

## **Leptogamasus, a new genus of acari from Sweden.**

By

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Most of the species of Parasitini one finds in Europe easily find place in the great genera *Parasitus* (*Gamasus*), *Pergamasus*, and *Eugamasus*, other genera belonging to that subfamily, such as *Ologamasus* and *Amblygamasus*, containing very few species and no other genera of this subfamily having hitherto been found in Europe. As a consequence it was a great surprise to me when, examining material of litter from an oak coppice quite close to the institute, treated by a Berlese funnel by dr. J. Johnston of Harvard university — who is studying the fauna of the forest soil at my institute — I found a new species, which although a typical *Pergamasus* in the shape of legs II of the male and of the mandibles and epistoma of both sexes, nevertheless is so different in the shape of the epigynial shield of the female, that it is impossible to find a place for it in any of the existing genera.

### **Leptogamasus** nov. gen.

Diagnosis. Dorsal shield entire in both sexes. Legs II of male much stouter than the others, with calcar femoralis, processus axillaris, processus genualis and processus tibialis. Mandible of male with calcar fused with digitus mobilis. Sternal shield of male separated from ventri-anal by a fine line. Paragynial shields of female free, not fused with sternal shield; epigynial shield of female rounded anteriorly.

Type: *Leptogamasus suecicus* nov. spec.

### **Leptogamasus suecicus** nov. spec.

Diagnosis: Body more than twice as long as it is wide, with slight constriction on a level with coxae IV. No distinct dorsal shields, but on a level with the constriction there are some very faint, transversal lines. Epistoma tricuspidate, in the male with short blunt teeth on a central projection, in the female with longer,

slenderer cusps, the median one of which is the longest. Legs II of the male with long, curved, acutely pointed calcar femoralis, rounded, blade-like processus axillaris, short, round, knob-like processus genualis and very acute processus tibialis bent at a right angle forwards. Tarsus I of the male with claws bent like a horse-shoe and with a row of very sharp teeth in the exterior half.

*Male.*

Length 420  $\mu$ , width 200  $\mu$ .

Colour very pale yellow.

Texture very finely scaly.

Shape oval, narrow, well rounded anteriorly, with well demarcated shoulders, pointed posteriorly. The sides are a little constricted behind coxa III.

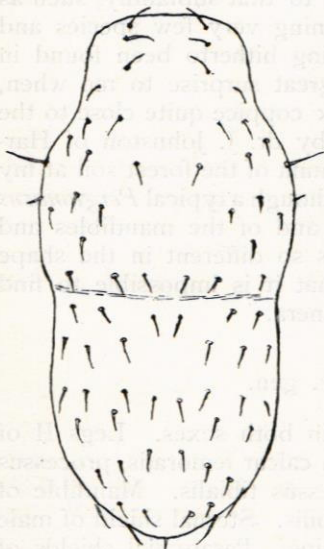


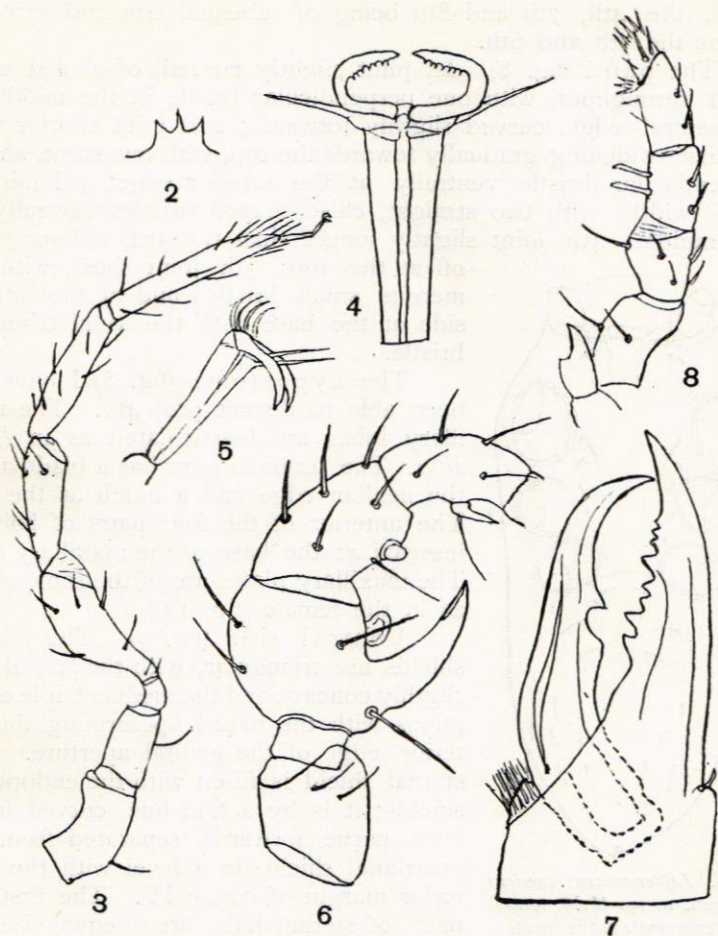
Fig. 1. *Leptogamasus suecicus* nov. gen. n. sp. Male. dorsal side.

