

Onychargia priydak sp. nov. (Odonata, Platycnemididae) from eastern Cambodia

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Onychargia priydak sp. nov. is described from eastern Cambodia. The new species co-occurs with the widespread *Onychargia atrocyana* Selys, 1865 in the same region. Its males differ from those of *O. atrocyana* by a larger paraproct, which are longer than the cerci, and a bright white pruinescence on thorax, femora and the two first abdominal segments. This is the second species in the genus *Onychargia* Selys, 1865. *Onychargia vittigera* Selys, 1865 is synonymised with *O. atrocyana*; *Onychargia indica* Sahni, 1964 does not belong in the genus *Onychargia*.

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Introduction

The genus *Onychargia* Selys, 1865 was formerly considered the only Old World representative of the subfamily Argiinae of Coenagrionidae but recently, on the basis of molecular and morphological data, it was transferred to Platycnemididae, to form, together with the Madagascan monotypical genus *Paracnemis* Martin, 1902, the subfamily Onychargiinae Dijkstra et al., 2013 (Dijkstra, Kalkman, Dow, Stokvis, & van Tol, 2014). The name *Onychargia* was erected as a subgenus of the genus *Argia* by Selys Longchamps (1865) for the single species *Argia atrocyana* Selys, 1865, described in the same paper by three syntypes: two males, mature and immature, from Singapore, collected by Alfred Wallace, and a female from Java. The subgenus was proposed verbatim as follows: “*sous-genre* 3. – **ONYCHARGIA, Hagen**” (Selys, 1865, p. 146). It is noteworthy that Hagen did not publish a description of this genus, and even if he indeed proposed the name, the ICZN Art. 50.1 assigns the authorship to the person who made the name available, in our case published a description, which was Selys. In his later paper, Selys (1891) operated with the name *Onychargia* as being of generic rank.

Two species described from New Guinea within *Onychargia* a century or more ago, namely *O. rubropunctata* Selys, 1878 and *O. stellata* Ris, 1915, were later transferred by Ris into the genus *Palaiargia* Förster, 1903.

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Two more species, *Onychargia vittigera* Selys, 1865 and *O. indica* Sahni, 1964, have not been recognised as valid for the last half a century, although they have not been formally synonymised until now. Both names were listed in the word catalogues by Bridges (1994), Davies and Tobin (1985), van Tol (2014) and Paulson and Schorr (2014) as valid species, but were not mentioned, even in synonymy, by Tsuda (2000).

The provisional name *Argia vittigera* Selys, 1865 was proposed along with the original description of *Argia atrocyana* (Selys, 1865, p. 417) in the following phrase: “N.B. J’avais d’abord pensé que le second exemplaire mâle formait une deuxième espèce que j’avais nommée *Vittigera*”. That is, Selys had been going to propose the name *vittigera* for the male with yellow stripes on the thorax (the Latin adjective *vittigera* means “wearing bands”), but refrained from this when he found out that the banded specimen was an immature male of the same species as the mature, non-banded male. The name *vittigera* Selys, 1865 was unavailable as proposed as a junior synonym (see definition of junior synonym in the ICZN Glossary and Art. 24.2). However, in his later work Selys (1891) changed his opinion again and considered *Onychargia vittigera* as a valid species, as follows: “77. *Onychargia vittigera*, Selys, Syn. Agr. n. 50 (pars, sous de nom de *O. atrocyana* moins adulte e femelle). / J’ai donné cette forme comme le jeune âge et la femelle de l’*atrocyana* de Bornéo, connue par un mâle seulement. Aujourd’hui je suis porté à considerer comme distincts les exemplaires du Continent, dont j’ai parlé sous le nom de *vittigera* moins adulte et femelle. J’ai sous les yeux trois mâles: les types de Singapore at du Sylhet et un exemplaire incomplet pris par M. Fea à Mandalay, le 11 novembre 1885.” (Selys, 1891, p. 508). Note a confusion made by Selys: the female paratype of *atrocyana* originated from Java, not from Borneo. According to the ICZN Art. 11.6.1, the name *vittigera* Selys, 1865 became available since it was later used as a valid species name (Selys, 1891), with the date of original proposition. According to Art. 72.4.3, the type of the name made available under propositions of Art. 11.6.1 consists of the specimen(s) cited with that name in the published synonymy, so the type series of *Argia vittigera* Selys, 1865 consists only of the immature male mentioned in Selys (1865) (simultaneously being a syntype of *Argia atrocyana*), which hence is the holotype by monotypy, with the type locality Singapore. Note this did not make the other, mature male syntype of *O. atrocyana* the lectotype or holotype. So the type series of *O. atrocyana* still consists of three syntypes and unless a lectotype is designated its type locality is still Singapore and Java together.

