

Redescription of *Gelis longulus* (Hymenoptera: Ichneumonidae), a parasitoid of *Ocnerostoma piniariellum* (Lepidoptera: Yponomeutidae)

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Abstract. *Gelis longulus* (Zetterstedt), reared from pupae of *Ocnerostoma piniariellum* Zeller collected on *Pinus cembra* L. in northern Italy, is redescribed. The lectotype designation is reported. Notes on its biology, distribution and other known hosts and a short list of other natural enemies of *Ocnerostoma piniariellum* Zeller in Europe are given.

INTRODUCTION

Ocnerostoma piniariellum Zeller is widely distributed in Europe and is known as larval miner of needles of coniferous trees (Friese, 1960). During an outbreak of this species on *Pinus cembra* L. in the Foscagno valley (Sondrio, northern Italy) in 1991, specimens of both sexes of an ichneumonid, *Gelis longulus* (Zetterstedt), emerged from the pupae of this Yponomeutidae. Other specimens were collected later on needles of *Pinus cembra* L.

The result of the examination of this and other material of *Gelis longulus* (Zetterstedt) is given.

MORPHOLOGY

Until now the identity and variation of *Gelis longulus* have not been clarified. Most authors have confused this species with some related species, such as *Gelis agilis* (Fabricius) nec auct. (syn. *Pezomachus instabilis* Förster) (Aubert, 1991) and *Gelis edentatus* (Förster). From the former, females are differentiated by their densely hairy gaster (with the exception of some aberrant small specimens) and in most specimens by their colour. From the latter, females can be distinguished by their more slender legs and the profile of their clypeus, which is more strongly convex.

Males can be differentiated from those of other known species (but males of most species of *Gelis* are still unknown) by some features of the head: head somewhat small, eyes strongly divergent ventrally, ocelli large.

Gelis longulus (Zetterstedt, 1838)

Cryptus (*Pezomachus*) *longulus* Zetterstedt, 1838: 371f. The lectotype ♀ (here designated) is labelled: “*C. longulus* ♀ Giebostad.”, “Syntypus *Cryptus longulus* Zett. Horstmann 1966” and “Lectotypus ♀ *Cryptus longulus* Zett. des. Mart. Schwarz '91” (coll. Zoologiska Institutionen, Lund). A second specimen, labelled as paralectotype, belongs to the same species as the lectotype.

Horstmann (1968) declared "*Cryptus (Pezomachus) longulus*" Zetterstedt as "nomen oblitum". Since there is no confirmation from the International Commission on Zoological Nomenclature the name is still in use (cf. Hinz, 1985).

REDESCRIPTION (♀)

Colouration. Black: usually majority of body, often coxae. Brown: palpi. Orange: sometimes part of head or rarely almost the entire head, often basal part of flagellum or rarely the entire flagellum, sometimes pronotal collar, sometimes parts of mesoscutum or rarely the entire thorax, rarely the propodeum and first segment of gaster at the apex or rarely the entire first segment. Yellow brown or red: mandible without teeth. Red brown or dark brown: legs. White: base of tibiae. Red: sometimes apical margin of gastral terga.

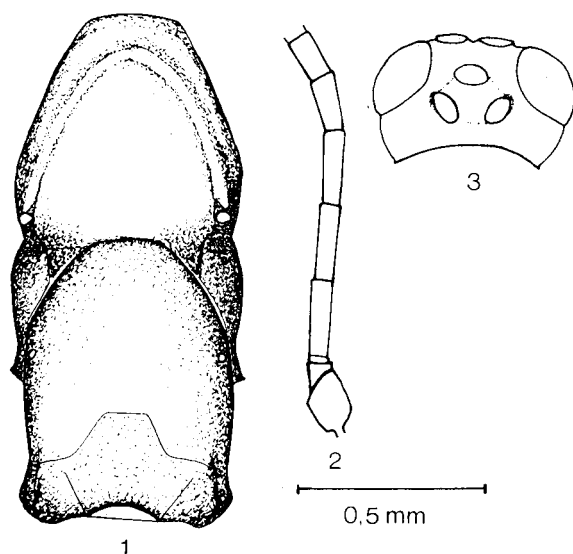
Head. Sculpture coriaceous or partly granulate; antenna 18–20 segmented, with third segment 3.1–4.2 times and seventh segment 1.7–2.3 times as long as wide (Fig. 2). Clypeus convex, with lower margin rounded to straight; genal carina reaching oral carina above base of mandible; malar space without sulcus; malar space 1.0–1.3 times as wide as basal width of mandible; width of compound eye 1.6–2.3 times the length of temple.

Thorax (Fig. 1). Mesoscutum fused with pronotum, 0.8–1.5 times as long as wide, plain, hind margin almost straight; scutellum not or only scarcely separated from mesoscutum; mesoscutum 0.6–0.8 times as long as horizontal part of propodeum; mesosternum longer than width of basal segments of flagellum. Hind femur 4.1–4.7 times as long as high. Wings absent.

Propodeum (Fig. 1). Horizontal part long, approximately twice as long as area postica; apical transverse carina present but often interrupted in the middle.

