

## The larva of *Phloeosinus thujae* Perris

(Col. Scolytidae)

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In a newly published work, Lekander 1968, a number of bark beetle larvae of Scandinavian species have been described. For practical reasons species outside Scandinavia were not dealt with. Such material has been investigated however, and a description follows below of the larva of *Phloeosinus thujae*. The material was collected on August 15, 1963, in the South Tyrol, Austria, by professor Dr. K. Schedl. For his kindness in placing it at my disposal I beg to express my sincere thanks.

For further details of the morphological nomenclature, see the work mentioned above.

Head capsule markedly oblong, index 1.12, retracted in prothorax. All epicranial setae are concentrated to the anterior part of the capsule, see fig. E. The frontal and the coronal sutures indistinct, and therefore the frontal shield can be distinguished from the rest of the capsule only with difficulty. There is no endocarinal line.

Epistoma distinctly dark in colour, to the rear limited by one almost straight, continuous line, which laterally does not bend backwards but continues behind the antennal field towards the side of the capsule. Laterally of clypeus there is in the caudal part of epistoma a characteristic inward curve. On the frontal shield there are six to seven pairs of setae concentrated to the anterior part of the shield. All of these, with exception of the hindmost pair, are of about the same length.

The antenna, fig. B, conical without indication of differentiation in stem and club. On the antennal field medially of the antenna there is a very long, vigorous seta, ca 2.5 times as long as the antenna. This seta is situated on a distinct papilla. Laterally of the antenna there is an indication of four, very small setae. In the shape of these setae of the antennal field this species differs distinctly from all species investigated so far.

Clypeus with angular sides and straight anterior border. The clypeal setae short and of the same length. In each pair they are situated relatively far from each other.

Labrum with usually three-lobed some undulated anterior border. The four antero-medial setae are of the same shape, narrow and of uniform breadth. They are bent forwards-downwards. No labral sensillae have been observed.

