

CONTRIBUTION TO THE KNOWLEDGE OF THE AMPHIPODA
127. NEW FRESHWATER SUBTERRANEAN GENUS RELICTO-
SEBORGIA, N. GEN. WITH REMARKS TO GENUS SEBORGIA
BOUSFIELD (FAM. SEBIDAE).

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ABSTRACT

New freshwater subterranean genus *Relictoseborgia*, n. gen. (Fam. *Sebidae*) is established with the type species *Seborgia relictata* Holsinger 1970, known from the subterranean waters of Texas, U.S.A. (artesian well in San Marcos).

New diagnosis of genus *Seborgia* Bousfield 1970 is made and *Seborgia minima* Bousfield 1970, known from the brackish water of Rennel Island (British Solomon Islands, South Pacific), is re-described and partially figured.

INTRODUCTION

Bousfield described (1970) a new genus and species *Seborgia minima*, n. sp. from the brackish waters of Rennel Island in South Pacific (British Solomon Islands). Later, Holsinger described (1980) one new species of the same genus, *Seborgia relictata*, n. sp. from the subterranean fresh waters of artesian well in San Marcos, Texas (U.S.A.).

The existence of *Seborgia* species in two localities so far to each other and in different ecological conditions (*minima* in brackish waters and *relictata* in fresh waters, indicated the necessity of study of their taxonomic characters, i. e. to examine the belonging of both species to the same genus *Seborgia*.

The analyse of taxonomic characters of both species showed that *minima* and *relictata* nearly belong to two different genera, and

we established a new genus *Relictoseborgia*, n. gen. with the type species *Seborgia relictata* Holsinger 1980.

A c k n o w l e d g m e n t s: I am thankful to Dr. Torben Wolff from the Zoologisk Museum in Copenhagen, Denmark, for the loan of material used in this study.

TAXONOMIC PART

Family *Sebidae* divided Holsinger (1980) into two monotypic subfamilies: subfamily *Sebinae* (type-genus *Seba* Stebbing 1875, see G. Karaman, 1971) and subfamily *Seborgiinae* (type-genus *Seborgia* Bousfield 1970).

The subfamily *Sebinae* is restricted to the marine species only (single genus *Seba* contains about 11 species) and the subfamily *Seborgiinae* is restricted to the fresh- and brackish waters (two genera contain 2 species only: *Seborgia minima* and *Relictoseborgia relictata*).

Subfamily: SEBORGIINAE Holsinger

D i a g n o s i s: (see Holsinger 1980): Labium with well developed inner lobes, inner plate of maxilla 1 short, almost smooth, palp 2-segmented. Maxilla 2 reduced to the single plate. Maxilliped: both plates narrow, setose, palp 4-segmented, segments 2-3 elongated, narrow. Mandible: incisor toothed, molar conical, non triturative, palp 3-segmented.

Coxae 1-4 long, coxa 5 much shorter than 4. Gnathopods 1-2 subchelate, pereopods 3-4 normal. Pereopods 5-7 with lobed segment 2. Pleopods normal, biramous. Uropods 1-2 biramous, slender, rami unequal. Uropod 3 uniramous, telson long, entire. Oostegys narrow. Coxal gills ovoid.

Type-genus: *Seborgia* Bousfield 1970 (orig. design.).

Genera: *Seborgia* Bousfield 1970, *Relictoseborgia* n. gen.

Genus SEBORGIA Bousfield

S y n .: *Seborgia* Bousfield 1970: 164; Holsinger, in: Holsinger & Longley 1980: 45; Bousfield 1982: 276.

Type-species: *Seborgia minima* Bousfield 1970.

D i a g n o s i s: Urosomites free, rostrum well developed, lateral cephalic lobes of head well developed, anteroventral sinus present, deep. Eyes absent. Antenna 1 longer than antenna 2, both antennae stout, antenna 1 telescopic-shaped, accessory flagellum 1-segmented, short. Labrum shallow, incised distally, labium with well developed, small inner lobes and large mandibular lobes (fin-

gers). Mandible: palp segments 1 and 3 subequal, segment 1 reaching half of segment 2.

