

Material examined. — No material of *L. hoestlandti* examined, but for comparison I did study the type specimen of *S. podicipitis* Monod, 1931b, which lacks the mouthparts and first pereopods: MNP; Morocco: Sidi Maklouf, Bou Regreg (found in the stomach of Great Crested Grebe; Coll. 1388).

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 15-18 articles. Each article of flagellum bearing fringe of smooth setae at distal interior angle. Adult male with these setae more abundant, up to two to three times length of article. In female these setae reaching only as far as end of next segment.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with broad lobes: ratio of width of third segment to that of protruding internal margin 4 : 1. Palp segments II-V with fringe of long, bare setae. Third and fourth segments bearing 6-10 long, bare setae in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. Near rostro-distal spine transverse row of 9-15 bare setae being inserted. Merus and ischium tergally bearing number of long setae.

Dorsal surface of pleotelson granulated in both sexes, older male often bearing two tubercles, one on either side of midline. Caudally pleotelson concave subapically and slightly upcurved.

Uropodal rami robust, usually reaching little beyond posterior margin of pleotelson. External margin of exopod with 5-7 small teeth, giving irregularly serrated appearance.

Ecology. — *L. hoestlandti* is an intertidal species. It is found in empty shells, on a muddy substratum. It penetrates into estuaries, where it is found further up than *S. serratum*, although it is a euhaline species.

Distribution. — The species is only known from the mouth of the Bou Regreg near Rabat (Morocco).

Remarks. — One of Monod's specimens of his species *S. podicipitis* was found in the stomach of a Great Crested Grebe (*Podiceps cristatus* (L.)), which was found in the estuary of the Bou Regreg (Sidi Maklouf, near Rabat-Salé, Morocco). He also mentioned one other specimen, found at Iles Chausey, France, but that proved to belong to *Sphaeroma serratum*, not to *Lekanesphaera levii* (Argano & Ponticelli, 1981) as thought by Bocquet et al., (1954). As no type-specimen was chosen by Monod, I hereby select the specimen from Sidi Maklouf (found in the stomach of a bird after which Monod named the species) as the lecto-type.

Daguerre de Hureaux et al. (1964, 1965) described two new species from the same estuary where Monod found his *Sphaeroma podicipitis*, viz., *S. hoestlandti* and *S. panousei*. Although they collected very intensively in the Bou Regreg estuary *S. podicipitis* was evidently missed by them. As *S. hoestlandti* resembles *S. podicipitis* in the pleotelson and the uropods (the type specimen of *S. podicipitis* lacks the mouthparts and the first pereopods, which are taxonomically very important), it seems likely that they are the same species, but only examination of more material, especially the types, can decide this matter. Fact is that Monod thought his new species a real *Sphaeroma* (Section I) (but his material included the specimen of Iles Chausey, which proves to belong indeed to *Sphaeroma serratum*), while it was found in a bird's stomach (one is never sure where this bird came from). For these reasons I will consider them here as two different species, but I will not describe *S. podicipitis* as a distinct species while no good description is at hand and the taxonomically most important parts of the specimen are missing.

**Lekanesphaera panousei** (Daguerre de Hureaux, Elkaïm & Lejuez, 1964)  
(fig. 11)

*Sphaeroma panousei* Daguerre de Hureaux, Elkaïm & Lejuez, 1964: 1-14; Daguerre de Hureaux et al., 1965: 119; Bocquet & Lejuez, 1969: 8, 12; Bocquet & Rezig, 1973: 2497; Rezig, 1974: 339-340; Rezig, 1977a: 6.

No material examined.

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 15-18 articles. Each article of flagellum bearing fringe of smooth setae at distal interior angle. Adult male with these setae more abundant, up to two to three times length of article. In female these setae reaching only as far as end of next segment.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with broad lobes: ratio of width of third segment to that of protruding internal margin 4 : 1. Palp segments II-V with fringe of long, bare setae. Third or fourth segments bearing 7-8 long, bare setae in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. Near rostro-distal spine transverse row of 15 bare setae being inserted. Merus and ischium tergally bearing 200 and 100-200 long, bare setae, respectively.