Dorsal side (fig. 1) entire, without any distinct dorsal shields but with some faint lines running straight across on a level with the constriction. The anterior part has in all 18 pairs of small, slender, slightly curved and pointed hairs of uniform size, placed as fig. 1 shows; on the collar-shaped, anterior part of the dorsal side there is a longitudinal row of three somewhat longer hairs, pointing towards the median line, at the shoulder there is a pair of straight hairs, twice as long as the rest and pointing a little forwards. Behind these there is a pair of very small, almost perpendicular hairs. The hairs of the anterior part of the dorsal side are markedly concentrated in the lateral parts, the median third being almost devoid of hairs.

In the posterior half there are about 17 pairs of hairs, of the same shape and size as those of the anterior part.

Gnathosoma. The epistome (fig. 2) resembles very much that of *Pergamasus oxygenellus* Berl (comp. Berlese 1905, pl. XIV, fig. 33) in as much as there is a central projection with almost parallel sides and slightly longer than it is wide, which has three teeth, the central one of which is a little longer and more slender than the lateral ones, which are as long as they are wide at the base.

The mandible (fig. 7) has digitus mobilis sickle-shaped, with very long, slender terminal tooth, the dorsal edge of which is even



Figs. 2—8. *Leptogamasus suecicus* nov. gen. n. sp. Male.  
 Fig. 2. Epistome. Fig. 3. Leg I. Fig. 4. Ambulacra of leg I ventral view.  
 Fig. 5. Ambulacra of leg II, lateral view. Fig. 6. Leg II. Fig. 7. Mandible.  
 Fig. 8. Top of maxillary lobe and palp.

and convex in the anterior half, where there is a big, sharp tooth a little in front of the middle; behind this there is an almost semi-circular incision, behind which the edge is raised to a thin blade. Digitus fixus longer than digitus mobilis, gradually tapering throughout from the base and only slightly curved, ending in a slender terminal tooth. The ventral edge is smooth in the distal fourth, then follows a row of 8 teeth, the three first of which are very

small, the 4th, 7th and 8th being of subequal size and twice as big as the 5th and 6th.

The palpi (fig. 8). 1st joint slightly curved, of almost equal width throughout, with one perpendicular bristle in the middle of the ventral edge, curved slightly forwards; 2nd joint shorter than the first, widening gradually towards the top, with one stout, almost perpendicular bristle ventrally at the anterior edge; 3rd joint of equal width, with two straight, chisel-shaped bristles ventrally, in the middle; 4th joint slightly longer than the 3rd, obliquely cut off at the top; 5th joint short, with numerous small bristles and at the interior side at the base with the usual trifurcate bristle.

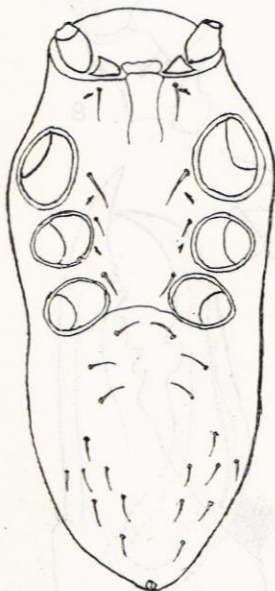


Fig. 9. *Leptogamasus succicus* nov. gen. n. sp. Male, ventral side. Peritremata not delineated.

The hypostome (fig. 8) I have not been able to dissect properly. The maxillary lobes are biarticulated as in *Parasitus*. The terminal joint has a blade along the median edge and a notch at the top. The anterior of the four pairs of hairs is inserted at the base of the maxillary lobe. The maxillary plates are of the same shape as in the female (fig. 13.)

Ventral side (fig. 9). The jugular shields are triangular, with the lateral side slightly concave and the median angle contiguous with the broad lip forming the anterior edge of the genital aperture. The sternal shield is fused with the endopodial shields; it is by a fine line, curved in an even curve forwards, separated from the ventrianal shield on a level with the posterior margin of coxae IV. The first two pairs of sternal hairs are of equal size and almost twice as long as the 4th pair, the

3rd pair being the shortest. The anterior pair is placed close to the anterior edge of the sternal shield, the second pair a little behind the middle of coxae II, the third pair near the anterior edge of coxae III and the fourth pair on a level with the anterior edge of coxae IV. There are 3 pairs of slit-shaped pores, one a little outside hair I, the second half way between hair II and III and the last pair between hair III and IV and a little closer to hair III.

