

**COENAGRION BIFURCATUM SPEC. NOV.
A NEW DAMSELFLY FROM HEILONGJIANG, CHINA
(ZYGOPTERA: COENAGRIONIDAE)**

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The new sp. (holotype ♂ and allotype ♀: Mao-er shan, Dong-ling, Heilongjiang, China, 15-VII-1999; deposited at Heilongjiang Nonken Teachers' College, Achen) is described, illustrated and compared with *hylas*.

INTRODUCTION

Twelve *Coenagrion* species have previously been recorded from China, i.e. *armatum*, *concinum*, *convalescens*, *ecornutum*, *glaciale*, *hylas*, *lanceolatum* and *lunulatum* (syn. *vernale*) listed from Manchuria by ASAHINA (1942); *dorothea* and *kagiens* (Taiwan) listed by DAVIES & TOBIN (1984); *chusanidum* and *needhami* are named by NAVAS (1933). The new species is compared with *hylas* in this paper.

COENAGRION BIFURCATUM SP. NOV.

Figures 1-10

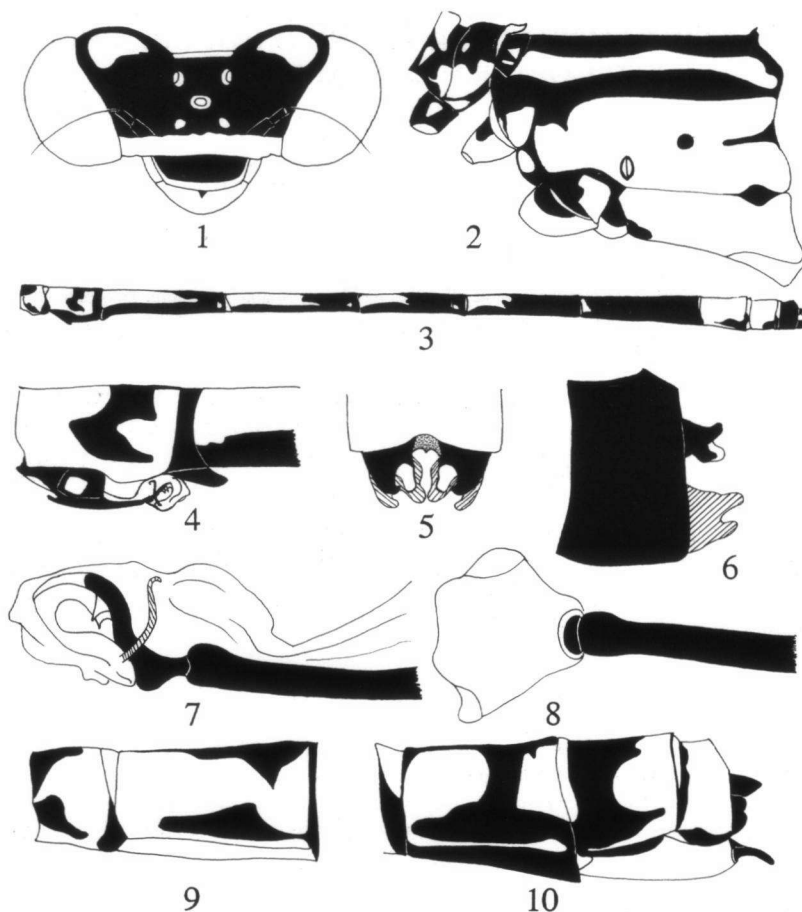
M a t e r i a l . – Holotype ♂, allotype ♀: Mao-er shan, Dong-ling, Heilongjiang, China, 15-VII-1999; deposited at Heilongjiang Nonken Teachers' College, Achen; – paratypes: 1 ♂, 1 ♀, Jiang-po Lake, Heilongjiang, 24-VI-1999, deposited at Shanxi University, Taiyuan, China.

E t y m o l o g y . – Named after the bifurcate shape of its superior and inferior anal appendages.

