

## Larva and pupa of European species *Atylotus sublunaticornis* (Zetterstedt, 1842) (Diptera, Tabanidae)

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Although the adults of 13 species of the genus *Atylotus* Ost.-Sack. have been described from Europe, descriptions of larvae of only one species have been published so far.

Sharp (1901) described a larva of the family Tabanidae which he says may belong to species *Atylotus fulvus* (Meigen, 1820). This description and some drawings are not acceptable and this paper is referred to for its historical value.

In contrast, Ivanišček (1970) described and figured larvae of *Atylotus fulvus* (Meigen, 1820) with some distinctive characters: e. g. pubescence, striations, the length of antennal segments.

A much better situation is in North America, where some larvae and pupae of genus *Atylotus* Ost.-Sack. have been studied e. g. by Cameron (1926), Stone (1930), Roberts & Dicke (1964) and mainly Teskey (1969), who precisely described and figured larvae and pupae of seven species.

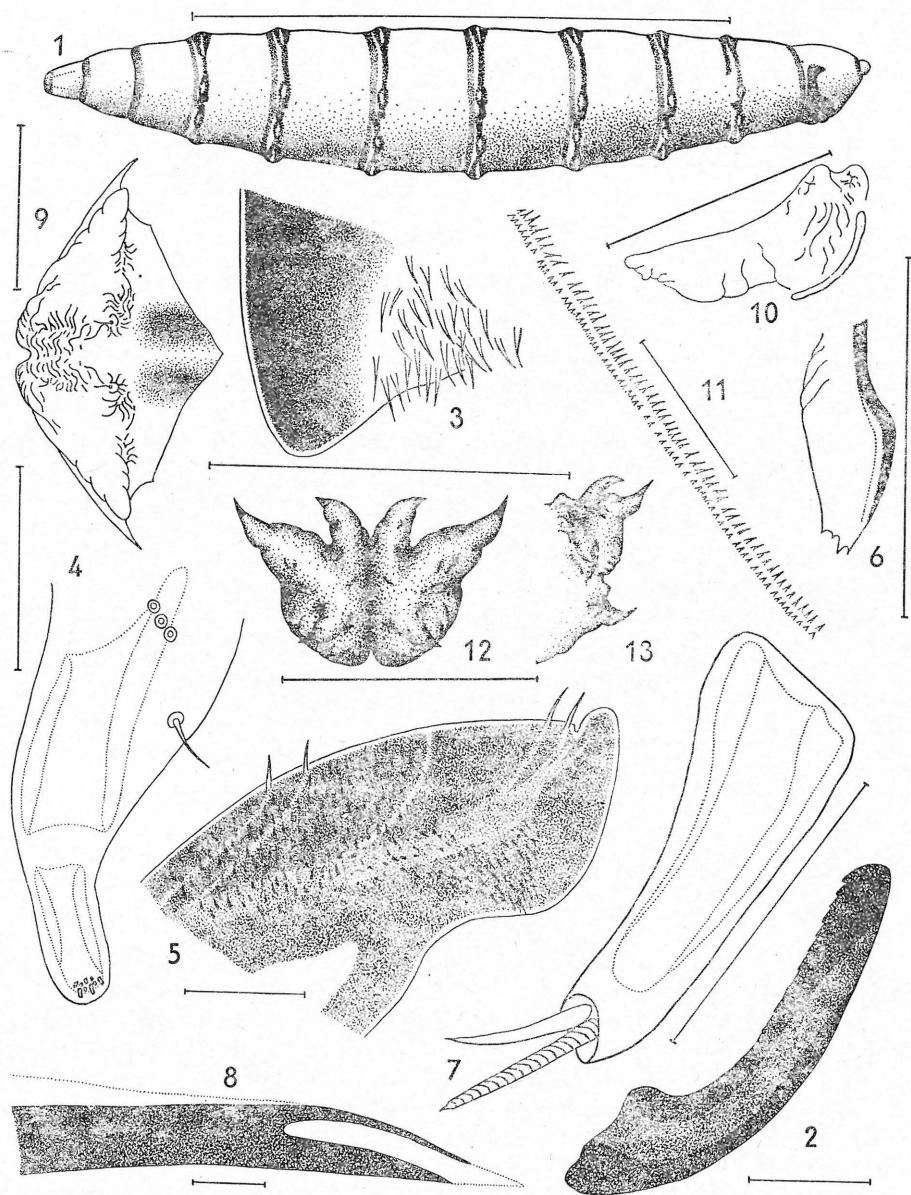
### Genus *Atylotus* Osten-Sacken, 1876

No generic characters were found to separate larvae and pupae of *Atylotus* Ost.-Sack. and *Tabanus* L. The group as a whole is rather compact.

