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Three new commensal Ostracods from *Limnoria lignorum* (Rathke) *)

by

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INTRODUCTION

While examining a number of *Limnoria lignorum* (RATHKE) living in a piece of cork washed ashore at Zandvoort (Netherlands), Mr. J. H. STOCK found attached on abdomen and legs of these Isopods some Ostracods belonging to the family of Cytheridae. As the specimens, though having characters in common with some known genera, differ markedly, I propose to establish 2 new genera, viz. *Aspidoconcha* and *Redekea*.

Dr. W. VERVOORT [1950, *Harrietella simulans* (T. SCOTT, 1894), A commensal Copepod on *Limnoria lignorum* (RATHKE), Zool. Meded. 30 (20) mentioned the presence of Ostracods on *Limnoria lignorum* collected by Mr. J. A. W. LUCAS in a piece of wood washed ashore near Katwijk. Through the kindness of Prof. Dr. H. BOSCHMA, director of the Leiden Museum of Natural History I was able to study the Ostracods. These proved to belong to the same species as the specimens of *Aspidoconcha* found by Mr. STOCK. In vain I examined the autochthonous *Limnoria lignorum* material in the collections of the Zoological Museum, Amsterdam, for the presence of Ostracods.

It is probable, therefore, that the Ostracods belonging to the genera *Aspidoconcha* and *Redekea* do not actually belong to the Dutch fauna. They were found on isopods burrowing in wood or cork washed ashore. Drifted objects are often transported to Dutch waters from the South (coast of Normandy and the Channel), or even from the Caribbean region. Most probably future findings will show these Ostracods to inhabit southern waters

In a sample of *Limnoria lignorum* burrowing in greenwood from the Annabaai (Curaçao), collected in 1923 by Prof. MOOLENGRAAFF. I found Ostracods on the legs, near the ventral surface. These Westindian specimens are closely related to *Redekea* nov. gen. Several differences justify another new genus, which I propose to call *Laocoon*.

[21]

*) Received March 17, 1953.

Though the animals seem adapted to living on *Limnoria* (*Aspidoconcha* and *Laocoon* being flattened dorsoventrally) it seems probable that they are commensals rather than parasites, as the mouth parts are not specialized.

Mr. STOCK assisted me in dissecting and in drawing the figures, partly from the material, partly from my pencil sketches.

Aspidoconcha nov. gen.

(ασπις = shield; κογχ = shell.)

DIAGNOSIS.

Shell of a very peculiar, shield-like shape, dorsally highly rounded, ventrally flat (fig. 1) margins with scattered hairs. Hinge undeveloped. Eyes absent. Anterior antennae with 2 basal, 3 terminal joints, the penultimate and ultimate joint provided with long hairs. Posterior antennae 4-jointed, one basal, three terminal joints, ending in two strong claws. Flagellum long, 4-segmented. Large upper lip. Mandibles with masticatory lobe well-developed, palp 4-jointed, ending in two strong claws. Vibratory plate conus-shaped armed with a seta. Maxillae well developed, with 3 digitiform endites and palp. Vibratory plate small, with one aberrant seta at its base. Legs similar in shape, each ending in a large claw. Tip of abdomen with 2 short lateral spines and several larger median spines. Copulative appendages with large expanded basal part and conus-shaped terminal part. Brushlike appendages present.

Genotype : *Aspidoconcha limnoriae* nov. spec.

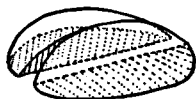


Fig. 1 *Aspidoconcha limnoriae* nov. gen., nov. spec. Diagrammatic lateral view of the shell.

Aspidoconcha limnoriae nov. spec.

SPECIFIC CHARACTERS. — Male.

Shell (Fig. 2 a—g) thin and pellucid, dorsally arched, ventrally flattened ; length : height about 2.4 : 1 ; length : breath about 1.3 : 1. Valves equal in size, marked with small pits, between the pits reticulated, large marginal area, crossed with undivided pore-canal, each ending on the surface of the valve in a hair. Hinge undeveloped.

Eyes absent.

Anterior antennae (Fig. 3a) with 5 joints, two basal and three terminal, the penultimate one with an indication of subdivision. The distal basal joint has a long spine at its base and is armed with a few short bristles at the externo-lateral margin. The first joint of the terminal part armed with a spine at the externo-lateral margin, the second joint with a long spine near its base and the penultimate and ultimate joints armed with long hairs.

