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Notosacantha warchalowskii, a new species from India
(Coleoptera: Chrysomelidae: Cassidinae: Notosacanthini)

JOLANTA ŚWIĘTOJAŃSKA¹ and LUKÁŠ SEKERKA²

¹Institute of Zoology, University of Wrocław, Przybyszewskiego 63/77, 51-148 Wrocław, Poland;
e-mail: sindiola@biol.uni.wroc.pl

²Department of Zoology, Faculty of Science, University of South Bohemia, Branišovská 31, CZ-370 05,
České Budějovice, Czech Republic, e-mail: sagrinae@seznam.cz

ABSTRACT. *Notosacantha warchalowskii* from NE India, new to the science, is described and figured.

Key words: entomology, taxonomy, new species, Coleoptera, Chrysomelidae, Cassidinae, *Notosacantha*, India.

INTRODUCTION

The genus *Notosacantha* CHEVROLAT, 1837 is one of the richest in species within tortoise beetles. Now 258 species of are known from various tropical and subtropical parts of the Old World (BOROWIEC 1999; BOROWIEC and ŚWIĘTOJAŃSKA 2004), 111 of them were recorded from the Oriental Region, but only 50 from its continental part (ŚWIĘTOJAŃSKA 2006b). Most species have small distribution ranges and especially on islands like Philippines and Sunda Islands a high percentage of endemism has been observed. At least 18 species occur in India (ŚWIĘTOJAŃSKA 2006a). They form a few distinct morphological groups but species within a group are usually similar and difficult to identify. Below we describe a new species from NE India belonging to the *Notosacantha lenta* group.

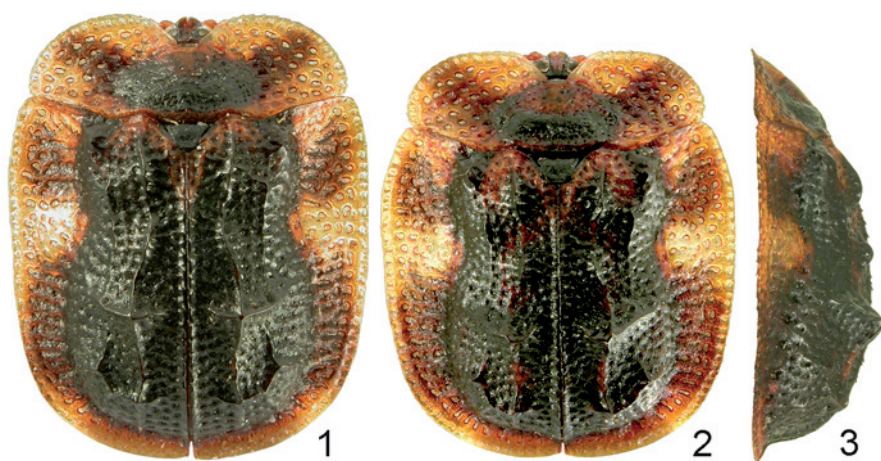
Notosacantha warchalowskii n. sp.

ETYMOLOGY

Dedicated to Prof. Andrzej WARCHAŁOWSKI in his jubilee of the 80th Birthday.

DIAGNOSIS

Oriental *Notosacantha* was perfectly keyed by SPAETH (1933). *Notosacantha warchalowskii* belongs to species characterized by the following: body stout, elytra with set of costae and tubercles, principal tubercle possesses four branches with anterior and posterior branch of dorsal costa converging at one point, basal tubercles without external lateral branch thus not connected with humeral costa, furca interna not connected with lateral costa, and apical costae distinctly marked. The group is comprised of 17 species, but only two of them have, like *N. warchalowskii*, humeral costa straight or rudimental with its anterior part not curved outwardly: *N. lenta* (SPAETH) and *N. duvivieri* (SPAETH), both from India. The three species form a natural morphological group and differ in subtle characters. *Notosacantha duvivieri* distinctly differs by a larger body (length ca. 6 mm) and dorsum almost uniformly dark reddish with only extreme lateral margin of elytra slightly paler, while both its relatives have a spotted dorsum. *Notosacantha lenta* (SPAETH, 1913) is the most similar to *N. warchalowskii*. Furca interna of *N. warchalowskii* is short, rudimentary while *N. lenta* it is usually long and almost connected with lateral costa (but the connection is never as distinct as in species of other groups). In some specimens of *N. lenta* furca interna is short, but in this case there is also an apical rudiment of furca interna in the form of short costa connected with principal tubercle. All tubercles of *N. lenta* are obtuse apically whereas principal and apical tubercles of *N. warchalowskii* are distinctly pointed. Costae of *N. warchalowskii* are sharp while in *N. lenta* blunt. The differences of both species are also expressed in colouration of body. In *N. lenta* spots on explanate margins of pronotum and elytra are more distinctly marked than in *N. warchalowskii* and with the same colour as disc while in *N. warchalowskii* the spots on marginalia are slightly paler than groundcolour of disc. In *N. lenta* spots of explanate margin of pronotum are broad and extend to basal margin of pronotum while in *N. warchalowskii* they run in distance from pronotal base. Humeral