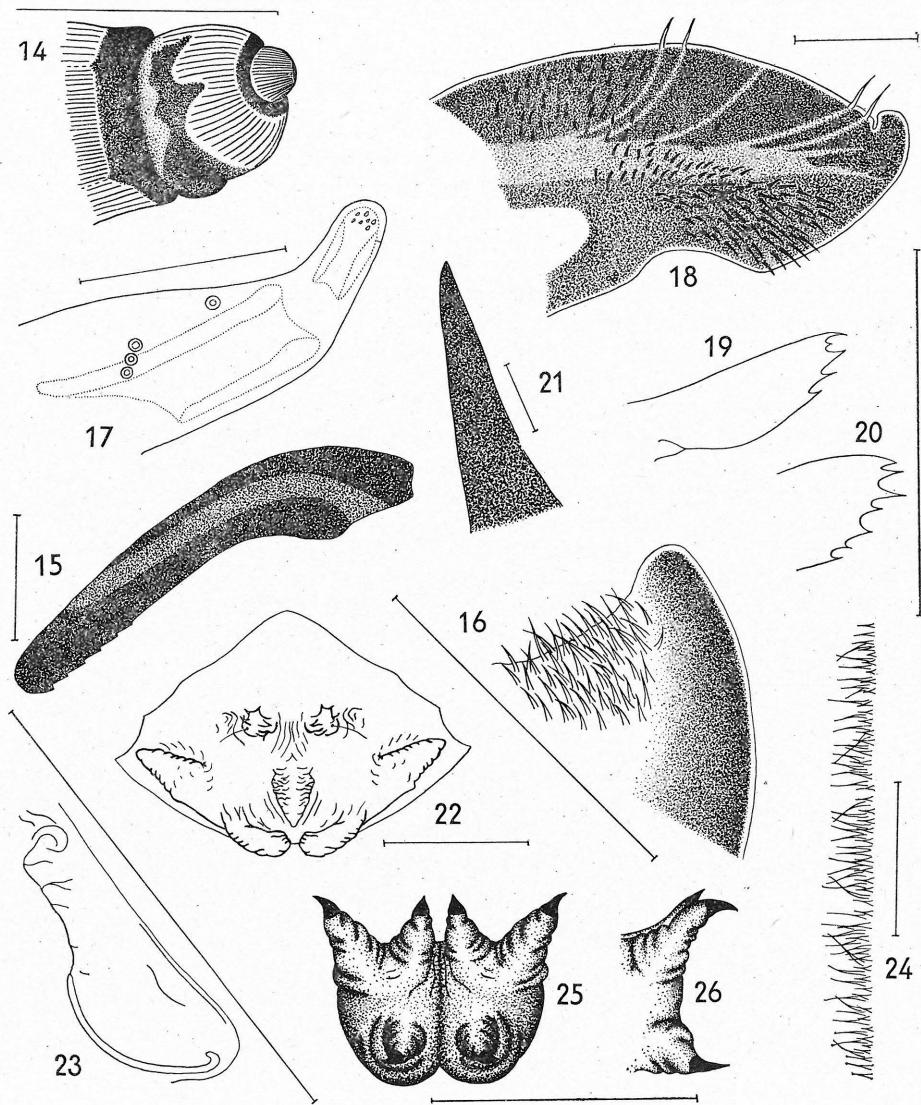
### *Atylotus sublunaticornis* (Zetterstedt, 1842)

Last instar larvae (Fig. 1)

15 mm long when extended, the coloration uniformly creamy-white. Epicranial stripes of the head capsule disunited in hind part (Fig. 8). Mandibles rounded, with 13 teeth — 4 stronger in anterior part, 9 smaller in posterior part (Fig. 2). Maxilla, Palpus maxillaris, Glossa, Clypeus and Labrum and Antenna as figured (Figs. 3, 4, 5, 6, 7). Cephalic brush with great number rather thin disunited spines. Dorsal and ventral discs of thoracic segments without striations. Many striae of all segments incomplete, striations inconspicuous. The striations of the siphon narrower than on the anal segment. Prothoracic pubescent annulus narrow, with 5 longitudinal grooves (2 dorsal, 2 lateral, 1 ventral), annuli of meso- and metathorax very inconspicuous. Pseudopodial pubescence encircling first seven, abdominal segments; connected to anterior pubescence only ventrolaterally on segments 4 to 9. Posterior pubescence narrowly encircling anal and preanal segment. The largest spines of pre-anal ridge as long as the length of transverse cuticular rods or a little longer. Siphon very short.



