

FIRST RECORD OF THE PSEUDOSCORPION *LARCA LATA* IN THE  
NETHERLANDS (PSEUDOSCORPIONES: GARYPOIDEA: LARCIDAE)

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Pseudoscorpions are small arachnids, most of them living in the litter layer of woods, behind bark, but also in houses and in bird nests. They were given their common name because of their pincerlike modified pedipalps. They differ from true scorpions in their smaller size (< 6 mm) and the abdomen which does not have the characteristic scorpion tail with terminal venomous sting. In the Netherlands 16 species of pseudoscorpions are recorded. In this paper the rare *Larca lata* is mentioned as new to the fauna of the Netherlands. Two specimens were found (1,5 years apart) on the loft of a church in Vorchten (province of Gelderland), among barn owl pellets. Because it is a highly variable species an extensive description of the Dutch specimens is included.

INTRODUCTION

From the Netherlands 16 species of pseudoscorpions are known (Van der Hammen 1963). In this paper the first Dutch records of *Larca lata* (Hansen, 1884) are given. *Larca lata* is very rare and extremely difficult to find. It lives almost exclusively among dry vegetable and animal remains in hidden niches.

Up to now *L. lata* has been recorded from nine central and northern European countries, ranging from England (Berkshire) in the west (Judson & Legg 1996) to Rumania (Dobrogea) in the east (Dumitresco & Orghidan 1964).

A female specimen of *L. lata* (fig. 1a) was found by the author in 1968 among barn owl pellets in a (dry) loft of a church in Vorchten (Heerde), in the north-eastern part of the province of Gelderland. A male (fig. 1b) was collected 1,5 year later on the same site under the same circumstances.

At that time it proved to be impossible to identify the specimens. The differences in palpal proportions found in the Dutch material and those given by Beier (1963: 240) and Dumitresco & Orghidan (1964: 622) seemed unbridgeable.

In 1971 and 1983 reference material of *L. lata* from Rumania was requested, but to no avail.

Later Gardini (1983: 64, 67) and Johnson & Legg

(1996: 207-208) showed that the geographical variation in *L. lata* is far greater than originally indicated. This made it clear that the Dutch specimens belong to *L. lata*. In view of the large variation within the species a full description of the Dutch specimens is made here. The material (mounted on permanent slides) will eventually be deposited in the collection of the National Museum of Natural History in Leiden (RMNH).

SYSTEMATICS

Superfamily Garypoidea Chamberlin, 1930

Family Larcidae Chamberlin, 1930

Genus *Larca* Chamberlin, 1930 (designated as genotype: *Garypus latus* (Hansen, 1884))

Diagnosis (after Chamberlin (1930): 608-609):

Vestitural setae of palps lanceolate; flagellum of 4 blades; (chelal) movable finger with 2 trichobothria; femur clearly somewhat longer than patella in leg 1.

*Larca lata* (Hansen, 1884)

Diagnosis (after Gardini, 1987: 67): chelal movable finger with 2 trichobothria; anterior margin of cephalothorax with 8 setae; cheliceral hand with 5 setae; length/width ratio of palpal patella 3.4-3.7; length/width ratio of chelal hand with pedicel 2.4-2.6; overground species.



Figure 1

*Larca lata*, a. Male, b. Female. Dorsal aspect of dissected animal (chelicerae, pedipalps, left leg I and IV removed). Photo Willem Renema (Naturalis).

Figuur 1

*Larca lata*, a. Mannetje, b. Vrouwtje. Dorsaal aanzicht van ontleed dier (weggenomen zijn: cheliceren, pedipalpen, linker eerste en linker vierde poot). Foto Willem Renema (Naturalis).

Up until now seven species have been assigned to the genus *Larca*: three from Europe, two from Western United States, one from Eastern United States and one from Canada. A key to the species has been given by Gardini (1983: 67-68). *Larca lata* can be separated from the closely related Canadian species *L. notha* Hoff, 1961, by having 2 trichobothria instead of 3 on the chelal movable finger; and from all other species assigned to the genus *Larca* by having 4 setae instead of (6)-8 along posterior margin of cephalothorax (carapace).

#### DESCRIPTION

Material examined: 1 male: 23.IV.1968, Vorchten (Heerde), province Gelderland, loft of a church, among barn owl pellets, leg. D. van den Tooren; 1 female: 17.XII.1969, [same locality and collector].

