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Studies on Tiger Beetles. CXXX.
On four presumed "*Prothyma*" species from China and the
Oriental region (Coleoptera: Cicindelidae)

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Abstract

Based on examination of male genitalia and other morphological features, the true taxonomic placement of four poorly known species incorrectly placed in the genus *Prothyma* HOPE, 1838, is established: *Cylindera* (*Cylindera*) *lautissima* (DOKHTOUROFF, 1888), comb. n., *Cylindera* (*Cylindera*) *pseudocylindriformis* (W. HORN, 1914), comb. n., *Probstia* (gen. n.) *triumphalis* (W. HORN, 1902), comb. n. and *Probstia* *triumphaloides* (SAWADA & WIESNER, 1999), comb. n.

Key Words: Coleoptera, Cicindelidae, *Prothyma*, *Cylindera*, *Probstia*, new genus, new combinations, tiger beetles.

Zusammenfassung

Basierend auf der Untersuchung von männlichen Genitalien und anderen Körpermerkmalen wurde für vier wenig bekannte, irrtümlich in die Gattung *Prothyma* HOPE, 1838, platzierte Arten die richtige taxonomische Stellung geklärt: *Cylindera* (*Cylindera*) *lautissima* (DOKHTOUROFF, 1888), comb. n., *Cylindera* (*Cylindera*) *pseudocylindriformis* (W. HORN, 1914), comb. n., *Probstia* (gen. n.) *triumphalis* (W. HORN, 1902), comb. n. und *Probstia* *triumphaloides* (SAWADA & WIESNER, 1999) comb. n.

Introduction

The tiger beetle genus *Prothyma* HOPE, 1838 (= *Euryoda* LACORDAIRE, 1843), type genus of the ciceline subtribe Prothymina W. HORN, 1910, was first reviewed by RIVALIER (1964), who re-defined the entire genus based on new characters, such as the peculiar architecture of the inner sac of male aedeagus. His revision resulted in the resurrection of several genera (*Megalomma* WESTWOOD, 1842, *Peridexia* CHAUDOIR, 1860, *Physodeutera* LACORDAIRE, 1843, *Oxygoniola* W. HORN, 1892, *Vata* FAUVEL, 1903, *Euryarthron* GUÉRIN, 1849, *Rhytidophaena* BATES, 1891) which had been unduly linked to *Prothyma* by HORN (1926). Two of these genera, *Megalomma* and *Rhytidophaena*, were even subsequently placed by RIVALIER (1971) into a different subtribe, Iresina.

In an earlier paper (RIVALIER, 1961) he had already moved two other species, incorrectly placed in the genus *Prothyma* by HORN (1926), to their true taxonomic positions: *Cylindera* (*Oligoma*) *paradoxa* (W. HORN, 1892), and *Pentacomia* (*Beckerium*) *leptale* (BATES, 1881). One more species, *belloides* W. HORN, 1907, from Karnataka, India, was later moved into *Cicindela* (in a new subgenus, *Glomera*) by ACCIAVATTI & PEARSON (1989), and *Glomera*

was subsequently listed by WIESNER (1992) as a genus of its own, between *Naviauxella* CASSOLA, 1988, and *Cylindera* WESTWOOD, 1831.

However, a few misplaced "*Prothyma*" species had eluded RIVALIER's revision. Therefore, their taxonomic position still remained doubtful, and they were listed by WIESNER (1992), with a question mark, under *Prothyma*, subgenus *Symplecthyma* RIVALIER, 1964: *P. (S.)? lautissima* (DOKHTOUROFF, 1888), from China, *P. (S.)? pseudocylindriciformis* (W. HORN, 1914), from Taiwan, *P. (S.)? triumphalis* (W. HORN, 1902), from Vietnam and southern China, and *P. (S.)? hennigi* (W. HORN, 1898), from Assam, India. While the latter species still has to be considered "incertae sedis" and should probably be placed in the genus *Heptodonta* HOPE, 1838 (HORN, 1898; FOWLER, 1912), or possibly in the genus *Pronyssa* Bates, 1874 (SAWADA & WIESNER, 1999a), the present paper deals with the three other species, aiming to finally place them in their true taxonomic position. Moreover, the placement of one further species, *triumphaloides* SAWADA & WIESNER, 1999, is discussed. All the four species proved to belong to subtribe Cicindelina instead of subtribe Prothymina.