Posterior antennae (Fig. 3b) with one basal and three terminal joints ; the first and second terminal joint each armed with a spine, the third joint ending in 2 strong, curved claws. Flagellum 4-jointed, joints 2 and 3 subequal. The flagellum contains the efferent duct of a long oval gland

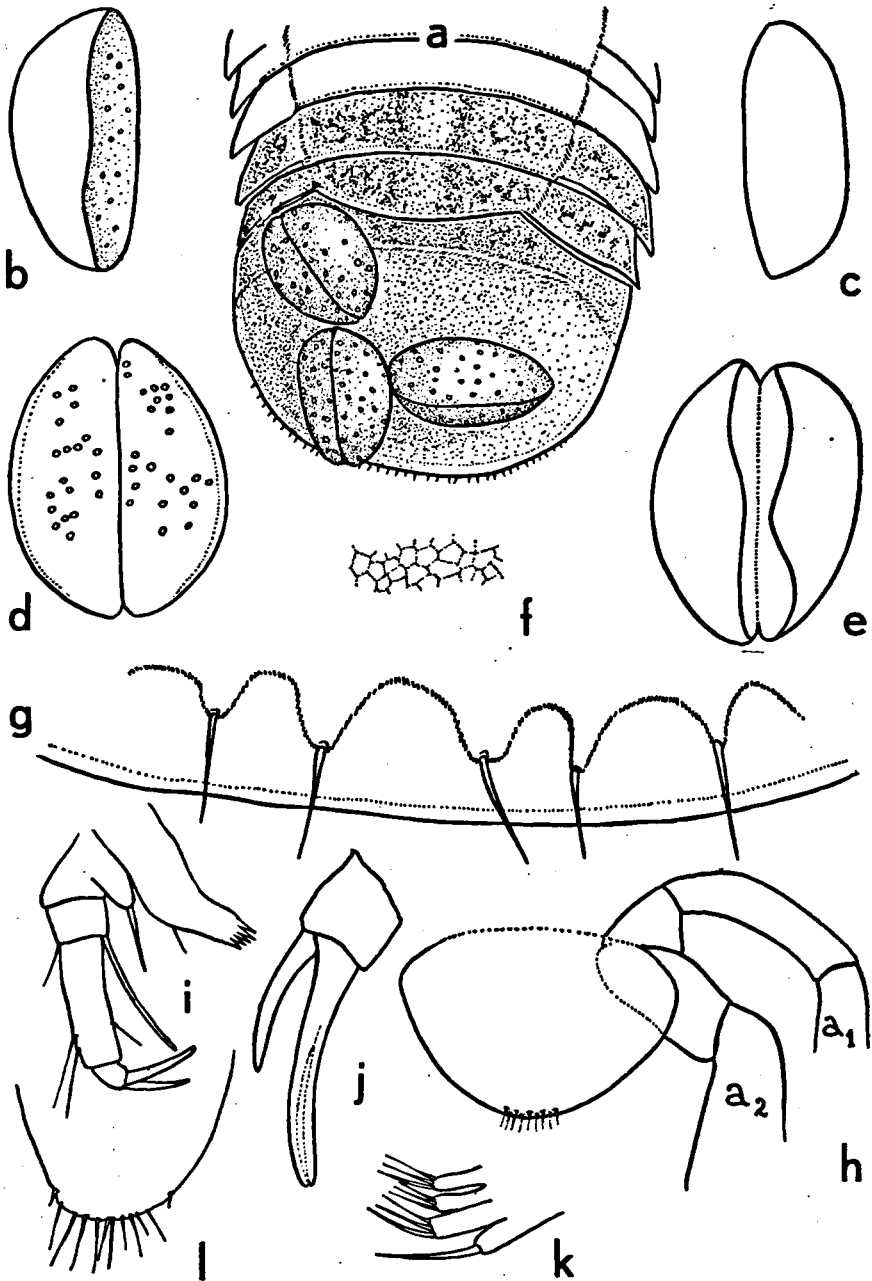


Fig. 2 a-1 *Aspidoconcha limnoriae* nov. gen., nov. spec. ♂. a, on abdomen of *Limnoria* × 72; b, c, lateral view × 112; d, dorsal view × 112; e, ventral view × 112; f, sculpture of valve × 560; g, pore-canals × 880; h, upperlip × 560; i, mandible × 560; j, claws of mandible × 1350; k, maxilla × 560; l, abdomen × 560.