The earlier published opinion by Selys (1865), that the banded and non-banded males are immature and mature individuals of the same species, was implicitly accepted by later authors who, with very few exceptions in the beginning of the XX century, used only the name *O. atrocyana* and ignored the name *O. vittigera*. No objective synonymy seems to have been formally published. Formal synonymisation is provided here:

Onychargia atrocyana Selys, 1865 = *Onychargia vittigera* Selys, 1865, syn. nov.

Onychargia indica Sahni, 1964 was described from Kumaon Hills, Uttarakand, India (Sahni, 1964) and received little attention. According to the description, this species has large leafy cerci and extremely short paraprocts clearly showing that the damselfly could not belong to *Onychargia*, although its true taxonomical position is unclear.

From the arguments above, the genus *Onychargia* in fact remained monotypic, with the only widespread species *O. atrocyana* ranging from India, Nepal and South China to the Philippines, Sumatra, Java and Borneo (Lieftinck, 1954; Tsuda, 2000). Therefore I was surprised to find another, undescribed species of *Onychargia* during my odonatological survey of Mondulkiri Province, East Cambodia, in June 2014. Obviously belonging to that genus, its males strongly contrasted to the entirely black mature males of the well-known *O. atrocyana* in having the thorax bright white owing to dense pruinescence (Figures 1, 2) and also showed differences in the structure of the anal appendages. Importantly, both *O. atrocyana* and the new species were found in the same area. The new species is described below in considerable detail in spite of its closeness



Figure 1. *Onychargia priydak* sp. nov. in nature; left, males in the type locality: Cambodia, Mondulkiri Province, a grassy swamp at Sen Monorom; right, tandems in the second locality: Cambodia, Mondulkiri Province, Dak Dam village environs, a moist pasture and margins of tall grass swamp, 16 June 2014.

to *O. atrocyana* in many features, since a detailed description of the latter is missing from the literature. So the description below can be used for reference concerning details of the genus *Onychargia*, the very peculiar features of which have hitherto attracted insufficient attention.

Material and methods

Specimens were collected with a hand net and photographed in the field using Olympus (Tokyo) Camedia C8080 camera. Illustrations of morphological details were prepared from serial photographs obtained via a Zeiss (Jena) Stemi 2000-C lens with a Canon (Tokyo) PowerShot A640 digital camera at the Institute of Cytology and Genetics of Siberian Branch of Russian Academy of Sciences, Novosibirsk. Images with broad focus zones were obtained from serial photos with shifted focus using the program Helicon Focus 5.3 (<http://www.photo-soft.ru/heliconfocus.html>).

Abbreviations for collections are as follows: ISEA, Institute of Systematics and Ecology of Animals, Novosibirsk, Russia; ZMUM, Zoological Museum of Moscow State University, Russia; RMNH, Naturalis Biodiversity Center, Leiden, the Netherlands.

Onychargia priydak sp. nov.

(Figures 1–4)

Material studied

Holotype. ♂, Cambodia, Mondulkiri Province, a grassy swamp at Sen Monorom, 12°26'56–58" N 107°12'15–17" E, 683 m, 8 June 2014, deposited in RMNH (Figure 3).

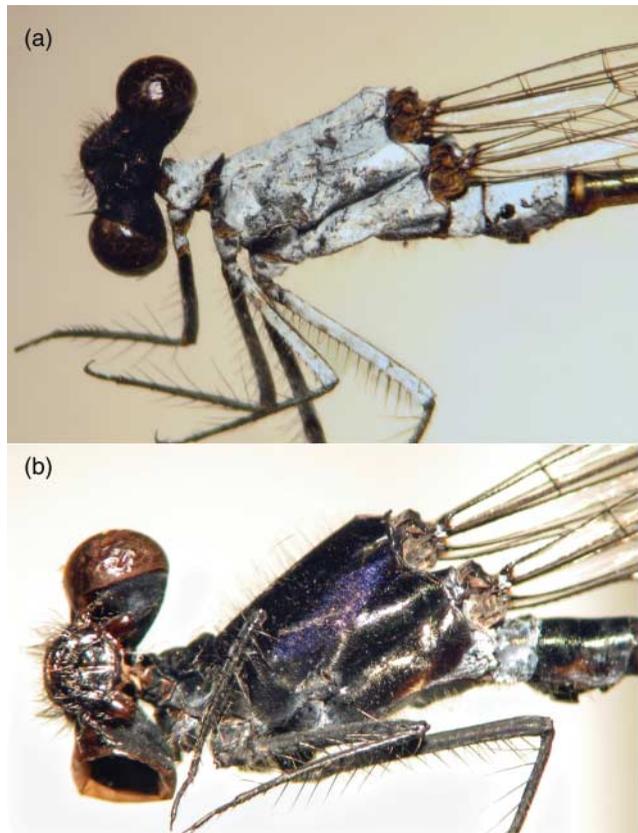


Figure 2. Head and thorax of (a) the holotype of *Onychargia priydak* sp. nov. (male); and (b, mirrored) a male of *O. atrocyana* from Cambodia, Mondulkiri Province, a pool near and upstream Buu Sraa Waterfall.

