Odonatologica 36(4): 399-403 *December 1, 2007*

SHORT COMMUNICATIONS

THE LARVA OF *GOMPHIDIA T-NIGRUM* SELYS FROM NEPAL (ANISOPTERA: GOMPHIDAE)

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Received November 10, 2006 / Revised and Accepted March 22, 2007

The final instar exuviae from the Phewa Tal lake at Pokhara, Nepal is described and illustrated and comparison is made with *Ictinogomphus rapax* larvae, inhabiting the same water body. Mention is made of the more noted differences between the SE Asian Lindeniinae genera.

INTRODUCTION

Gomphidia t-nigrum was recorded by FRASER (1934) from northern India and from Deccan. Its range is given as N India by DAVIES & TOBIN (1985). This was thought to be the first record of this species from Nepal (KEMP & BUTLER, 2001).

Males of the species were observed flying in the overflow area from the Phewa Tal lake at Pokhara, approximately 140 m North of the Fishtail Lodge Hotel. Adults and exuviae were taken around this area of the large lake, whereas adults, larvae and exuviae of *Ictinogumphus rapax* (Ramb.) were seen and collected in all other parts that were explored, but only occasionally seen with *G. t-nigrum* and no exuviae of the former species were found at the above mentioned area. One larva of *I. rapax* was later bred out in the United Kingdom.

MATERIAL USED

Four final instar exuviae of *G. t-nigrum* were collected in situ, and 30+ *Ictinogomphus rapax* exuviae were collected (22/26-V-2005) from other niches.

Comparative material from my collection includes: *Gomphidia abbotti* Williamson [Malaysia], *G. madi* Pinhey [Ivory Coast], *Ictinogomphus pertinax* (Selys) [Japan], *I. decoratus melaenops* (Selys) [Ma-

laysia], *I. fraseri* Kimmins [Cameroon], *I. dobsoni* (Watson) [W Australia], *Sinictinogomphus clavatus* (Fabricius) [Japan] and *Gomphidictinus perakensis* (Laidlaw) [Malaysia].

Illustrations of the following were also used: *Gomphidia confluens* Selys (NEEDHAM, 1930), *G. kellogi* Needham (WILSON, 1995), *G. kirschii* Selys (NEEDHAM & GYGER, 1937; SEIDENBUSCH, 1995), *Ictinogomphus australis* (Selys) (THEISCHINGER, 2000) and *I. ferox* (Rambur) (CHELMICK, 2000; CORBET, 1962).

GOMPHIDIA T-NIGRUM SELYS

Figures 1, 3-5

Material. – 1♂ and 3♀ final instar exuviae, Phewa Tal lake, Pokhara, Nepal, 26-V-2000.

Length 29 mm including labium in situ (Fig. 1), typical lindeniine type in build, heavily armoured and covered with a liberal coating of mud.

Head. – When viewed dorsally, sub-pentagonal in shape, its surface bearing fields of short, fine setae on the frons, ocelli and occiput, mainly situated on raised areas. The eyes are comparatively large and have a lateral border which protrudes outwards as a blunt projection. Distal to the ocelli the frontal plate is developed into an inverted T-shaped ridge (Fig. 5), the antennal bases slotting on either side of the extruding centre piece. These bases are set somewhat lower than their surrounds, being slightly concealed in dorsal view. The antennae are the typical lindeniine type, having a long cigar-shaped 3rd segment and a tiny 4th. Segmental ratios 1-4 as follows: 2,0: 1,0: 6,9: 0,1. Long, spiny setae are present on the first three segments.

Head ratio l × b = 4:8 (including the clearly visible labrum and clypeus). Ridges are present on the lateral margins of the occiput and pronounced bosses are situated on either side of the central suture, about halfway between it and the lateral margins.

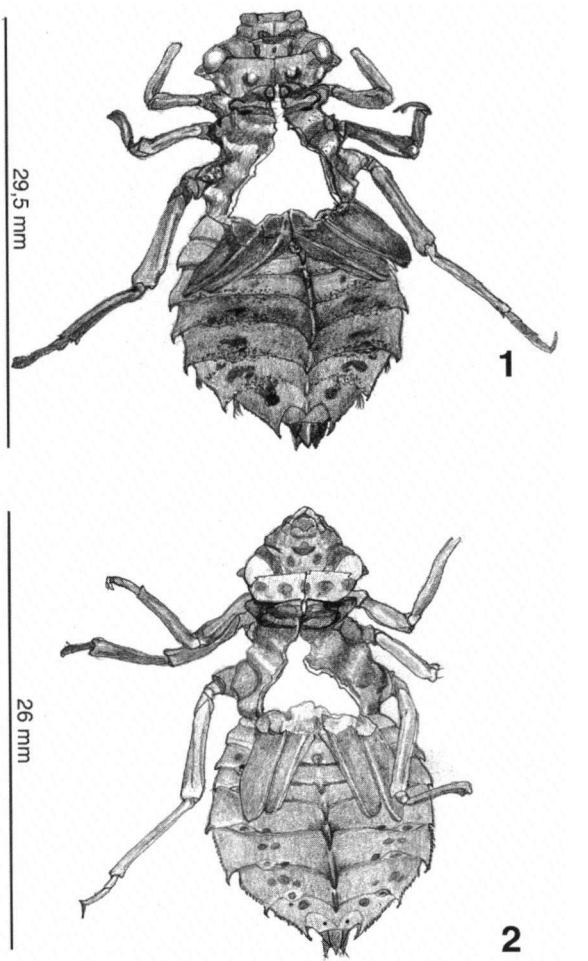
Labium (Fig. 4) is small 4 mm in length and 4,5 mm in width, being widest approximately ½ way along, then tapering noticeably towards the distal border. It is dark brown in colour with fine setae on its dorsal surface and fringes of long, stout setae on both lateral and frontal margins. The ligula is semi circular in shape and bears a fringe of long setae. The labial palps are stocky, their internal margins bearing small teeth and ending in a stout distal hook.