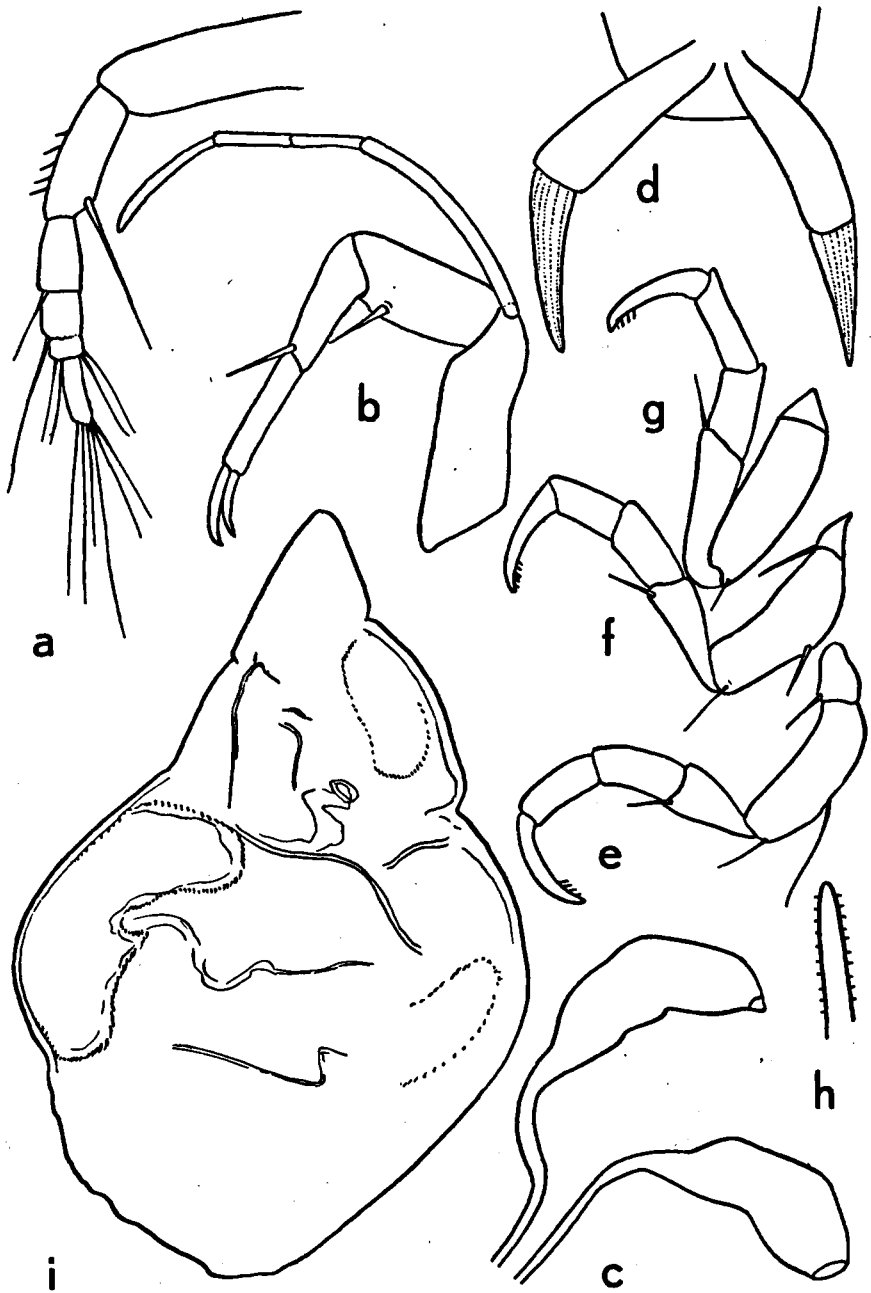


Fig. 3 a-i *Aspidoconcha limnoriae* nov. gen., nov. spec. ♂. a, First antenna $\times 560$; b, second antenna $\times 560$; c, gland $\times 560$; d, brushlike organ $\times 1360$; e, f, g, legs 1 to 3 $\times 560$; h, claw of leg from above; i, copulative organ $\times 880$.

(Fig. 3c) lying in the front part of the body.

Upper lip (Fig. 2h) well developed, free margin regularly rounded and provided with hairs.

Mandibles (Fig. 2 i, j) strongly dentate at the end, palp rather large, 4-segmented, penultimate joint the largest; its latero-external margin with 2 setae. The second joint is armed with a tape-like hair. The palp ends in two unequal claws, the longer has a spoon-like shape. The vibratory plate reduced to a conus armed with a seta.

