Description of *Devadatta cyanocephala* sp. nov. from Vietnam
(Zygoptera : Amphipterygidae)

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Abstract: A new amphipterygid damselfly species, *Devadatta cyanocephala* sp. nov. (holotype male from Vietnam, Thua Thien Hue Province, Bach Ma), is described and illustrated in both sexes and compared with other Indochinese taxa in the genus.

Key words: Amphipterygidae, *Devadatta cyanocephala*, new species, Vietnam

Introduction

*Devadatta* Kirby, 1890 is a small genus of ancient oriental damselflies including half a dozen described species, recorded from Laos, Vietnam, southern China (Guangxi), Malay Peninsula (incl. southern Thailand), Sumatra, Borneo, Basilan, Mindanao, Dinagat and Luzon. Their closest relatives are the species of *Amphipteryx* Selys, 1853 from Central America. *Devadatta* are drably coloured and rather inconspicuous, inhabiting bogggy springs and rocky streamlets in well-shaded tropical forests from the lowlands to an altitude of 1600m.

The type species of the genus *Devadatta* was originally described by Selys-Longchamps (1859) as *Tetraneura argyoides* by a single male specimen from Singapore, collected by A. R. Wallace. The genus appears to be most diverse in Indochina, from where three species have been named earlier : *D. multinervosa* from Laos (Fraser, 1933), *D. ducatrix* from Northern Vietnam (Lieftinck, 1969) and *D. glaucinotata* from Laos (Sasamoto, 2003).

During separate entomological surveys in Central Vietnam in 2001-2003, both Jan van Tol (the National Museum of Natural History, Leiden) and Karube collected many specimens of a peculiar blue faced *Devadatta* from several localities in Thua Thien Hue Province. These turned out to be conspecific with the taxon ' *Devadatta* sp. indet.' recorded and characterized by van Tol and Rozendaal (1995) on the basis of two female specimens from Nghe Tinh and Quang Tri Provinces in Central Vietnam. They considered them to represent clearly an undescribed species, but refrained from naming it since at that time no male specimen was known. Now with both sexes available, including additional male specimens from Lam Dong Province from southern Vietnam found by Karube, this conspicuous new species is described here.

*Devadatta cyanocephala*, sp. nov.
(Figs. 1-12)

*Devadatta* sp. indet.; Van Tol & Rozendaal, 1995 : 91-92 (Descriptive notes on female and discussion).

13°E, Thua Thien Hue Prov., C. Vietnam, 3-4 IV. 2001, J. van Tol and collaborators leg. (JvT 26171-26174); 2 ♀, 40km W. of Hue: Khe Ca Loc (stream nr junction O Lau river, (alt. 60m), w=5m, d=10-50cm. Disturbed forest). 16°31'15"N 107°12'45"E., Thua Thien Hue Prov., C. Vietnam, 22. III. - 7. IV. 2001, J. van Tol leg. (JvT 26175-26177); 1 ♀, Huong Son district. W. of Rao Qua (Logging road along tributary of the An Bun R. Rivulets through grass and rocky stream, edge of logged forest). (alt. 100-150m), 18°24'N 105°15'E., Nghe Tinh Prov., C. Vietnam, 1. VI. 1990, F. G. Rozendaal leg. (JvT 1070); 1 ♀, A Shau valley. 4km NW. of Lang Ka Kou (Fast flowing clear mountain stream through primary forest). (alt. 490m), 16°22'N 107°07'E., Binh Tri Thien Prov., C. Vietnam, 10. VI. 1988, F.G. Rozendaal leg. (JvT 1069).

Most paratypes from Karube's series are kept in the Kanagawa Prefectural Museum of Natural History (Odawara) and those from van Tol's series at RMNH (Leiden), respectively. Several paratypes are in the collections of M. Hamalainen and A. Sasamoto.


Description. —A dark, medium to large sized *Devadatta* with a conspicuously pale blue face in the male (Figs. 1, 3-5). Longitudinal veins and their supplements smoothly recurved towards wing margin, similarly so in fore and hind wings (Fig. 7).