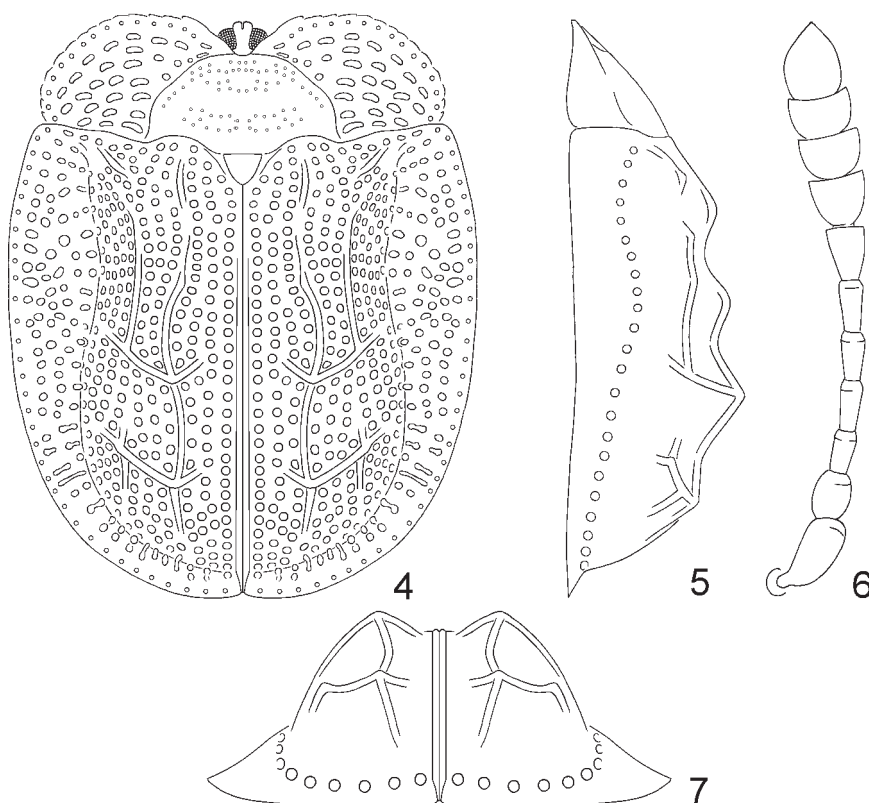
1-3. *Notosacantha warchalowskii* n. sp.: 1 – dark form dorsal, 2 – paler form dorsal, 3 – lateral

spot of explanate margin of elytra in *N. lenta* runs along basal margin of elytra while in *N. warchalowskii* it runs in distance from the basal margin. Posterolateral spot of explanate margin in *N. warchalowskii* is distinctly broader than in *N. lenta* and apex of the explanate margin is dark while in *N. lenta* apex is pale yellow. Slope of elytral disc between principal and apical tubercles of *N. lenta* is slightly paler than remaining part of disc while in *N. warchalowskii* slope is uniformly dark or with paler stripe on dorsal costa between principal and apical tubercle.

DESCRIPTION

Measurements (n=29): length: 4.24-5.33 mm (mean 4.95), width: 3.37-4.27 mm (mean 4.04), length of pronotum: 0.99-1.15 mm (mean 1.05), width of pronotum: 2.9-3.75 mm (mean 3.46), length/width ratio of body: 1.19-1.26 (mean 1.23); width/length ratio of pronotum: 3.18-3.42 (mean 3.31). Body oval (Figs 1, 2).

