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A REVIEW OF THE GENUS *PARANISITRA* CHOPARD (ORTHOPTERA: GRYLLIDAE: ENEOPTERINAE)

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ABSTRACT

The genus *Paranisitra* is redescribed. Its species are reviewed. Two new species of the genus are described from the Philippines (*P. maculata* sp. nov.) and the eastern part of Indonesia (*P. diluta* sp. nov.).

Key words: descriptions, Eneopterinae, Gryllidae, new species, Orthoptera, *Paranisitra*

ОБЗОР РОДА *PARANISITRA* CHOPARD (ORTHOPTERA: GRYLLIDAE: ENEOPTERINAE)

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РЕЗЮМЕ

Переописывается род *Paranisitra*. Его виды ревизуются; два вида с Филиппин (*P. maculata* sp. nov.) и из восточной части Индонезии (*P. diluta* sp. nov.) описываются как новые.

Ключевые слова: описания, Eneopterinae, Gryllidae, новые виды, Orthoptera, *Paranisitra*

INTRODUCTION

The genus *Paranisitra* was described by Chopard (1925) for a single species from the Philippines (Luzon I.). The genus was monotypical during long time (Chopard 1968; Eades and Otte 2008), and the male genitalia were unstudied up to now. At present two new species of *Paranisitra* were collected in Mindoro I. (The Philippines), Supiori I. and Biak I. (both near New Guinea). These finds allow me to redescribe the genus, to review its species, and to note their habits.

MATERIAL AND METHODS

Both new species were collected at night in tropical rain forest on low mountains. The specimens sat

on leaves of low bushes and on grasses along small forest brooks.

The material considered here (including types) are deposited at the Zoological Institute of the Russian Academy of Sciences, Saint Petersburg.

SYSTEMATICS

Family Gryllidae Laicharting, 1781

Subfamily Eneopterinae Saussure, 1874

Genus *Paranisitra* Chopard, 1925

(Figs. 1–13)

Type species. *Paranisitra longipes* Chopard, 1925 (Luzon I.: Mt. Makiling).

Diagnosis. Body completely apterous. Head short, somewhat wider than pronotum, rather high (slightly higher than wide), almost triangular in front, with very large eyes and moderately narrow rostrum between antennal cavities (width of rostrum almost equal to width of scape); rostral apex roundly angular in profile; epicranium above antennal cavities and along lateral edges of rostrum with low keels; middle ocellus convex, situated on dorsal surface of rostrum not far from apex; lateral ocelli also convex, situated near hind part of rostrum and not far from each other; palpi rather slender (Figs. 1, 2, 6, 7, 9, 10). Pronotum with somewhat concave dorsal edge in profile; disc with more or less convex anterior edge, concave hind edge, and slightly sinuate lateral edges; lateral lobes with slightly oblique ventral half of anterior edge, distinctly oblique ventral edge, roundly angular corner between these edges, and widely rounded corner between ventral edge and disc (Figs. 3, 8, 11). Legs long and rather thin; fore tibiae with distinct oval outer tympanum, slit-like inner one (lobe covering inner tympanum not large, but distinctly inflated), and 3 lower apical spines; middle tibiae with a pair of lower apical spines and 1 inner upper apical spine; hind femora well adapted to jump, with thick proximal half and thin distal half; hind tibiae with a few rather small upper subapical spines, numerous very small upper denticles, and 6 apical spines (3 inner apical spines longest, especially middle one; upper and lower outer apical spines shortest); tarsi with long basitarsus having a few very small upper outer denticles and 2 pairs of distal spines: long apical spines (inner spine distinctly longer than outer spine) and short (denticle-like) upper spines. Pterothorax and abdomen without distinct gland; anal plate in both sexes with rounded lobe-like hind part and low transverse keel in middle of dorsum; cerci not very long, unspecialized; male genital plate not large, elongate, with narrow apex; female genital plate also not large, but rather short and with distinct hind median notch; male genitalia with elongate epiphallus, a pair of small membranous apical lobes near its apex (these lobes laterally with numerous short hairs), a pair of wide semimembranous lateral lobes (each of these lobes with weak elongate distal sclerite and lateral endoparameral sclerite), long and narrow endoparameral apodemes, V-shaped mold of spermatophore attachment plate (having rather long unpaired apodeme and heavily sclerotized median sclerite under transverse endoparameral bridge), and

a few small sclerotized structures behind mold (Figs. 4, 5, 12, 13); ovipositor thin and rather long (but distinctly shorter than hind femur), with narrow and acute apex.