Maxilla 1: inner plate short, outer plate spinose, palp well developed, 2-segmented. Maxilla 2 unisegmented, setose. Maxilliped: both plates setose only, palp elongate.

Gnathopods 1-2 subchelate, nearly subequal, segment 5 short, not distinctly lobed posteriorly on gnathopod 1, unlobed on gnathopod 2. Pereopods 3-7 normal. Uropods 1-2 lanceolate, with inner ramus longer than outer one. Uropod 3 short, not reaching tip of uropods 1-2, uniramous, single ramus 1-segmented. Telson entire, long. Males hardly differs from females.

SEBORGIA MINIMA Bousfield
figs.: I-III.

Syn.: *Seborgia minima* Bousfield 1970: 164, fig. 4.

Material examined: Rennel Island (British Solomon Islands, South Pacific): Pandanus, Rennel expedition St. 7, 19 March, 1965 (det. Bousfield), (Zoologisk Museum, Copenhagen), Tegano Lake, several specimens.

Description: female ovig. 1.0 mm: Body stout, laterally compressed, urosomites free, smooth. Rostrum strong, lateral cephalic lobes of head subrounded, reaching tip of rostrum (fig. I, 1), ventroanterior sinus deep. Eyes absent (fig. I, 1).

Coxae 1-4 long, much longer than broad, subrounded ventrally, poorly setose, progressively longer towards coxa 4 (fig. II, 2, 3; III, 1, 2). Coxa 1 slightly dilated medially (fig. II, 2), coxae 2-4 with parallel lateral margins, coxa 4 with short distoposterior notch (fig. III, 2), coxae 5-7 short, poorly bilobed.

Labrum much broader than long, excavated medially; labium with strong outer lobes bearing short mandibular lobe (finger), inner lobes short but well developed.

Mandible: incisor toothed, molar conical, non tritulative; palp 3-segmented, segments 1 and 3 short, subequal, segment 2 twice longer than segment 1, segment 3 non falciform, bearing 4 distal E-setae (fig. II, 1).

Maxilla 1: inner plate short, with short distal seta, outer plate with several toothed spines, palp 2-segmented, palp of left and right maxilla 1 symmetric to each other. Maxilla 2: consisting of single plate setose distally. Maxilliped: both plates with setae only, palp strong, 4-segmented, segments 1 and 4 short, segments 2-3 long.