Thorax. – Prothorax has a raised inverted triangular portion, the width of the whole prothorax being less than that of the occiput. A large horn-shaped process is visible below either side of the pronotum.

The legs are short and stocky, the femora being marked with a pair of dark rings. The tibiae are slender, but short; the hind pair being only as long as the femora. The fore and mid tarsi are short and bear hooked claws, the posterior tarsi are longer with finer claws.

Abdomen (Fig. 1). – Ovate to sub-circular in shape, its ground colour is light brown. The dorsal surface is smooth, bearing scale-like setae arranged in

rows along the distal margin of segments 2-8. Dark blotchings are visible on segments 3-9 approximately 1/3 of the distance from the dorsal spines to the lateral margins. The largest on segments 3-8 are elliptical, that on segment 9 is circular. Dorsal spines are present on segments 2-10, those on 2 and 3 point vertically, those on segments 4-6 are fused to form a continuous ridge, the succeeding segments bear spines which are separate and overlap the next segment and which descend rapidly producing a somewhat humped appearance. Ventrally the colour on the basal segments is similar, darkening gradually distally. The central 1/3 of the abdomen is flattened, but is flanked laterally by ribbed segments. Along the centre of each raised part run a row of scales, which may be the bases of setae, presumably eroded by constant rubbing against the substrate. The whole ventral surface is covered with a scattering of fine setae mixed with slightly darker somewhat flattened backwardly pointing tiny spines.

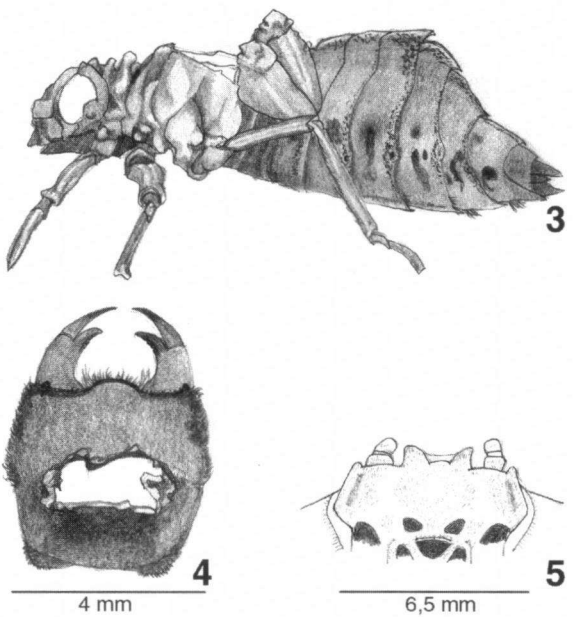


Figs 1-2. General aspect of exuviae, dorsal view: (1) *Gomphidia t-nigrum*; – (2) *Ictinogomphus rapax*.

Lateral spines are present on segments 2-9, those on segments 2 and 3 almost concealed by dense tufts of setae.

DIFFERENTIAL DIAGNOSIS

Ictinogomphus rapax, the only other cohabiting Lindeniinae species, exhibits clear differences, on both head and abdomen (Fig 2). Frontal processes are present between eye and antenna, but are much less pronounced and the antennae are set only slightly below the dorsal surface of the head. The lateral projections are only just visible lateral to the eyes and the occiput has rather small lateral ridges and no central bosses.



Figs 3-5. *Gomphidia t-nigrum*: (3) habitus left side view, showing locking of dorsal spines on segs. 4-6; – (4) labium, dorsal view; – (5) ocellar area, showing anterior plate and processes.

On the abdomen dorsal spines are visible on segments 1-9, but not on 10, neither are the spines on segments 4-6 fused together (Fig. 2). The Asian species of *Gomphidia* and *Ictinogomphus* in my collection seem to show these as consistent differences, however the two African genera do not exhibit the same critical features. *Gomphidictinus perakensis* shows a further development of the above-mentioned head processes, plus lateral spines which are developed sideways on segments 3-7. The whole larva is covered in densely packed setae.

ACKNOWLEDGEMENT

For identification in the field and for general support, thanks are due to R.G. KEMP.

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