Abbreviations used to indicate trichobothria on palpal fingers (Chamberlin 1931: 138): movable finger (exterior surface): T = terminal, ST = subterminal, SB = subbasal, B = basal; fixed finger (exterior surface): ET = exterior terminal, EST =

exterior subterminal, ESB = exterior subbasal, EB = exterior basal; fixed finger (interior surface): IT = interior terminal, IST = interior subterminal, ISB = interior subbasal, IB = interior basal.

#### Male (fig. 2a-d)

Measurements in mm.

Body carapace and chelicerae pale orange coloured; legs with a slightly reddish glow.

*Body*: 2.05 long.

*Carapace*: triangular, anterior margin with 8 setae, posterior margin with 4 setae, on the surface 20 setae in transverse rows from 2 to 4, and 1 pair of slitlike lyrifissures within posterior third of carapace; eyes: 2 pairs, rather well developed; length 0.56, greatest width 0.66, ocular width 0.34, length/width ratio 0.84.

*Abdomen*: globose and much wider than cephalothorax; pleural membrane weakly and irregularly plicate; tergites and sternites closely granulated: granules rounded, arcuate or scaly and even more or less triangular in the posterior part of the body; chaetotaxy, tergites I-X: 4: 4: 6; IO: II: IO: IO: 12: 8: T5T (T = tactile seta); lyrifissures, tergites I-IX: 2: I: 6: 6: 6: 8: 8: 8; tergites II-VIII divided,

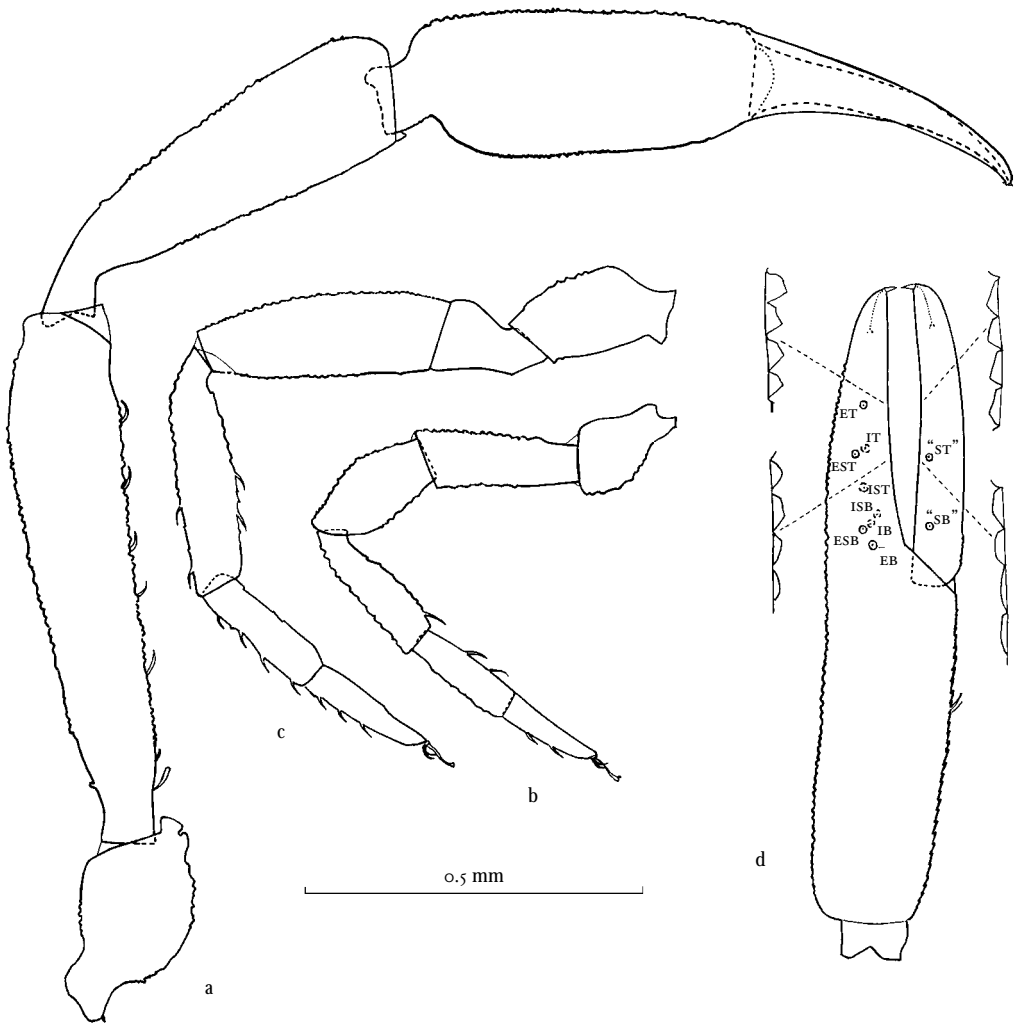


Figure 2

*Larca lata*, male. Granulation on surface omitted. a. Dorsal aspect of left pedipalp, b. Posterior aspect of left first leg, c. Posterior aspect of left fourth leg, d. Extero-lateral aspect of right palpal chela.