Male. Head. —Labium brownish white at base; tips of middle lobes brown; movable hook of lateral lobes black. Face conspicuously caerulean blue (Figs. 4, 5). Blue colour covers the entire labrum, base of the mandibles and adjacent parts of the genae, clypeus and frons with adjacent parts of genae to the eye border, extending upwards to the level of base of antennae. Antennae dark brown with the anterior side of pedicel partly bluish. Vertex shining

Figs. 1-4. *Devadatta cyanocephala* sp. nov. General habitus of (1) male & (2) female; (3) close-up of male head and thorax; (4) living male photographed in Nam Dong District in Thua Thien Hue by Mr. Bui Huu Manh on 26 April, 2005.
black with a narrow, pale brown streak between lateral ocelli and base of antennae. Occiput concave, matt black above, brownish below; specimens from Lam Dong Province with a pair of small, pear-shaped yellowish spots on the posterior margin. Postocular lobes protruded slightly posteriorly.

Thorax. — Prothorax dark or blackish brown, a pair of small pale yellowish spots on the anterior lobe; outer margin of the posterior lobe narrowly pale, more broadly so at sides. Specimens from Lam Dong Province with more pronounced pale markings, with obscure pale markings also laterally on the middle lobes.

Synthorax (Fig. 3) dark brownish above, becoming darker on sides; ground colour of mesepimeron and metepisternum black in older specimens. Narrow yellowish cream bands along the humeral and first lateral sutures, the latter band becoming broader anterior to the stigma. A small pale spot present on mesepimeron near wing base, close to the humeral suture. Metepimeron with broad pale margins. In most specimens the pale areas of the first and second lateral sutures are connected anterior to the stigma. In the specimens from Lam Dong Prov. the pale stripes, especially along the humeral suture, are broader and more distinct, the pale spot near wing base being connected to the stripe; dorsum of synthorax with narrow, obscure, pale brownish stripes bordering the dorsal carina. Ventral surface of thorax uniform pale greyish yellow. Coxa and trochanter with dark and pale brown and grey intermingled. Femora and tibiae greyish brown.

Wings (Fig. 7) — Hyaline, with slight iridescence on the membrane; tinted a little brownish in the aged insects. Tips of both wings distinctly suffused with dark brown for 0.5-1.2 mm. Venation black. Wings quite rounded apically. The number of antenodals in both wings varies from 6 to 11, of which 4-5 (rarely 6) are aligned across the costal and subcostal spaces; number of accessory antenodals apicad to arculus in the costal space varies from 2 to 5 (usually 3). The number of postnodals varies greatly from 24 to 41. Forewing petiolated about halfway between the base and nodus, petiolation of hindwing slightly longer. Arculus situated usually at the level of 5th antenodal. Discoidal cell long, usually 3-celled (sometimes 4-celled). Forewing cubital space with 3-5 crossveins before Ac; hindwing with 3-7. Longitudinal veins gently recurved towards the wing margin, similarly so in both wings. Usually only one cell row between 1A and wing border, or two cell rows to the extent of 1-3 adjacent cells. 1A reaches the wing margin a little beyond the level of the nodus, CuP correspondingly about halfway along the margin. Pterostigma dark brown, tear-drop shaped as typical for the genus, the costal margin very swollen. Pterostigma usually covering 3-4 underlying cells.

Abdomen. — Brown with distinct pale yellowish rings at the base of 3rd to 7th segments; the rings occupying 1/5 - 1/4th of the segment length; on the ventral side the rings are considerably longer. Small pale spots on the sides of 2nd and 8th segments, near the anterior border. Apical third of 2nd to 7th segments darker brown than the middle part. 9th and 10th segments black. The three apical intersegmental rings conspicuously pale above. In
the specimens from Lam Dong Prov., there are no distinct yellowish rings, but the anterior 3/4th of 3rd to 7th segments are pale brown and the posterior 1/4th blackish brown. In dorsal view 8th and 9th segments are slightly expanded towards the apex.

Anal appendages shaped as in Figs. 8-9: inferiors about half length of superiors. Superiors blackish brown, ca. 1.5 times as long as the 10th segment. Base of superior appendages thick and slightly swollen inwards, then strongly concave inside around the middle of its length. Distal half arched inwards and slightly upwards, with the apex somewhat dilated; dorsally and laterally bearing many minute denticles. Inferiors above pale with distinct black tip pointing inwards; ventrally and laterally blackish brown. In lateral view, inferiors taper apically, hooked upwards at tips. In dorsal view, they are bilobed in the middle, and the apices hooked sharply inwards.

Penis (Figs. 10-11).—Glans of penis with a pair of slender and angled protuberances, with the apices a little dilated. Distal part of glans forms two ear-shaped lobes. Penis stem bearing golden yellow hairs on both sides.


