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REDISCOVERY OF *METACNEMIS ANGUSTA* (SELYS) IN THE WESTERN CAPE, SOUTH AFRICA, WITH DESCRIPTION OF MALE AND REDESCRIPTION OF FEMALE (ZYGOPTERA: PLATYCNEMIDIDAE)

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M. angusta was described from a ♀ type in 1863, which has since been lost. The only other specimen is another ♀ taken in 1920 in the Western Cape, South Africa. The sp. was feared extinct, but a population was discovered in November 2003. The ♂ is described here as a neotype, along with a redescription of the ♀ as a paratype. Although the conservation status of the sp. has improved, it is still threatened, principally by invasive alien trees.

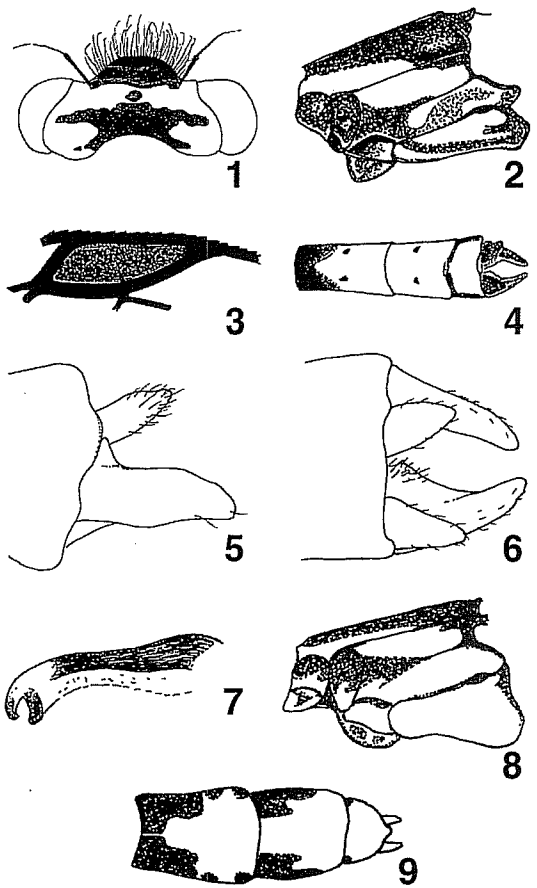
INTRODUCTION

The female holotype of *Metacnemis angusta* (Platycnemididae) was described by SELYS (1863), but now appears to be lost (PINHEY, 1980). The only other specimen, also a female, of what appears to be the same species, was taken at Ceres, Western Cape, South Africa in November 1920 by R.E. Turner. This specimen is in good condition and is in the Natural History Museum, London. PINHEY (1980) strongly suspected that the Turner specimen was *M. angusta*. However, he did not designate it as a neotype, because of what he considered as great morphological variation in the genus, preferring to wait until more specimens became available. The male remained undescribed. On November 2003, a population of a platycnemidid was discovered by W. and M. Tarboton in the Dutoitsrivier valley, near Villiersdorp, Western Cape, South Africa. The females in this population are identical to Turner's specimen, and now that a series of females, as well as males and mating pairs, are available, it is appropriate to describe this species in detail.

METACNEMIS ANGUSTA SELYS, 1863

Figures 1-9

M a t e r i a l. – **Neotype** ♂: SOUTH AFRICA: Western Cape Province, Dutoitsrivier, near Villiersdorp 380 m a.s.l. 33°57'S, 19°10'E. 25-XI-2003 (M.J. Samways); **paratype** ♀, in copula. Both held in same envelope. Photographed in situ. Lodged at Iziko Museums of Cape Town. Additional material (6 ♂, 6 ♀), same data, and Coll. W. Tarboton (15-XI-2003). **Paratypes** (1 ♂, 1 ♀) lodged at Natural History Museum, London. Remaining paratypes at Department of Conservation Ecology and Entomology, University of Stellenbosch. No specimens acetone-treated. All colours are those in life.



Figs 1-9. *Metacnemis angusta*, male neotype (Figs 1-7) and female paratype (Figs 8-9): (1) head from above; – (2) synthorax, left side; – (3) pterostigma, right forewing; – (4) abdomen, segments 8, 9 and 10 from above, with colour patterning: – (5) appendages, left side; – (6) idem, from above; – (7) tip of prophallus; – (8) synthorax, left side; – (9) abdomen, segments 8, 9 and 10 from above, with colour patterning.

MALE (**Neotype**). – General appearance: greyish blue to dark blue and black head and thorax, abdomen black with bright greyish blue tip. Superficially like a *Pseudagrion* sp.

H e a d. – Labium buff. Labrum bright-greyish-blue. Genae greyish blue. Anteclypeus and postclypeus dull black. Postclypeus with long, black setae, curved at their tips (Fig. 1). Frontal band greyish blue, but blackish along margin with postclypeus. Vertex bright greyish blue with a strong matt black, forked marking (Fig. 1). Eyes blackish above, greyish buff below.

T h o r a x. – Prothorax above black, with buffish, greyish patches on lower half of sides. Dorsum of synthorax dull black (Fig. 2). Antehumeral stripe wide and distinctive, greyish blue. Mesepimeron dorsally with a wide, black stripe running anteriorly to mesinfraepisternum. Metapleural suture bordered in black against a buffish, greyish blue background. Interalar area black with greyish blue spots. Wings clear. Arculus coincident with, or very slightly distal to, 2nd antenodal crossvein. Pterostigma, as in Fig. 3, dark reddish brown with fine, pale brown margin posteriorly and distally. Interior dimensions of pterostigma almost four times longer than wide. Legs black, with fine, buffish or bluish speckles on trochanters and poximal ends of femur.