Dorsal surface of fused abdomen bearing two robust tubercles (as do sixth

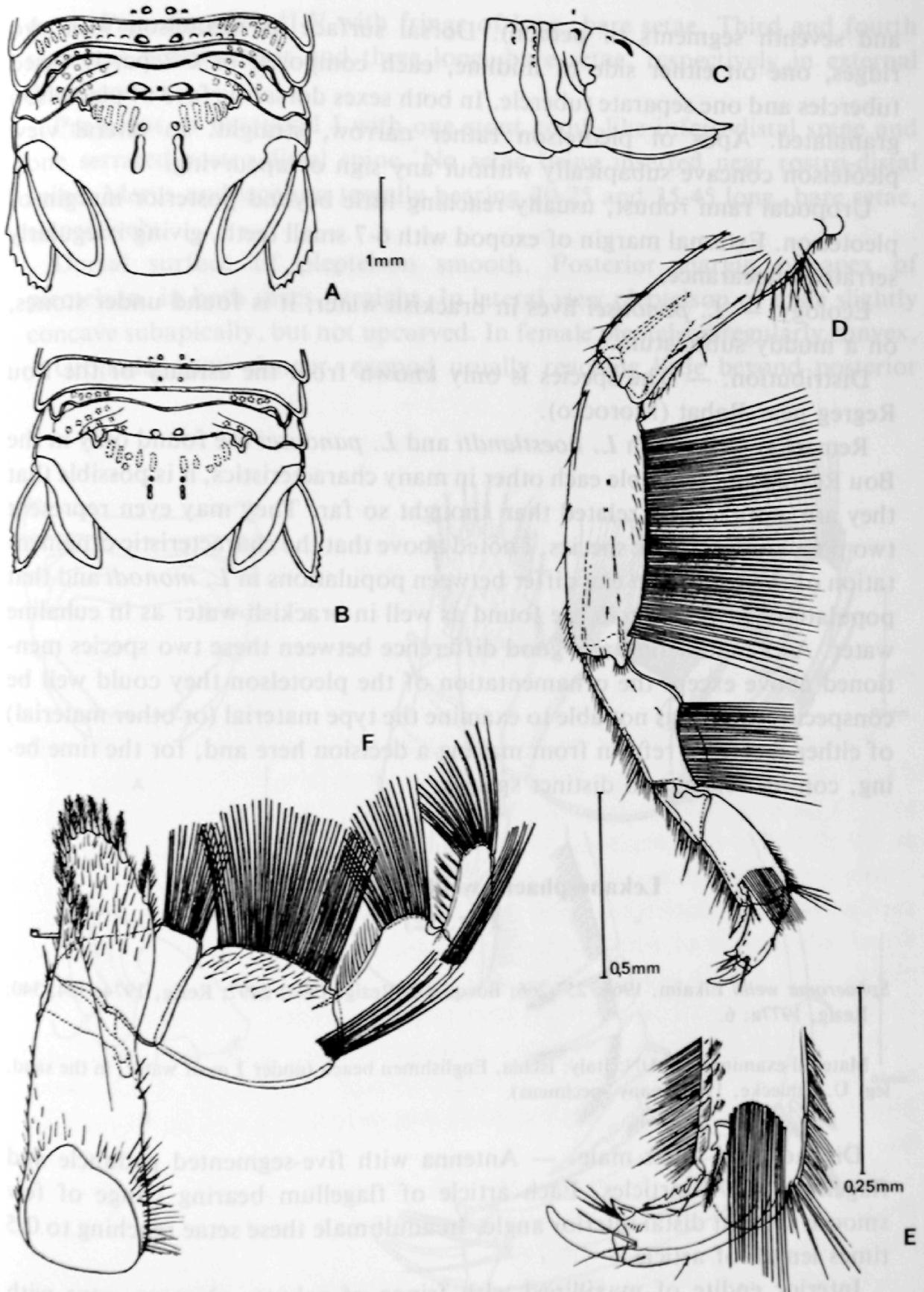


Fig. 11. *L. panousei* (Daguerre de Hureaux, Elkäim & Lejuez). a-e, after Daguerre de Hureaux et al. (1964): a, pleotelson ♂ in tergal view; b, pleotelson ♀ in tergal view; c, pleotelson ♂ in lateral view; d, Mxp; e, Pl; f, detail Pl.

and seventh segments of pereon). Dorsal surface of pleotelson with two ridges, one on either side of midline, each composed of 6-7 partly fused tubercles and one separate tubercle. In both sexes dorsal surface of pleotelson granulated. Apex of pleotelson rather narrow, straight. In lateral view pleotelson concave subapically without any sign of upcurving.

Uropodal rami robust, usually reaching little beyond posterior margin of pleotelson. External margin of exopod with 6-7 small teeth, giving irregularly serrated appearance.

Ecology. — *L. panousei* lives in brackish water; it is found under stones, on a muddy substratum.