The specimens discussed below are in the following collections: DEI (Deutsches Entomologisches Institut, Eberswalde, Germany), FCC (author's collection), HPC (Johann Probst, Vienna, Austria), JWC (Jürgen Wiesner, Wolfsburg, Germany).

Discussion of species

Cylindera (Cylindera) lautissima (DOKHTOUROFF, 1888), comb. n. (fig. 1)

Cicindela (Euryoda) lautissima DOKHTOUROFF, 1888: 145

Jansenia lautissima; FLEUTIAUX 1892: 38

Prothyma? lautissima; RIVALIER 1964: 129

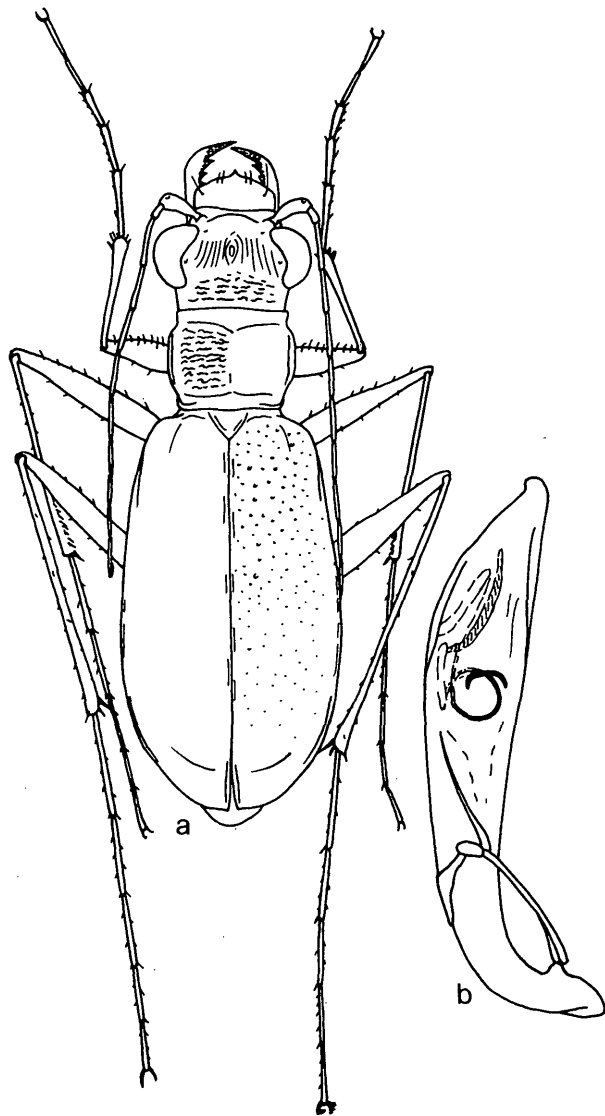
Prothyma (Symplecthyma)? lautissima; WIESNER 1992: 59

This species was described by DOKHTOUROFF (1888), based on a single specimen from China ["près du village Ché-pù (Province Kan-nu) au passage du Plateau d'Amdos vers la vallée chinoise"]. Its type locality, therefore, lies in present-day Kansu province (HORN 1930; HORN 1935: "Das Amdo-Plateau ist der Abfall des nordöstlichen Tibets nach dem eigentlichen China zu"). From DOKHTOUROFF's description, *C. lautissima* would appear to be a small species (length: 11.5 mm), with head and pronotum bronze brownish-green, elytra bright blue-violet, and underside dark violet metallic, smooth and glabrous.

