A description of the larva of Eremotes elongatus Gyll. (Col. Curc.) and a comparison between this and the Hylastes larvae (Col. Scol.)

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In the description of some *Magdalis* larvae, Lekander 1967, the great resemblance between these and the *Scolytus* larvae was stressed. This led to a continued discussion of a hypothesis briefly mentioned in the description of the Scandinavian bark beetle larvae, Lekander 1968, viz. that the bark beetles probably do not belong to a monophyletic but a polyphyletic family, the origin of which is to be sought among different groups of weevils. Earlier authors, e.g. Nüsslin 1911, Escherich 1923 and Chararas 1957, may have been thinking along the same lines, but their thoughts were never expressed. In order further to elucidate these hypothetic relationships a comparison has been made between the weevil genus *Eremotes* and the bark beetle genus *Hylastes*, since the authors mentioned made statements and investigations to illustrate a possible connection. The reason for the discussion about just these two genera is the striking similarity between the imagines.

Thus, Nüsslin 1911, proposed that the tribus *Cossonini*, to which among others the genus *Eremotes* belongs, should be removed from the family *Curculionidae* and be placed in a family of its own between *Curculionidae* and *Scolytidae*, as the only major difference between the actual tribus and the bark beetles was the biology. Chararas 1957, who made a thorough comparison between the anatomy of larvae and imagines of some Cossonines and above all *Hylastes ater*, has proved that with some minor exceptions no principle differences exist in the anatomy. His investigations mainly concerned the alimentary canal, the Malpighian tubules and the genetalia. He described the external morphology of the larva quite superficially, however, and the short description and the pictures he published not only say very little, but are impossible to use in a thorough analysis.

As a detailed comparison of the external morphology of the larva has until now been lacking in the discussion about the relationship of the Cossonides and *Hylastes* in particular, the larva of *Eremotes elongatus* Gyll. has been investigated. Regretfully this species is the only one I have had at my disposal. A detailed description of *Hylastes brunneus, cunicularius* and *opacus* is to be found in the account of the Scandinavian bark beetle larvae op.c. In Scherf 1964 there is only a short description of the *elongatus* larva,

but in this connection it is too incomplete, especially as the description is not elucidated with pictures. The following description of the larva of *Eremotes elongatus* Gyll. is therefore necessary.

The larva faintly bent, fully grown about 5 mm long with black dots at the stigmata, dots which disappear in conservation fluids. On prothorax a faintly coloured dorsal shield. Head capsule, fig. G, yellow-brown, broader than long, index 0.9. Frontal and coronal sutures distinct. Frontal shield, fig. A, broad, posteriorly rounded with four pairs of setae, the two anterior of which are somewhat longer. Epistoma without tubercle, posteriorly delimited by a broken line which laterally turns backwards. Endocarnial line missing.

Antennae, fig. E, differentiated in club and stem. On the antennal field laterally of the antenna there are four setae, one of these with divergent appearance as it is broader and stronger. Caudally of the antenna there is one small seta.

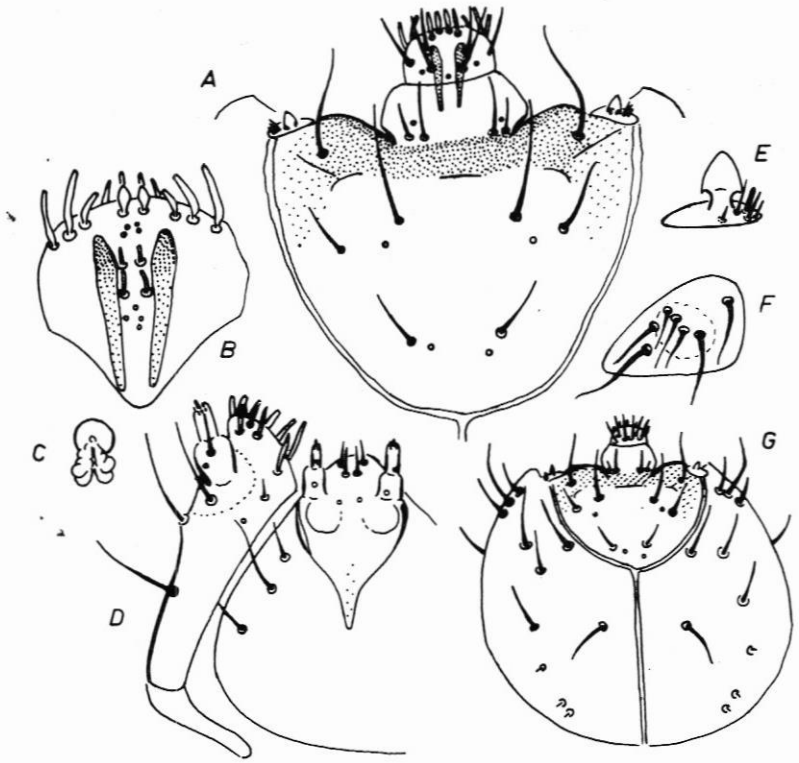
Clypeus, Fig. A, with sides bent outwards. The clypeal setae of different length, in each pair placed near each other. Labrum, fig. A, with evenly rounded anterior border. The four antero-medial setae of the same length, lancet-like. The three sensillae placed in triangle. On epipharynx, fig. B, the antero-lateral setae are placed parallel with the anterior border. Of the three pairs of medial setae the anterior pair is as a broad lancet, the two posterior ones narrow and of equal breadth. Between the first and second pairs and caudally of the third one there are a number of irregularly placed sensillae. Tormae, fig. B, long, strong, anteriorly broader, faintly converging backwards.

