ACTA ENTOMOLOGICA MUSEI NATIONALIS PRAGAE
Published 9.xii.2011 Volume 51(2), pp. 443–448 ISSN 0374-1036

A new species of *Pactye* from Papua New Guinea (Hemiptera: Heteroptera: Rhyparochromidae)

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Abstract. *Pactye constanti* sp. nov., a new species of *Pactye* Stål, 1865 (Rhyparochromidae: Rhyparochrorminae: Cleradini) is described from Papua New Guinea; drawings of head, legs, male genital capsule, paramere and dorsal view habitus are provided. New distributional records of *P. ciconia* Stål, 1867 from Indonesia, Malaysia and Papua New Guinea are included. An identification key for the five known species of *Pactye* is given.

Key words. Heteroptera, Rhyparochromidae, taxonomy, new species, distribution, Indonesia, Malaysia, Papua New Guinea

Introduction

The genus *Pactye* Stål, 1865 belongs to the tribe Cleradini of the family Rhyparochromidae, and is characterized by having the head greatly exserted, constricted behind eyes and drawn out into a distinct narrow neck, the postocular part gradually rounded, the ocelli located behind eyes, the hemelytral membrane with single pale spot, the humeral angles obtuse to rounded, and the paramere blade always forked (Stål 1865, Malipatil 1983). Scudder (1963) keyed the genus, and latter (Scudder 1978) described two new species and keyed the known species of *Pactye*. Malipatil (1983) redefined the genus and provided a key for world cleradine genera, and transferred *Henricodohrnia elegans* Breddin, 1901 to this genus. The genus includes four species: *P. ciconia* Stål, 1867 from Malaysia (Kalimantan: Sarawak), *P. distincta* Scudder, 1978 from Malaysia (Kalimantan: Sabah and Sarawak), *P. elegans* (Breddin, 1901) from Indonesia (Sumatra) and Malaysia (Kalimantan: Sarawak), and *P. izzardi* Scudder, 1978 from Indonesia (Mentawei) and 'Borneo' (without details) (Scudder 1962, 1978; Tomokuni 2010). In this contribution a fifth species is described, which extends the geographic distribution of this genus to Papua New Guinea, and new records of *P. ciconia* are included. A key to separate the species of the genus is presented.

Material and methods

The following abbreviations are used for the institutions cited in this paper:

CASC California Academy of Sciences, San Francisco, California, USA;
IRNB Institut Royal des Sciences Naturelles, Bruxelles, Belgique;
RMNH Nationaal Natuurhistorische Museum ('Naturalis') Leiden, the Netherlands;
UNAM Colección Entomológica, Instituto de Biología, Universidad Nacional Autónoma de México, México.

Results

Pactye constanti sp. nov.

(Figs. 1, 4, 7–10, 13)

Type locality. Papua New Guinea, Madang Province, Baiteta.

Type material. HOLOTYPE: ♂, **PAPUA NEW GUINEA: MADANG PROVINCE:** Baiteta, fogging AR 16, Canopy Mission, 16.v.1995, O. Missa (IRNB). PARATYPES: 1 ♀, same label and data as holotype (IRNB); 3 ♂♂ 2♀♀, **PAPUA NEW GUINEA: MADANG PROVINCE:** Baiteta, fogging AR 8, AR 13, AR 14, Canopy Mission, 25.v.1995, 9.vi.1995, 1995 (without month and day), O. Missa (IRNB, UNAM).

Description. ***Male*.** Body not pilose, elongate, slender, myrmecomorphic.