Subsequently, HORN (1935) identified as "*Prothyma lautissima*" specimens from north-eastern Sichuan ("NE Szechuan, zwischen Paoningfu u. Yen-fen-lo") and southern Kansu ("Lan-Shan - Orchidé-Berg - am Wu-tu"), stating that *lautissima* would be the northermost *Prothyma* species ("die nördlichste *Prothyma*-Art"). HORN (1935) fully re-described the species (length: 9-10.5 mm without labrum), and he published a figure of a male specimen which, however, does not perfectly fit DOKHTOUROFF's description, as it has a subsquared pronotum (approximately as long as wide), while DOKHTOUROFF (1888) had indicated that his species has a "thorax beaucoup plus long que large, cylindrique". But HORN (1935), whose identification had been confirmed by A. SEMENOV TIAN-SHANSKIJ upon confrontation with DOKHTOUROFF's type specimen, pointed out that DOKHTOUROFF's description was not fully correct.

A male specimen in HPC ("China, NW-Sichuan, Maowen, 1000 m, 10.-18. 07.1990, J. KOLIBÁČ leg.") and several specimens in FCC (2 ♂ 2 ♀, from "Venchuan, W Sichuan, 27-29 May 1996, BENES & SCEPAR leg."; 1 ♂, from "WeiChow, 6.5 mi. NW Chengtu, Szechwan", collected by D. C. GRAHAM on 1-4 August 1933, elev. 5500-9000 ft) appear to correspond quite well to HORN's figure and description, having beautifully blue-green head

Fig. 1. *Cylindera* (*Cylindera*) *lautissima* (DOKHTOUROFF, 1888) a: habitus (male specimen from Maowen, NW Sichuan, China; HPC); b: aedeagus and inner sac of aedeagus (male specimen from Weichow, 6.5 mi. NW Chengtu, Sichuan, China; FCC).



and elytra, slightly transverse pronotum, and immaculate elytra (fig. 1 a). Three further specimens (1 ♂ 2 ♀, FCC), from Gansu ("S Min-Shan, 1000 m, July 1992, J.M. BOUSQUET leg."), having bronze cuprous head and pronotum, dark elytra with some bluish-violet metallic hue, and a roundish subapical spot on each elytron - thus even better fitting DOKHTOUROFF's description ("un petit point blanchâtre se trouve près de l'angle postérieur de chaque élytre") -, are also considered here to belong to the same species, and to possibly represent a different subspecies.

In the assumption that these species are DOKHTOUROFF's *C. lautissima*, examination of the inner sac of aedeagus (fig. 1 b) clearly revealed them to be a *Cylindera* (*Cylindera*) species, with no relations at all to the genus *Prothyma*. It must be emphasized here that FLEUTIAUX

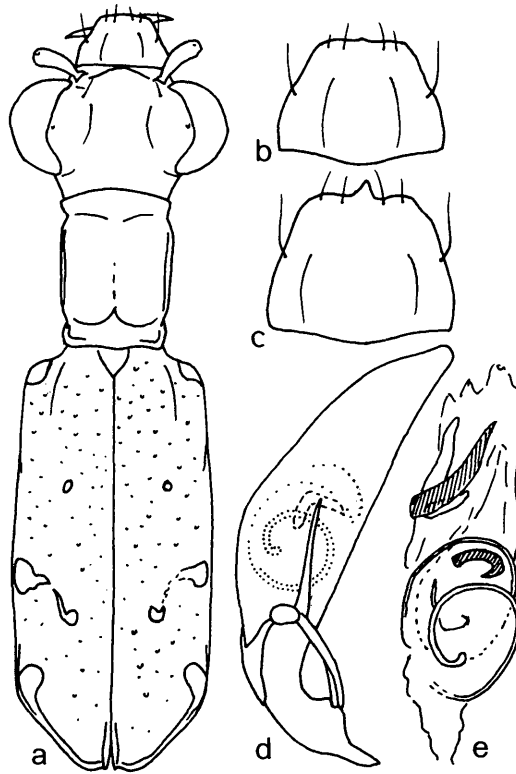


Fig. 2. *Cylindera (Cylindera) pseudocylindriformis* (W. HORN, 1914). a: habitus, b: labrum (syntype male specimen from "Shis, Formosa"; DEI); c: labrum (syntype female specimen from same locality; DEI); d: aedeagus, e: inner sac of aedeagus (male specimen from Kosempo, Taiwan; FCC).