Paratypes. 3 ♂♂, 1 ♀ (no. 1, not in tandem with males), the same place and date; 2 ♂♂, 2 ♀♀ (nos. 2 and 3, collected as two tandems), Cambodia, Mondulkiri Province, Dak Dam village environs, a moist pasture and margins of a tall grass swamp, 12°24'58"–25°07" N 107°19'02–14" E, 762–774 m, 16 June 2014 (in RMNH, ZMUM, ISEA and some retained in the author's collection).

Etymology

Priydak, a noun in apposition, a dialect Ukrainian word meaning “alien”, in the nominative case, is the surname of my wife Natalya Priydak to whom I dedicate the species.

Diagnosis

Onychargia with males with bright white pruinoscence on thorax, femora and the first two abdominal segments (Figures 1–3), and paraprocts longer than cerci.

Male (Holotype, Figures 2a, 3a, b).

Head. Black, becoming brownish-black anteriorly, bearing moderately dense black setae; genae and labium base brown (Figure 2a). Rear of head with tiny traces of bluish-white pruinoscence. Eyes black in life, with a small dull greenish-blue patch below.

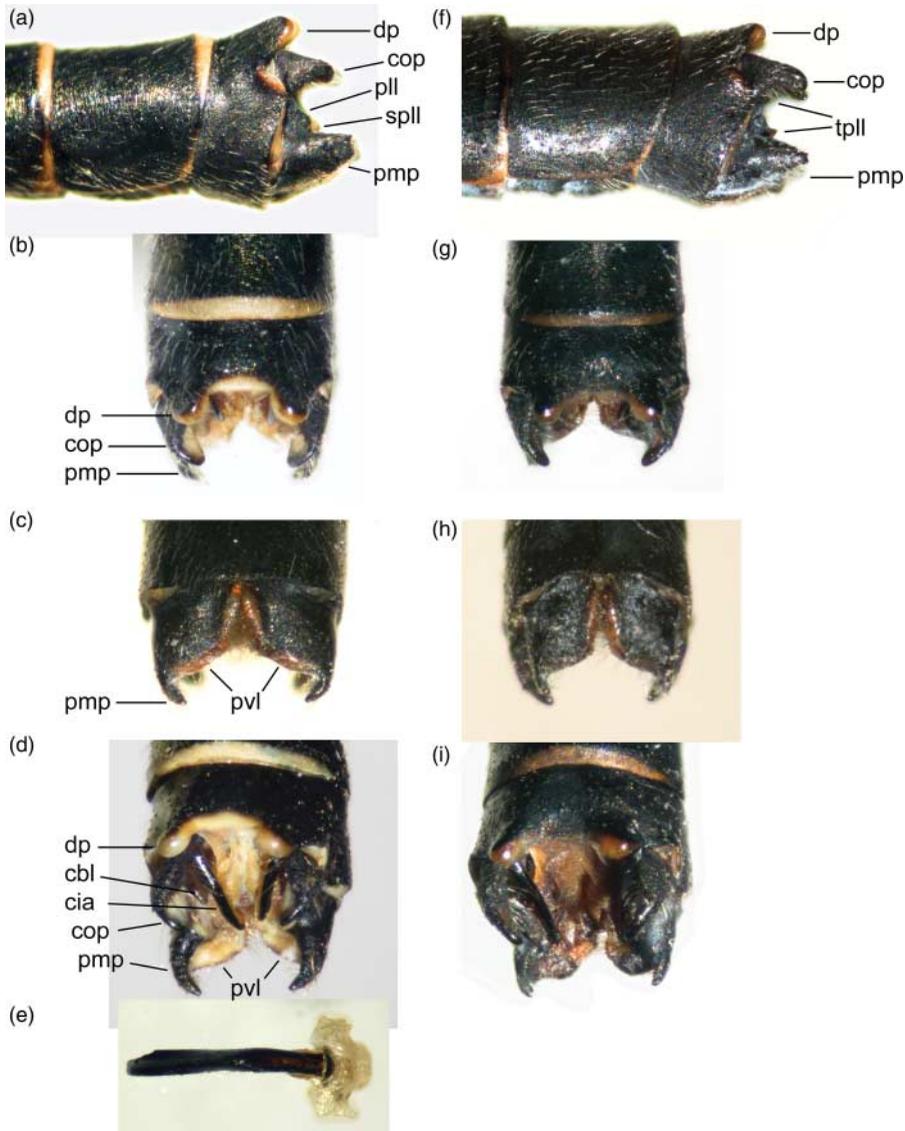


Figure 3. Details of males of (a–e) *Onychargia priydak* sp. nov. (a, b: holotype; c–e: a paratype); and (f–i) *O. atrocyana* from Cambodia, Mondulkiri Province. (a, f) End of abdomen, lateral view; (b, g) the same, dorsal view; (c, h) the same, ventral view; (d, i) the same, oblique dorsolateroposterior view; (e) penis, dorsal view. Designations: dp, dorsal processes; cop, cercus outer part; cba, cercus basal arm; cbl, cercus basal lobe; pmp, paraprot main part; pll, paraprot lateral lamina; pvl, paraprot ventral lamina; spll, swelling of paraprot lateral lamina; tppl, two teeth on paraprot lateral lamina. Not to scale.