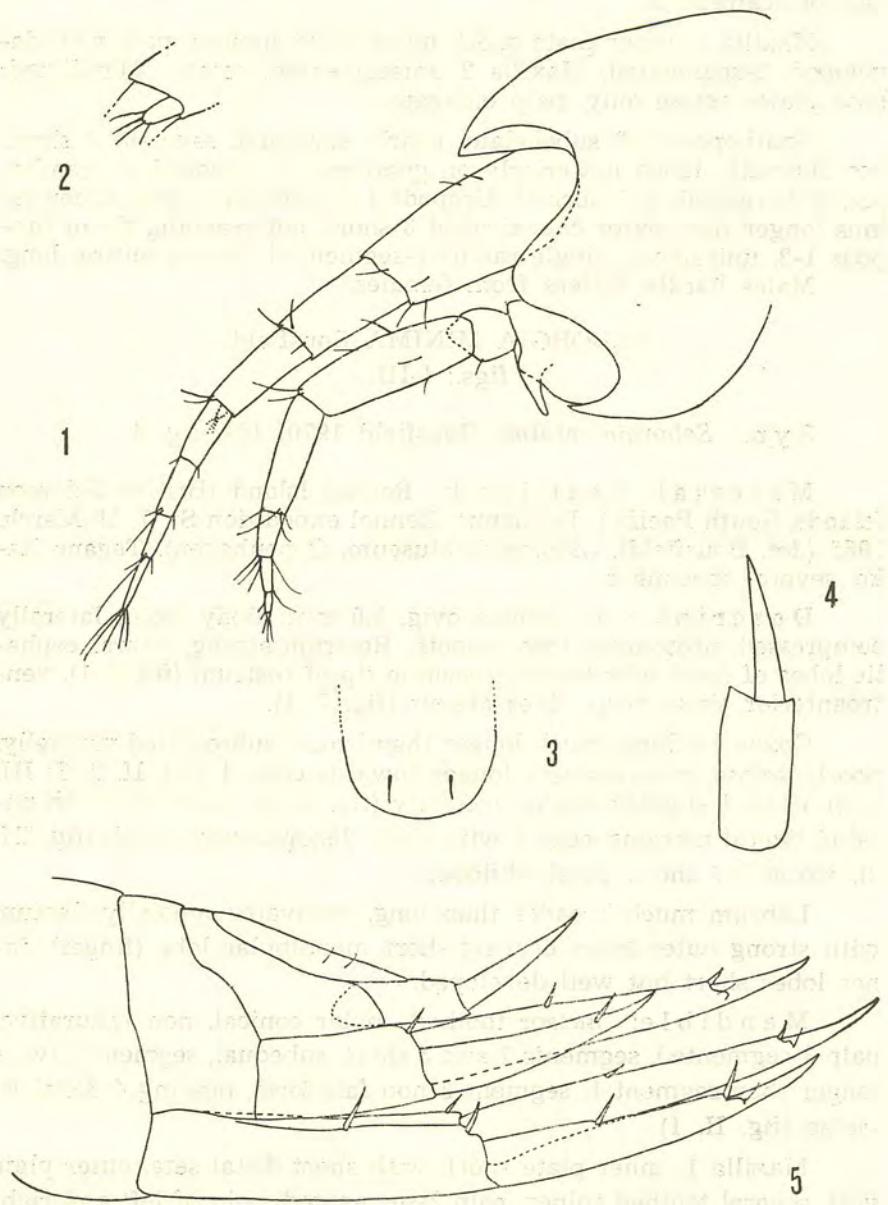


Fig. 1. *Seborgia minima* Bousfield, Rennel Island, Pandanus, female 1 mm: 1 = head with antennae 1-2; 2 = accessory flagellum; 3 = distal part of telson; 4 = uropod 3; 5 = urosome with uropods 1-3.