Figuur 2

*Larca lata*, mannetje. Sculptuur van het oppervlak weggelaten. a. Dorsaal aanzicht linker pedipalp, b. Achteraanzicht van linker poot 1, c. Achteraanzicht van linker poot 4, d. Zijaanzicht van rechter palphand.

tergite IX partly divided; chaetotaxy, sternites IV-X: 10: 10: II: 10: 9: 7: 6; lyrifissures, tergites IV-X: 4: 9: 10: 10: 7: 10: 8; sternites V-VIII divided.

*Chelicera*: length 0.19, width 0.09, length/width ratio 2.08; movable finger: length 0.11; galea: slender, main stalk with 3 small weakly curved

terminal rami, length 0.04; sclerotic apical tooth of fixed finger with basal part of inner lateral margin tapering to an evident conical tooth, followed by 3 small non-sclerotic marginal teeth; sclerotic apical tooth of movable finger with sub-apical lobe, consisting of 3 small rather truncate

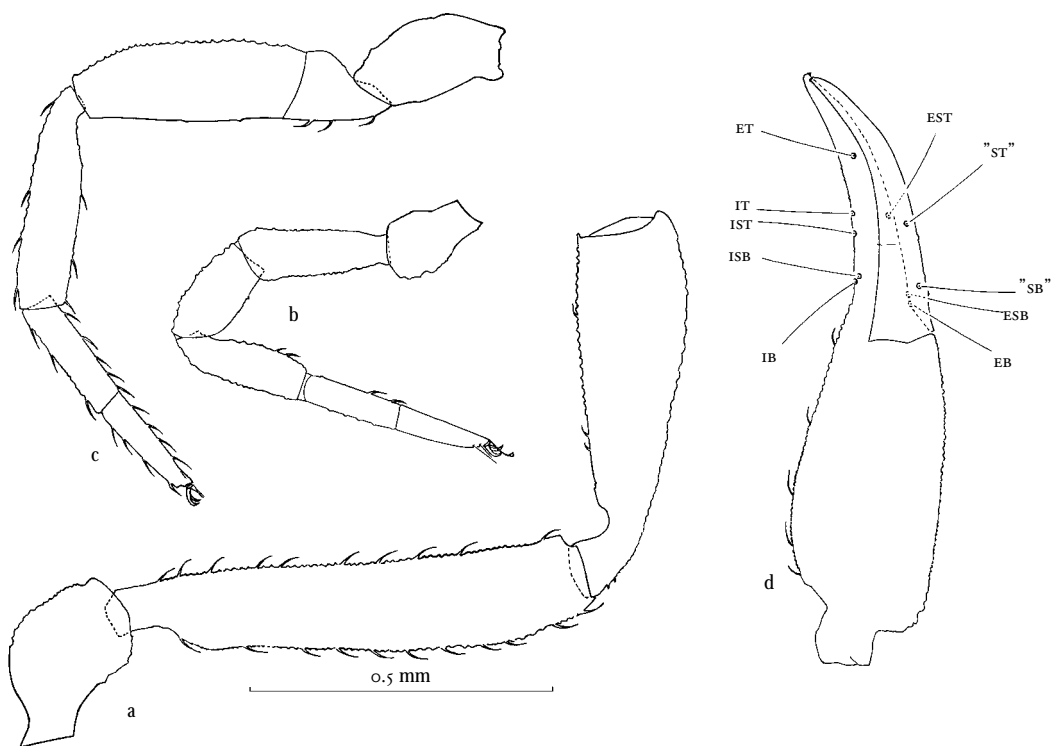


Figure 3

*Larca lata*, female. Granulation on surface omitted. a. Ventral aspect of trochanter, femur and patella of left pedipalp, b. Posterior aspect of left first leg, c. Posterior aspect of left fourth leg (arolium broken off), d. Ventral aspect of left palpal chela.