Thorax. Black, almost completely covered with thick bluish-white pruinescence, thinner only on anterior prothoracic lobe, at subventral areas of synthorax (Figure 2a). Poststernum more lightly pruinosed, distal part not pruinosed, brownish-yellow. Sclerites at and below wing bases dark brownish-grey. Prothorax rather simple, median lobe composed of two smoothly convex areas separated anteriorly by a middorsal depression; posterior lobe large, collar-like, evenly rounded (Figure 2a).

Legs black; coxae, protrochanters, trochanters and femora with a dense bluish-white pruinescence; tibiae with only slight traces of pruinescence (Figure 2a).

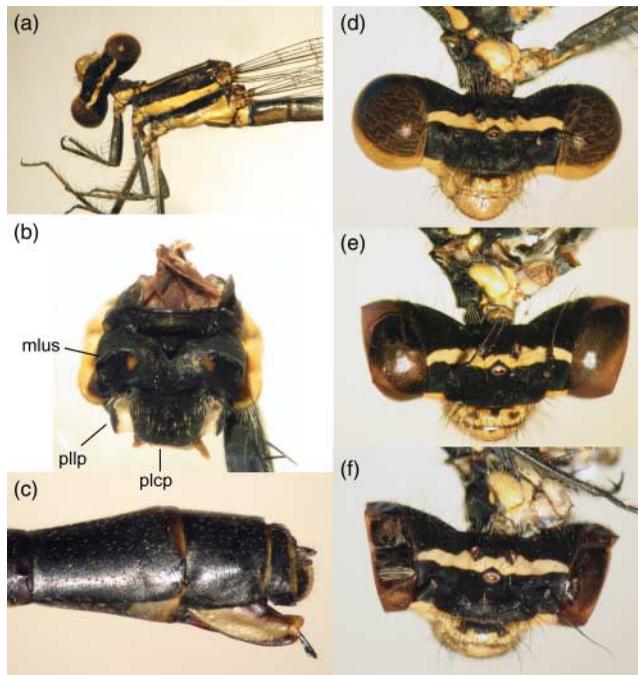


Figure 4. Details of female paratypes of *Onychargia priyadak* sp. nov.: (a, d) female no. 1 from the type locality; (b, c, e) female no. 2 from the second locality; (c, f) female no. 3 from the second locality. (a) Head and thorax; (b) prothorax; (c) end of abdomen; (d–f) head. Designations: mlus, prothorax median lobe upper surface; pllpl, prothorax posterior lobe lateral process; plcp, prothorax posterior lobe central part. Not to scale.

Wing venation as in *O. atrocyana*. Venation black. Quadrilateral upper side $c.1/3$ of lower side in forewing and $1/2$ in hind wing. Anal vein starts proximally of Cux at about $1/4$ of distance between Cux and wing base. Postnodals: 13 (right) or 14 (left) on forewing, 13 on hind wing. Proximal cells between R2 and R3 before IR2 start: 5 (right) or 6 (left) on forewing; 5 on hind wing. Pterostigma dark brown with paler thin outer rim.

Abdomen. Slightly curved, sides with light pubescence, more dense at tergite subventral areas, S1 and S2 ventrally with long light setae. Abdomen black but with dense bluish-white pruinescence becoming sparser at subventral part of tergites, no pruinescence on further segments. S3–S7 with dorsal yellow streaks along their proximal margins, long on S3 and progressively shorter in further segments, on S7 small and indistinct. S8–S9 with indistinct narrow dorsal yellowish streaks at their distal margins.