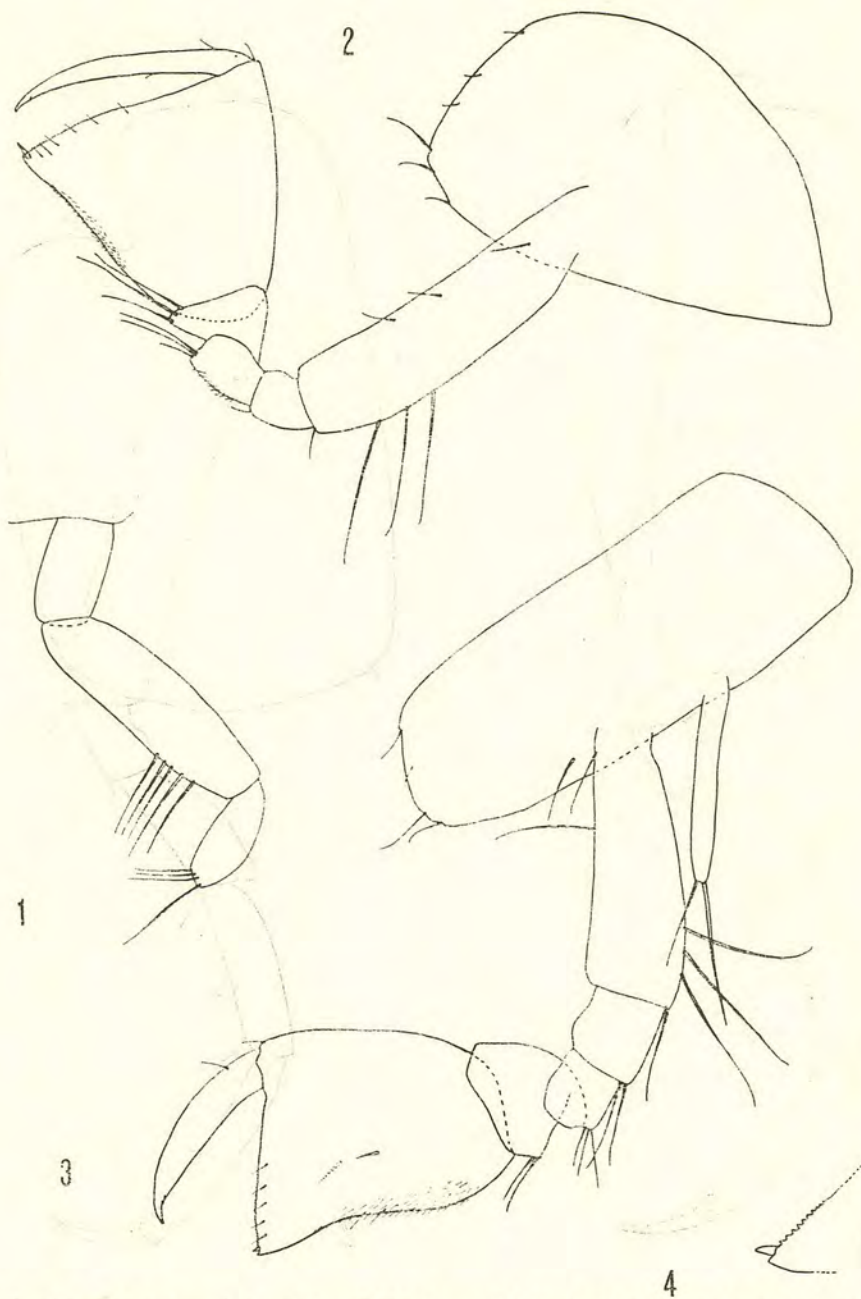


Fig. II. *Seborgia minima* Bousfield, Rennel Island, Pandanus, female 1 mm: 1 = mandibular palp; 2 = gnathopod 1; 3 = gnathopod 2; 4 = distoposterior tip of segment 6 of gnathopod 2.

