

DESCRIPTION OF *HYLAEARGIA MAGNIFICA*

MICHALSKI, A DAMSELFLY FROM PAPUA NEW GUINEA (ODONATA: ZYGOPTERA)

Michalski, J.C., 1996. Description of *Hylaeargia magnifica* Michalski, a damselfly from Papua New Guinea (Odonata: Zygoptera). – Tijdschrift voor Entomologie 139: 29-32, figs. 1-7. [ISSN 0040-7496]. Published 15 October 1996.

Hylaeargia magnifica is a new species of argiine damselfly from the Star Mountains (Victor Emanuel Range) of Papua New Guinea, and is only the second species of its genus. The species is at once distinguished from *H. simulatrix* by its bright blue, yellow, and green body coloration.

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Key words. – Odonata, Papua New Guinea, Argiinae, *Hylaeargia*, new species.

M.A. Lieftinck erected the genus *Hylaeargia* in 1949 to accommodate the single species *simulatrix*, which he described as 'peculiar by the sombreness of its colours' and noted its strong resemblance, both in general facies as well as in certain structural details, to the platynemidid *Lochmaeocnemis malacodora* Lieftinck, which was remarkable on account of the two species being collected in the same locale.

Lieftinck (1949), describes *Hylaeargia* as having the 'stature of *Palaiargia*, but with a larger head, more slenderly built thorax, much narrower wings, and with an entirely different type of male anal appendages'. In Lieftinck's view, the arched and deeply emarginate hind lobe of the female prothorax, the long legs (the posterior femur of which reaches beyond the posterior margin of the first abdominal segment), and the unusual male anal appendages, clearly set *Hylaeargia* apart from all other regional Argiinae.

Lieftinck (1957), suggests that both *Hylaeargia* and *Papuargia* are probably derived from the *humida* group of the genus *Palaiargia*, which is identified by the bluntly rounded wing-tips, strongly curved origin of the vein M_3 , the very oblique pterostigma, the relatively large and bulky thorax, and simple anal appendages.

The new species fits *Hylaeargia* in all particulars, but is clearly distinct from *simulatrix* on account of the male terminalia, female prothorax, and by the bold and distinctive body colors of the male.

The new species was inadvertently described in an article entitled 'New Guinea continued' (Michalski 1995): while it was not the author's intention, the brief general description provided in that article does

indeed satisfy the International Code of Zoological Nomenclature, and therefore those notes may be considered a preliminary description of the species which follows.

Hylaeargia magnifica Michalski, 1995 (figs. 1-7)

Hylaeargia magnifica. – Michalski 1995: 15.