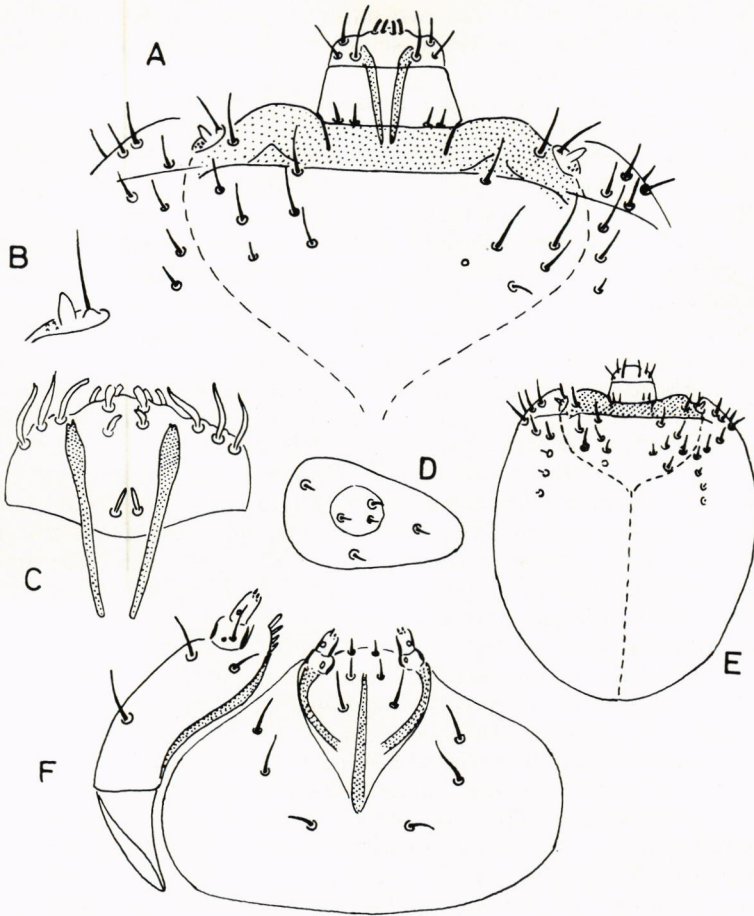


Fig. 1. *Phloeosinus thujae* Per. The head capsule and mouth parts of the larva. A: Anterior part of the head capsule with clypeus and labrum (170  $\times$ ), B: Antennal field with antenna and setae (300  $\times$ ), C: Epipharynx with tormae (320  $\times$ ), D: Pedal lobe, E: Head capsule (60  $\times$ ), F: Maxilla with mentum-submentum (90  $\times$ ).

On epipharynx the antero-lateral setae are situated close to the edge of epipharynx and parallel to this. All setae are long, narrow and of equal breadth. The two foremost pairs of the medial epipharyngeal setae are placed close together at the anterior part of epipharynx. The third pair is situated far back. The setae in the two anterior pairs are broad and in the last pair narrow lancet-shaped. The epipharyngeal sensillae are probably lacking.

The tormae are long and narrow, a little broader in the anterior part and taper and converge backwards.

Mentum with a peculiar shape as the arms are not attached to the axis but independent to this, which has not been observed in such a distinct form in any other earlier described bark beetle larva. The axis is long, tapering forwards.

On the ligula the setae in the two pairs are situated at equal distance and are of the same length. The three setae on submentum are not placed in a straight line but at an angle.

On the pedal lobes there are three small setae see fig. D.

The systematists have constantly placed the genus *Phloeosinus* in a tribus of its own, *Phloeosinides* or *Phloeosinina* among the Hylesinides in connection with *Phthorophloeoides*, Reitter 1908, Nüsslin 1912, Nunberg 1954, Pfeffer 1955. Nüsslin, who has thoroughly studied both the external and internal morphology of the imago, stresses that the species in almost all respects is isolated among the Hylesinides. There are, however, some connections with *Phthorophloeoides* and *Hylesinides* (primarily *Phloeotribus*).

Obviously also the larva shows a mixture of characteristic features which can each connect with different genera. Further, there are some details which — as far as is known — are quite unique to this species. It is, however, quite clear that the nearest relations are to be sought among the so called derivative Hylesinides sensu Nüsslin (*Hylesinus*, *Leperisinus*, *Phthorophloeus*, *Phloeophthorus* and others). The strikingly oblong head capsule, the narrow, posteriorly converging tormae and the three setae on the pedal lobe point in that direction. The larva differs, however, from the derivative forms mainly in the shape of the antenna. This is not differentiated in club and stem but conical. This type is characteristic for the archaic Hylesinides as *Hylastes*, *Blastophagus* and *Dendroctonus*.

Among other things the species differs from the other Hylesinides in greater number of setae on the frontal shield (6—7 pairs), which, involuntarily, carries the thoughts to the genus *Carphoborus*, with the larvae of which it shows other very striking similarities, such as the indistinct frontal suture, the lack of endocarinal line, the shape of the posterior border of epistoma, the four uniform antero-median setae and the dispersed clypeal setae, which are of the same length. This confirms a previous opinion, Lekander 1968, viz. that the genus *Carphoborus* in different respects shows striking similarities with some Hylesinin-genera.

Besides the above mentioned characteristics, which are also to be found in other larvae, the larvae of *Phloeosinus* has some specific features, which hitherto have not been found in any other larvae, such as the peculiar shape of the setae on the antennal field and the construction of mentum.

The morphology shows that the species is closely related to the derivative Hylesinides, but owing to some specific details it cannot be placed in the genera-group *Hylesinina* sensu Lekander 1968. It must be placed in a group of its own *Phloeosinina* in direct connection with the former. In this respect the morphology of the larva quite confirms the conception of the „imaginal-systematists“.

#### References

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