M A L E . – H e a d (Fig. 1). – Labium yellow; labrum, anteclypeus, gena and bases of mandible, pale blue, except the labrum which has a minute mid-basal spot of black; post-clypeus, frons, vertex and occiput black, the frons margined with a transverse band extending to eyes and a pair of small spots above it, the occiput with postocular spots large and the hind border pale blue.

T h o r a x (Fig. 2). – Prothorax black, anterior lobe pale blue in front half, and

with two pairs of lateral spots; middle lobe with a pair of small dorsal spots, and the sides broad pale blue; posterior lobe pale blue. Pterothorax with antehumeral stripes pale blue, 2nd lateral stripes incomplete above, and a spot just before its lower end; 3rd lateral stripes incomplete above, fusiform, continued as a fine streak along postero-lateral suture and broadly furcate behind hind coxae. Sterna black, except the distal parts yellowish. Legs yellow, extensor surface of femora and flexor surface of tibia black, hind tibia armed with 9 spines. Wings hyaline,



Figs 1-10. *Coenagrion bifurcatum* sp. nov., Heilongjiang: Figs 1-8 (δ): (1) head; - (2) thorax, lateral view from left; - (3) abdomen, lateral view from left; - (4) abdominal segment 2, lateral view from left; - (5) anal appendages, dorsal view; - (6) the same, lateral view from left; - (7) penis, distal segment, lateral view from right; - (8) the same, ventral view. Figs 9-10 (σ): (9) abdominal segments 1 and 2, lateral view from left; - (10) abdominal segments 8, 9 and 10, lateral view from left.

pterostigma covering a little more than half of one cell, braced, grey-brown, framed finely in obscure yellow and black nervures, 12-13 postnodal nervures in forewings, 11 in the hind, Ac and A' meeting on posterior edge.

A b d o m e n (Figs 3-4). – Segments 1 and 2 pale blue, with a large dorsal spot and the sides black on 1st, the 2nd marked with a broad bilobed dorsal spot, connected narrowly to apical ring and mixed with the black intersegment; segments 3-7 with broad basal bands pale blue and increasing by degrees at each segment, which also have a pair of small spots on 7th, a pair of distal spots on segments 3-5; segments 8 and 9 pale blue, both marked with a pair of apical lateral spots; segment 10 black.

Anal appendages (Figs 5-6). – Black, both superior and inferior divaricate, the superior shorter than the inferior and half the length of segment 10, the inner lobe obviously coloured white.

Genitalia (Figs 7-8). – Yellow, except the stalk which is black, the recurved terminal lobe of penis broad in ventral view, forming a shield-shaped whole and armed dorso-apically, with a pair of flagella, brownish.

M e a s u r e m e n t s (mm). – Hind wing 18; abdomen 25.5.

FEMALE (Figs 9-10). – Similar to male, differs as follows: labrum with basal half black, without the small frons spots; abdominal segment 2 has the dorsal spot divided into a pair of lateral and a pair of dorsal stripes, and marked with a narrow mid-dorsal stripe extending the whole length of the segment; segment 8 pale blue, divided into two pairs of large dorsal spots and with a pair of finely lateral pale streaks; segment 9 with basal half irregularly black, and segment 10 pale blue, with the basal and lateral margins finely black.

Anal appendages black, longer than half of segment 10. Vulvar scale robust, not extending to the end of abdomen, yellowish. Stylus and paraproct black.

M e a s u r e m e n t s (mm). – Hind wings 21; abdomen 26.

AFFINITIES. – The new species is fairly similar to *hylas* with respect to the markings of segments 3-8 (δ), differing as follows:

<i>bifurcatum</i> sp. nov.	<i>hylas</i>
– with a pair of spots and a transverse broad band on frons (Fig. 1)	– frons black, without pale colour
– 3rd lateral stripes incomplete above (Fig. 2)	– 3rd lateral stripes complete
– segment 2 with the dorsal spot complete, shaped as a broad bilobe (Figs 3-4)	– segment 2 with the dorsal stripe divided into a dorsal stripe and a pair of lateral stripes
– segment 10 entirely black (Figs 3-6)	– segment 10 black and with pale lateral edges
– both the superior and inferior divaricate as seen in lateral view (Fig. 6)	– only the superior divaricate as seen in lateral view

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