Maxillae (Fig. 2k) with both endites as well as palp digitiform, palp shorter than the endites. Palp ending in one, endites in many setae. The vibratory plate well-developed with 14 setae and one aberrant seta near its base.

Brushlike organ (Fig. 3d) $3\frac{1}{2}$ times as long as broad, ending in several setae.

Legs (Fig. 3e—g) of nearly the same shape, ending in short strong claws, which are provided on the margin with hairs. (Fig. 3h).

Tip of abdomen (Fig. 2 l) with short lateral spines and several larger median ones.

Copulative appendages (Fig. 3i) with large basal part; terminal part produced into an obtuse point.

Length male: 0.32 mm.

MATERIAL AND TYPES.

Holotype, Zandvoort 30.V.1952 (Zool. Museum, Amsterdam. Ost. 105.046), paratypes ibid. (Ost. 105.047), N. of Katwijk 20.II.1949 (Zool. Museum, Amsterdam, Ost. 105.048; Rijksmuseum Nat. Hist. Leiden).

This Ostracod was found on the abdomen and legs of *Limnoria lignorum* fixed with its flat ventral side. I don't presume this to be a case of parasitism, as the mouth-parts are quite normal. Maybe the species lives in commensalism.

Redekea nov. gen.

DIAGNOSIS.

Shell comparatively thin, compressed, elongate. Surface of valves marked with distant rounded pits. Hinge undeveloped. Eyes confluent. Anterior antennae 6-jointed, 2 basal, 4 terminal joints, ending in several long hairs. Posterior antennae 5-jointed, 1 basal, 4 terminal joints, ending in a claw, flagellum with 2 joints. Oral cone present, not terminating in a sucking disk. Mandibles provided with strong teeth, undivided palp, ending in a robust claw. Vibratory plate rudimentary, ending in only one seta. Maxillae with four digitiform parts. Legs resembling each other; each leg terminating in a claw. Copulative organ with large basal part and pointed terminal part. Abdomen ending in two bristles.

Genotype: *Redekea perpusilla* nov. spec.

This new genus was named after the late Dr. H. C. REDEKE (1873—1945), who studied the Ostracods of the Netherlands.

Redekea perpusilla nov. spec.

SPECIFIC CHARACTERS. — Male.

Shell (Fig. 4a—d, 5a, b) in lateral view reniform in shape. Greatest height behind the eye, slightly exceeding half the length. Dorsal margin