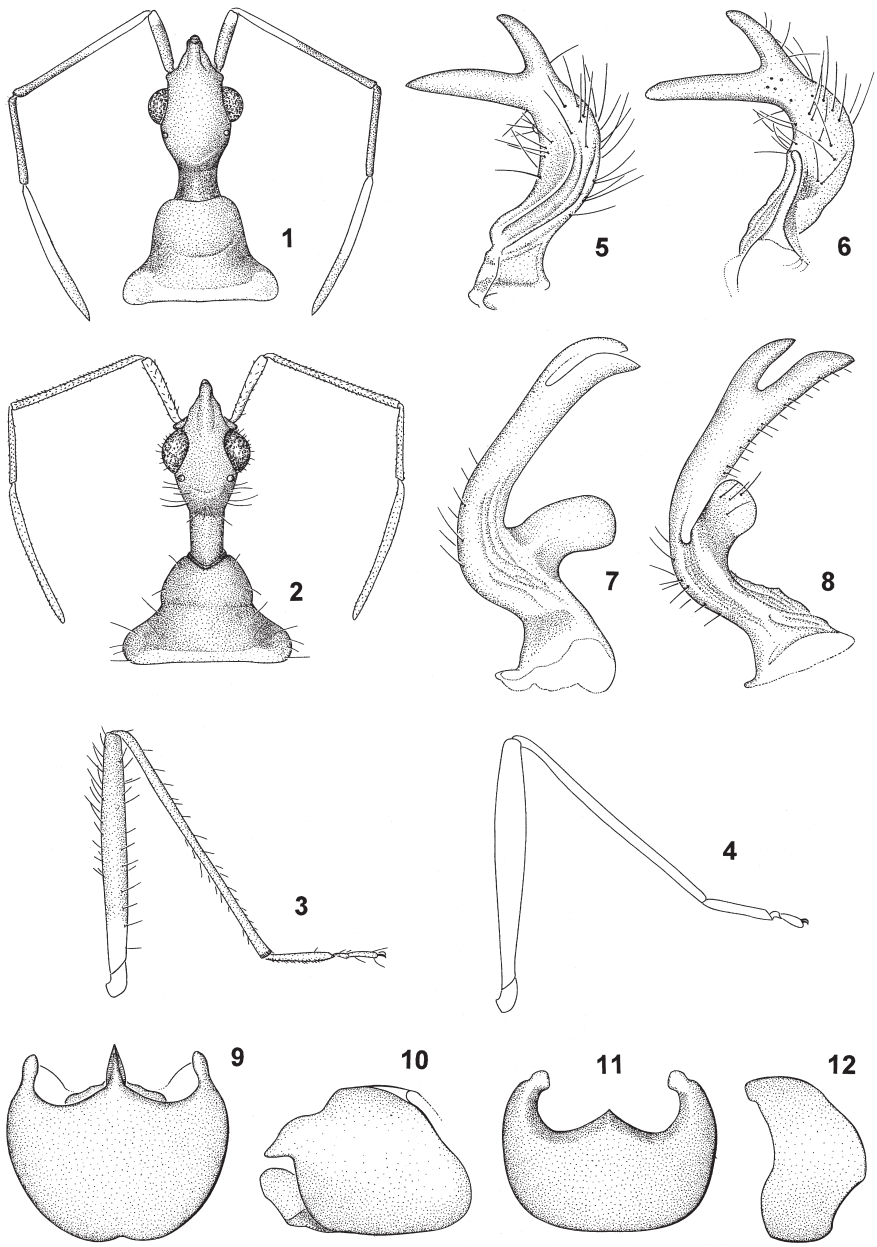
Head. Longer than wide; elongate behind eyes, forming a medium size robust cylindrical neck (Figs. 1–2); tylus apically rounded; antenniferous tubercle short, close to eyes, not produced, clearly visible from above; antennal segment I exceeding apex of head; antennal segments I and III greater than interocular distance; ocelli situated behind eyes; eyes basically oval, not protruding; preocular and interocular distance less than postocular distance; postocular region gradually rounded; vertex with shallow median sulcus; buccular juncture short, U-shaped, close to rostral insertion; rostrum reaching anterior margin of mesosternum; rostral segment I reaching anterior margin of eye; rostral segment II longer than IV; ventral surface only grooved at anterior third (Fig. 1).

Thorax. Pronotum wider than long, markedly bilobed with transverse impression shallow, not deeply incised; collar apparent, weakly demarked posteriorly; anterior lobe globose, strongly convex in lateral view, higher and longer than posterior pronotal lobe; posterior lobe rounded, not emarginated; frontal angles rounded; anterolateral border of anterior pronotal lobe slightly emarginated, and posterior border of pronotal lobe not emarginated, straight (Fig. 1). Propleura lacking a curving cross-striated area; metathoracic scent gland auricle elongate, not enlarged strongly at distal end but curving slightly posteriorly; evaporatorium reduced, not extending to posterior margin of metapleuron. Scutellum triangular, longer than wide, uniformly flat, not elevated apically, lacking a median carina. Hemelytra macropterous, extending beyond apex of last abdominal segment; costal margin slightly narrowed, emarginated, and parallel sided in basal 1/3, sinuated, and not obviously serrate; corium widest in middle. Legs unarmed; femora glabrous (Fig. 4); tibiae ventrally with some erect hairs; tarsi densely pilose.

Abdomen. Lacking a crescent-shaped striated area laterally on abdominal sterna II and III.

Genital capsule. Rounded; posteroventral edge slightly concave with large median, slender projection (Figs. 9–10). Paramere: Figs. 7–8.

