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## *Otiorhynchus* subgenus *Arammichnus* GOZIS, 1882 in Poland (Coleoptera: Curculionidae)

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ABSTRACT. Occurrence of *Otiorhynchus* subgenus *Arammichnus* in Poland is confirmed, based on new records of *O. (A.) cribricollis* GYLLENHAL from Koło in central Poland, and *O. (A.) dieckmanni* MAGNANO from Sopot at Baltic coast. Both species are briefly diagnosed, illustrated and keyed. *Otiorhynchus velutinus* GERMAR is transferred from subgenus *Arammichnus* to subgenus *Choilisanus* REITTER. Current view on taxonomy of subgenus *Arammichnus*, including its diagnosis, is presented and compared with that adopted in existing keys for identification of Centraleuropean species of *Otiorhynchus*.

Key words: entomology, taxonomy Coleoptera, Curculionoidea, Entiminae, Otiorhynchini, subgenus *Arammichnus*, subgenus *Choilisanus*, Poland, new records.

The subgenus *Arammichnus* (formerly as homonymous *Eurychirus*) appeared very early in papers dealing with subdivision of the enormously diverse genus *Otiorhynchus*, and it remained one of just a few subgenera in the most generalised, oversimplified and artificial classification of this weevil group proposed first by STIERLIN (1861), and then followed by a vast majority of specialists, including HOFFMANN (1950) and SMRECZYŃSKI (1966). In his key to the weevils of Poland the latter author classified five species in *Arammichnus*, none of which actually belongs to this subgenus if any narrower taxonomic concept of division of *Otiorhynchus* is considered. The same extraordinarily generalized systematics was adopted for the Central European Otiorhynchini by FRIESER (1981) and DIECKMANN & BEHNE (1994), who included 15 spp. to the subgenus *Arammichnus*, 11 of which are currently dispersed through 8 (!) subgenera, namely

*Cryphiphorus* STIERLIN, 1883 (*O. turbator* F. SOLARI, *O. ligustici* (LINNAEUS), including *O. hormuzachii* PENECKE), *Otirolehus* REITTER, 1914 (*O. tristis* (SCOPOLI), *O. anthracinus* (SCOPOLI)), *Tithonus* GERMAR, 1824 (*O. chrysocomus* GERMAR), *Zadrehus* REITTER, 1912 (*O. atroapterus* (DE GEER)), *Meriplodus* REITTER, 1912 (*O. laconicus* KIRSCH), *Pseudocryphiphorus* MAGNANO, 1998 (*O. conspersus* (HERBST)), *Paracryphiphorus* MAGNANO, 1998 (*O. orbicularis* (HERBST)), and *Elechranus* REITTER, 1912 (*O. roubali* PENECKE) (REITTER, 1912; MAGNANO, 1998; ALONSO-ZARAZAGA, 2010). All these species were formerly grouped with *Arammichnus* sensu lato based on a single character, the outwardly expanded tibial apices, which turned out highly heterogeneous, inconsistent with distribution of other important characters, and thus irrelevant.

The occurrence in Poland of nominotypical *O. (Arammichnus) cribricollis* GYLL. has been briefly announced by KONWERSKI, MAJEWSKI and MATUSIAK (in WANAT & MOKRZYCKI, 2005), and detailed data of that record are finally presented below. Meanwhile, a closely related *O. (A.) dieckmanni* has been discovered in Poland by two authors of this contribution (MW, PB). Both species, still poorly known in Central Europe, are characterized and keyed below. We taxonomically diagnose the subgenus in its narrowed sense as well, with comments on the species living in Poland.

The species of *Otiorhynchus* are all apterous, foliophagous in adult stage, while the larvae develop in soil feeding on roots. They are polyphagous in both stages, though sometimes with evident plant preferences. Moreover, thelytoky is very common in this group, with hundreds of parthenogenetic lineages known (SUOMALAINEN 1969). Adults of most species express nocturnal activity, spending whole day hidden in ground crevices or near root base of their host plants. This combination of biological features predestinates many species for transportation by humans with young garden and forest plants, and they are well known as inhabitants of gardens, hedgerows, and other kinds of urban green areas. This group, adapted to urban environment, may nowadays easily increase in number and range, following rapid increase of transportation chances and global development of communication between human settlements. Both species described below represent this ecological group.