S10 (Figure 3a–d) with a pair of large rounded dorsal processes (Figure 3a–b, d: dp); with space between them twice as broad as their width. Below them, at $c.1/3$ of segment height, lateral margin of S10 forms a broad blunt protrusion. Apical part of all these projections brown, inner part of projections and segment margin light yellow. Cercus consists of an outer part well seen in lateral and dorsal views (Figure 3a–d: cop), an inner basal arm (Figure 3d: cia) and a small basal leaf-like lobe (Figure 3d: cbl) which may be seen only at ventral or lateroventral views. Cercus outer part shorter than S10 (Figure 3a: cop), bears long light setae. In lateral view, cercus main part has straight dorsal margins, concave ventral margins, and rounded apices (Figure 3a: cop). In dorsal view (Figure 3b: cop) it is narrow, rounded at apex, slightly incurved, with straight inner margins and convex outer margins. Outer cercus part black, whitish interiorly. Inner arms of cerci (Figure 3d: cia) long, glossy black. They sprout from cerci bases, directed down and slightly inwards, along inner parts of paraprocts; with ends situated innerly of rounded swellings

of paraproct lateral laminae. Each cercus bears also a small basal leaf-like blackish-brown lobe below and outerly of inner arm base (Figure 3d: cbl). Paraprocts large, extending well beyond cerci (Figure 3a), set with shorter setae. Each paraproct consists of a main process (Figure 3a–d: pmp) and two laminae, lateral (Figure 3a: pll) and ventral (Figure 3c, d: pvl). In lateral view, main process (Figure 3a: pmp) has a bluntly pointed tip bearing a small subapical dorsal tooth; in dorsal view incurved towards each other, black (Figure 3b: pmp). Lateral lamina (Figure 3a: pll) black, smooth, extends from top of main process narrowing towards cercus but with a rounded light-coloured swelling above main process (Figure 3a: spll). Ventral laminae (Figure 3c, d: pvl) light coloured, shelf-like, convex, extend towards each other from main processes at 2/3 of their length. Inner parts of S10 pale.

Secondary genitalia as in *O. atrocyana*. Lamina yellowish proximally, turning brown medially and black distally, with a very large and deep oval incision and looks like a deer hoof. Hamules glossy black, as prominent quadrangular plate with non-pointed angles, of which the posterior one slightly inclines outwards and may look acute at some aspects. Lobe black, long depressed with a groove. Penis (dissected in a paratype, Figure 4e, f) apical segment broader than long, with a large semicircular apical incision embracing basal segment, slanting anterolateral margins, rounded anterolateral corners, slightly concave lateral margins and posterolateral corners slightly produced.

Measurements (mm). Hind wing 18.8, abdomen without appendages 25.6, total length 33.

Variation in male paratypes

Forewing postnodals: 11 (2 cases), 12 (1 case), 13 (6 cases) or 14 (1 case). Hind wing postnodals: 11 (4 cases), 12 (4 cases) or 13 (2 cases). In one male, subapical dorsal tooth on paraprocts scarcely expressed. In some paratypes, a small pointed dorsolateral tooth is seen from above at about 3/5 of the cercus length. Hind wing length 18.0–20.6 mm; abdomen length without appendages 24.4–25.7 mm.

Female

Head. (Figure 4a, d–f) set with quite dense long setae, black and yellow. Labium yellow but movable hooks brownish-black; genae yellow. Mandible bases yellow, distal part black. Labrum yellow, in females nos. 2 and 3 with a blackish streak at anterior margin and in female no. 2 with a central black spot. Postclypeus with a variable black pattern:

- in female no. 1 (Figure 4a, d) with two brownish spots (central one missing) contacting a black basal stripe;
- in female no. 2 (Figure 4e) with three black spots, of which the lateral ones chevron-shaped, isolated, and central spot rounded, contacting basal black stripe;
- in female no. 3 (Figure 4f) with an united broad black basal stripe with three protuberances (corresponding to three spots in female no. 2).

In addition, in females nos. 2 and 3 frontal margin of postclypeus blackish. Anteclypeus bicoloured, narrowly yellow along postclypeus and more broadly at sides. There is an irregular yellow stripe with wavy margins between eyes, narrowing and slightly curving anteriorly at eyes. It has a triangular incision at its middle, behind central ocellus, and a strong saddle-shaped incisions in front of lateral ocelli (so that all ocelli disposed on black). Antennae black but the

very base of 1st article yellow. Eye colour in life: upper part (about 40% of total area) dark brown, rest dull bluish, with colour border corresponding to that on anteclypeus.