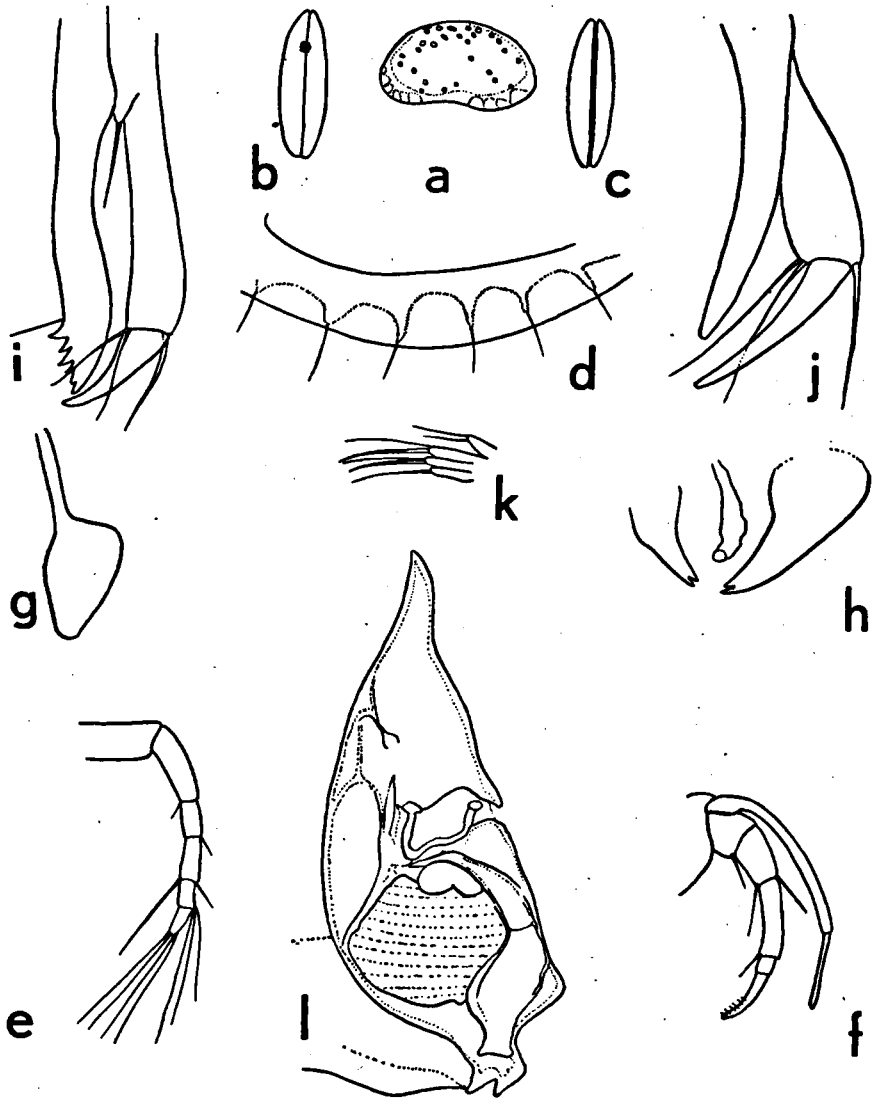


Fig. 4 a-l *Redekia perpusilla* nov. gen., nov. spec. ♂. a, lateral view of shell $\times 84$; b, dorsal, c, ventral view of shell $\times 84$; d, pore-canals $\times 420$; e, first antenna $\times 420$; f, second antenna $\times 420$; g, gland $\times 420$; h, oral conus $\times 420$; i, mandible, side view $\times 720$; j, mandible, dorsal view $\times 720$; k, maxilla $\times 420$; l, copulatory organ $\times 660$.

rounded, ventral margin deeply sinuated in front of the middle, anterior extremity narrowly, posterior extremity broadly rounded. Valves pellucid, thin, scantily marked with oval pits. Right valve somewhat larger than the left one. Marginal zone well marked, crossed by more or less branched pore-canals, which end on the surface of the valve with a hair.

Eyes confluent.

Anterior antennae (Fig. 4e) with the penultimate joint at its base with

3 long hairs, the last joint ending also in long hairs.

Posterior antennae (Fig. 4f) ending in a strong claw, at its tip provided with bristles. At the base of 1st, 2nd and 3rd joint a long spine. Flagellum coarse with the knee far below, 2-segmented. It contains the effluent of a gland (Fig. 4g) somewhat cordiform.

Oral cone (Fig. 4h) massive, terminating in an imperfect sucking-disk.

Mandibles (Fig. 4i, j) with the masticatory lobe ending in a row of teeth, palp undivided ending in a strong claw, a spine and two hairs. Vibratory plate small, conus-shaped, with one bristle only.

Maxillae (Fig. 4k) with 3 digitiform endites and a short palpe, the endites ending each in 1 large and 1 small seta. Vibratory plate small.

Legs (Fig. 5c—d) of moderate size, ending in short claws, the claws of the first pair of legs are larger than those of legs 2 and 3.

Copulative organ (Fig. 4l) long oval in form, ending in a point.

Abdomen ending in 2 bristles.

Length male : 0.23 mm.

MATERIAL AND TYPES :

Holotype, Zandvoort, 30.V.1952 (Zool. Museum, Amsterdam. Ost. 105.049); paratypes ibid. (Ost. 105.050).

This Ostracod was also found living on *Limnoria lignorum*, usually at the base of the legs.

Although the present form somewhat resembles the genera recorded by Sars in the subfamily Paradoxostominae, it cannot be identified with any of these, so a new genus *Redekea* was established.

Laocoon nov. gen.

DIAGNOSIS.

Shell in dorsal view rounded in outline, the anterior border narrower rounded than the posterior, the ventral surface of the valves flattened. Surface of shell marked with pits in concentric rows, moreover reticulated. Hinge well developed at the anterior part of the right valve with large teeth and the margin behind these teeth, with minute denticules. Teeth and denticulated margin corresponding with sockets and groves in the other valve. Eyes confluent. Anterior antennae 6-jointed, with 2 basal and 4 terminal joints ending in one long hair only. Posterior antennae 6-segmented, terminal joint ending in a strong claw. Flagellum with 2 joints. Gland large. Oral conus present. Mandibles strongly denticated at the end, palp of moderate size, segmentation indistinct, vibratory plate reduced to a small conus provided with a single hair. Maxillae with 4 digitiform lobes, the lateral one representing the palp; vibratory plate small, only with uniform setae. Legs of moderate size, all of about the same structure. Copulative organ well-developed.

