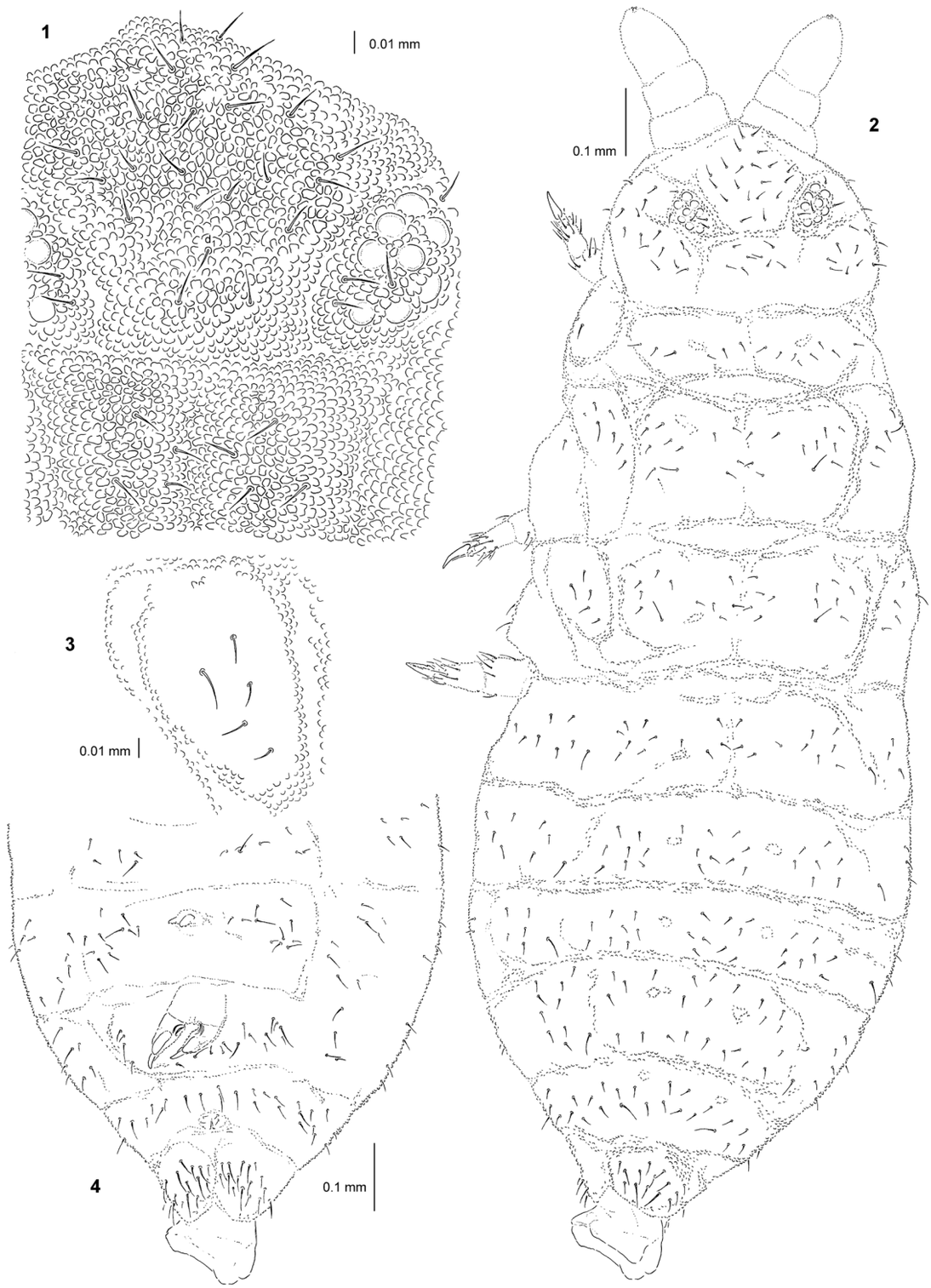

Fig. 1–4. *Pseudachorutella bescidica* sp. n. **1.** dorsal chaetotaxy of central part of head. **2.** habitus and dorsal chaetotaxy. **3.** chaetotaxy of lateral part of tergum III. **4.** chaetotaxy of abdominal sterna II–VI.