Thorax. Black and yellow. Anterior lobe of pronotum black with small yellow patches at posterior corners. Median lobe with a deeply notched anterior margin and smoothly bisinuous posterior margin. Upper surface of median lobe (Figure 4b: *mlus*) distinct, raised over anterior lobe, nearly flat, slightly hollowed at sides, consists of two nearly pentagonal parts bordered anterolaterally with sharp bluntly angled ridges and united at posterior margin. Median lobe black with yellow patches at anterior corners (Figure 4b). Female no. 2 has also a pair of yellow elongate spots on its upper surface (Figure 4b). Propleurons bulging, yellow, with dense long light hairs. Narrow area behind propleurons black. Posterior lobe black, tripartite, consisting of a very prominent central part (Figure 4b: *plcp*) and lateral processes (Figure 4b: *pllp*). Central part subrectangular but with rounded corners and directed along synthorax. Lateral processes narrow, shorter than central part, with uneven inner margin and blunt apices. Between central part and lateral processes there are long incisions with rounded apices. These incisions are however filled below with a white membrane being a scarcely sclerotised part of posterior lobe (Figure 4b).

Mesostigmal plate black, consists of broadly divergent rami of dorsal carina leading to a pair of widely separated dorsal prominences of narrow anterior ridge. Anterior ridge raised and inclined behind; with its prominences opposed to incisions of pronotum posterior lobe. There are hollows laterally of rami and between them, with a stronger small dorsal dimple at anterior margin. Prominences of mesostigmal plate connected to prothorax with a pair of fasciae sprouting from below central part of posterior lobe of pronotum.

Synthorax (Figure 4a) with long hairs above, shorter elsewhere. Its fore part black. Mesepisternum with a yellow antehumeral stripe not reaching its apex, broadened at anterior end but narrow otherwise. Black humeral stripe broad, with an uneven ventral side. It occupies about half of mesepimeron width and most of inframesepisternum, leaving its ventral corner yellow. Upper part of inframesepisternum, disposed in front of mesostigmal plate, also yellow. Black band along metapleural suture broad, only slightly narrower than yellow stripe above, with uneven margins. Anterior half of hind alar ridge black. Poststernum yellow, its posterior section with twin blackish spots disposed in hollows at its base.

All coxae yellow with a large black spot at base and a small black spot at apex. Protrochanters yellow. Trochanters yellow ventrally and black dorsally. Femora black with yellow bases and a yellow streak at ventral side, short in profemur, going to about half of mesofemur and to about 2/3 of metafemur. Tibia and tarsi black.

Wing venation as in male. Forewing postnodals: 11 (5 cases) or 12 (1 case); hind wing postnodals: 10 (2 cases) or 11 (4 cases). Pterostigma light brown (lighter than in male), with a light rim.

Abdomen. Straight, rather thick, with very fine light hairs throughout becoming longer at tergite subventral areas. Dorsal side black: this black on S1 rather narrow; on S2 broad proximally but narrowing distally. Black on S3–S7 broad, leaving a lateral light stripe which is rather broad on S3–S4 and narrowing on S5–S6 to very narrow on S7. S8 with only a light patch on ventral side, S9–S10 generally black. Light lateral stripes changes live colour from yellow at S1–S2 to bluish-white on S4–S7, in dead specimens dull yellow. On all tergites, black colour broadly extends along distal tergite margins to their posteroventral corners where it slightly broadens proximally along ventral margin. On S3–S5 black colour more narrowly extends along proximal tergite margins to their anteroventral corners where it broadens distally along ventral margin. S2–S5 with bright yellowish-white narrow semirings at anterior margins, decreasing in length from nearly complete at S2 to just dorsal streak at S5. However, diffuse and narrow greyish streaks descending to ventral margins could be seen as their prolongation. S1 and S6–S7 with only these diffuse and hardly noticeable greyish semirings. S8–S10 with bright light semirings

not extending to ventral margins. Ovipositor (Figure 4c) slightly extends beyond S10 tergite but not beyond S10 apical part (paraprocts) and appendages. Visible parts of gonapophyses brown. Ovipositor largest part (coxites IX or third valves) yellow, slightly (in female no. 2) or more strongly (in females nos. 1 and 3, Figure 4c) darkened to brown along ventral (narrowly) and posterior (more broadly) margin. Styles (genital appendages) black but light-tipped. Cerci small and simple, black.

Measurements (mm). The values for female paratypes nos. 1, 2 and 3, respectively: hind wing 17, 19.2 and 19.3 mm; abdomen 23.7, 26.2, 24.8 and mm; total length 30, 33 and 32 mm.

Remarks

It is notable that both *O. priydak* sp. nov. and *O. atrocyana* were almost simultaneously found in the same province of Cambodia: on 9 June 2014 I collected a tandem of the latter (the male shown in Figures 2b and 3f–i) at a shallow grassy pool near and upstream Buu Sraa Waterfall (12°33'55"N, 107°25'10"E, 500 m asl), which was only 15 and 27 km from the two localities of *O. priydak* sp. nov.

