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Review of the genus *Neoplatycerus* Subba Rao, 1965 (Hymenoptera: Encyrtidae) of the world fauna with description of a new species from Australia

Обзор рода *Neoplatycerus* Subba Rao, 1965 (Hymenoptera: Encyrtidae) мировой фауны с описанием нового вида из Австралии

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КЛЮЧЕВЫЕ СЛОВА: Hymenoptera, Encyrtidae, *Neoplatycerus,* новый вид, Австралия.

ABSTRACT: Diagnosis of the genus *Neoplatycerus* Subba Rao, 1965, key to females of four known species and synopsis of these species are provided. *N. tshernyshevi* **sp.n.** is described from Australia.

РЕЗЮМЕ: Статья содержит диагноз рода *Neoplatycerus* Subba Rao, 1965, определительную таблицу самок четырех его известных видов и их синопсис. Описан *N. tshernyshevi* **sp.n.** из Австралии.

Introduction

I have found *Neoplatycerus tshernyshevi* **sp.n.** in the collection of the University of California (Riverside, USA) during my visit there in 1997. All previously described species of *Neoplatycerus* are primary endoparasitoids of mealybugs (Homoptera: Pseudococcidae) including those injurious to such important cultivated plants as grapes (*Vitis vinifera*), mango (*Mangifera indica*) and pomegranate (*Punica granatum*). They might be used in programs of classical biological control and integrated pest management. In addition, the genus *Neoplatycerus* was not previously recorded for Australia.

Genus *Neoplatycerus* Subba Rao, 1965

TYPE SPECIES: *Neoplatycerus tachikawai* Subba Rao, 1965, by original designation.

Subba Rao, 1965: 150–152; Hayat et al., 1975: 7, 18; Mani, 1981: 779–782; Noyes & Hayat, 1984: 306–307; Trjapitzin & Triapitsyn, 2002: 203–210.

DIAGNOSIS. Female. Frontovertex very broad; ocelli form an obtuse triangle. Facial cavity either deep, delimited dorsally by a well-developed acute ridge, or shallow, delimited both dorsally and laterally, or only laterally, by acute margins. Antennae (Figs 1–3) inserted close to the mouth aperture, foliaceous, strongly broadened and flattened; scape with clearly (Fig. 1) or slightly (Fig. 3) curved ventral margin; dorsal outer flange of scape well developed; pedicel subtriangular; funicle 6-egmented, all its segments strongly transverse. Mandible with two teeth at apex. Maxillary palpus 4-segmented, labial palpus 3-segmented. Pronotum short. Mesoscutum without parapsidal lines. Wings not abbreviated; marginal vein of forewing punctiform, stigmal vein strongly curved, postmarginal vein as long as or a little shorter than stigmal. Gaster with ovipositor sheaths not exerted; paratergites present in the type species. Body length 1.3–2.3 mm.

Male (not known for *N. tachikawai* and *N. tshernyshevi* **sp.n.**). Antennae (Fig. 2) not enlarged foliaceously, with scope slightly or moderately broadened; all funicular segments somewhat wider than long, or 1st segment subquadrate; clava entire, not truncate.

BIOLOGY. Endoparasitoids of mealybugs (Homoptera: Pseudococcidae), other data require confirmation.

DISTRIBUTION. Israel, Egypt, India, Malaysia, Australia. Material from Malaysia was not identified to species [Noyes & Hayat, 1984: 306–307].

SYSTEMATIC POSITION. Genus *Neoplatycerus* belongs to the subfamily Tetracneminae, tribe Chrysoplatycerini, and the subtribe Chrysoplatycerina. It is closely related to the genus C*eraptrocerella* Girault, 1918, known only from Australia. *Neoplatycerus* differs from *Ceraptrocerella* in having robust body (flattened in *Ceraptrocerella*), absence of transverse band of dense white setae above the frontofacial ridge, absence of dark pattern on the forewing.