The ventrianal shield has in all 10 pairs of hairs, three of which point towards the median line and a little forwards and are placed, the first pair as far apart as twice their own length, the

second pair twice as far apart as the first and the third pair three times as far apart as their own length; the remaining 7 pairs are concentrated in the posterior half of the shield, forming 4 transversal rows of 1, 3, 2 and 1 hair. Anal aperture small, circular, situated at the hind margin of the body.

The peritremata are of the common type.

The legs (figs. 3—6). The legs are slender, except the 2nd pair. Their length is: I 480  $\mu$ , II 240  $\mu$ , III 260  $\mu$ , IV 380  $\mu$ . Legs I (fig. 3). Coxa of even width, curved upwards and bearing one perpendicular bristle in the middle of the ventral edge. Trochanter straight, slightly conical and a little shorter than the coxa; femur long, club-shaped, more than three times as long as it is wide at the top, where it is deeply obliquely cut off; genu shorter than femur, slightly widening towards the top; tibia slightly longer than the genu and of almost even width throughout; tarsus narrow, cylindrical, tapering in the distal  $\frac{1}{4}$  and longer than the tibia. The claws are of a very peculiar shape, as far as I know not met with in other genera (fig. 4): they are horse-shoe-shaped and have a dense row of 6—8 teeth in the distal half.

Legs II (fig. 6). Femur with distinct, short basifemur, very short and wide, its width exceeding its length by about 50%. It has a very long, slender and slightly curved calcar, gradually tapering towards the top, which is 50% longer than the femur itself. The calcar has a smooth anterior edge, striated at the top. Processus axillaris is not placed on the anterior edge of the calcar, nor in the angle between the calcar and the femur itself, but half way between the calcar and the anterior edge of the femur. It is shaped like an oval, thin blade. On the femur there are two conspicuous, long, straight, perpendicular bristles, one, pointing downwards and backwards, behind the calcar, the other on a level with the processus axillaris points downwards.

Genu a little longer than femur, of almost even width and almost twice as long as it is wide; processus genualis shaped as a low, very blunt and stout bristle; behind the processus a perpendicular, straight bristle as long as the anterior bristle of the femur.

Tibia curved downwards, of even width, with very sharply pointed processus tibialis, curved at a right angle forwards.

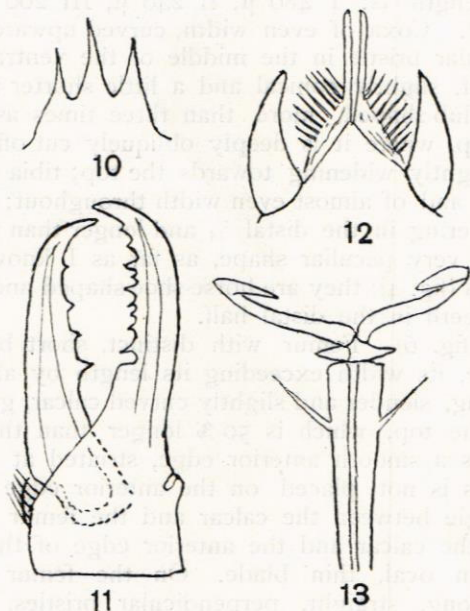
Tarsus without any special characters. The ambulacres (fig. 5) are of another shape than those of legs I, the claws being of normal shape, but with a comb of four curved hairlike appendages between them. Legs III and IV without any special characters.

#### *Female.*

Length 480  $\mu$ , width 260  $\mu$ .

Colour, general shape and texture the same as in the male, as well as the hairs of the dorsal side.

The gnathosoma (figs. 10—12). The epistome (fig. 10) is tricuspidate, as in the male, but the teeth are much longer. The mandible (fig. 11) has a long and narrow chela. Digitus mobilis slender, with convex ventral edge, gradually tapering from the base towards the slender, strongly curved terminal tooth. The cutting edge has in the anterior half a row of 4 teeth, the first one very small, halfway between the terminal tooth and the 2nd one, the



Figs. 10—13. *Leptogamasus suecicus* nov. gen. n. sp. Female. Fig. 10. Epistome. Fig. 11. Mandible. Fig. 12. Top of hypostome, interior view. Fig. 13. Ambulacra of leg I.

other teeth being equidistant, increasing in size backwards, the last tooth being placed a little behind the middle of the digitus.

Digitus fixus more straight than digitus mobilis, only curved at the terminal tooth, which is of the same shape and size as that of digitus mobilis. The cutting edge has a row of 9 sharp teeth, the 3rd, 5th, 8th and 9th of which are twice as big as the others. Behind the last tooth there is a narrow, rounded incision, behind which the edge is raised to a thin blade.