Distribution. — The species is only known from the estuary of the Bou Regreg near Rabat (Morocco).

Remarks. — As both *L. hoestlandti* and *L. panousei* are found only in the Bou Regreg and resemble each other in many characteristics, it is possible that they are more closely related than thought so far. They may even represent two populations of one species. I noted above that the characteristic ornamentation of the pleotelson can differ between populations in *L. monodi* and that populations of *L. monodi* are found as well in brackish water as in euhaline water. As I cannot find any good difference between these two species mentioned above except the ornamentation of the pleotelson they could well be conspecific. As I was not able to examine the type material (or other material) of either species, I refrain from making a decision here and, for the time being, consider them two distinct species.

### **Lekanesphaera weilli** (Elkaïm, 1966)

(fig. 12)

*Sphaeroma weilli* Elkaïm, 1966: 257-266; Bocquet & Rezig, 1973: 2497; Rezig, 1974: 334, 340; Rezig, 1977a: 6.

Material examined. — UN: Italy: Ischia, Englishmen beach (under 1 m of water, in the sand, leg. U. Schiecke, 1967, many specimens).

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 7-9 articles. Each article of flagellum bearing fringe of few smooth setae at distal interior angle. In adult male these setae reaching to 0.5 times length of article.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with broad lobes: ratio of width of third segment to that of protruding internal margin

4 : 1. Palp segments II-V with fringe of long, bare setae. Third and fourth segments bearing four and three long, bare setae, respectively in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. No setae being inserted near rostro-distal spine. Merus and ischium tergally bearing 20-25 and 35-45 long, bare setae, respectively.

Dorsal surface of pleotelson smooth. Posterior margin of apex of pleotelson, in both sexes, straight. In lateral view pleotelson of male slightly concave subapically, but not upcurved. In female pleotelson regularly convex.

