

**Description of *Australiocyphlus cabbagensis* gen. n., sp. n.  
of the new tribe Australiocyphlini from Australia  
(Coleoptera, Staphylinidae: Leptocyphlinae)\***

R. PACE

*Via Vittorio Veneto, 13, 37032 Monteforte d'Alpone (Verona), Italy. E-mail: pace.ent@tiscali.it*

**Abstract** – *Australiocyphlus cabbagensis* gen. n., sp. n. belonging to a new tribe Australiocyphlini of the staphylinid subfamily Leptocyphlinae is described, based on two females from Australia (NSW). The new tribe is characterized by the shape of the abdomen, without paratergites on the second to fifth tergites. The generic and tribal characters are illustrated. With 10 figures.

**Key words** – Australia, Coleoptera, Leptocyphlinae, new tribe, new genus, new species, Staphylinidae, taxonomy

INTRODUCTION

In 1989, on the Congress of Coleopterology in Barcelona, A. F. Newton of the Field Museum of Natural History (Chicago) announced the discovery of the first species of Leptocyphlinae from Australia, with 3 adults and 5 larvae collected in the Walpole National Park, Giant Red Tingle Area, 6 km NE Coalbine beach (NEWTON 1989). The description of this species was still not published by him nearly twenty years later during the study of larvae of Leptocyphlinae (GREBENNIKOV & NEWTON 2008). The publication by these authors mentions the taxon belonging to an unidentified genus of the subfamily Leptocyphlinae. In the key of larval identification, the Australian species is called “Australian genus” without a valid description. NAOMI (1996) described *Newtonius placidus* from the Papuan subregion (New Guinea), which belongs to the tribe Leptocyphlini. The species described here does not belong to this tribe, for the unique features of the abdomen and the maxillary palpus that not only do not allow placement in the tribe Leptocyphlini, but necessitate a description of a new genus belonging to a newly erected tribe.

\* 60th contribution to the knowledge of the endogenous fauna.

The subfamily Leptotyphlinae includes exclusively blind species and without metathoracic wings capable of flight (COIFFAIT 1959, 1972, PACE 1996). Their ecological niche is the deep soil in which they develop during their whole life from the larva to the adult. They only exceptionally and spontaneously occur on or near the surface. The species of this subfamily are distributed in all zoogeographic regions, but are rather abundant and diverse in the Mediterranean sub-region, where, however, their study has been very intensive, and their collection requires the method of soil-washing and the use of Berlese funnels.

#### MATERIAL AND METHODS

The examined material, two undetermined adult female specimens, was sent to me by Dr. György Makranczy of the Hungarian Natural History Museum, Budapest. After relaxing and removing the specimens from the mounting cards with distilled water, the two specimens were immersed in glacial acetic acid (*acidum aceticum concentratum*) in a deep porcelain dish and heated for removal of small air bubbles from the internal parts. The beetles were then removed with an elongate triangular white cardboard point, and one of the specimens was temporarily placed in glycerine on an object holding microscope slide covered by a cover slip for examination in transparent light; the other specimen was embedded in Canada balsam on a transparent plastic slip to be pinned through (for suitable placement in a pinned collection). For the procedure of embedding in Canada balsam I followed the regular method of using a xylene bath and moved the object with the aforementioned cardboard point. With holding a pin dipped in the distal extremity in the Canada balsam, I fished the specimen from the bath of xylene and absorbed immediately in the drop of Canada balsam on the plastic card. All of this was done under a stereoscopic microscope with 18× magnification, to avoid the great risk of losing the extremely minute specimens. For the examination of the external characters of the specimens, like punctation or fossae, I used the stereoscopic microscope with objective to 100×. For the examination of the generic and specific characters in transmitted light a compound microscope was used with magnification up to 450×. The specimens on the microscopic slide were photographed with a digital camera and their respective images printed; the sketches of the line drawings were made from these images combined with a direct observation in the microscope of certain hard-to-see details on the photos. The measurements have been made with the help of an ocular micrometer with a scale whose value of 3.3 corresponds to 1 mm.

The holotype is preserved in the Australian National Insect Collection, Canberra (ANIC) and the paratype in the Hungarian Natural History Museum,

Budapest (HNHM). Data in square brackets are supplementary and were not included on the original labels.

### Subfamily Leptotyphlinae

#### Tribe **Australiotyphlini** n.

*Type genus* – *Australiotyphlus* gen. n.