The strong white pruinescence at the thorax and femora (Figure 1a) makes males of *O. priydak* sp. nov. at once distinguishable from those of *O. atrocyana* (Figure 2b). In mature males of *O. atrocyana*, a slight whitish pruinescence is confined to the ventral areas of synthorax, coxae, legs (partly), S1 and the posterolateral corners of S2 (Figure 2b). Apart from these small pruinose areas they are black, except for strong violet lustre occupying most of the mesepisternum (Figure 2b), whitish rings at abdominal segment joints, and a greenish patch at the eyes. The synthorax of mature males of *O. atrocyana* has been described as “en entier d’un noir acier violet” (Selys, 1865, p. 416), “velvety black . . . with a deep purplish reflex, especially on dorsum” (Fraser, 1933, p. 417), or “entirely dark purplish blue” (Tang, Wang, & Hämäläinen, 2010, p. 75); however the strong violet iridescence is confined to the distinct, elongate with pointed ends, spot occupying most of the mesepisternum. It can be clearly seen in a photo of the specimen from Buu-Sraa Waterfall area of Mondulkiri Province of Cambodia (Figure 2b), the photos from Singapore in Tang et al. (2010), or photos from different countries uploaded to www.asia-dragonfly.net.

The main difference between *O. priydak* sp. nov. and *O. atrocyana* is large paraprocts extending behind substantially beyond the cerci (Figure 3a: pmp). In *O. atrocyana*, the paraprocts extend to about the same level as the cerci (Figure 3f: pmp). Although *O. atrocyana* has a vast range and may vary geographically, all authors agree on this character (e.g. Dijkstra et al., 2014; Fraser, 1933). In ventral view, this difference is seen as the main process of the paraproct being larger and more robust in *O. priydak* sp. n. (Figure 3c: pmp) than in *O. atrocyana* (Figure 3 h). The ventral lamina of the paraproct in *O. priydak* sp. nov. is smoothly convex in ventral view (Figure 3c: pvl) while in *O. atrocyana* it is more convex, almost forming a rounded blunt angle (Figure 3 h). The lateral lamina of the paraproct is coarse in *O. atrocyana*, the projection above the main process is pointed as an acute tooth, as shown in Figure 3f: tp11 (rounded in *O. priydak* sp. nov.; see Figure 3a: sp11), and there is another, upper tooth just below the cercus (absent in *O. priydak* sp. nov.) (Figure 3f: tp11). No projections of the paraproct lateral lamina are shown for *O. atrocyana* in Fraser (1933, figure 180) but the drawing is obviously too schematic to show details. It may be supposed that the structure of the paraproct lateral lamina is not universal over the vast range of *O. atrocyana*. However I observed it in specimens from such distant localities as Mondulkiri Province of Cambodia and Peninsular Thailand (Phuket); note that the latter locality belongs to the same biogeographical region as Singapore, a part of the type locality of *O. atrocyana*. In *O. atrocyana*, the subapical dorsal tooth of the main process is scarcely expressed.

No reliable differences of *O. priydak* sp. nov. from *O. atrocyana* were apparent in females (Figure 4), even in the prothorax and mesostigmal plate morphology. Most *O. atrocyana* females examined have the ventral half of the ovipositor black, those with the ovipositor entirely yellow being immature. The female paratypes of *O. priydak* sp. nov., which do not look immature, have the ovipositor yellow or only slightly darkened at margins (Figure 4c). Available female specimens of *O. atrocyana* have much less yellow on the legs than in *O. priydak* sp. nov., confined to the protrochanters and small basal spots at the femora bases. However, these coloration details may be variable and unreliable. *O. priydak* sp. nov. seems to be at the upper limit of size observed in *O. atrocyana*. The hind wing length is 18.0–20.6 mm in the former and 16–21 mm in the latter according to published measurements (Fraser, 1933; Lieftinck, 1932; Orr, 2005; Tang et al., 2010). A female from Phuket (grassy swamp at Nay Yang Beach area, 2009) at my disposal is even smaller, with the hind wing 15.0 mm long. At least the pair of *O. atrocyana* from Mondulkiri Province of Cambodia are smaller than *O. priydak* sp. nov.: hind wing 17.0 mm in the male and 16.8 mm in the female, abdomen 23.8 mm in the male and 21.3 mm in the female.

Habitat

Both localities of the new species were grassy swamps (Figure 5). The type locality (Figure 5a, b) is a large grassy swamp in a flat valley, upstream of a low dam, with vegetation changing from downstream to upstream from low Poaceae to tall Cyperaceae, with abundant *Alocasia* (Araceae) at the transitory zone. The second locality (Figure 5c, d) is partly a tall grass/fern swamp with bushes (mostly *Melastoma*) and sparse trees, partly a moist, short-grass buffalo pasture in place of the swamp. In general the area belongs to the Central Plateau of the Annamese Mountains and is a hilly land at 500–900 m asl covered with savannah, with semi-evergreen forest in valleys.