Integument. Head, pronotum, scutellum, thorax, and abdominal sterna uniformly shining; clavus, corium, connexivum and dorsal abdominal segments dull; head and pronotum



Figs. 1–12. *Pactye* spp. 1–2 – head and pronotum: 1 – *P. constanti* sp. nov., 2 – *P. ciconia* Stål, 1867. 3–4 – hind leg: 3 – *P. ciconia*, 4 – *P. constanti* sp. nov. 5–8 – paramere: 5–6 – *P. ciconia*, 7–8 – *P. constanti* sp. nov. 9–12 – male genital capsule: 9–10 – *P. constanti* sp. nov. (9 – caudal view, 10 – lateral view), 11–12 – *P. ciconia* (11 – caudal view, 12 – lateral view).

impunctate; scutellum striated, vaguely punctate; claval punctuation in more than four irregular rows; corium (except costal margin) densely punctate; propleuron and mesopleuron punctate; metapleuron striated, with posterior margin punctate; surface glabrous; abdominal sterna finely pilose.

Dorsal color. Head and scutellum shiny to subshining black; apex of tylus dark yellow; antennal segment I dark castaneous brown with distal joint yellowish white, segment II with proximal half yellowish white and distal half dark castaneous brown, segment III dark castaneous brown with proximal joint yellowish white, and segment IV yellowish white with distal third dark castaneous brown; pronotum shiny black with posterior margin including humeral angles yellowish white; clavus dull black to dark brown; corium black to dark brown with large yellowish white spot on anterior margin about 1/3 way from base and contiguous with costal margin; hemelytral membrane basally white and apically with semidiscoidal pale castaneous orange spot; connexivum dark brown; dorsal abdominal segments III–V pale castaneous orange, segment VI dark castaneous orange with posterior border dark brown, and segment VII dark brown.

Ventral color. Head, abdominal sterna and genital capsule shiny black; rostral segments I–IV dark castaneous orange; thorax shiny black with posterior border of propleuron yellowish white; coxae and trochanter dark brown; fore femur dark brown, middle and hind femora dark brown with basal or anterior third yellow; tibiae yellowish white with basal third or basal joint pale castaneous orange; tarsi pale castaneous orange.

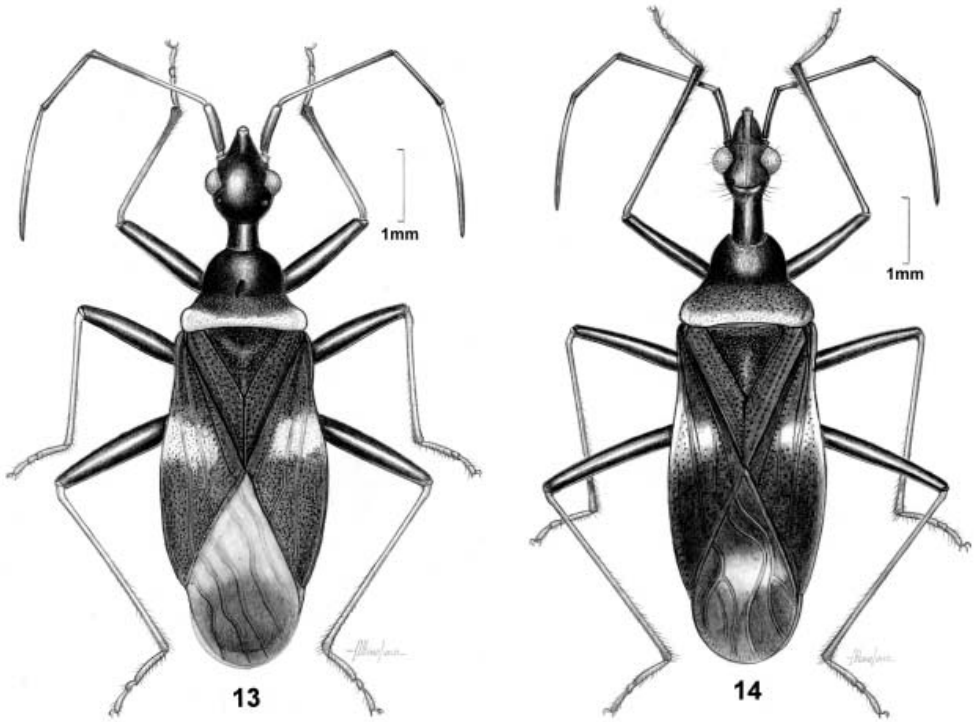
Female. Habitus and color similar to male holotype. Dorsal abdominal segments VIII and IX, and genital plates dull to shiny black.

Measurements. First male, then female (mm): Body length 6.70, 8.00. Head length including the neck 1.60, 1.52; width across eyes 0.92, 0.84; interocular distance 0.56, 0.52; preocular distance 0.60, 0.54; interocular distance 0.54, 0.54; neck width 0.36, 0.41; length of antennal segments: I – 0.60, 0.56; II – 1.52, 1.48; III – 0.84, 0.82, IV – 1.48, 1.40; length of rostral segments: I – 0.68, 0.74, II – 0.56, 0.64; III – 1.49, 1.53; IV – 0.34, 0.38. Pronotum: maximum length of anterior lobe 0.52, 0.48; maximum length of posterior lobe 0.44, 0.44; maximum width of anterior lobe 0.88, 0.84; maximum width of posterior lobe 1.44, 1.44. Scutellar length 0.77, 0.78; width 0.68, 0.72.