All the illustrations were taken using Leica M205C stereomicroscope with attached JVC KYF75 camera, and prepared using the AutoMontage Pro and Photoshop CS2 software.

### **Subgenus *Arammichnus* Gozis, 1882**

Type species: *Otiorhynchus cribricollis* GYLLENHAL, 1834.

#### **DIAGNOSIS**

The subgenus represents an isolated subgroup within MAGNANO's (1998) 'section 4' due to tight elytra-prothorax connection, obsolete and not hollowed epistome, superficial antennal scrobes reaching anterior margins of eyes, short and broadly rounded median lobe of aedeagus, and endophallus, apart from the basal sclerite, having a complex armature.

## REMARKS

Of the two species listed in *Arammichnus* by WANAT & MOKRZYCKI (2005), *O. velutinus* GERMAR is here transferred to the subgenus *Choilisanus* REITTER, to join *O. raucus* (FABRICIUS). Both these species share all important characters of the 'section 3' (MAGNANO, *l.c.*): loose connection between elytra and prothorax, straight outer margin of elytron, and short rostrum. Moreover, *O. velutinus* possesses the most important diagnostic features of *Choilisanus*, namely: epistome triangular, hollowed, with well developed lateral keels; pterygia thick and projecting; antennal scrobes closed; fore coxae placed subcentrally; tibial spurs well developed; median lobe of aedeagus thin, slender, shorter than aedeagal apophyses, in endophallus besides the basal sclerite with subapical paired structure; spermatheca with inflated, subglobular corpus, and ramus reduced.