Gaster. Densely or moderately densely hairy, rarely sparsely hairy (small specimens); first segment with dorsolateral carina, epipleurum of second segment separated by a crease, narrow, 3.5–7.6 times as long as wide; ovipositor sheet 0.6–0.8 times as long as hind tibia; apex of ovipositor with small teeth.

Variation. Usually small individuals are more extensively black in colour than large specimens and the gaster is sometimes sparsely hairy (especially in undersized specimens). Specimens from northern and central Europe are more extensively red in colour and the gaster hairs are shorter than those of the specimens from southern Europe.



Figs 1–3: *Gelis longulus* (Zetterstedt). 1 – thorax and propodeum in dorsal view (♀); 2 – basal segments of antenna (♀); 3 – head in dorsal view (♂).

Length of body: 2.2–3.6 mm.

REDESCRIPTION (♂)

Colouration. Black: most of body, usually teeth, sometimes coxae. Brown: palpi, stigma of fore wing. Pale brown: base and apex of stigma of fore wing. Red to black: mandible. Orange brown: hind corner of pronotum. White or light orange brown: tegula. Mid-brown or dark brown: legs. Orange brown: sometimes trochanters, trochantelli, front side of fore and middle femora or the entire fore and middle femora, sometimes fore tibia and usually tarsi. White or pale orange brown: base of tibiae. Brown or yellow: often first tergite of gaster apical, second tergite apical and sometimes apex of third tergite.

Head (Fig. 3). Somewhat small, sculpture coriaceous, frons and face matt, other parts more or less lustrous; antenna 21–23 segmented, with third segment 4.1–5.2 times and seventh segment 2.9–3.5 times as long as wide, eleventh to thirteenth segments with tyloids; inner margin of eyes strongly divergent ventrally; lower margin of clypeus rounded; genal carina reaching oral carina above base of mandible; malar space 0.6–0.8 times as wide as basal width of the mandible, without sulcus; ocelli large, distance of an eye and lateral ocellus : diameter of lateral ocellus : distance of the lateral ocelli = 1 : 1.9–2.7 : 1.7–2.1; eye 1.9–2.1 times as wide as the length of temple; head weakly narrowed behind the eyes.

Thorax. Notaulus weak; mesopleurum between subtegular ridge and speculum usually with some striae; mesopleurum with a rather weak prepectal carina; mesosternum only with a weak longitudinal groove. Hind femur 4.7–5.8 times as long as high. Wings fully developed.

Propodeum. Horizontal part long; apical transverse carina complete and distinct; area superomedia indicated in most specimens, 1.8–2.7 times as long as wide; costula absent; area postica with some longitudinal carinae.

Gaster. Densely hairy; first segment with dorsolateral carina, dorsal carina absent, petiole as long as postpetiole; gaster with first and second (apical part lustrous) tergite and base of third tergite matt or gaster lustrous.

Length of body: 2.6–3.6 mm.

DISCUSSION

Gelis longulus (Zetterstedt) is a parasitoid of Lepidoptera and Tenthredinoidea (as well as a hyperparasitoid through Braconidae and Ichneumonidae). This species is widely distributed in Europe. The specimens examined come from Austria, Germany, Italy, England, Scotland, Finland, Poland, Russia (near St. Petersburg) and Sweden. This material comes from the following hosts: *Solenobia* sp. (Psychidae) (coll. Mohr, Oberath), *Ocnerostoma piniariellum* Zeller* (coll. Boriani, Milano & Schwarz, Salzburg), *Gilpinia socia* (Klug)

* The European complex of natural enemies of *Ocnerostoma piniariellum* Zeller includes *Eriplatys ardeicollis* (Wesmael) (Ichneumonidae) from Spain (Ceballos, 1958 as *Herpestomus neirae* Ceballos; see Selfa, 1991), *Aganiaspis fuscicollis* (Dalman) (Encyrtidae) from Sweden (Trägårdh, 1914), *Gelis longulus* (Zetterstedt) (Ichneumonidae) (see above), *Cirrospilus vittatus* Walker (coll. Boriani) and *Dicladoceus euryalus* (Haliday) (Eulophidae) from Italy (Casale & Sampò, 1979), *Dicladoceus euryalus* (Haliday) (Eulophidae), *Eriplatys ardeicollis* (Wesmael) and *Gelis longulus* (Zetterstedt) (as *Gelis speculator* Förster) (Ichneumonidae) from Switzerland (Delucchi & Aeschlimann, 1971), *Cirrospilus vittatus* Walker and *C. pinicolus* Askew (Eulophidae) from England (Askew, 1984).

(Diprionidae) (coll. Warama, Vantaa), *Aleiodes* sp. (coll. National Museums of Scotland, Edinburgh) (Braconidae), *Phobocampe* sp. (coll. National Museums of Scotland, Edinburgh) (Ichneumonidae).

Gelis longulus (Zetterstedt) is a common parasitoid in the areas of the recent outbreak of *Ocnerostoma piniariellum* Zeller in northern Italy. However, its biology is little-known and further investigation will be necessary in order to appraise its role in forestry habitats.

In central and northern Europe the adults were found from February to November, and probably some females overwinter as adults, but in one known example from Scotland a female overwintered in an immature stage (as ? larva) in the host. As far as is known, adults were found in coniferous and deciduous forests, on the ground as well as on trees.

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