Differential diagnosis. *Pactye constanti* sp. nov., like *P. ciconia*, has clavus completely dark brown to dull black, and pronotum dark brown with posterior margin including the humeral angles yellowish white. In *P. ciconia* the neck is elongate and slender (neck width 0.32 male, 0.36 female) (Fig. 2), and the surface of body including the legs covered with long outstanding hairs (Fig. 3). In *P. constanti* sp. nov., the neck is shorter and robust (neck width 0.36 male, 0.41 female) (Fig. 1) and the surface of body is almost glabrous lacking outstanding long hairs (Fig. 4). The shape of posterior border of male genital capsule (Figs. 9–12) and shape of paramere (Figs. 5–8) distinguish both species.

In *P. izzardi* the pronotum is unicolorous, completely dark brown to black, in *P. distincta* the clavus is bicolored, and the corium has a subapical yellowish white spot, and in *P. elegans* the hemelytral membrane is black with hyaline tip, each situation absent in the new species here described.

Of the five species placed in the genus as in the present study, only three – *P. ciconia*, *P. izzardi* and *P. elegans* – possess long outstanding hairs, at least on head and pronotum, a character



Figs. 13–14. Dorsal view of *Pactye* species. 13 – *P. constanti* sp. nov., male; 14 – *P. ciconia* Stål, 1867, female.

considered by Malipatil (1983) as diagnostic of the genus *Pactye*. Therefore, the placement of the species *P. disticta* and *P. constanti* sp. nov., that lack these hairs, in this genus may be considered tentative, until a thorough review and assessment of all morphological characters of the genus *Pactye* and the related genus *Parapactye* Malipatil, 1983 are conducted.
Etymology. Named for Jerome Constant (IRBN), a distinguished Belgian entomologist.
Distribution. Papua New Guinea: Madang Province.

Pactye ciconia Stål, 1867

(Figs. 2–3, 5–6, 11–12, 14)

Material examined. INDONESIA: Kalimantan Timur: 1 ♀, Pasir, G. Lumut S slope, 1°24′49.96″S-115°58′34.82″W, 650 m, 20.xi.2005, E. Gassó Miracle, GLBA, EGM 18, collected on undisturbed dipterocarp rain forest at blacklight (RMNH). **MALAYSIA: Sabah:** 1 ♀, 1 km S Kundasang, 1530 m, 24.viii.1983, G. F. Hevel & W. E. Steiner (UNAM). **PAPUA NEW GUINEA: Madang Province:** 1 ♂ 1 ♀, Baiteta rd., 2.2 km W of North Coast rd., 60 m, 22.iv.1989, stop # 89–96, D. H. Kavanaugh, G. E. Ball & N. D. Penny (CASC); 6 ♀♀, Baiteta, 9.–13.iv.1996, 6.vi.1996, O. Missa (IRNB).

Distribution. Formerly recorded only from Kalimantan (Sarawak) (Miller 1949, Tomokuni 2010); here recorded first time from Sabah, Indonesian part of Kalimantan, and Papua New Guinea.

Key to the species of *Pactye* Stål, 1865

Modified from Scudder (1978):

1 Dorsum shining, hemelytra with pale costal margin. ..... ***P. elegans*** (Breddin, 1901)
– Dorsum not fully shining, hemelytra with pale spot. 2
2 Pronotum dark brown to black with posterior margin including the humeral angles yellowish white to pale ochraceous. 3
– Pronotum completely dark brown to black. ..... ***P. izzardi*** Scudder, 1978
3 Clavus completely dark brown to black; corium without distinct subapical pale spot; femora unarmed. 4
– Clavus bicolored; corium with a subapical pale spot; femora armed with one tubercle. .. .. ***P. distincta*** Scudder, 1978
4 Dorsum and legs with long outstanding hairs (Figs. 2–3); neck elongate and slender (Fig. 2). ..... ***P. ciconia*** Stål, 1867
– Dorsum and legs without long outstanding hairs (Figs. 1, 4); neck short and robust (Fig. 1). ..... ***P. constanti* sp. nov.**

Acknowledgments

I should like to extend my appreciation to Norman D. Penny and Vincent Lee (CASC), Jerome Constant (IRNB), and Ivonne van Nierop (RMNH) for allowing the opportunity for study this unique material. I sincerely thank Mallik Malipatil (Department of Primary Industries, Knoxfield, Victoria, Australia) for his critical reading of the manuscript with helpful comments. Special thanks go to Ernesto Barrera (UNAM) and Albino Luna (UNAM) for the illustrations.

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