Disc of pronotum black or disc with anterior half dark brown and posterior black (Figs 1, 2). Explanate margin of pronotum yellowish-brown with dark brown spot on



4-7. *Notosacantha warchalowskii* n. sp.: 4 – dorsal aspect; 5 - lateral aspect; 6 – antenna; 7 – apical aspect

each side. Spots run in distance from base of pronotum. Scutellum black. Specimens with black disc of pronotum possess almost uniformly black disc of elytra with only yellowish-brown V-shaped patch surrounding scutellum and laterally extending to humeral callus (Fig. 1). Specimens with bicoloured pronotal disc have more expanded, yellowish-brown, V-shaped patch in basal part of elytral disc, and two small pale spots on dorsal costa between basal and principal tubercles and single spot on dorsal costa between principal and apical tubercle (Fig. 2). Explanate margin of elytra yellowish-brown with broad, brown humeral and posterolateral spots. Humeral spot runs in distance from base of elytra. Posterolateral spot very broad, occupies 1/3 length of explanate margin of elytra. Apex of elytra between posterolateral spot and suture distinctly infuscate, gradually darker from posterolateral spot to suture. Head dorsally with yellowish-brown frontal plate and black vertex, ventrally black except for yellowish-brown mouth part. Antennae yellowish-brown. Sternites of thorax black, abdominal sternites yellowish-brown. Legs yellowish-brown with black coxae and base of femora.

Frontal plate short, rounded, with shallow apical cleft (Fig. 4).

Pronotum broad, with maximum width slightly before base (Figs 1, 2, 4). Anterior half of disc with group of fine punctures and row of punctures along antero-lateral side, posteriorly two fine punctate transverse impressions at base of disc. Explanate margin with moderate, elongate, regularly distributed pores which are slightly coarser than punctures on elytral disc and pores of explanate margin of elytra.

Base of elytra almost as wide as base of pronotum. Elytral disc with distinct and almost complete set of costae and tubercles (Fig. 4). Humeral, basal, subbasal, principal and apical tubercle distinctly marked. Humeral tubercle the lowest, basal and subbasal tubercle obtuse at the top, principal and apical tubercle pointed (Figs. 3, 5). Dorsal costa sharp and distinct, only slightly vanished between basal and subbasal tubercle. Humeral costa fine, only slightly marked, vanished before humeral tubercle, connected with lateral branch of principal tubercle, not connected with dorsal costa. Sutural branch of principal tubercle runs almost perpendicular to the body axis but not extending to suture. Lateral branch complete, extends to 8th row of punctures. Anterior and posterior branch of dorsal costa at the top of principal tubercle converge in one point. Apicosutural costa extends to second row of punctures. Apicolateral costa with distinct costa ultima, costa terminalis and furca interna. Costa ultima long, complete. Costa terminalis short. Furca interna as short as costa terminalis and not connected with lateral branch of principal tubercle (Fig. 7). Punctuation of elytral disc moderate, distance between punctures approximately as wide as puncture diameter. Diameter of punctuation in marginal row similar to punctuation of elytral disc, only slightly gradually coarser posteriorly. Pores of explanate margin slightly wider than punctures on elytral disc. Pores distributed around disc slightly elongate, in posterior half form short radial grooves.

Antennae 11-segmented, slim with distinct 5-segmented club. Pedicel approximately 1.22 times as long as club. Second antennal segment approximately 1.3 times as long as wide. Segments 8-10 wider than long (Fig. 6).

MATERIAL EXAMINED

Holotype: "INDIA, W-ARUNACHAL PR., DIRANG vicinity; 1500-1800 m, 27°21'–23' N 92°13'–16' E; R. Businský leg.; 1-10.vi.2004"; 7 paratypes: the same data as holotype; 6 paratypes: "NE INDIA; ARUNACHAL PR. DIRANG vicinity; 1550±150 m, 27°21'–23' N 92°13'–16' E, L. Dembický leg.; 1-9.vi.2004"; 1 paratype: "NE INDIA, ARUNACHAL PR., betw. Dirang & Bombadia Pass, 27°19' N 92°22' E; 2200m, L. Dembický leg.; 15.vi.2004"; 11 paratypes "NE INDIA, ARUNACHAL PR., DIRANG vicinity, 1800±100m, 27°21' N 92°13' E, L. Dembický leg., 8.-22.v.2006, BMNH 2006-48"; 8 paratypes: "NE INDIA, ARUNACHAL PR., DIRANG vicinity, 1800±100m, 27°21' N 92°13' E, 2006, P. Pacholátko leg., 8.-22.v.", "L. Dembický & P. Pacholátko, BMNH(E) 2006-48" (holotype and four paratypes in the collection of the Department of Biodiversity and Evolutionary Taxonomy, Wrocław University, Poland, twelve paratypes in collection of junior author, twelve paratypes in the collection of British Museum of Natural History, London, United Kingdom, five paratypes in the collection of Naturhistorisches Museum, Basel, Switzerland).

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