**Female.** A distinctly more robust insect than the male (Fig. 2). Head with less extensive blue colouration (Fig. 6). Labrum blue (sometimes with a narrow black central indentation in the upper half); base of mandibles and adjacent portion of genae blue. Clypeus and frons shining black. Genae between the base of antennae and the level of the upper margin of clypeus bluish. Thorax and abdomen coloured similarly to male. Abdomen very robust, relatively shorter than in male. Ovipositor (Fig. 12) dark brown. Ventral margin of lateral valvula bearing tiny serrated spines. Tip of lateral valvula reaching a little beyond the paraproct. Wings more extensively (1.5-2.0 mm) tipped with dark brown than in male; venational details fall almost within the range of variation described for the male.
A new *Devadatta* from Vietnam

Measurements (in mm). - Hindwing 33 - 37, abdomen (incl. appendages) 35 - 39.5. Specimens from Bach Ma are larger than those from the lowlands.

*Etymology.* The species name *cyanocephala* (Greek) after its blue-coloured head.

*Distribution.* Central and southern Vietnam.

*Variation.* This new species shows clear geographic variation. The southern specimens (so far only males known) from Lam Dong Province differ from those from the central provinces by the following respects: (1) the pale stripes on the synthorax are broader and better defined, (2) the pale basal rings on sides of 3rd to 7th abdominal segments are very inconspicuous or lacking, usually the basal 2/3rd of each segment is pale brown and the apical third dark brown, and (3) the wing tips are only faintly and narrowly darkened.

Like in many other odonate species, specimens from higher altitudes are larger in size than the specimens from lowlands; cf. the size of specimens from Bach Ma (altitude ca 1,000m) and Phong Dien and Khe Ca Loc in the lowlands.

*Remarks.* From the four described Indochinese *Devadatta* species, *multinervosa* differs most from the others by having short, blunt inferior appendages, obviously 1) quite similar to those of *podolestoides* Laidlaw, 1934 and *basilanensis* Laidlaw, 1934. The male anal appendages of the other three species, i.e. *ducatrix*, *glaucinotata* and *cyanocephala* sp. nov. are quite similar, the inferiors being about half of the length of the superiors, with hooked, in-turned tips.

*D. ducatrix* is the only Indochinese species of the genus in which the longitudinal veins in fore wings enter the wing border perpendicularly (see Sasamoto 2003, fig. 2), a character it shares with *argyroides* (see Fraser, 1938, fig. 1). *podolestoides* and *basilanensis*. *Ducatrix* has also a distinctly larger number of ante- and postnodals and more antenodals in which costal and subcostal halves coincide than *glaucinotata* and *cyanocephala* sp. nov. The latter two species are quite close to each other in terms of venation, but in *cyanocephala* sp. nov. the longitudinal veins of the forewing meet the wing margin more smoothly than in *glaucinotata* (cf. Fig. 7 in this paper & Sasamoto, 2003, Fig. 2 a), in this respect *glaucinotata* is somewhat intermediate between *ducatrix* and *cyanocephala* sp. nov. *Cyanopachra* sp. nov. and *glaucinotata* males are easy to tell apart by the colour pattern. The face of *glaucinotata* is entirely dark indigo blue with a metallic lustre and the sides of the synthorax below the humeral suture are largely greyish blue, whereas *cyanocephala* sp. nov. is characterized by a conspicuously sky blue face and the sides of synthorax are blackish brown with narrow pale stripes. The female of *glaucinotata* remains unknown.

Populations of many *Devadatta* species seem to show considerable geographical variation, the taxonomic implications of which still remain uncertain. As regards to the Indochinese taxa, Sasamoto (2003) discussed the differences in topotypical North Vietnamese *D. ducatrix* and specimens from Vang Vieng, Central Laos, identified as *D. ducatrix* by Yokoi (1999), but drew no taxonomic conclusions due to lack of material from the intervening areas.

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1) Unfortunately no figure of *multinervosa* has been published and we have not yet studied the type specimen.

**References**

Fraser, F. C., 1933. Dragonflies from the Laos country. *Journal of the Siam Society, Natural History, Supplement,*


**Abstract:** In Central and South Vietnam, a new species of *Devadatta* (Amphipterygidae) was described. This species, *Devadatta cyanicephala* sp. nov., was found in the Tham Thien Hue Province. The description was based on specimens collected by the author and Dr. van Tol. The new species can be distinguished from the closely related *D. glaucinotata* by its unique color pattern. The species has a blue head and a white thorax, with a distinctive black stripe on the abdomen.

The Annual meeting of the Japanese Society for Odonatology was held at Toyama University, Toyama Prefecture, on October 1 and 2, 2005, and 41 members attended.