Figuur 3

*Larca lata*, vrouwtje. Sculptuur van het oppervlak weggelaten. a. Ventraal aanzicht van trochanter, femur en patella van de linker pedipalp, b. Achteraanzicht van linker poot 1, c. Achteraanzicht van linker poot 4 (arolium afgebroken), d. Ventraal aanzicht van de linker palphand.

conical non-sclerotic teeth; serrula exterior with about 16 blades, of which basal 3 or 4 and most distal blade are much longer and more acute than the others which have a ligulate shape; flagellum of 4 spine-like setae in one row, anterior one longest, posterior one shortest; lamina exterior present; chaetotaxy: 2 setae on palp hand, 3 within basal third of fixed finger and 1 near tip movable finger.

*Pedipalp*. granulation more fine-grained than on body, with rounder granules; vestitural setae lanceolate; trochanter: length 0.315, width 0.16,

length/width ratio 2.0; femur: length 0.79, width 0.16, length/width ratio 4.79; patella: length 0.645, width 0.18, length/width ratio 3.51; patella length/carapace length 1.15; chela + pedicel: length 0.97, width 0.21, length/width ratio 4.62; chela - pedicel: length 0.91, width 0.21, length/width ratio 4.31; hand + pedicel: length 0.545, depth 0.19, length/depth ratio 2.93 (length/width ratio 2.60); hand - pedicel: length 0.50, depth 0.19, length/depth ratio 2.55 (length/width ratio 2.37); movable finger 0.47 long, 0.865 times as long as hand with pedicel, 0.95 times as long as

hand without pedicel. Fixed finger with 29 marginal teeth; trichobothrium *ET* up to level of 19th marginal tooth from apical tooth, remaining 7 trichobothria within basal half of finger, *EST* up to level of 27th marginal tooth from apical tooth, *ESB* about 1.5 areolar diameter from *EB* and both far below most proximal marginal tooth, near base finger; *IT* up to level of 26th marginal tooth from apical tooth; *IST* just below level of most proximal marginal tooth; *ISB* less than 1 areolar diameter from *IB* and both far below level of most proximal marginal tooth, just distal to *ESB*. Nodus ramosus in fixed finger up to level of 8th marginal tooth from apical tooth. Movable finger with 29 marginal teeth, proximal 4 teeth shallow and much reduced; trichobothrium “*ST*” up to level of 27th marginal tooth from apical tooth, “*SB*” far below level of most proximal marginal tooth and about halfway “*ST*” and base finger. Probably lacking in movable finger trichobothria “*B*” and “*T*”. Nodus ramosus in movable finger up to level of 8/9 marginal tooth from apical tooth.

*First leg.* Granulation and shape setae as on palps; trochanter: length 0.17, depth 0.10, length/depth ratio: 1.66; femur: length 0.245, depth 0.09, length/depth ratio 2.86; patella: length 0.19, depth 0.10, length/depth ratio 1.95; length of femur 1.30 times length of patella; tibia: length 0.23, depth 0.07, length/depth ratio 3.39; length of tibia 1.19 times length of patella; metatarsus: length 0.17, depth 0.05, length/depth ratio 3.41; tarsus: length 0.15, depth 0.04, length/depth ratio 3.55; length arolium about 1.5 times length of claws.

*Fourth leg.* Granulation and shape setae as on palps; trochanter: length 0.25, depth 0.12, length/depth ratio 2.04; femur: length 0.18, depth 0.105, length/depth ratio 1.74; patella: length 0.38, depth 0.13, length/depth ratio 2.97; femur + patella: length 0.52, depth 0.13, length/depth ratio 4.11; tibia: length 0.375, depth 0.08, length/depth ratio 4.56; metatarsus: length 0.20, depth 0.06, length/depth ratio 3.49; tarsus: length 0.20, depth 0.05, length/depth ratio 4.34; length of arolium about 1.6 times length of claws.

*Chaetotaxy of metatarsus of fourth leg.* exterior lateral 4 and interior lateral 4 lanceolate setae, dorsal 4 and ventral 7 simple acuminate setae.

*Chaetotaxy of male genital area:* on face posterior lip 2 setae on each side of midline and near anterior margin 25 setae, on posterior operculum (3rd sternite) 16 setae.

### Female (fig. 3a-d)

Measurements in mm.

Female similar to male except for different genitalia, wider chela and longer cheliceral galea; body, segments of pedipals and legs of same length as in male or slightly larger.

*Body:* 2.045 long.

*Carapace:* shape and chaetotaxy as in male; length 0.54, greatest width 0.69, ocular width 0.33, length/width ratio 0.78.