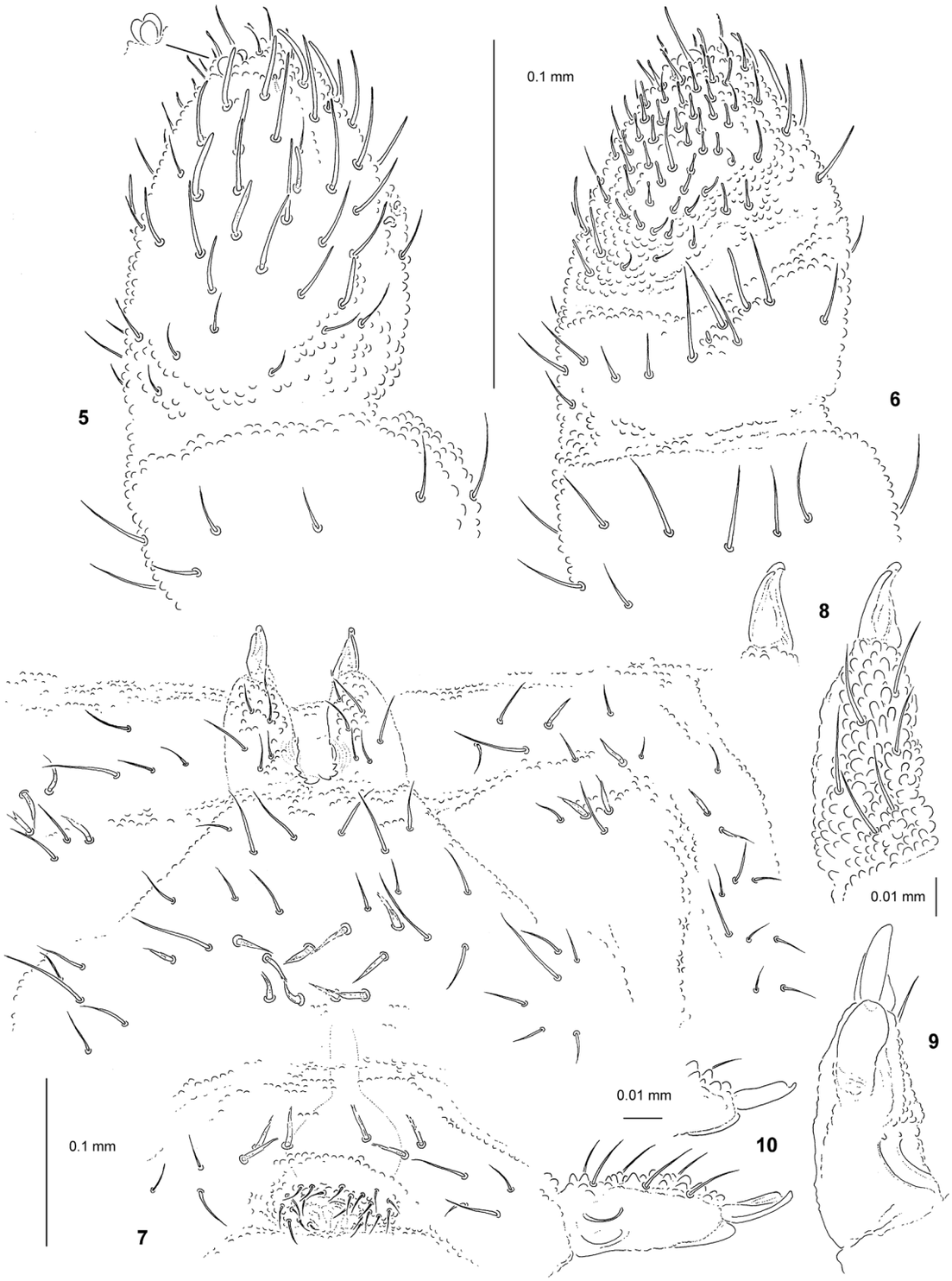

Fig. 5–10. *Pseudachorutella bescidica* sp. n. **5.** antennal segments II–IV of right antenna, dorsal view. **6.** antennal segments II–IV of right antenna, ventral view. **7.** furca, genital plate and male ventral organ. **8.** furca, dorsal view. **9.** furca, ventral view. **10.** furca, lateral view.