Uropodal rami slender, exopod usually reaching little beyond posterior

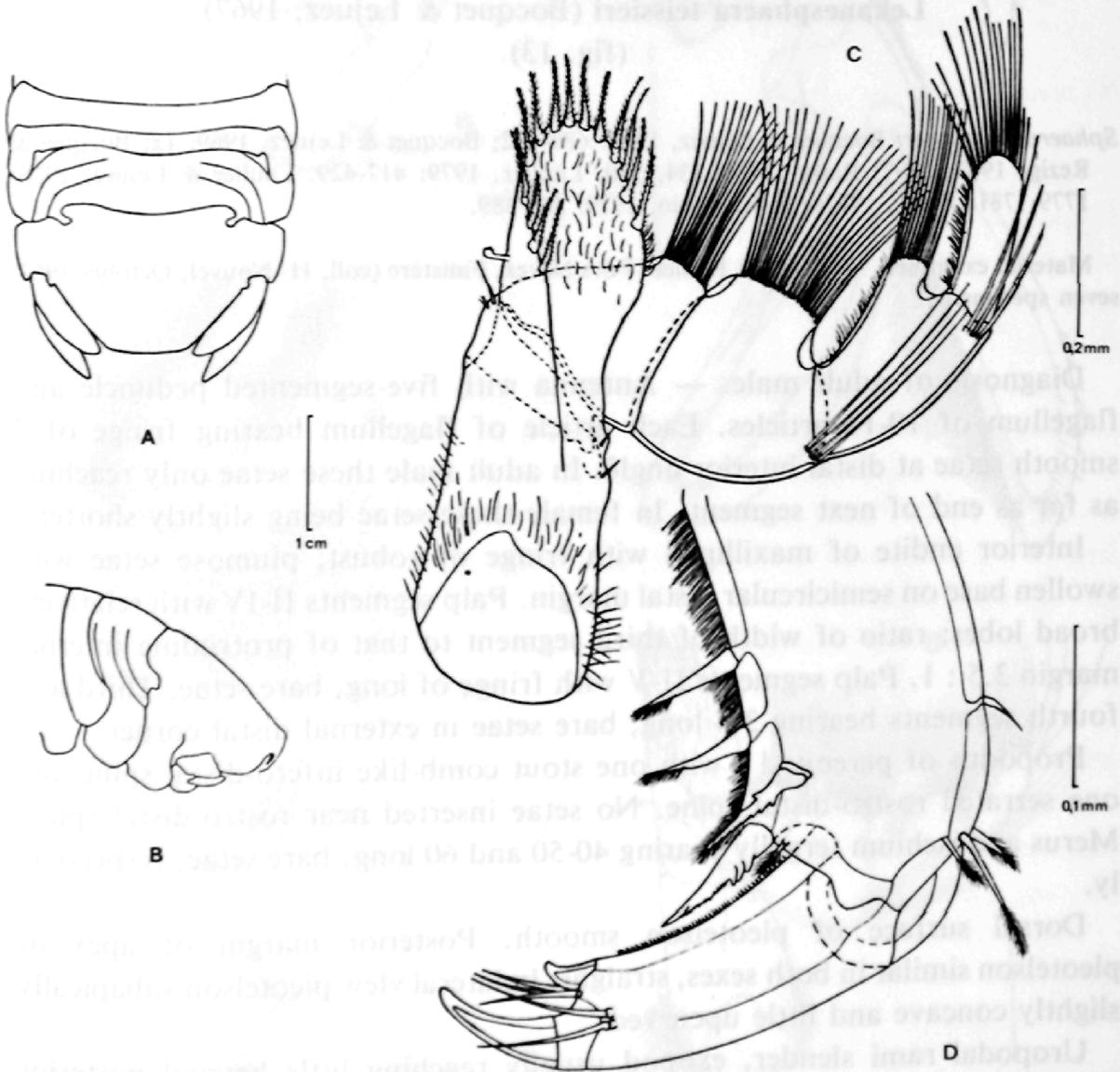


Fig. 12. *L. weilli* (Elkaïm). a-d, after Elkaïm (1966): a, pleotelson in lateral view; b, pleotelson in tergal view; c, Mxp; d, detail Pl.

margin of pleotelson. In males, external margin of inwardly bent exopod smooth, while in females exopod straight and irregularly serrated (when examined microscopically).

Ecology. — *L. weilli* is an intertidal species, found in moist or wet clean sand, buried 10-15 cm deep.

Distribution. — Until recently the species was only known from the mouth of the Bou Regreg, but through the kindness of Dr. D.M. Holdich I was allowed to study some specimens from Ischia, Italy. The peculiar habitat in which it seems to live, could well be the reason that the species has been overlooked in other localities.

### ***Lekanesphaera teissieri* (Bocquet & Lejuez, 1967)**

(fig. 13)

*Sphaeroma teissieri* Bocquet & Lejuez, 1967: 689-692; Bocquet & Lejuez, 1969: 12; Bocquet & Rezig, 1973: 2497; Rezig, 1974: 334, 340; Laulier, 1979: 417-429; Laulier & Lejuez, 1976: 1779-1781; Rezig, 1977a: 6; Kussakin, 1979: 385-389.

Material examined. — RMNH: France: Pors Nevez, Finistère (coll. H. Nouvel, October 1952, seven specimens).

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 10-14 articles. Each article of flagellum bearing fringe of 5 smooth setae at distal interior angle. In adult male these setae only reaching as far as end of next segment. In female these setae being slightly shorter.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with relatively broad lobes: ratio of width of third segment to that of protruding internal margin 3.5 : 1. Palp segments II-V with fringe of long, bare setae. Third and fourth segments bearing 3-4 long, bare setae in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. No setae inserted near rostro-distal spine. Merus and ischium tergally bearing 40-50 and 60 long, bare setae, respectively.

Dorsal surface of pleotelson smooth. Posterior margin of apex of pleotelson similar in both sexes, straight. In lateral view pleotelson subapically slightly concave and little upcurved.

Uropodal rami slender, exopod usually reaching little beyond posterior margin of pleotelson. In male, external margin of exopod smooth and bent inwards more than in female. Exopod ending in rather sharp point.