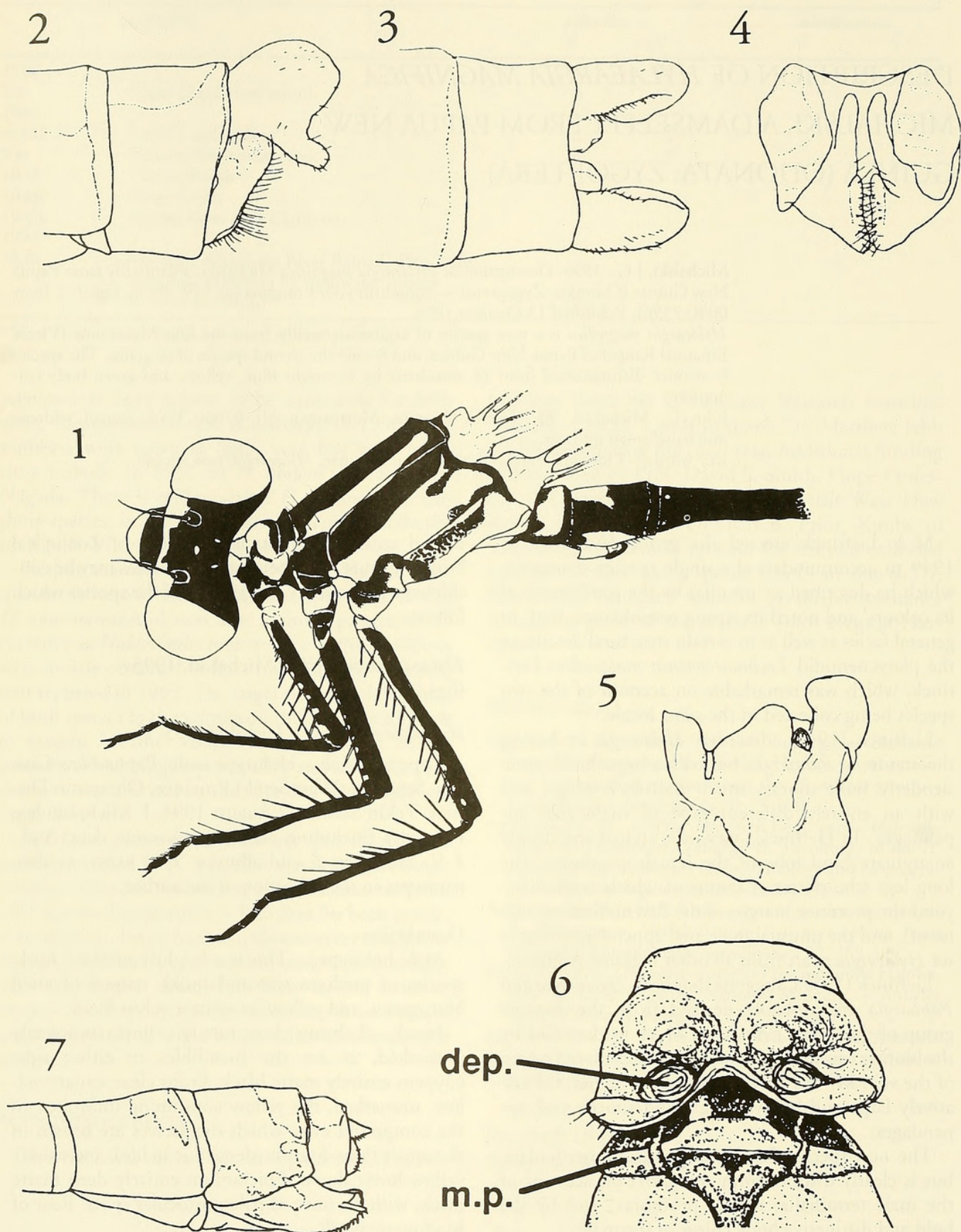
Type material. – Holotype male: Papua New Guinea. Sandaun (West Sepik) Province, Oksapmin District, Tekin Station, 2 August 1994, J. Michalski leg. Paratypes (including an allotype), same data, 3 ♂, 4 ♀. Holotype ♂ and allotype ♀ in RMNH Leiden, paratypes in the collection of the author.

Description

Male holotype. – This is a brightly marked, lively species of medium size and build, striped in vivid blue, green, and yellow set against velvet black.

Head. – Labrum clear, canary yellow, completely unmarked, as are the mandibles to either side. Clypeus entirely matte black. Frons clear, canary yellow, unmarked, the yellow continuing unbroken to the compound eyes, which themselves are brown in the upper three-fourths (deep blue in life), and canary yellow lower down. Epicranium entirely deep matte black, with no trace of pale postocular spots. Rear of head matte black.

Prothorax. – Bright sky blue, the hind lobe and rear portion of median lobe matte black; dorsum of prothorax also matte black in a broad band, isolating the pale areas into two large oval spots.



Figs. 1-7. *Hylaeargia magnifica* Michalski – 1, ♂ head and thoracic pattern; 2, ♂ terminalia, left lateral view; 3, same, dorsal view; 4, same, posterior view; 5, ♀ prothorax, left lateral view; 6, ♀ prothorax and mesostigmal plates, dorsal view; 7, ♀ terminalia, left lateral view.