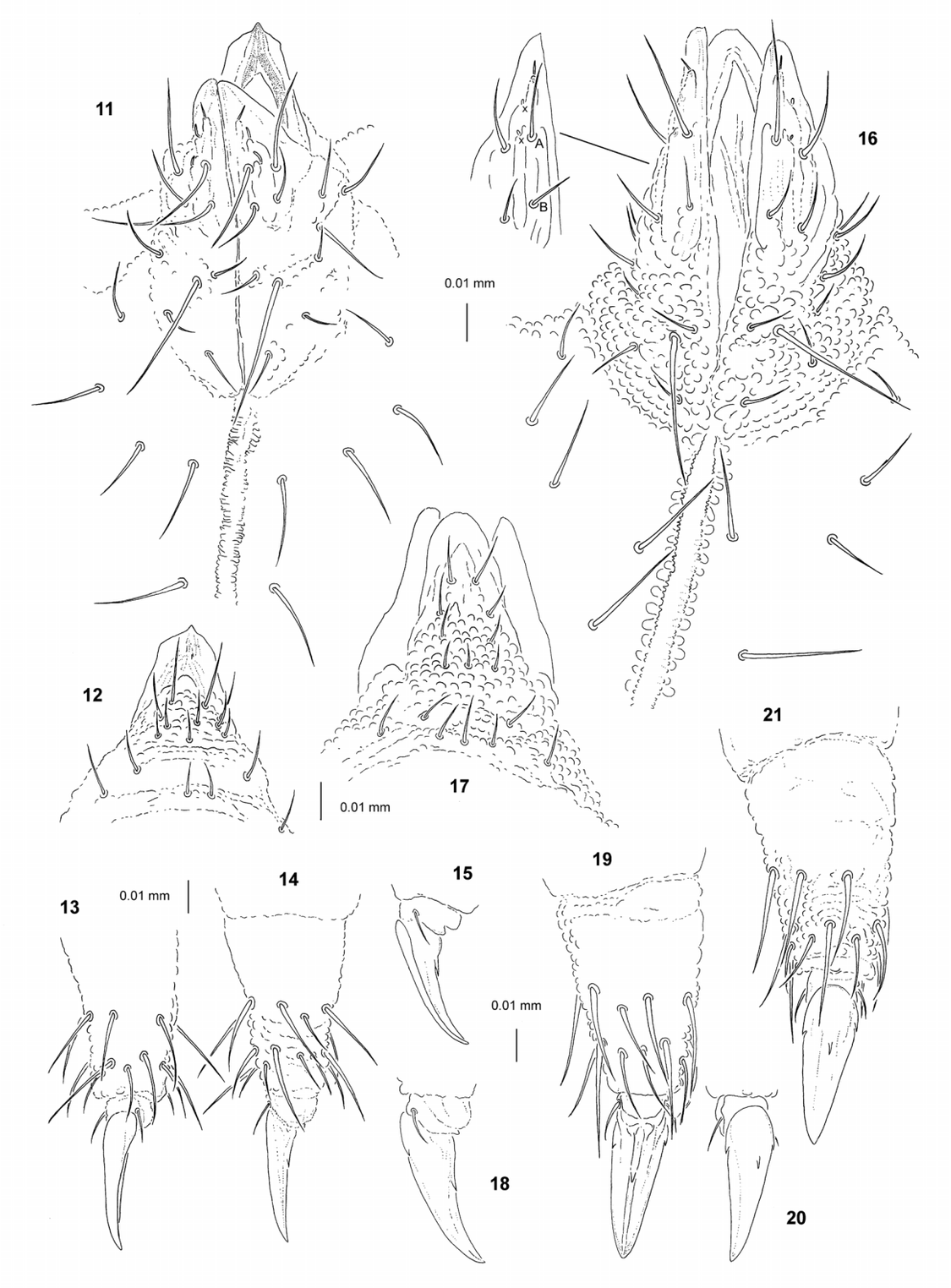

Fig. 11–21. *Pseudachorutella assigillata* (**11–15**) and *Pseudachorutella bescidica* sp. n. (**16–21**). **11.** labium, **12.** labrum, **13.** tibiotarsus III, dorsolateral view; **14.** tibiotarsus III, ventrolateral view; **15.** claw, lateral view. **16.** labium, **17.** labrum, **18.** claw, lateral view; **19.** tibiotarsus III, ventral view; **20.** claw, dorsolateral view; **21.** tibiotarsus III, dorsal view.