KEY TO WORLD SPECIES OF *NEOPLATYCERUS* (FEMALES)

1(2). Antennal scape not strongly narrowed basally (Fig. 3). 1.3–1.8 mm ..... 4. *N. tshernyshevi* **sp.n.**
2(1). Antennal scape strongly narrowed basally (Fig. 1).
3(4). Antennal clava about as long as wide. Scutellum strongly convex. 2.3 mm ..... 3. *N. tachikawai*
4(3). Antennal clava distinctly longer than wide (Fig. 1). Scutellum not strongly convex.
5(6). Facial cavity delimited dorsally by an acute ridge. Head and mesosoma black. Antennal scape dark, its outer side with strong green luster. Tibiae black. 1.09–1.45 mm ..... 1. *N. kemticus*

6(5). Facial cavity not delimited dorsally by an acute ridge. Head and mesosoma yellowish brown, apex of scutellum whith strong violet luster. Antennal scape yellowish with violet luster. Tibiae brownish. 2 mm ..... 2. *N. palestinensis*

Synopsis of species

1. *Neoplatycerus kemticus* V. Trjapitzin et S. Triapitsyn, 2002 Figs 1–2.

Trjapitzin & Triapitsyn, 2002: 205–208. Egypt, ex *Planococcus ficus* Signoret and *Planococcus* sp. on grapes (*Vitis vinifera*).

2. *Neoplatycerus palestinensis* (Rivnay, 1945)

Rivnay, 1945: 119–121 (*Tropidophryne* — sic!); 1960: 224 (*Tropidophryne*, but the species probably belongs to a new genus); 1968: 55 (*Tropidophryne*); Trjapitzin, 1971: 68 (not *Tropidophryne*); Kerrich, 1978: 150 (*Tropidophryne*, but a further assessment of the generic position of the species should be made); Trjapitzin, 1989: 125; Trjapitzin & Triapitsyn, 2002: 204, 208–209. Israel.

NOTE. The question concerning hosts of *Neoplatycerus palestinensis* is not an easy one, because the corresponding data are rather contradictory. Rivnay [1945] recorded *Eriopeltis* sp. (Homoptera: Coccidae) on a «composite thistle» in Jerusalem as a host of this species. Without any doubt, it was an error of rearing of the parasitoid; among coccoids, Encyrtidae of the subfamily Tetracneminae infest only pseudococcids and eriococcids. In Rehovot, *N. palestinensis* was reared from the citrus mealybug *Planococcus citri* (Risso, 1813) on pomegranate (*Punica granatum*), but this host identification might be questionable, because a similar species, *Planococcus ficus* (Signoret, 1875), also exists in Israel. In 2002, Prof Yair Ben-Dov (Rehovot, Israel) informed me and my son and co-author, Dr. Serguei V. Triapitsyn, that in 1987 he sent his material on *N. palestinensis* to Dr. John S. Noyes (London) who confirmed the identification. Ben-Dov then identified the mealybug host as *Ferrisia virgata* (Cockerell, 1893) but wrote in 2002 that it was a misidentification, and the correct name for this pseudococcid was *F. malvastra* (McDaniel, 1962) (pers. comm.).

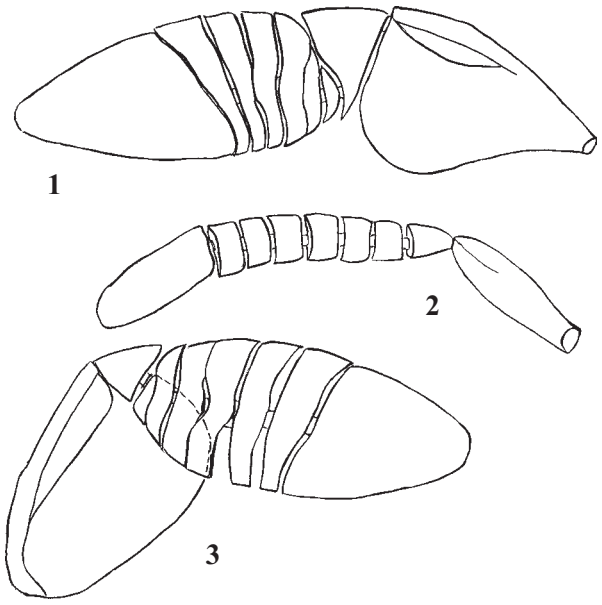
3. *Neoplatycerus tachikawai* Subba Rao, 1965

Subba Rao, 1965: 150–152; Hayat et al., 1975: 18–20; Kerrich, 1978: 150–152; Mani, 1989; Hayat, 2006: 231. India, ex *Rastrococcus icerioides* Green on mango (*Mangifera indica*). Rearing of *N. tachikawai* from *Icerya seyshellarum* (Westwood, 1855) (Homoptera: Margarodidae) is doubtful. A brief review of the encyrtid genera associated with Margarodidae was published by Trjapitzin & Triapitsyn [2006].