(1892) had already included *C. lautissima* in a cicindeline (not prothymine) genus (*Jansonia* CHAUDOIR, 1865), and that HORN (1935) had compared its sculpture of head and pronotum with that of *Cylindera (Cylindera) kirilowi* (FISCHER, 1844).

***Cylindera (Cylindera) pseudocylindriformis* (W. HORN, 1914), comb. n. (Fig. 2)**

Prothyma pseudocylindriformis W. HORN, 1914: 15

Prothyma? pseudocylindriformis; RIVALIER 1964: 129

Prothyma (Symplectyma)? pseudocylindriformis; WIESNER 1992: 59

This species was described by HORN (1914), based on specimens of both sexes collected by H. SAUTER in May-June 1912, at "Shisha, ...Banshoryo Distrikt (Sokutsu)", Formosa (Taiwan), and subsequently it was recorded (HORN, 1929) from Vietnam too ("Tonkin: Chapa"). However, the latter record appears to be rather doubtful.

Examination of two syntype specimens in DEI (male and female), and a male specimen from "Kosempo", also collected by SAUTER, in author's collection (FCC), showed that the species is very similar to *Cylindera* (*Cylindera*) *cylindriciformis* (W. HORN, 1912), however a bit smaller, darker, with slightly different elytral markings (fig. 2a), courser elytral punctures, and irregular elytral surface. Moreover, unlike the labrum of *cylindriciformis* (which is metallic green), its is testaceous, large, 6-haired, unidentate in front in the female; its pronotum is cylindrical, parallel-sided, distinctly longer than wide; trochanters and legs are testaceous; the underside is fully glabrous, with just a few white erect setae on fore and middle coxae. The aedeagus and its inner sac (figs. 2b, 2c) are almost identical to those of *Cylindera* (*Cylindera*) *sauteri* (W. HORN, 1912), as they were figured by RIVALIER (1961, fig. 10a). Thus, far from being a *Prothyma* species, *pseudocylindriciformis* clearly belongs, instead, to the cicindeline genus *Cylindera* (s. str.).

***Probstia* (gen. n.) *triumphalis* (W. HORN, 1902), comb. n. (fig. 3)**

Euryoda triumphalis W. HORN, 1902: 75

Prothyma triumphalis; HORN 1926: 100

Prothyma? *triumphalis*; RIVALIER 1964: 129

Prothyma (*Symplecthyma*)? *triumphalis*; WIESNER 1992: 59

Euryoda triumphalis was described by HORN (1902) from several specimens collected by H. Fruhstorfer, in April-May 1900, in Tonkin ("Montes Mauseon"), in present-day northern Vietnam. HORN (1930) later quoted *triumphalis* from southern China as well (Macao), MELL (1931) recorded it from Kwantung, and BROUERUS VAN NIDEK (1957) subsequently added one further Chinese locality ("Yim Na San, East Kwantung"). The following specimens were examined: two syntypes (male and female) in DEI, three syntopic non-type specimens, also in DEI, as well as four more specimens ("Tonkin, Than-Moi, VI-VII.1900, H. FRUHSTORFER", 1 ♀ DEI, 1 ♂ FCC; "MELL, 13.VII.20, Kwantung, Lienping, Teeberg", 1 ♂ DEI; "N. Vietnam, Vinh phu, Tam-Dao, 2-11.VI.1985, KUBAN leg.", 1 ♀ HPC).