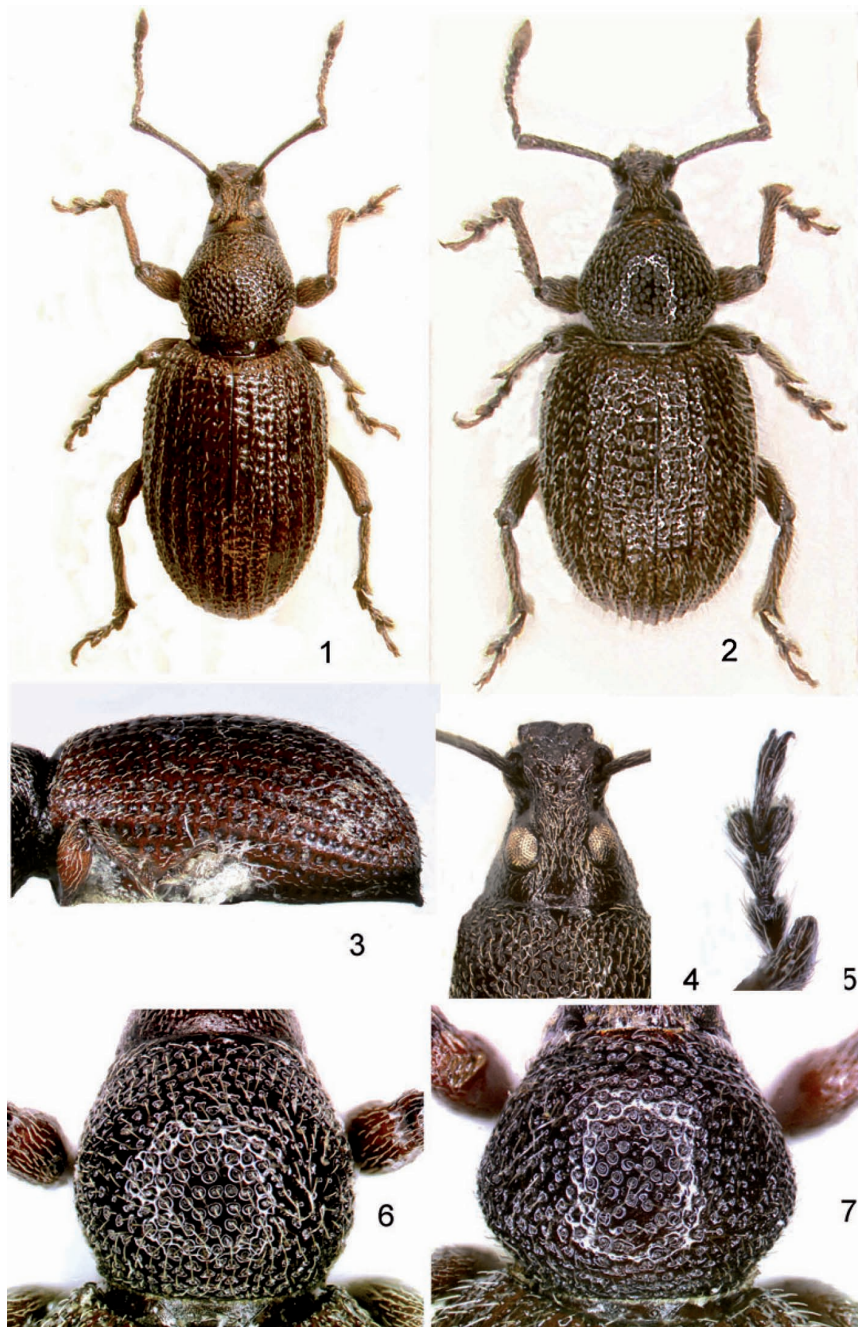
## KEY TO SPECIES OF OTIORHYNCHUS (ARAMMICHNUS) FOUND IN POLAND

1. Body covered with short, weakly lifted hair-like scales (fig. 8). Pronotum gently, regularly rounded, its basal constriction weakly expressed (fig. 6) ..... *O. (A.) cribricollis*
- Body vestiture basically composed of long, semi-erect hairs (fig. 9). Pronotum markedly rounded at sides, somewhat angulate, its basal constriction strong, collar-like (fig. 7) ..... *O. (A.) dieckmanni*

***Otiorynchus (Arammichnus) cribricollis* GYLLENHAL, 1834**

## DESCRIPTION

Body dark testaceous, length (pronotum+elytra) 6.2-7.8 mm; integument largely uncovered by pale, hair-like and sparse, generally recumbent vestiture (fig. 1). Rostrum very short, 1.3-1.4 × wider than long, its disk distinctly narrowing posteriad, just behind pterygia usually evidently wider than frons, concave, coarsely punctured; antennal scape extending to apical 0.33 of pronotum in repose, length ratio of four basal funicular segments: 1.0 - 1.2 - 0.7 - 0.6; eyes barely convex, nearly dorsal; frons narrower to about as wide as eye diameter, flat to slightly concave, coarsely punctured, with short median fovea close to vertex; temples and vertex finely punctured. Pronotum slightly (less than 1.1 ×) wider than long, regularly rounded at sides, widest at mid-length, weakly convex, coarsely punctured, with punctures generally less than its diameter apart, the largest sized as 5-6 ommatidia combined, with interspaces shiny, nearly flat (fig. 6). Elytra 1.55-1.60 × longer than wide, in profile almost even in basal two-thirds and with protruding apex (fig. 3); striae formed as regular rows of large punctures slightly larger than those largest on pronotal disk; interstriae level with punctural septa, flat, shiny, on disk about as wide as the striae, with single row of short, arcuately raised, pointed hair-like scales each attached to the base of minute asperity, the asperities higher and tubercle-like in the posterior part of elytron; occasionally elytra with variable number of additional loose aggregations of suboval, adpressed opalescent scales. Legs short, thin, finely pilose; femora untoothed; protibia straight, barely sinuous and with obsolescent



1-7. *Otiorhynchus cribricollis* (from Poland): 1 – habitus, 3 – elytra in profile, 4 – head in dorsal view, 5 – protarsus, 6 – pronotum in dorsal view. *O. dieckmanni* (from Poland): 2 – habitus, 7 – pronotum in dorsal view





8-16. *Otiorynchus cribricollis* (from Poland, except 11 from Italy): 8 – elytral vestiture, 10 – protibial apex, 11 – proventriculus, 12 – ovipositor, 14 – 8<sup>th</sup> sternite, 15 - spermatheca. *O. dieckmanni* (from Poland): 9 – elytral vestiture, 13 – ovipositor, 16 - spermatheca

denticles along inner margin, largely expanded apically (fig. 10); tarsi with onychium twice as long as 3<sup>rd</sup> segment (fig. 5). Body venter entire finely and sparsely punctured, with very sparse whitish hair-like setae.