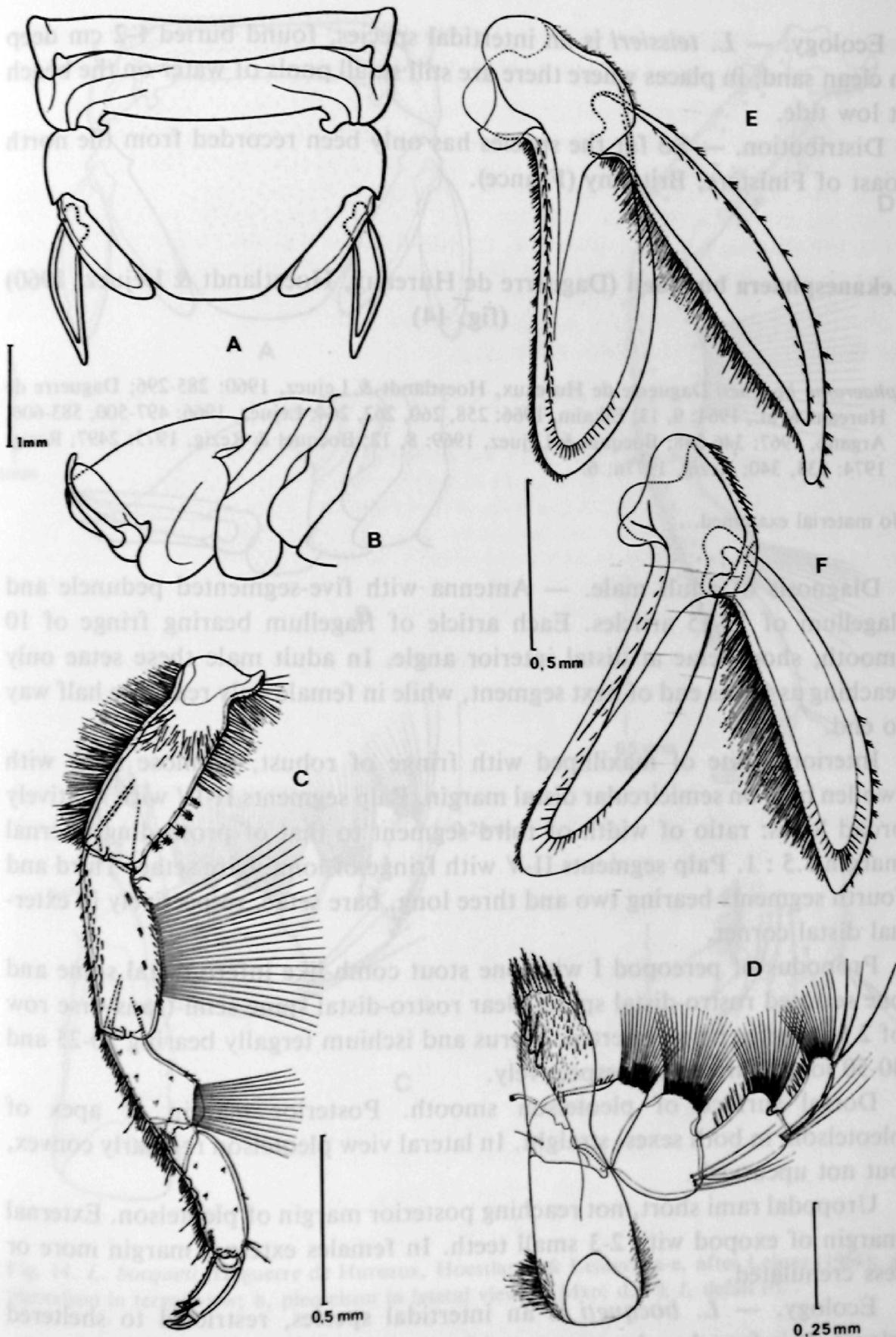


Fig. 13. *L. teissieri* (Bocquet & Lejuez). a-f, after Bocquet & Lejuez (1969): a, pleotelson in tergal view; b, pleotelson in lateral view; c, Mxp; d, Pl; e, uropod ♂; f, uropod ♀.

Ecology. — *L. teissieri* is an intertidal species, found buried 1-2 cm deep in clean sand, in places where there are still small pools of water on the beach at low tide.

Distribution. — So far the species has only been recorded from the north coast of Finistère, Brittany (France).

***Lekanesphaera bocqueti*** (Daguerrre de Hureaux, Hoestlandt & Lejuez, 1960)  
(fig. 14)

*Sphaeroma bocqueti* Daguerrre de Hureaux, Hoestlandt & Lejuez, 1960: 285-296; Daguerrre de Hureaux et al., 1964: 9, 13; Elkaïm, 1966: 258, 260, 262, 264; Lejuez, 1966: 497-500, 583-606; Argano, 1967: 346-348; Bocquet & Lejuez, 1969: 8, 12; Bocquet & Rezig, 1973: 2497; Rezig, 1974: 334, 340; Rezig, 1977a: 6.

No material examined.

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 13-15 articles. Each article of flagellum bearing fringe of 10 smooth, short setae at distal interior angle. In adult male these setae only reaching as far as end of next segment, while in female only reaching half way to end.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with relatively broad lobes: ratio of width of third segment to that of protruding internal margin 3.5 : 1. Palp segments II-V with fringe of long, bare setae. Third and fourth segments bearing two and three long, bare setae, respectively in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. Near rostro-distal spine semi-transverse row of 2 bare setae being inserted. Merus and ischium tergally bearing 20-25 and 40-50 long, bare setae, respectively.