Genotype : *Laocoon commensalis* nov. spec.

I propose to call this new genus *Laocoon*, since the Ostracods were clinging to the legs of *Limnoria lignorum* in a way recalling the famous sculpture.

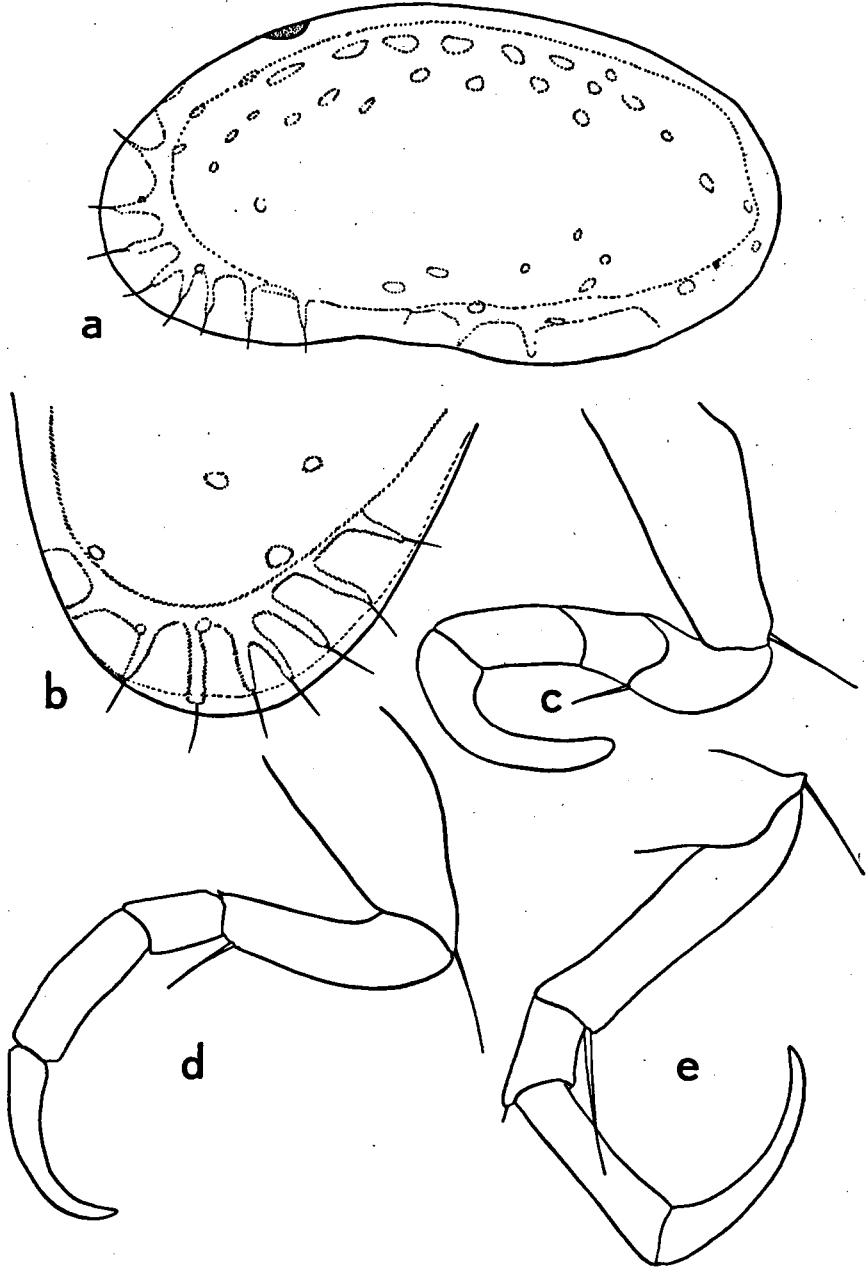


Fig. 5 a-e *Redekea perpusilla* nov. gen., nov. spec. ♂. a, lateral view of shell $\times 550$;
b, marginal zone with porecanals $\times 850$; c-e, legs 1 to 3 $\times 1250$.

Laocoon commensalis nov. spec.

SPECIFIC CHARACTERS. — Male.