*Diagnosis* – The new tribe is here founded based on the unique features of the abdomen documented in the following key:

- 1 First and sixth tergites with paratergites, second to fifth tergites without paratergites, so they are similar to those of the species in the staphylinid subfamily Osoriinae .....  
..... Tribe **Australiotyphlini** n.
- First to sixth tergites with paratergites, no tergites are without them .....  
..... Tribes Cephalotyphlini, Entomoculini, Leptotyphlini, Metrotyphlini, Neotyphlini

#### *Australiotyphlus* gen. n.

*Type species* – *Australiotyphlus cabbagensis* sp. n.

*Description* – Head with occipital constriction weak (Fig. 4); antenna with 11 antennomeres (Fig. 8); labrum (Fig. 5) posteriorly narrowed, with undulated anterior border with two pairs of setae, one of which, the lateral, longer than that internal; mandibles each bicuspidate (Fig. 6); maxilla (Fig. 3) with galea very curved, with bristles to apical border, lacinia with bristles to inside border; maxillary palpus with 4 palpomeres, first palpomere small, second pear-shaped, a little narrower than third that is very dilated, fourth narrow and rather long; labial palpus (Fig. 2) with 3 palpomeres, first palpomere somewhat longer and a little wider than second, third subulate, longer than either second or first; pronotum with coxal cavities (Fig. 9) situated behind half, posteriorly open; mesonotum transverse, with contiguous mesocoxae; elytra shorter than first tergite; legs short; tarsal formula 3–3–3 (Fig. 7); a paratergite to every side of segments 1 and 6, tergites second to fifth without paratergites, therefore similar to an osorine abdomen within the Staphylinidae; seventh sternite and pygidium of female (Fig. 10) without evident darker, sclerotized internal structures.

*Etymology* – The masculine name of the new species derives from Australia and from τυφλός = blind.

**Australiotyphlus cabbagensis** sp. n.

(Figs 1–10)

*Type material* – Holotype, female: “Australia, NSW, Cabbage Tree Creek [approx. 34° 53’ S, 150° 34’ W – 35° 48’ S, 150° 09’ W], wet schlero[phyll], [leg.] E.B. Britton, ANIC Berlesate No. 23, 17.V.1967” (ANIC). Paratype, female: same data as holotype (HNHM).

*Description* – Body 1.24 mm in length, very narrow, parallel-sided (Fig. 1), colouration entirely yellowish-red, antennae and legs yellow. Reticulation or microsculpture of body invisible. Puncturation of body evident and rather dense, on tergites more dense at base of each, and sparse on sixth. Postantennal carinae absent. Pronotum with two longitudinal parallel median impressions. Scutellum minute, inconspicuous. Male unknown.

*Etymology* – The name of the species is derived from the “Cabbage” part of the toponym, its typical locality.