Dorsal surface of pleotelson smooth. Posterior margin of apex of pleotelson, in both sexes, straight. In lateral view pleotelson regularly convex, but not upcurved.

Uropodal rami short, not reaching posterior margin of pleotelson. External margin of exopod with 2-3 small teeth. In females external margin more or less crenulated.

Ecology. — *L. bocqueti* is an intertidal species, restricted to sheltered places. It is found under stones and in rock crevices, preferring clean sand.

Distribution. — The species is known from the Atlantic coast of Portugal (Algarve) and Morocco (Casablanca).

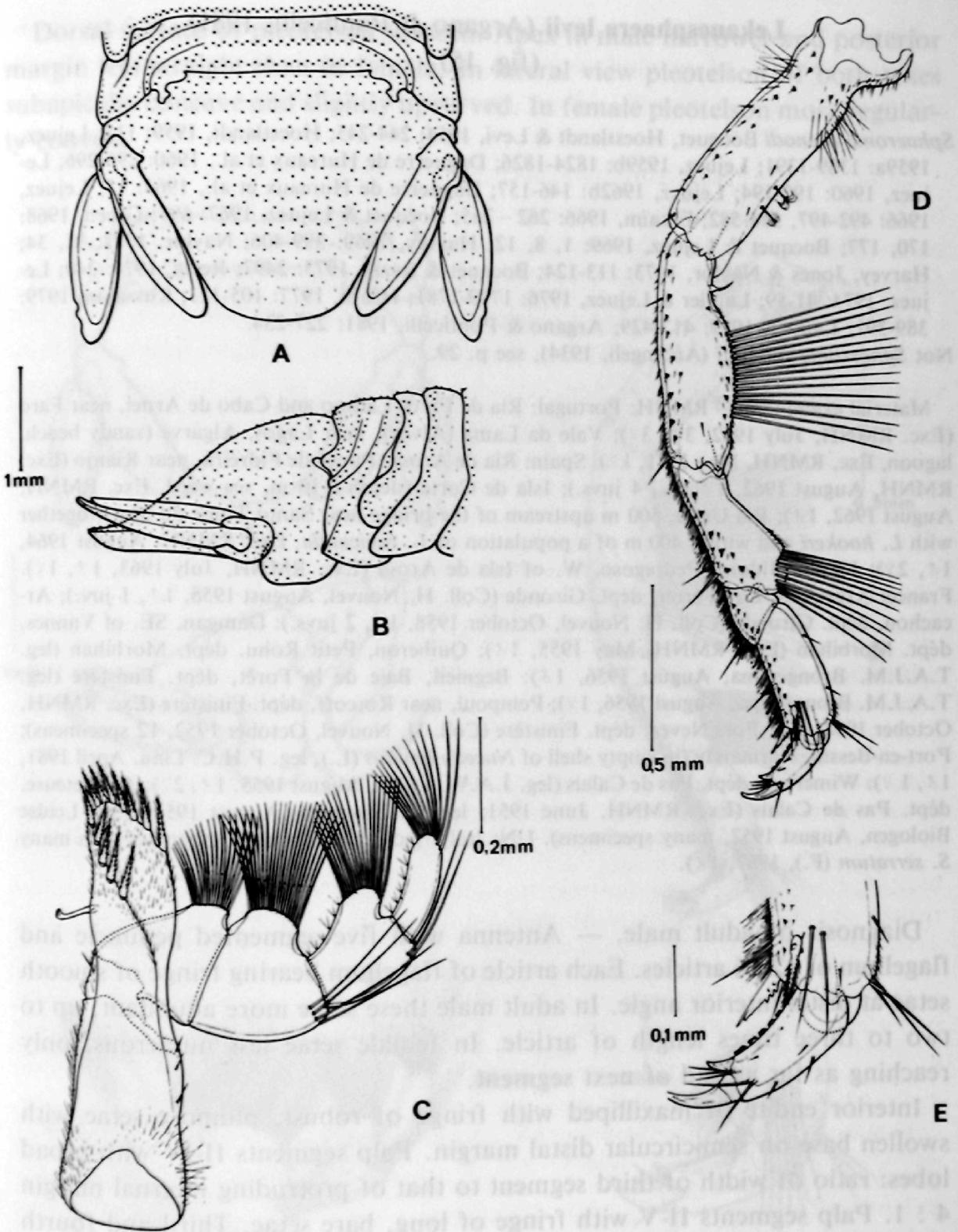


Fig. 14. *L. bocqueti* (Daguerre de Hureaux, Hoestlandt & Lejuez). a-e, after Lejuez (1966): a, pleotelson in tergal view; b, pleotelson in lateral view; c, Mxp; d, Pl; f, detail Pl.