Mentum, fig. D, distinctly sclerotized, triangular with broadly attached arms and with only faintly indicated axis, which in its posterior part is free only to a slight degree. Palpi with two oblong articles. On submentum the three setae in a straight line. On ligula there are two pairs of setae of the same length, the distance between the setae in the anterior pair is greater than that in the posterior one. On pedal lobes, fig. F, there are four setae, one of which is somewhat longer. Stigmata, fig. C, with two air sacs.

Without any doubt this *Eremotes* larva corresponds very closely to the bark beetle larvae, as no essential characteristics unfamiliar to these have been observed. On the other hand it is difficult to relate the actual larva to any of the bark beetle larva which have been described up till now. The following comparison, which will be made primarily with *Hylastes,* will illustrate the relationship.

Head capsule index: *E*(remotes) 0.90, *H*(ylastes) 0.90. This low index figure is characteristic of a.o. the genus group *Hylastina* sensu Lekander, i.e. *Hylastes, Hylurgops, Blastophagus* and *Dendroctonus*. The form of the frontal shield is identical in *E* and *H,* it is however found also in other related genera e.g. *Blastophagus*. Frontal setae principally the same in *E* and *H* as in many other bark beetle genera. Endocarinal line lacking in *E* but present in *H* as other *Hylastina*. In *Phloeosinus,* however, it is lacking as in some *Hylesinus* species.

Antenna in *E* differentiated, in *H* not differentiated as in the other *Hylastides*. A differentiated antenna on the other hand is to be found in e.g. *Xylechinus, Hylesinus, Carphoborus*. Antennal field with a different, broad seta has in addition to *E* also been described from *Polygraphus* and *H. cuni-*



Eremotes elongatus Gyll. A: Frontal shield with clypeus and labrum, 115×, B: Epipharynx, 230×, C: Stigma with air sacs, D: Maxilla with mentum and submentum, 140×, E: Antenna and antennal field, 230×, F: Pedal lobe, G: Head capsule, 70×.

cularius. Antero-medial setae in *E* of the same appearance, in *H* of different size as in all *Hylastides*. Similar setae as in *E* are described from e.g. *Hylesinus, Carphoborus*. Antero-lateral setae in *E* as in all Hylesinin orientated genera placed parallel to the anterior border of epipharynx. In the Ipin orientated, however, they are placed in a different way.

Sensillae on epipharynx in *E* between the first and second pairs of median setae and caudally of the third pair. In *H* as other described bark beetle larvae the sensillae, if present, are situated between the second and third pairs and caudally of the third one. Mentum with broadly attached arms in *E* and *H* as in closely related genera. Submental setae in *E* in straight line, in *H* as in all other *Hylesinini* in triangle. *E* is in this respect like the Ipin orientated genera where they are throughout placed in a straight line. On the ligula there is a different distance between setae in the two pairs in *E* and *H* as in other *Hylastides* and some other genera. Setae on the pedal lobes in *E* and *H* four. Hitherto this number has only been described from *Hylastides*.

Thus a comparison shows that there is a certain similarity between the *Eremotes* larva and the *Hylastina* larvae. The most important differences are the differentiated antenna and the location of the submental setae. The *Eremotes* larva shows in its morphology a mixture of characteristics which point in different directions, but without doubt the similarity is striking to the genera group *Hylastina*. Above all the number of setae on the pedal lobes and the setae on the antennal field are evidence of this assumption. A direct connection to the genus *Hylastes* is, however, difficult or impossible, but I would not consider it unthinkable that *Cossonini* here represented by *Eremotes* and *Hylastina* or some related genera group systematically stand near each other, probably they are more closely related than with many other Curculionid respectively Scolytid groups.

Litterature

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