4. *Neoplatycerus tshernyshevi* **sp.n.** Fig. 3.

TYPE MATERIAL. Holotype ♀: Australia, SE Qld [Southeast Queensland], Gatton, 11.IX.1980 (Gordh & Dahms); *Neoplatycerus*, det. V.A. Trjapitzin, 1997. The intact holotype specimen is card-mounted. Paratype ♀: the same labels as in the holotype; the specimen is card-mounted, with one antenna lost; another antenna and left forewing detached and mounted on the slide No. 2 Cal. in Canada balsam. Both holotype and paratype are preserved in the Entomology Research Museum, University of California, Riverside, USA.

DESCRIPTION. Female (holotype and paratype). Head, seen from above, wider than long (19 : 15). Occipital margin slightly concave, sharp. Inner orbits of eyes diverging anteriorly. Vertex about 3/8 head width; frontovertex (measured along the middle) longer than wide (5 : 3). Apical angle of ocellar triangle somewhat more than 90°; distance between posterior ocelli more than distance from tham to anterior ocellus (7 : 4)



Figs 1–3. *Neoplatycerus* spp., antennae: 1–2 — *N. kemticus*; 3 — *N. tshernyshevi* **sp.n.**; 1, 3 — female; 2 — male.

Рис. 1–3. *Neoplatycerus* spp., усики: 1–2 — *N. kemticus*; 3 — *N. tshernyshevi* **sp.n.**; 1, 3 — самка, 2 — самец.

and to occipital margin (7: 2); distance from posterior ocelli to eye margins less then diameter of an ocellus; distance from anterior ocellus to dorsal margin of facial cavity, formed by joined scrobes, 3x more than to occipital margin. Facial cavity deep, not large, but broad, delimited dorsally and laterally by sharp keel; borders of the cavity almost vertical; dorsal margins of this cavity strongly concave (front view), frons depressed before the cavity; interantennal prominence of face broad, convex, not reaching oral aperture. Toruli situated clearly above the level of lower eye margins; distance between toruli equal to distance from them to eye margins and 2x more than distance to oral aperture. Malar space about 2x shorter then maximum height of eye; subocular suture present. Antenna as on Fig. 3. Pronotum very short, with slightly concave posterior margin. Mesoscutum 1.5x as wide as long. Scutellum somewhat convex, shorter than mesoscutum (3 : 4) and longer than wide (4 : 3), rounded at apex and with slightly curved lateral margins; apex of scutellum not overhanging propodeum. Mesopleura convex. Metapleura narrow, broadening dorsally. Wings not abbreviated; forewing 2.7–3x as long as its maximum width; costal cell about 11x as long as wide, its anterior margin convex; anterior half of costal cell with hairs; linea calva interrupted in the middle with seven very small hairs and closed with single row of hairs before posterior margin of the wing; apex of stigmal vein not rounded, with three sensilla in slightly curved line. Mesotibial spur 2x shorter than 1st segment of mid tarsus. Propodeum in the middle about 1/3 scutellum length and 2x shorter laterally than scutellum. Gaster somewhat shorter than mesosoma, pygostyli situated near its base. Ovipositor sheaths scarcely exerted.

Head, pronotum, prothorax, mesopleura and metanotum more or less brown. Antennae, propodeum and gaster black. Mesoscutum, axillae and scutellum bronze-blue. Genae and malar spaces black with moderate greenish bronze luster. Tegulae and postspiracular sclerites dark, the latter with metallic luster. Forewings infuscate, but more or less hyaline in their basal part (about 1/5 wing length), except approxi-

mately 1/10 wing length at its base; apical 1/3 of the wing, measured along the middle, and its posterior 1/2 less infuscate. Fore legs black or brownish black, including tarsi. Mid and hind legs dark, with mid femora brown. Mesotibial spur yellow. Mid and hind tarsi white-yellow or yellow-white.

Frontovertex, interantennal prominence of face, mesoscutum, axillae and scutellum with minute cellular sculpture.

Body length 1.3–1.8 mm.

Male unknown.

Host(s) unknown.

ETYMOLOGY. The new species is named after Prof. Wladimir Borisovich Tshernyshev (Department of Entomology, Moscow State University, Russia).

DIAGNOSIS. *Neoplatycerus tshernyshevi* **sp.n.** is the only representative of the genus *Neoplatycerus* with antennal scape of female not strongly narrowed in basal part (Fig. 3). Scape is basally narrowed in all other described species of the genus (Fig. 1).

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