**Lekanesphaera levii** (Argano & Ponticelli, 1981)  
(fig. 15)

*Sphaeroma monodi* Bocquet, Hoestlandt & Levi, 1954: 244-245; Hoestlandt, 1959: 115; Lejuez, 1959a: 1389-1391; Lejuez, 1959b: 1824-1826; Daguerre de Hureaux et al., 1960: 295-296; Lejuez, 1960: 192-194; Lejuez, 1962b: 146-157; Daguerre de Hureaux et al., 1964: 13; Lejuez, 1966: 492-497, 554-582; Elkaïm, 1966: 262-265; Bocquet & Lejuez, 1967: 691; Green, 1968: 170, 177; Bocquet & Lejuez, 1969: 1, 8, 12; Harvey, 1969: 399-406; Naylor, 1972: 31, 34; Harvey, Jones & Naylor, 1973: 113-124; Bocquet & Rezig, 1973: 2497; Rezig, 1974: 340; Lejuez, 1974: 41-59; Laulier & Lejuez, 1976: 1779-1781; Heath, 1977: 105-113; Kussakin, 1979: 389-391; Laulier, 1979: 417-429; Argano & Ponticelli, 1981: 227-234.

Not *Sphaeroma monodi* (Arcangeli, 1934), see p. 29.

Material examined. — RMNH: Portugal: Ria de Faro, Ladrao and Cabo de Arnel, near Faro (Exc. RMNH, July 1962, 3♂, 3♀); Vale da Lama (Alvor), near Lagos, Algarve (sandy beach, lagoon, Exc. RMNH, May 1971, 1♀). Spain: Ría de Arosa: Punta de Fideira, near Rianjo (Exc. RMNH, August 1962, 1♂, 2♀, 4 juvs.); Isla de Corta (depth 5-10 m, sea-weed, Exc. RMNH, August 1962, 1♂); Ria Umia, 500 m upstream of the bridge near Santo Tomé do Mar (together with *L. hookeri* and within 400 m of a population of *L. rugicauda*, Exc. RMNH, August 1964, 1♂, 2♀); NE. of Jidoiro Pedregoso, W. of Isla de Arosa (Exc. RMNH, July 1963, 1♂, 1♀). France: Arcachon, Cap Ferret, dépt. Gironde (Coll. H. Nouvel, August 1958, 1♂, 1 juv.); Arcachon, dépt. Gironde (Coll. H. Nouvel, October 1958, 1♂, 2 juvs.); Damgan, SE. of Vannes, dépt. Morbihan (Exc. RMNH, May 1955, 1♂); Quiberon, Petit Rohu, dépt. Morbihan (leg. T.A.J.M. Brongersma, August 1956, 1♂); Begmeil, Baie de la Forêt, dépt. Finistère (leg. T.A.J.M. Brongersma, August 1956, 1♀); Pempoul, near Roscoff, dépt. Finistère (Exc. RMNH, October 1938, 1♂); Pors Nevez, dépt. Finistère (Coll. H. Nouvel, October 1952, 12 specimens); Port-en-Bessin, Normandy (in empty shell of *Nucella lapillus* (L.), leg. P.H.C. Lina, April 1981, 1♂, 1♀); Wimereux, dépt. Pas de Calais (leg. J.A.W. Lucas, August 1955, 1♂, 2♀); Ambleteuse, dépt. Pas de Calais (Exc. RMNH, June 1951; leg. C. Swennen, August 1953; Exc. Leidse Biologen, August 1957, many specimens). UN: Italy: Ischia, Naples dock (together with many *S. serratum* (F.), 1967, 1♂).

Diagnosis of adult male. — Antenna with five-segmented peduncle and flagellum of 12-16 articles. Each article of flagellum bearing fringe of smooth setae at distal interior angle. In adult male these setae more abundant, up to two to three times length of article. In female setae less numerous, only reaching as far as end of next segment.

Interior endite of maxilliped with fringe of robust, plumose setae with swollen base on semicircular distal margin. Palp segments II-IV with broad lobes: ratio of width of third segment to that of protruding internal margin 4 : 1. Palp segments II-V with fringe of long, bare setae. Third and fourth segments bearing 6-7 and 4-6 long, bare setae, respectively in external distal corner.