Pterothorax. – A broad mid-dorsal band of matte black, about 1.5 times as broad as the pale antehumeral stripes to either side. Antehumeral stripes yellowish-green (bright leafy yellow-green in life), broadest anteriorly and narrowing steadily upward; antehumeral stripes reaching nearly to forewing bases. Mesopleural (humeral) suture bordered by a broad, complete stripe of matte black, as wide as the pale antehumeral stripe; humeral stripe extending to interpleural (first lateral) suture anteriorly, but narrowing rearward so that about one-sixth of the mesepimeron is left pale. This pale area, and all the remaining pale areas of the body, are of the deepest, boldest, electric blue coloration. Metepisternum almost entirely pale (blue in life). Upper end of the black humeral stripe reaching the wing bases, continuing as unbroken stripe along subalar carina, with downward extensions along the upper fourth of the interpleural suture and the upper half of the metapleural (second lateral) suture. A jagged, diagonal stripe of black between bases of second and third coxae and continuing rearward along upper edge of metinfraepisternum. Metepimeron pale with an isolated diagonal bar of black, about half the width of the metepimeron and nearly two-thirds its length, located in the dorso-anterior sector of the metepimeron. Venter of thorax pale (bluish), almost unmarked.

Legs. – Black, the interior surface of all femora bright, electric blue, the spines deep black.

Wings. – Hyaline, with no suggestion of smoky pigmentation; pterostigma black. Venation as described by Liefstinck for the genus.

Abdomen. – Segments mainly matte black with markings of bold, electric blue, as follows: sides of segment 1 entirely blue, dorsum with a broad, rearward-pointing triangle of black; segment 2 with large cup-shaped blue spot covering basal half or more of dorsum; segments 3-7 each with a pair of small, dorso-apical dots of blue (almost invisible in preserved specimens); segment 8 with the distal two-thirds or more bright sky blue, the anterior margin of the blue color convex; dorsum of segments 9 and 10 entirely bright sky blue; colors on segments 8-10 are clearly delimited in profile view, the upper halves blue and the lower halves black.

Terminalia. – Cerci (figs. 2-4) entirely matte black, bilobed in profile, the upper lobe wide and round, the lower lobe finger-like and projecting below the horizontal at an angle of around 45 degrees; the appendage taken as a whole presenting a shape like a mitten. Paraprocts entirely black, finger-like and upturned, mostly concealed in profile.

Female allotype. – Coloration similar to the male but with the dark colours of the head and thorax dark brownish-black.

Prothorax. – Posterior lobe (figs. 5-6) in dorsal view with the hind margin produced into a pair of raised, smoothly rounded ridges. Hind edge of median lobe with a pair of weakly-sclerotized oval depressions; these appear to be so situated as to receive the 'thumbs' of the male cerci during copulation.

Pterothorax. – Mesostigmal plates as in figure 6, each lateral flange perpendicularly crossed by a rounded carina with the dorsal/posterior end teardrop-shaped. Antehumeral stripes bronzed olive-green, these stripes much broader than the mid-dorsal stripe separating them. Brown humeral stripe obliquely crossing the mesopleural suture, which is itself covered by a fine pale stripe; in other words, the humeral stripe is interrupted or jagged, comprising a broad, 'post-sutural' band over the mesepimeron, and narrowing to a fine point dorso-posteriorly; and a fine 'antehumeral' wisp of a brown stripe coming down from the forewing base and tapering to a point anteriorly, the two dark stripes separated by the merest hair of a pale line along the mesopleural suture.

Abdomen. – Segment 2 without any pale dorsal markings; dorsum of segments 8 and 9 with only a broad ring covering the apical one-third to one-half of each segment. Segment 10 entirely blue dorsally; appendages and ovipositor as in figure 7, brownish-black.

Dimensions. – Holotype male: abdomen + appendages 34.5 mm, hindwing 26.0 mm. Allotype female: abdomen + appendages 33.5 mm, hindwing 27.5 mm.

Dimensional range of the paratype series. – Abdomen + appendages 32.5-35.0 mm, hindwing 25.0-27.0 mm.