Proventriculus as in fig. 11. Sternite 8 with semicircular basal plate bearing numerous marginal setae, cleared in middle between dichotomous sclerotized extensions of the apodeme (fig. 14). Ovipositor as in fig. 12; styli minute, barely longer than wide, with 3-4 long setae; coxitae triangular in outline, with 1-2 long, subapical setae. Spermatheca with broad ramus provided with a small gland, and minute, sclerotized nodule; cornu equally thin through its length (fig. 15).

For detailed description see MAGNANO (1992). Only parthenogenetic populations are known.

#### DISTRIBUTION IN POLAND

Wielkopolsko-Kujawska Lowland: Koło (UTM: CC38; lat/long: 52.2017N/18.6092E), 4 V 2004, 6 exs, swept from herbs on a floodbank along Warta River, leg. R. MATUSIAK (coll. S. KONWERSKI, M. KAŻMIERCZAK).

#### GENERAL DISTRIBUTION

Basin of Mediterranean Sea except for its easternmost peripherals, Belgium, Germany, Switzerland (likely introductions); introduced to Azores, Australia, North America (MAGNANO 2010).

#### REMARKS

The specimens from Poland have distinctly wider frons than other studied representatives of this species from southern Europe, even slightly wider than eye diameter and subequal in width to rostral dorsum behind pterygia (fig. 4), while in the studied specimens from Spain and Italy the frons is evidently narrower than both.

### *Otiorhynchus (Arammichnus) dieckmanni* MAGNANO, 1979

#### DESCRIPTION

Very similar to *O. cribricollis* in size (body length 5.3-7.5 mm), colour of integument and vestiture (fig. 2), structure of rostrum, antennae, sculpture of pronotum and elytra, leg characters, etc. Vestiture on head, pronotum and elytra distinctly protruding (fig. 9). Rostrum disk less concave; frons 1.1-1.2 × wider than eye diameter, about as wide as rostrum disk just behind pterygia. Pronotum 1.1-1.2 × wider than long, strongly rounded and somewhat angulate at sides (fig. 7). Elytra shaped and sculptured as in *O. cribricollis* but shorter, 1.40-1.50 × longer than wide, even 1.38-1.45 × in the specimens from Poland; hair-like scales in rows on the interstriae much longer, semi-erect, recumbent scales inconspicuous (except the population in Berlin).

Ovipositor in Polish specimens with slightly more elongate styli (fig. 13); spermatheca with cornu slightly swollen medially (fig. 16).

Other characters like in *O. cribricollis*, for more detailed description see MAGNANO (1979). Only parthenogenetic populations are known.

## DISTRIBUTION IN POLAND

Baltic Coast: Sopot (UTM: CF43; lat/long: 54.45384/18.55006), 24 VII 2009, 3 exs, leg. M. WANAT & P. BIALOOKI. All the specimens were beaten at night from various rosacean cultivars (*Ribes*, *Prunus*, *Rosa*) in a house garden.

## GENERAL DISTRIBUTION

Known only from urban green areas in several European cities in France, The Netherlands, Germany, and Sweden (MAGNANO 2010). Its origin and natural range remain unknown.

## REMARKS

Isolated populations of *O. dieckmanni* express geographical variability: the form occurring in Berlin, somewhat different from that in locus typicus (Magdeburg), was named f. *berolinensis* by GOSPODAR & KORGE (1982). The specimens from Sopot differ from those of Berlin population in shorter elytra, which are less narrowing posteriorly and more widely rounded apically in dorsal view, and relatively larger, more angulate in pronotal outline, widest behind middle, as well as in the shape and abundance of recumbent scales on elytra, which are few in number and hair-like, not much distinct from the erect hairs, while in the specimens from Berlin these scales are broad and ovoid, often abundant enough to form recognizable spots on elytra, and resembling in shape the scales in *O. cribricollis*.

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