the body grayish-blue, eyes dark. Granulation coarse, rather homogenous (Fig. 1). Antennae shorter than head (Fig. 2). Antennal segment I with 7 chaetae, antennal segment II with 13 chaetae (Figs 5, 6). Antennal segments III and IV fused dorsally. Antennal III-organ with two small internal curved sensilla, one ventral microsensillum and two cylindrical guard sensilla, ventral one slightly longer than dorsal (Figs 5, 6). Chaetotaxy of antennal segments II–IV as in Figs 5, 6. Antennal segment IV with trilobed apical vesicle, subapical organite, microsensillum, chaeta i and 8 relatively thick, cylindrical sensilla (Fig. 5). Antennal segment IV ventrally with numerous modified small sensilla (Fig. 6).

Postantennal organ absent. Area ocularis with 8 + 8 large, pigmented eyes (Figs 1, 2). Buccal cone long. Mandible delicate with 3–4 teeth, maxilla styliform. Labium with 12 + 12 chaetae, 2 + 2 small papillae x and 1 + 1 subapical denticles (Fig. 16). Labium distally distinctly elongated, distance between chaetae A and B greater than length of chaeta B (Fig. 16). Labrum elongated, chaetotaxy: 4–5/2, 3, 2, 2, 2. Labral edge non ogival (Fig. 17).

Dorsal chaetotaxy as in Figs 1, 2. Chaeta d_1 on the head present or absent, unpaired chaeta a_0 absent. Chaetae a_2 on thoracic tergum II and m_1 on abdominal tergum IV present. Dorsal chaetotaxy moderately plurichaetotic, variable. 4–5 ordinary chaetae on lateral parts of terga II–III (Fig. 3). Sensorial formula of the body 022/11111. Sensilla twice as long as ordinary chaetae. Microsensillum on thoracic tergum II present. Thoracic sterna without chaetae, ventral tube with 3–5 + 3–5 chaetae. Ventral chaetotaxy of abdominal sterna II–VI as in Figs 4, 7. Furca relatively long. Dens with 6 chaetae (Figs 7, 8, 10). Mucro 2–2.5 times shorter than dens, triangular in shape (Figs 8, 10). Dens with ventro-apical hyaline area (Figs 9, 10). Retinaculum with 3 + 3 teeth. Male ventral organ (visible only in adult male with ductus ejaculatorius) built of thickened and slightly forked chaetae on abdominal sterna III–V (Fig. 7).

Tibiotarsi I, II, III with 19, 19, 18 chaetae respectively (Figs 19, 21). Femora I, II, III with 13, 12, 11 chaetae respectively. Trochanters with 6 chaetae each. Coxae I, II, III with 3, 7–8, 7–8 chaetae respectively. Subcoxae 2 I, II, III with 1, 2–4, 2–4 chaetae respectively. Subcoxae 1 I, II, III with 1, 2–3, 2–3 chaetae respectively. Claws with one tooth on inner edge, one tooth on outer edge and two lateral teeth (Figs 18–21). Empodial appendage absent.

Derivatio nominis. Named after its terra typica, the Beskidy Mountains in Poland.

Discussion. Among known members of the genus the new species is most similar to *P. assigillata* (Börner, 1901) and *P. balcanica* Cassagnau et Peja, 1978, but differs from them in the following characters: 4–5 ordinary chaetae on lateral parts of terga II–III (moderately plurichaetotic form) (*P. assigillata* and *P. balcanica*: 2 chaetae), distally elongated labium (*P. assigillata* and *P. balcanica*: labium of normal size, see Figs 11, 12), non-ogival edge of labrum (*P. balcanica* also non-ogival, but in *P. assigillata* distinctly ogival, see Figs 11, 12), labral chaetotaxy: 4–5/2, 3, 2, 2, 2 (*P. assigillata* and *P. balcanica*: 4/2, 3, 5, 2, see Fig. 12), male organ present (in *P. assigillata* absent, in *P. balcanica* unknown), four teeth on claws (in *P. balcanica* three teeth, outer tooth absent; in *P. assigillata* only inner tooth present, see Figs 13–15).

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