Shell (Fig. 6h—k, Fig. 7a) of rather firm consistency, in dorsal view broadly oblong, the greatest width behind the middle, attaining more than $\frac{1}{2}$ of length. Height not attaining half the length. The ventral surface of the valves is rather flat, the dorsal surface arched. Marginal zone comparatively large, crossed by undivided pore-channels, ending on the surface of the valve with a hair. Anterior margin more narrowly rounded than the posterior part. Surface of valves marked with closely set small pits in concentric rows, a faint reticulation moreover present. The infero-anterior border of both valves with three short projections.

Hinge (Fig. 6 k, j) well developed.

Eyes confluent.

Anterior antennae (Fig. 6a) with 6 joints, the penultimate one with 2 long setae at its externo-basal part, the ultimate joint with one seta only.

Posterior antennae (Fig. 6b) 6-segmented, ending in one strong claw, provided with bristles. Joints 1—3 with a strong spine at the base. Flagellum slender, with the knee far beneath the middle. Gland large.

Oral conus (Fig. 6g) projecting forwards, ending in 2 lips.

Mandibles (Fig. 6c—e) with the masticatory lobe well developed, cutting part with several teeth, palp strong, indistinctly divided into joints, ending in a strong spoon-like claw and 2 hairs.

Maxillae (Fig. 6f) slender, with 4 digitiform lobes, the lateral one being the palp, all of them ending with a strong curved seta. Vibratory plate small, with less than 10 uniform setae.

Legs (Fig. 7c—d) rather narrow, each ending with a strong claw.

Copulative organ (Fig. 7e) with large basal part ending in a blunt point.

Length male : 0.22 mm.

MATERIAL AND TYPES :

Holotype, Annabai, Curaçao, 1923 (Zool. Museum, Amsterdam. Ost. 105.051), paratypes *ibid.* (Ost. 105.052).

The dorso-ventral flattening of the shell seems an adaptation to the life on *Limnoria* (or perhaps on other hosts too!) The normally developed mouth parts suggest the relation with the host to be commensal rather than parasitic.