This species (fig. 3a) would superficially recall a *Thopeutica* species of the subgenus *Pseudothorates*, such as *Th. (P.) albapicalis* (W. HORN, 1892), from Sulawesi (CASSOLA, 1991), but it has a much different elytral punctation, which includes stronger punctures in the front half of elytra only and a finer isodiametric microsculpture of the elytral ground, somewhat reminiscent of that of *Physodeutera* species from Madagascar. Significantly, in fact, HORN (1902) stated that *triumphalis* is "speciebus illis madagascariensibus (*viridicyaneae* BRILL., *Sikora* m. etc.) affinis". BROUERUS VAN NIDEK (1957) called *triumphalis* a "*Thorates*-like species".

Short re-description:

Head bluish-green, glabrous, with violet genae; frons strongly wrinkled, eyes and genae striate. Labrum metallic bluish-green, tridentate, with 6 to 8 submarginal hairs, slightly longer in the female. Scape and joints 2-4 of the antennae dark, glabrous, metallic, the 3rd and 4th article testaceous apically; antennomeres 5-11 rufescent. Pronotum a bit globose, rounded, glabrous, bluish-green with violet reflections; female coupling sulci almost absent, just a shallow depression on mesepisterna. Elytra shiny black, slightly emarginate at apex; elytral markings consisting of a humeral dot (in both sexes), two middle spots (located almost in the same transversal line), and a subapical spot. Underside fully glabrous, bluish-green, blackish-violet on episterna. Abdominal sternites dark with some violet reflections, apex of last sternite rufescent.



Fig. 3. *Probstia* (gen. n.) *triumphalis* (W. HORN, 1902). a: habitus, b: labrum (syntype male specimen from "Montes Mauson, Tonkin"; DEI); c: labrum (female syntype from same locality; DEI); d: aedeagus (male specimen from Lienping, Kuantung, China; DEI); e: inner sac of aedeagus (male specimen from Than-Moi, Tonkin, Vietnam; FCC).

These puzzling characters are completed by a fusiform tapering male aedeagus, slightly widened in the middle, with a short blunt apex and a fine carina on the left side only, from the apex to nearly one third of the total length. The inner sac of the aedeagus includes a large arciform sclerite and a long narrow flagellum which describes a complete convolution on the left side, then passes to the ventral side by defining a membranous plica that outlines a kind of "mantle" (RIVALIER, 1950), similar to that of species of the Oriental genus *Calochroa* HOPE (RIVALIER, 1961). However, while the shape and position of the flagellum would rather recall those of the genus *Cylindera* WESTWOOD, there is not the sclerite, so characteristic of the genus *Cylindera*, that RIVALIER (1950) had called "équerre", but a thin, small, elongate, almost straight sclerification visible under the upper convolution of flagellum which apparently can not be associated with the "équerre".

Thus, while the plurisetose labrum clearly excludes such a species from the genus *Prothyma*, the unusual inner sac of aedeagus cannot allow its inclusion in the genus *Cylindera*. Instead, it forces me to create here a separate generic taxon, someway related with *Cylindera*, that I shall call ***Probstia* gen. n.**, in honour of my friend and colleague Johann PROBST (Vienna, Austria), who, many years ago, sent me the very first specimen I ever saw of this puzzling species for identification.

***Probstia triumphaloides* (SAWADA & WIESNER, 1999), comb. n.**

Prothyma triumphaloides SAWADA & WIESNER, 1999: 299

This species, from central Laos, recently described in the genus *Prothyma* by SAWADA & WIESNER (1999b), has also proved to belong to the new genus described above, that consequently turns out to include so far two closely related species at least. Check of the male holotype specimen has showed the inner sac of the aedeagus to be almost identical to that of *Probstia triumphalis*, with just a more slender arciform sclerite and a thin additional sclerite below, describing a descending obtuse angle from the lower dorsal margin of the sac to the lower convolution of flagellum.

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