Included species. Type species; *P. maculata* sp. nov. and *P. diluta* sp. nov.

Comparison. The genus is most similar to *Nisitrus* Saussure, 1878, but clearly distinguished from it by the absence of wings and of stridulatory apparatus in male, different shape of lateral pronotal lobes (in *Nisitrus*, they are with the ventral edge longer and more or less parallel to dorsal edge), distinctly longer hind legs and differently shaped epiphallus of male genitalia, as well as much smaller membranous apical lobes of epiphallus.

***Paranisitra maculata* sp. nov.**

(Figs. 1–5)

Etymology. The name originates from *maculatus* (Lat.) – spotted.

Type material. Holotype – male, PHILIPPINES: Mindoro Island, northern coast, environs of Puerto Galera town, 11–13 March 2004, coll. A. Gorochov. Paratypes: 9 males, 4 females, same data.

Description. Male (holotype). Coloration distinctly spotted. Head yellowish with wide dark brown transverse band on dorsum between dorsal parts of eyes, somewhat narrower transverse band between lower parts of eyes (including ventral and apical parts of rostrum, antennal cavities, scapes, and stripes along ventral edge of these cavities), and very small spot around medial half of each lateral ocellus and hind half of median ocellus, brown second antennal segment, upper part of clypeus, stripes along ventral edge of eyes, vertical band on genae, and lines along frontogenal sutures, light brown subgenae, proximal half of mandibles, and antennal flagellum (flagellum with very sparse and very short whitish rings); maxillary palpi with 3rd–5th segments whitish. Thorax and abdomen light yellowish grey with a pair of rather large dark brown spots on pronotal disc, rather wide transverse band in middle of pronotal lateral lobes, line along most part of pronotal edge, and numerous rather small spots on other parts of pronotal disc, on pterothoracic pleurites, and on all pterothoracic and abdominal tergites (spots on 3rd, 7th, and 8th abdominal tergites partly fused with each other), brownish grey anal plate and apex of genital plate, and more or less light brown cerci;



Figs. 1–13. *Paranisitra* Chopard: 1–5, *P. maculata* sp. nov., male (holotype); 6–8, *P. longipes* Chop., female; 9–13, *P. diluta* sp. nov., male (holotype). Body from above (1, 6, 9) and from side (3, 8, 11); head in front (2, 7, 10); genitalia from below (with outlines of lateral endoparameral sclerite) (4, 12) and from side (5, 13).

fore legs brown with light yellowish grey proximal part, sparse spots on femora, and proximal 2/3 of basitarsus; middle legs light yellowish grey with several brown spots on femora, a few more or less light brown spots on tibiae, and darkened distal half of tarsi; hind femora light yellowish grey with dark brown apical part, rather wide longitudinal band on proximal half of outer surface, and spots of different size on other parts of this half, greyish brown area occupying most part of distal half and separated from dark apical part by more or less light ring; hind tibiae and tarsi dark brown with light parts: short part not far from base, proximal half of basitarsus (excepting its base), and middle of 3rd segment. Male genitalia with lateral endoparameral sclerites rather wide and almost not hooked at apex; heavily sclerotized part of mold of spermatophore attachment plate with long hind rod (Figs. 4, 5).

Variation. Some specimens with some dark spots almost black, distal half of cerci somewhat darkened, or second antennal segment light brown.

Female. General appearance as in male, but genital plate completely light. Hind femur almost 1.5 times as long as ovipositor.

Length (mm). Body: male 11–13, female 12–13.5; pronotum: male 2.1–2.3, female 2.2–2.3; hind femur: male 16–17, female 17–17.5; ovipositor 11.5–12.

Comparison. Differences from the type species are listed below (in “Remarks” to *P. longipes*).

***Paranisitra longipes* Chopard, 1925**

(Figs. 6–8)

Material studied. 1 female, PHILIPPINES: Luzon Island, Los Banos (near Mt. Makiling), 15 May 1917, coll. N. Ikonnikov.