The hypostome (fig. 12) has the maxillary lobes of the common type, without any median blades or notches and their base is not raised as in the male. The maxillary plates end in very narrow slips of equal width, at the base of which there is a rounded blade with a very fine fringe.

Ventral side. (Fig. 14). The jugular shields are of the same shape as in the male. The sternal shield has a concave anterior edge. It has the usual three pairs of hairs which are of subequal size, long, finely pointed and slightly curved and placed, the first pair close to the anterior edge of the shield a little outside the middle of the jugular shields, the second pair far laterally, a little behind the middle of coxae II, and the third pair in a straight line behind the second pair, near the anterior edge of coxae III. There are two pairs of slitlike pores, one close behind the first pair of hairs, the other behind the second pair. The sternal shield is deeply concave at the posterior edge, but the excavation is rounded at the bottom. The metasternal (or paragynial) shields are of the shape typical in *Parasitus*, *Eugamasus* and *Pergamasus*, viz. triangular but tapering very strongly in the anterior half, where they form a very narrow rim between the anterior edge of the epigynial shield and the sternal shield. The metasternal shields have one pair of hairs, immediately in front of which there is a small pore. The epigynial shield is in the posterior half shaped as in the genera *Parasitus*, *Pergamasus* etc. viz. divided from the ventrianal shield by a straight, transversal line; it is constricted between coxae IV and widens in front of them with almost semi-circular anterior edge.

The legs do not show any special characters, legs I, III and IV being of nearly the same shape as in the male. The claws of legs I are however of a different shape (fig. 13) and have no teeth.

Legs I 520  $\mu$ , II 300  $\mu$ , III 280  $\mu$ , IV 440  $\mu$ .

Locality: In litter of dead leaves in oak-coppice, in the garden surrounding the Institute of experimental forestry, Experimentalfältet, close to Stockholm. 3 males, 3 females. Types in the collection of the Institute.

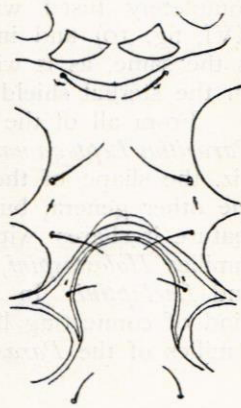


Fig. 14. *Leptogamasus suecicus* nov. gen. n. sp. Female. Jugular, sternal, epigynial and metasternal shields.

### Systematic position of *Leptogamasus*.

Through the fusion of the calcar mandibuli with the digitus mobilis *Leptogamasus* undoubtedly belongs to the *Parasitini* in the sense of Berlese, embracing the genera *Parasitus*, *Eugamasus*, *Pergamasus*, *Amblygamasus* and *Ologamasus*. It is true that Berlese referred to the same subfamily three other genera: *Halo-*

*laelaps*, *Trachygamasus* and *Laelogamasus*. But if the subfamily is characterized not only by the shape of the male mandible but also by the shape of the ventral shield of the female, then it seems to me that none of the three last mentioned genera can be included in the *Parasitini*. Because in the five genera mentioned above there is a pair of distinct, triangular, paragnathal or metasternal shields, fused with the corresponding pair of endopodial shields and carrying the fourth pair of sternal hairs. In *Halolaelaps*, on the other hand, there are no well defined metasternal shields (comp. Berlese l. c. fig. 17), in *Trachygamasus* the metasternal shield is completely fused with the sternal shield (comp. Berlese l. c. pl. XVI, fig. 10) and in *Laelogamasus* (comp. Berlese l. c. fig. 19) it is the same, as is witnessed by the presence of four pairs of hairs on the sternal shield, as I pointed out already in 1910 (p. 427).

From all of the remaining genera belonging to the subfamily *Parasitini* *Leptogamasus* differs, however, in one fundamental respect viz. the shape of the epigynal shield. It is acutely pointed in all the other genera, but in *Leptogamasus* it is broadly rounded. This feature it shares with many other genera belonging to the subfamilies *Holostaspini*, (*Macrochelini*), *Pachylaelaptini*, *Cyrtolaelaptini* and *Laelaptini*. In this respect therefore, *Leptogamasus* forms a kind of connecting link between the *Parasitini* and the other subfamilies of the *Parasitidæ*.

### Literature.

- Berlese, A. Monographia del genere »Gamasus» Latr. Redia. Vol. 2. fasc. 2. Firenze 1905.  
Trägårdh, I. Acariden aus dem Sarek-Gebirge. Naturw. Untersuchungen des Sarekgebirges. Vol. 4. Stockholm 1910.