Variation within paratype series. – The paratypes include three males and three females. The males agree in all particulars with the holotype, except that the wings show a distinct brownish tint distributed evenly throughout the wing membrane. Of the three females, two were immature and, while their markings do not differ appreciably from the allotype, the pale areas of the body are of a frosty pale blue color, including the antehumeral stripes, which are green in the mature female. The immature females present the general facies of the female of North America's *Argia moesta*.

Etymology. – The species is named for its magnificent body coloration, which makes this insect among the most dramatic and lovely Zygoptera in the world.

Remarks. – All of the type series were taken on the same day, the first two or three around noon, the remainder on a return visit about three in the afternoon. The type locality is a small clear brook with a bed of battleship-grey, clayish soil (or rock?). It might have been soft grey limestone, as this is cave country. To reach the site one would take the broad, flat foot-

path which runs from the airstrip-serviced mission station of Tekin, towards the smaller village of Sabate, and from there to points westward, eventually leading to Telefomin. Between Tekin and Sabate, only a few minutes' walk out of Tekin, one comes to this grey-bedded stream where a waterfall about 8 feet high and six feet wide is visible just a few feet back from the road.

Mosses and ferns cling to the vertical face of this waterfall, but apparently this is not the favored retreat of *Hylaeargia*. Just past the fall is a muddy footpath going steeply uphill on the left. Following this path for only a few meters one comes across *H. magnifica* perching on tall grasses and branches over the small ravine through which the stream runs. At this point the stream is something less than one meter across and only ankle deep, and *magnifica* perches on any sunny vegetation without apparent preference (alighting on small ferns only inches from the ground as well as tree branches well out of reach). In behavior it is similar to the American *Argia* with its robust flight, frequent perching in sunny places and, it seemed at the time, fairly high population density. It did not take long to catch these eight specimens, however time did not permit a more extensive collection.

The only other odonate species encountered here was the libellulid *Diplacina hippolyte* Lieftinck. Only three or four meters upstream from this place the stream emerges from a meter-wide oval hole in the side of the hill. In my limited time I did not explore the stream downhill of the road, nor was I able to explore further uphill to see if the stream came to the surface further on.

The Tekin-Telefomin area will no doubt be a rich source of new material for any worker who chooses to spend time there. Tekin is a tiny station made up mostly of thatched grass-and-wood huts.

Hylaeargia magnifica is truly magnificent in life, with its rainbow of colors set against velvet black. The long black leg spines cross the electric blue of the femora in such a way as to create the effect of a string of blue lights along each leg. It is a pleasure to be able to introduce such a delightful species to the scientific community.

Key to the species of *Hylaeargia*

1. Insect of sombre coloration; the face dirty yellow with slight greenish intermingling, dorsum of synthorax matte bronzy-black, the lateral blue marks dull, not conspicuous in old individuals and often much obscured. Male superior anal appendages about 1.5 times as long as segment 10, sinuate and tapering to a rounded apex, in profile shaped something like an 'inflated Y', with the

upper spur of the 'Y' short, broad and rounded, the lower spur more than twice the length of the upper, though not as broad, and pointing ventrad 45 degrees below the horizontal; the inferior appendages slightly less than one-half the length of the superiors. Posterior lobe of female prothorax in dorsal view with the hind margin produced into a pair of rearward-pointing, triangular peaks. Dist.: Central North New Guinea

- *simulatrix* Lieftinck
- Insect of brilliant coloration; the face bright canary-yellow, the antehumeral stripes bright leaf-green, the remainder of the body painted in deep electric-blue with velvet black sutures. Male superior anal appendages about equal in length to segment 10, in profile shaped rather like a boxing-glove, generally spherical with a downward- and rearward-projecting 'thumb'; the inferior appendages about one-half the length of the superiors. Posterior lobe of female prothorax in dorsal view with the hind margin produced into a pair of raised, smoothly rounded ridges. Dist.: Star Mountains (Tekin) *magnifica* Michalski

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