Propodus of pereopod I with one stout comb-like infero-distal spine and one serrated rostro-distal spine. Near rostro-distal spine transverse row of 4-8 bare setae being inserted. Merus and ischium tergally bearing 40-50 and 50-60 long, bare setae, respectively.

Dorsal surface of pleotelson smooth. Apex in male narrower and posterior margin less straight than in female. In lateral view pleotelson of both sexes subapically concave and slightly upcurved. In female pleotelson more regularly convex.

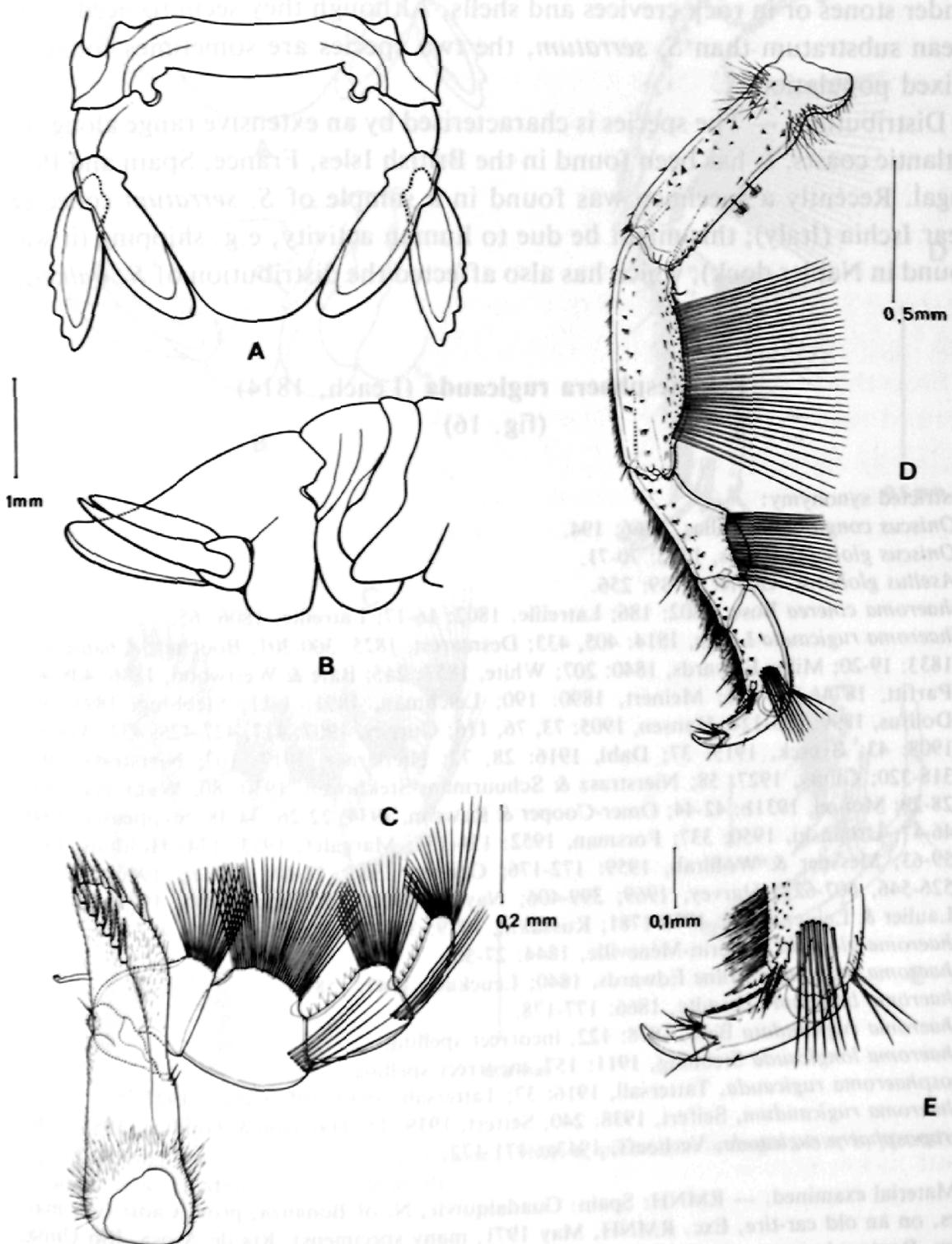


Fig. 15. *L. levii* (Argano & Ponticelli). a-e, after Lejuez (1966): a, pleotelson in tergal view; b, pleotelson in lateral view; c, Mxp; d, Pl; e, detail Pl.