## DISCUSSION

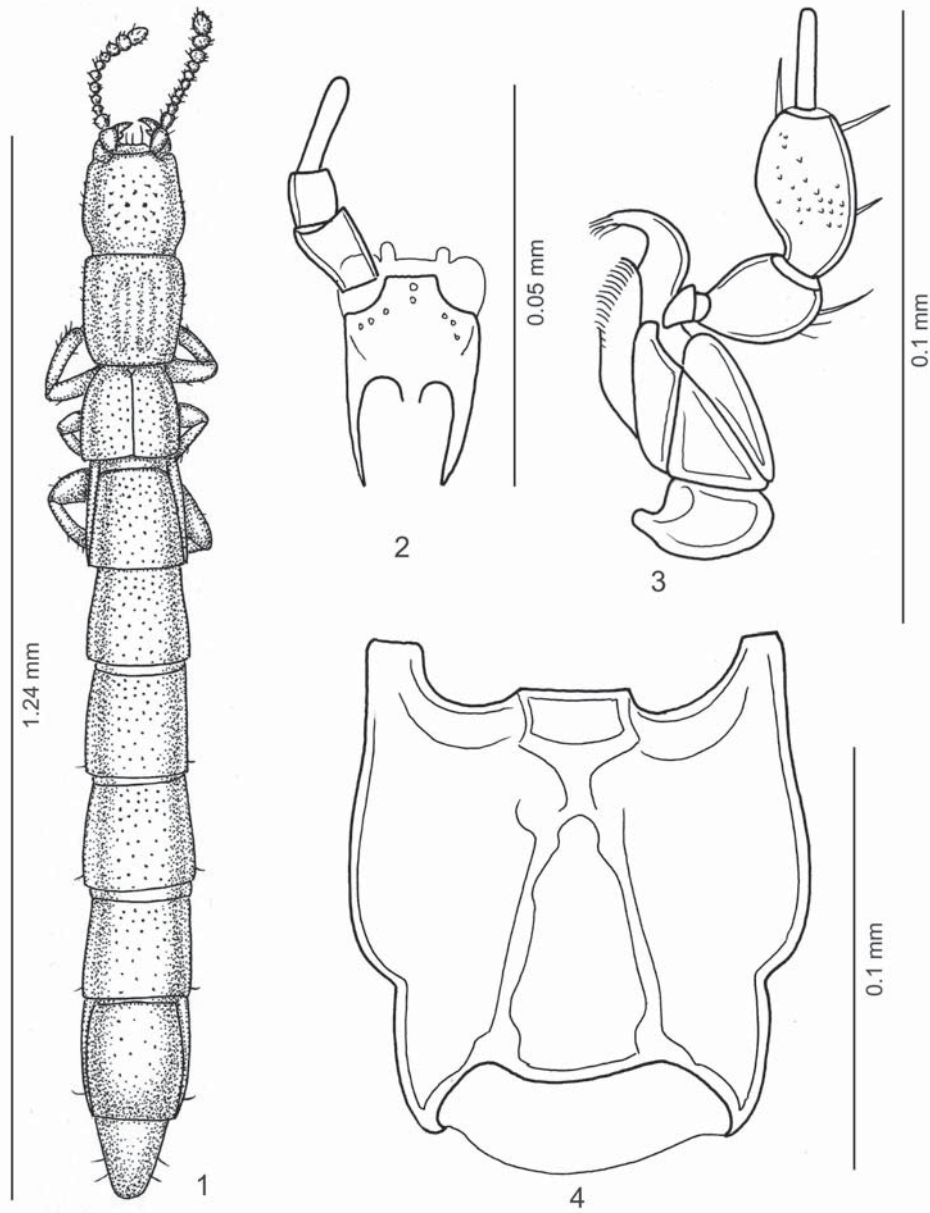
Because of the absence of transverse basal sulci of the sternites, the new tribe is nearer taxonomically to the tribes Leptotyphlini, Metrotyphlini and Neotyphlini, than to the tribes Entomoculini and Cephalotyphlini. For the second and third palpomeres of the maxillary palpus both dilated, the new tribe is more allied to the tribes Metrotyphlini and Neotyphlini (FAGEL 1954).

The new species has a form as in the species of the subfamily Osoriinae of the Staphylinidae. Despite its cylindrical abdomen it must be attributed to the subfamily Leptotyphlinae rather than Osoriinae because of the rest of the characters, and principally the structure of the ligula. But also the shape of labial and maxillary palpi, presence of tentorial pit, tibiae being not lobate and thorny as in the Osoriinae, form of the gula, leave no doubt that the taxon belongs in the Leptotyphlinae.