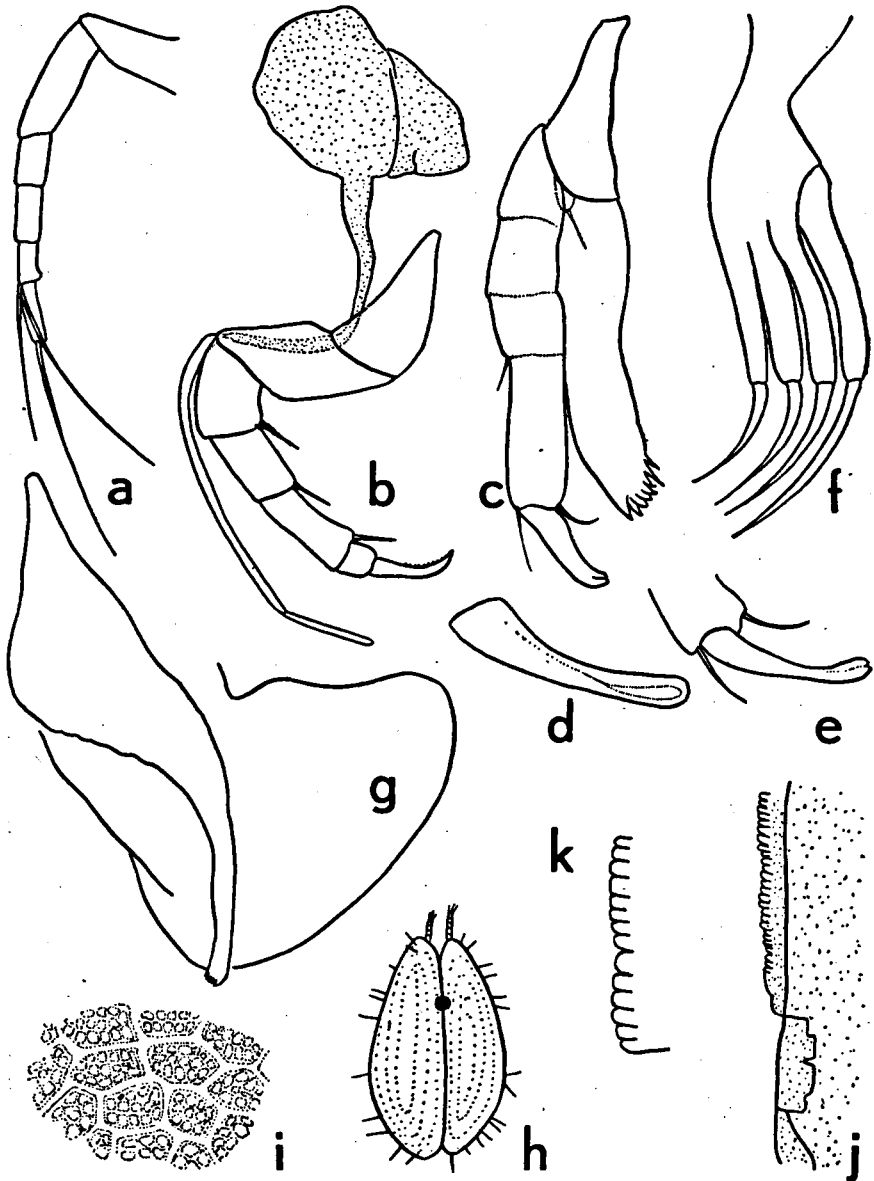


Fig. 6 a-k *Laocoon commensalis* nov. gen., nov. spec. ♂. a, first antenna $\times 660$; b, second antenna $\times 660$; c, mandible $\times 1020$; d, claw of mandible $\times 1500$; e, claw of mandible $\times 1020$; f, maxilla $\times 1020$; g, oral conus $\times 1020$; h, dorsal view of shell $\times 132$; i, sculpture of shell; j, hinge $\times 660$; k, serrated margin of hinge $\times 1020$.

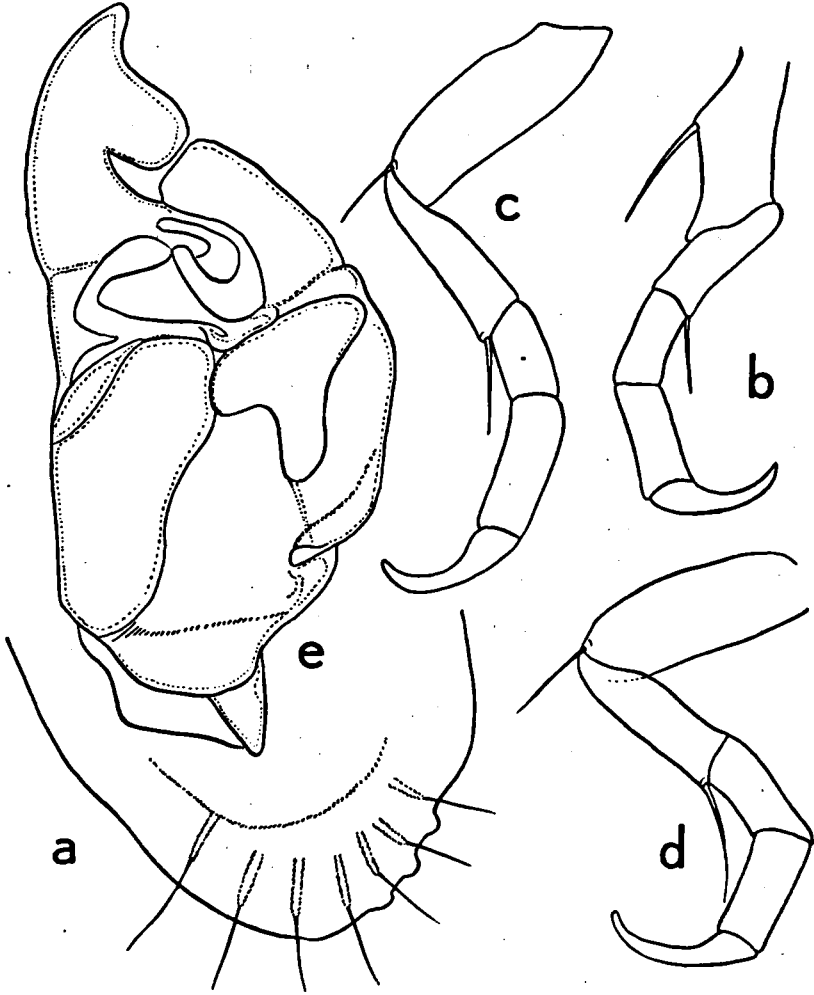


Fig. 7 a-e *Laocoon commensalis* nov. gen., nov. spec. ♂. a, marginal zone with pore-canal $\times 1020$; b-d, legs 1 to 3 $\times 1020$; e, copulatory organ $\times 1020$.