Figs. 1—13: *Atylotus sublunaticornis* (Zett.). 1 — Last instar larvae (schematically), lateral view. 2 — Mandible. 3 — Maxilla. 4 — Maxillary palp. 5 — Clypeus and Labrum. 6 — Glossa. 7 — Antenna. 8 — Epicranial stripe. 9 — Head shield of pupa (♀). 10 — Mesonotal spiracle. 11 — Spinose fringe on the 4th abdominal tergite. 12 — Anal aster, caudal view. 13 — The same, lateral view. The scale line represents 1 cm in Fig. 1, 0.1 mm in Figs. 2—8, 1 mm in Figs. 9—13.



Figs. 14–26: *Atylotus ohionensis* (Hine). 14 – Anal segment of the last instar larvae (schematically), lateral view. 15 – Mandible. 16 – Maxilla. 17 – Maxillary palp. 18 – Clypeus and Labrum. 19, 20 – Glossae (variation). 21 – Epicranial stripe. 22 – Head shield of pupa (♀). 23 – Mesonotal spiracle. 24 – Spinose fringe on the 4th abdominal tergite. 25 – Anal aster, caudal view. 26 – The same, lateral view. The scale line represents 1 mm in Figs. 14, 22–26, 0.1 mm in Figs. 15–21.

### Pupa

Pupal case 14 mm long, uniformly coloured yellowish-brown except for inconspicuous darker patches near dorsal margins of the head shield (Fig. 9). The wide median cleft between frontal crests very deep, the crests very long, rounded on the inner side, flanked above by very strong rugose areas with vertical sulcus. The frontal tubercles broad, rather irregularly shaped, with rugosities, dorsally with small pit. Antennal sheaths slightly surpassing epicranial suture, with rugosities dorsally. Mesonotal spiracle (Fig. 10) with rugose surface, with rather deep furrow anteriorly. The cleft dorsally behind rima deep, without pigmentation, rugosities very distinct. Spiracular mound on the first abdominal segment larger than on the following segments, rima semicircular to straight. Abdominal fringes (Fig. 11) biseriate, spines of posterior series slender and acuminate, of the same basal diameter but about twice to three times as long as adjacent anterior spines. Pleura of the 7th segment altogether with about 70 spines, dorso-lateral combs with 3—4 very small spines. Lateral combs with 9—11 spines of the same size as posterior spines on 7th tergite, preanal fringe in female with 8—9 spines on both sides. Anal aster as figured (Figs. 12, 13).

Material: 1 exuvie of last instar larva, 1 pupal case (♀). Larva was found 11. 7. 1969 in *Sphagnum* sp. on the margin of peatbog of nature reservation Mrtvý luh env. Volary (Bohemia mer.) with plants such as *Pinus muggo* ssp. *rotundata*, *Betula nana*, *Molinia coerulea*, *Nardus stricta*, *Gentiana pannonica*, *Aconitum napellus*.

Comparative material: 2 larvae of *A. ohionensis* (Hine, 1901), 1 pupal case of the mentioned species (♀). Localities: Tompkins County Airport, Ithaca, New York, coll. H. J. Teskey (larvae June 16, pupa July 12; 1965).

### Acknowledgement

I take this opportunity to express my most sincere thanks to Dr. H. J. Teskey (Canada, Ottawa) for his great kindness in putting the material of larvae and pupal case of *Atylotus ohionensis* (Hine, 1901) for comparison and in permitting me to publish some drawings of preimaginal stages which he has described.

### Summary

Author in the present study described and figured the larva and pupa of *Atylotus sublunaticornis* (Zetterstedt, 1842) for the first time and included some drawings of the larva and pupa of North American species *A. ohionensis* (Hine, 1901) for comparison. Detailed differences were ascertained both on the head capsule of larvae and on its appendages.

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