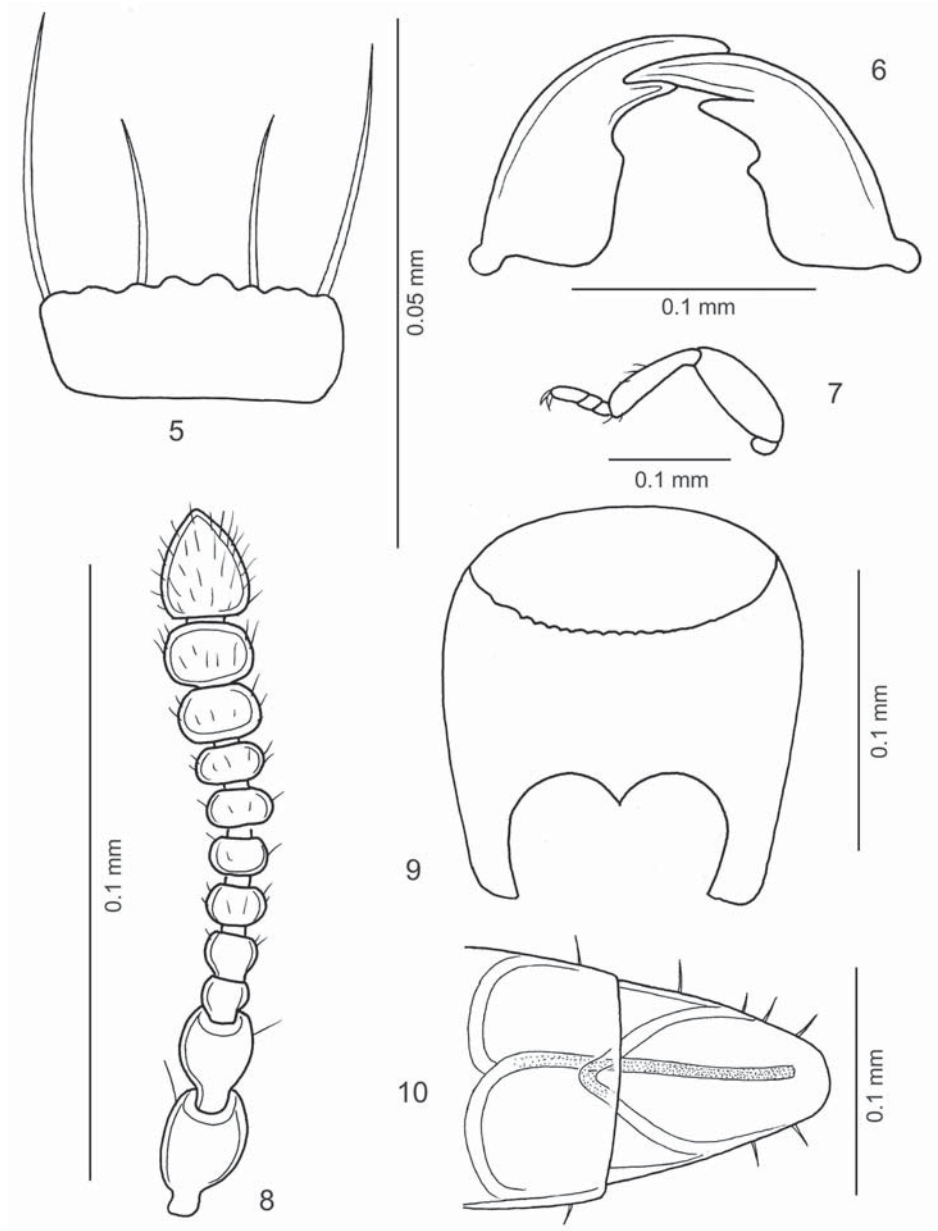
According to the study of the larval morphology of Leptotyphlinae, this subfamily would be sister to the group Pseudopsinae, Paederinae and Staphylininae (GREBENNIKOV & NEWTON 2008). Now, with the discovery of a new species with predominantly cylindrical abdomen, an affinity of the Leptotyphlinae can be suspected to the Osoriinae.

\*

*Acknowledgements* – I thank Dr. György Makranczy (HNHM), who sent me for study the rare material described in the present contribution. For supplying papers on the Leptotyphlinae I thank



Figs 1–4. *Australiotyphlus cabbagensis* gen. n., sp. n.: 1 = habitus, 2 = labium with labial palpus, 3 = maxilla with maxillary palpus, 4 = head in ventral view



**Figs 5–10.** *Australiotypplus cabbagensis* gen. n., sp. n.: 5 = labrum, 6 = mandibles in ventral view, 7 = middle leg, 8 = antenna, 9 = pronotum in ventral view with coxal cavities, 10 = female's pygidium in ventral view

Dr. Shun-Ichiro Naomi of the Museum of Natural History of Chiba, Japan, and Dr. Alfred F. Newton of the Field Museum of Natural History, Chicago.

#### REFERENCES

- COIFFAIT H. 1959: Monographie des Leptotyphlites (Col. Staphylinidae). – *Revue Française d'Entomologie* **26**(4): 237–437.
- COIFFAIT H. 1972: Coléoptères Staphylinidae de la Région paléarctique occidentale. – *Supplément à la Nouvelle Revue d'Entomologie* **2**(2): 1–651.
- FAGEL G. 1954: Un nouveau genre de Leptotyphlinae d'Afrique Noire. – *Bulletin de l'Institut royal des Sciences naturelles de Belgique* **30**(45): 1–6.
- GREBENNIKOV V. V. & NEWTON A. F. 2008: Minute larvae of Leptotyphlinae (Coleoptera: Staphylinidae): description of three genera with discussion on the monophyly and phylogenetic position of the subfamily as inferred from larval morphology. – *Zootaxa* **1817**: 49–58.
- NAOMI S. I. 1996: *Newtonius placidus* Naomi, gen. et sp. nov., the first representative of the tribe Leptotyphlini (Coleoptera, Staphylinidae, Leptotyphlinae) from the Australian region. – *Japanese Journal of Systematic Entomology* **2**: 235–240.
- NEWTON A. F. 1989: The first Leptotyphlinae from Australia and its larva (Coleoptera: Staphylinidae). – In: *Abstract Volume, International Congress of Coleopterology, Barcelona, September, 18–23, 1989*. Asociación Europea de Coleopterología, Barcelona, p. 123.
- PAGE R. 1996: *Coleoptera Staphylinidae Leptotyphlinae. Fauna d'Italia, vol. XXIV*. – Edizioni Calderini, Bologna, viii+328 pp.