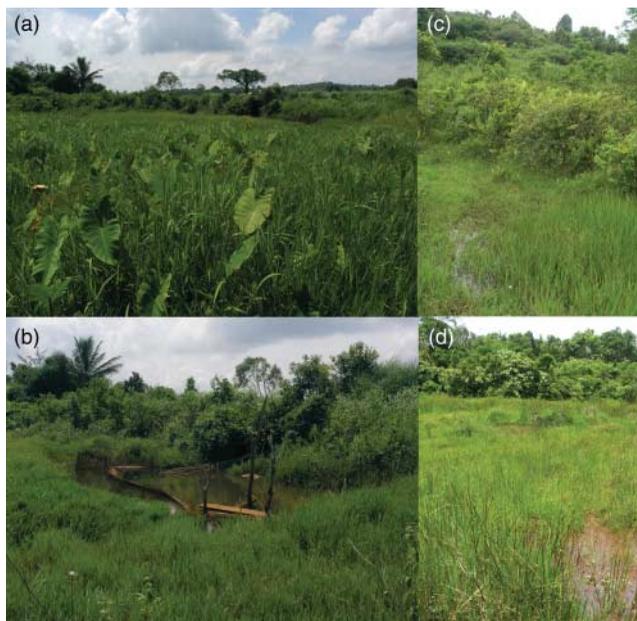


Figure 5. Habitats of *Onychargia priydak* sp. nov.: (a, b) the type locality, Cambodia, Mondulkiri Province, a grassy swamp at Sen Monorom, 8 June 2014; (c, d) the second locality, Cambodia, Mondulkiri Province, Dak Dam village environs, a moist pasture and margins of tall grass swamp, 16 June 2014.

Discussion

O. priydak sp. nov., so far known only from Mondulkiri Province of Cambodia, is no doubt close to the widespread *O. atrocyana*. The males of these two species have literally an opposite appearance (Figure 2), “white” versus black, respectively, because of the strong white pruinescence in *O. priydak* sp. nov. Presumably this difference provides females of both species with an excellent visual cue for conspecific match recognition in the situation of sympatry. Although both species were not found at exactly the same localities, both were present in the area and their habitats are similar. Since females of both species seem to lack visible differences, possibly these are females who choose males for mating rather than vice versa. The larger paraprocts in *O. priydak* as compared to *O. atrocyana* may further ensure accuracy of conspecific mating mechanically.

The swampy habitats of the new species are typical also for the second and well-known representative of the genus, *O. atrocyana* (Lieftinck, 1954; Orr, 2005; Tang et al., 2010). *Paracnemis alluaudi* Martin, 1903 from Madagascar, representing the second genus of Onychargiinae, is also connected to swampy habitats (Dijkstra et al., 2014)

The diagnosis of the subfamily Onychargiinae Dijkstra et al., 2014 contains the following statement “Male cerci distinctly shorter than 10th abdominal segment and subequal to paraprocts” (Dijkstra et al., 2014, p. 28). Here “subequal” should be changed to “not larger” since in *O. priydak* sp. nov. the paraprocts are larger and longer (Figure 3a: pmp) than the cerci (Figure 3a: cop).

With the discovery of this second species of *Onychargia* from Cambodia, with females scarcely differing from those of *O. atrocyana*, earlier records of *O. atrocyana* for this country by Kosterin (2010, 2012, 2014) become dubious. For Preah Sihanouk Province the genus was reported from a tandem collected at Ream recreation centre (Kosterin, 2010), but re-examination of the specimens revealed they were two females, by chance simultaneously netted. The report from Kampot was based on a visual observation of a female (Kosterin, 2012). The record from Ratanakiri Province (Ban Lung, Kan Seng Lake, a floating bog) was based only on teneral individuals without colour. Records of mature males are necessary to confidently identify the *Onychargia* species from these places. It should be, however, noted that the white males of *O. priydak* sp. nov. are much more conspicuous in vegetation than the black males of *O. atrocyana*, so the former is a species difficult to overlook. Its having remained hitherto undescribed may indicate a very restricted range, which should, however, extend to South Vietnam, since both localities of the new species are close to the Vietnamese border. However, if the extensive pruinosity of *O. priydak* sp. nov. males is primarily for species recognition and is reinforced in sympatry with *O. atrocyana* by selection against interspecies hybridisation, it might be not so well expressed in males *O. priydak* beyond the region where the two species overlap. There males of *O. priydak* sp. nov. might easily have been misidentified as *O. atrocyana* by coloration and male appendage morphology should be checked. This issue needs further investigation.

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