Remarks. This specimen is in accordance with the original description of *P. longipes* (Chopard 1925). It is similar to *P. maculata*, but distinguished by the following characters: dark brown transverse band between dorsal parts of eyes wider, extending to lateral ocelli (in *P. maculata*, head with distinct transverse yellowish band behind lateral ocelli); rostrum between dark apex and median ocellus clearly darkened (in *P. maculata*, this area yellowish); clypeus, labrum, and mandibles dark brown (in *P. maculata*, they somewhat lighter); pronotal disc and pterothoracic and abdominal tergites with only small darkish spots; pronotal lobes with light yellowish grey band along dorsal edge and hardly darker (light brown) rest of

these lobes; fore and middle legs somewhat less spotted; hind legs with much less darkened (brownish) longitudinal band on proximal half of outer femoral surface; cerci and female genital plate slightly darker (cerci greyish brown, plate light brown); ovipositor somewhat longer (hind femur almost 1.3 times as long as ovipositor).

***Paranisitra diluta* sp. nov.**

(Figs. 9–13)

Etymology. The name originates from *dilutus* (Lat.) – pale.

Type material. Holotype – male, INDONESIA: Supiori Island (not far from northern edge of western New Guinea), southern coast, environs of Korido village, 10–11 November 2004, coll. A. Gorochov. Paratypes: 3 males, 3 females, same data; 2 males, 2 females, INDONESIA, Biak Island (near Supiori Island), northern coast, environs of Corem village, 14–15 November 2004, coll. A. Gorochov.

Description. Male (holotype). Coloration less spotted than in *P. maculata* and *P. longipes*. Epicranium yellowish with dark brown: wide transverse band on dorsum between dorsal parts of eyes; a distinctly narrower transverse band between lower parts of eyes (including ventral part of rostrum, parts of antennal cavities and scapes, and very narrow stripes along ventral edge of these cavities); very small spots near ocelli (as in *P. maculata*). Antennae dark brown except for light spots on scape and second antennal segment, short light basal part of antennal flagellum, and very sparse rings on rest of flagellum. Maxillary palps yellowish with 3rd–5th segments whitish. Thorax and abdomen light yellowish grey with slightly lighter lateral parts (including pronotal lateral lobes) and very small, rather sparse, and not very distinct brownish spots on pronotal disc and pterothoracic and abdominal dorsum (apex of genital plate somewhat darkened; cerci with weakly darkened distal half). Fore and middle legs almost uniformly light brown, but with slightly lighter base, dark second tarsal segment, and dull third segment. Hind femora light yellowish grey with numerous slightly darkened oblique stripes and dark brown apical part; hind tibiae brown with dark brown basal and dorsal areas (except for short light part near base); hind tarsi dark brown except for slightly less darkened third segment. Male genitalia with lateral endoparameral sclerites narrow and distinctly hooked at apex; heavily sclerotized

part of mold of spermatophore attachment plate with short hind rod (Figs. 12, 13).

Variation. Some specimens with large reddish brown or brown spot on dorsum of 3rd and/or 7th abdominal tergites. Very small brownish spots on pronotal disc and pterothoracic and abdominal tergites may be distinct or almost absent.

Female. General appearance as in male, but abdomen with large and very distinct brown or reddish brown spot on 3rd tergite, this spot usually with dark brown lateral and/or anterior parts, and genital plate uniformly light. Hind femur almost 1.5 times as long as ovipositor.

Length (mm). Body: male 10–12, female 13–14; pronotum: male 1.9–2.1, female 2–2.2; hind femur: male 16–17, female 17–18; ovipositor 11–12.

Comparison. The new species differs from *P. longipes* and *P. maculata* by the lighter (less spotted) body, light mouthparts and genae, and absence of darkened longitudinal band on hind femora. Additionally from *P. longipes*, the new species can be distinguished by the wider light stripe on head (between rostrum and dark dorsal band) and shorter

ovipositor, and from *P. maculata*, by the absence of large dark spots and bands on disc and lateral lobes of pronotum, narrower lateral endoparameral sclerites and shorter heavily sclerotized part of mold of spermatophore attachment plate.

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