*Abdomen:* globose and still wider than cephalothorax in male; pleural membrane with rough plications which are longitudinally irregularly wavy or even papillate; tergites stronger granulated than sternites; chaetotaxy tergites I-X: 4: 8: 8: 11: 11: 14: 12: 12: 12: T5T (T = tactile seta); lyrifissures, tergites I-IX: 2: 5: 4: 8: 8: 6: 7: 8: 8; tergites II-VIII divided, tergite IX partly divided; chaetotaxy sternites IV-XII: 10: 12: 11: 10: 9: 9: 8: about 17 along anterior margin and 18 on face on circumanal plate: 2 on ventral half of anal opercula; lyrifissures, sternites IV-X: 4: 10: 10: 8: 8: 9: 8; sternites II-VIII divided.

*Chelicera:* teeth on fingers, serrula exterior and chaetotaxy as in male; galea as in male, but almost twice as long (0.075); length 0.20, width 0.10, length/width ratio 1.97; movable finger: length 0.11.

*Pedipalp:* trochanter: length 0.32, width 0.17, length/width ratio 1.86; femur: length 0.81, width 0.165, length/width ratio 4.90; patella: length 0.645, width 0.18, length/width ratio 3.53; patella length/carapace length 1.19; chela + pedicel: length 0.97, width 0.23, length/width ratio 4.17; chela - pedicel: length 0.92, width 0.23, length/width ratio 3.93; hand + pedicel: length 0.55, depth not measurable, (length/width ratio: 2.37); hand - pedicel: length 0.49, depth not measurable,

(length/width ratio 2.11); movable finger: 0.47 long, 0.85 times as long as hand + pedicel, 0.96 times as long as hand - pedicel. Fixed finger with about 34 marginal teeth, 4 most proximal ones vestigial; position of (8) trichobothria similar to that in male; nodus ramosus up to level of 7th marginal tooth from apical tooth. Movable finger with about 32 marginal teeth, 4 most proximal ones vestigial; position of (2) trichobothria as in male; nodus ramosus up to level of 7/8th marginal tooth from apical tooth.

*First leg* trochanter: length 0.15, depth 0.105, length/depth ratio 1.42; femur: length 0.25, depth 0.09, length/depth ratio 2.87; patella: length 0.18, depth 0.09, length/depth ratio 1.94; length of femur 1.37 times length of patella; tibia: length 0.23, depth 0.07, length/depth ratio 3.25; length of tibia 1.24 times length of patella; metatarsus: length 0.165, depth 0.05, length/depth ratio 3.32; tarsus: length 0.15, depth 0.04, length/depth ratio 3.62; length arolium about 1.7 times length claws.

*Fourth leg* trochanter: length 0.27, depth 0.12, length/depth ratio 2.15; femur: length 0.19, depth 0.11, length/depth ratio 1.70; patella: length 0.39, depth 0.14, length/depth ratio 2.89; femur + patella: length 0.53, depth 0.14, length/depth ratio 3.91; tibia: length 0.38, depth 0.085, length/depth ratio 4.45; metatarsus: length 0.20, depth 0.05, length/depth ratio 3.71; tarsus: length 0.20, depth 0.05, length/depth ratio 4.34; arolium broken; length claws 0.035.

*Chaetotaxy of metatarsus of fourth leg* exterior lateral 3 and interior lateral 5 lanceolate setae, dorsal 6 and ventral 3 simple acuminate setae.

*Chaetotaxy and internal structure of female genital area*: anterior operculum with 2 median setae,

posterior operculum with 13 setae along posterior margin and along posterior lip of aperture 8 setae to the left and 7 to the right of midline (from ventral view); cribriform plates barely perceptible, but probably present a cluster of small median plates.

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## SAMENVATTING

### **De eerste waarnemingen van de pseudoscorpioen *Larca lata* in Nederland (Pseudoscorpiones: Garypoidea: Larcidae)**

In dit artikel wordt *Larca lata* (Hansen, 1884) voor het eerst voor Nederland vermeld.

In 1968 werd een vrouwtje van deze soort gevonden tussen braakballen van een kerkuil, op de zolder van een kerk in Vorchten (Gelderland). Op dezelfde plaats werd 1,5 jaar later een mannetje verzameld. De identiteit van de dieren bleef lange tijd ongewis. Pas later bleken de dieren tot *Larca lata* te behoren, toen de grote variatie binnen deze soort duidelijk werd (Gardini 1983, Johnson & Legg 1996). Omdat de soort zo variabel is, wordt in dit artikel een uitgebreide beschrijving van de Nederlandse exemplaren gegeven.

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