A b d o m e n. – Greyish black, with segments 1-2 slightly bluish, last two-thirds of segment 8, segment 9 and segment 10 pale greyish blue above. Segments 8 and 9 each with two black dots dorsally (Fig. 4). Superior appendages short, pointed, greyish black and divergent (Figs. 5, 6). Inferior appendages long, pointed, forcipate, blackish but greyish on the interior edges (Figs 5, 6). Tip of prophallus fork-like, without terminal flagella (Fig. 7). Body overall not pruinose, but black areas all have a greyish tinge, the light hue of which appears to lie within the cuticle.

M e a s u r e m e n t s (in mm). – Total length (incl. apps) 29-30, abdomen (incl. apps) 22-22.5, hindwing 15.5-16.

FEMALE (**Paratype**). – General appearance: very similar in size and general colour to male, but stouter.

H e a d. – Almost identical to male, although blue areas can become almost whitish, especially frontal area. Eyes browner than male.

T h o r a x. – Very similar to male, although pale areas more extensive (Fig. 8). Humeral stripe generally greyish blue, although can be whitish. Wings and pterostigma very similar to male, although wings can be slightly fumose.

A b d o m e n. – Dorsal, black area not as extensive as in male. Small, bright, pale blue saddle on segment 1. Pale tip of abdomen far less extensive than in male, and with very irregular edges compared to male (Fig. 9).

HABITAT AND BEHAVIOUR. – Habitat is pools in river braids, with bushy fynbos margins and floating leaves of the water plant *Aponogeton distachyus*. Male moves across the water, close to the surface, regularly landing to perch lengthwise, often horizontally along twigs or stems of reeds or grasses. Females often among males over the water, but sometimes in bushes or among tall grass some metres from the water.

DISCUSSION

TAXONOMY

The specimens described here are all from one population, thus the male matches the female. The females are identical to the Turner specimen, and therefore it is appropriate to designate it a paratype, along with the other females. Now that the male is known, one specimen is designated the neotype. These specimens all match Selys' description, including banded vertex, banded synthorax, very pointed pterostigma and the abdominal patterning. The only difference is that

Selys records an abdominal length of 25 mm and a wing length of 19 mm. This is distinctly larger than our specimens, which may have gone through a genetic bottleneck with only the smallest surviving. Limited habitat and even intraspecific competition for the available habitat may also have contributed to the small size.

This species is clearly distinct from the Eastern Cape species *Metacnemis valida* Hagen which is not only much larger (ca 40 mm long), (rather than 30 mm of *M. angusta*) has a much shorter pterostigma (barely twice as long as wide) (compared to nearly four times as long as wide in *M. angusta*) and much shorter inferior appendages compared to superior ones (much longer inferior appendages compared to superior ones in *M. angusta*).

PINHEY (1980) tentatively restored *Mesocnemis* as a separate genus from *Metacnemis*. Morphology of *M. angusta* supports this separation. Both *M. angusta* and *M. valida* share the three metacnemine conditions of the arculus being coincident with the second antenodal crossvein, a forked prophallus without flagella, and a lack of pruinescence. In *Mesocnemis*, the arculus is between the first and second antenodals, the prophallus has flagella and, at least in *Mesocnemis singularis* Karsch, there is well-developed pruinescence.

CONSERVATION

M. angusta was formerly Red-listed as Critically Endangered (CR) (SAMWAYS, 2002). However, with discovery of this population, it has been downlisted to Endangered (EN) (SAMWAYS, 2004). Nevertheless, invasive alien trees (*Acacia* spp.) remain a major threat (SAMWAYS and TAYLOR, 2004). Now that the species has been rediscovered, it encourages further searches in suitable habitats, especially where invasive alien trees have been removed.

ACKNOWLEDGEMENTS

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DESCRIPTION OF THE LARVA OF *SOMATOCHLORA INCURVATA* WALKER (ANISOPTERA: CORDULIIDAE)

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The last larval instar is described and illustrated from material collected in central and southeast Wisconsin, United States, and the larval habitat is described. The larva differs from related species in the *arctica* group of *Somatochlora* in having a greater head width and in the dorsolateral setal patterns on abdominal tergites VI-IX. Segment IX has distinct paired dorsolateral tufts, and VIII, VII, and VI have progressively less defined to absent paired tufts. These characters distinguish the species from the most similar species, S. *forcipata*, and all others of the *arctica* group.

INTRODUCTION

The larva of *Somatochlora incurvata* Walker is among the last North American members of the genus to be described, despite being distributed in fairly well studied states (MA, ME, MI, NY, OH, PA, WI) and provinces (NB, NS, ON, QC) (NEEDHAM et al., 2000). In July, 1997, W.A. Smith (WAS) observed *S. incurvata* females ovipositing at two poor fens in Jackson County, WI. Six larval *Somatochlora* in the *arctica* group (WALKER, 1925) were collected at one of these sites by W. Steffens in October of 1997, which could not be determined using existing keys and descriptions. The larvae from this site were kept alive and reared by WAS. Four of the larvae emerged in February 1998 and were determined to be S. *incurvata*. The remaining two final instar larvae were sent to Dr Rick Purdue of the Illinois Museum (ISM) for mitochondrial DNA (mDNA) analysis. mDNA analysis provides tentative identification of larval specimens by comparing base