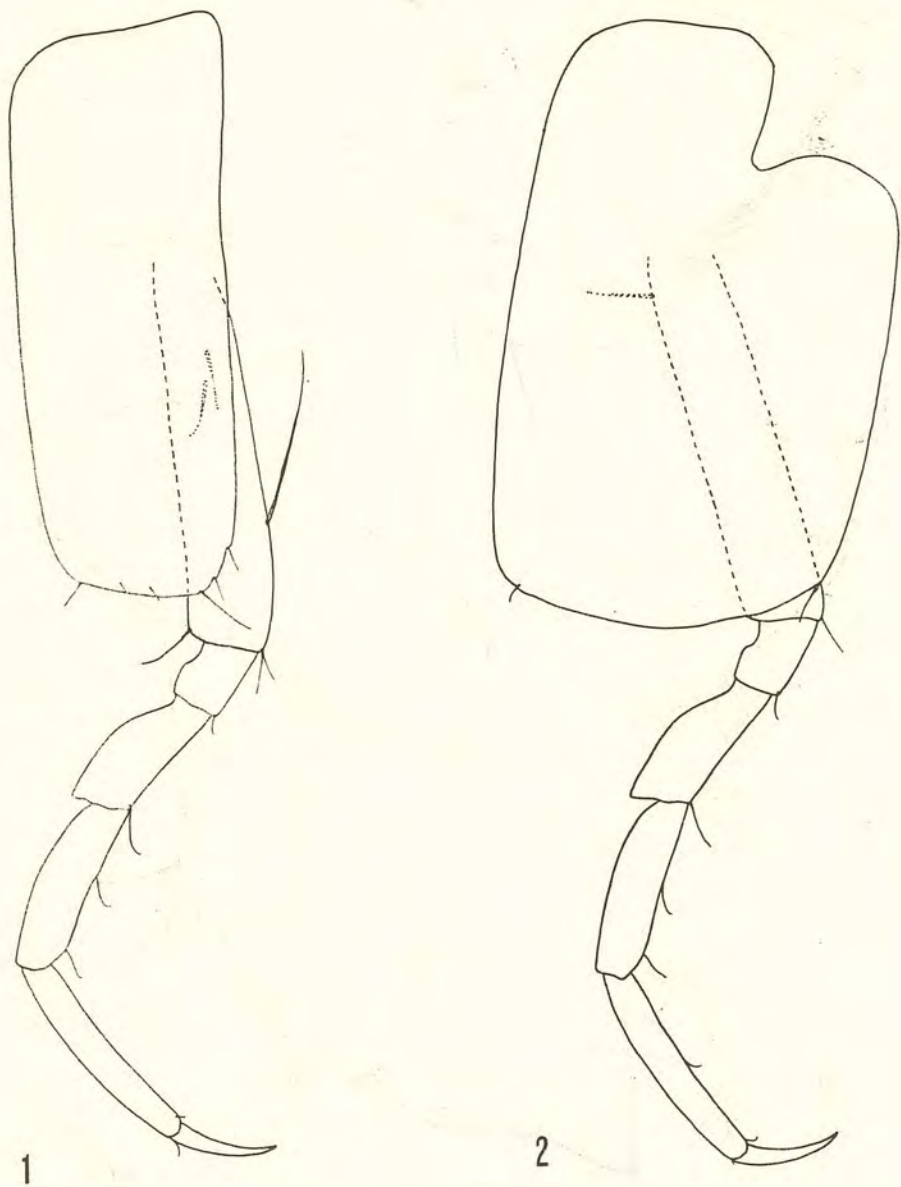


Fig. III. *Seborgia minima* Bousfield, Rennel Island, Pandanus, female 1 mm:
1 = pereopod 3; 2 = pereopod 4.

Antennae 1-2 stout, short. Antenna 1 telescopic — shaped (fig. I, 1), peduncular segments 1-3 progressively shorter, main flagellum shorter than peduncle, 4-articulate. Accessory flagellum vestigial, 1-segmented (fig. I, 2).

Antenna 2 shorter than antenna 1, peduncular segment 4 longer than 5, flagellum short, 4-articulate (fig. I, 1). Antennal gland cone recurved.

Gnathopods 1-2 moderate, subchelate, subequal in size (fig. II, 2-4). Segment 5 short, unlobed (gnathopod 2) or undistinctly lobed (gnathopod 1). Segment 6 of both gnathopods trapezoid, dilated distally, with slightly concave posterior margin and transverse, finely serrate palm bearing one small distoposterior corner spine (fig. II, 4). Dactyl not exceeding the width of segment 6, slender in gnathopod 1, stouter in gnathopod 2, always bearing one short seta at outer margin.

Pereopods 3-4 similar to each other in size and shape, normal; segments 4-6 progressively longer, dactyl reaching nearly half of segment 6 (figs. III, 1, 2).

Pereopods 5-7 moderate, subequal long (nearly), alike to each other, with large, ovoid, lobed segment 2, segments 3-6 normal, narrow, dactyl like that in pereopods 3-4.

Pleopods 1-3 biramous, normal, rami consisting of several segments each, peduncle with 2 retinacula each.

Uropods 1-2 lanceolate, long, peduncle shorter than rami, rami with lateral spines only (fig. I, 5). Ventrofacial spine on peduncle of uropod 1 absent. Inner ramus of uropod 1 slightly longer than outer one, outer ramus of uropod 2 reaching 3/5 of inner ramus only (fig. I, 5).

Uropod 3 short, non reaching tip of uropods 1-2 (fig. I, 5); peduncle nearly as long as single unisegmented ramus (fig. I, 4). Telson long, entire, with 2 short subdistal setae (fig. I, 3).

Oostegites long and narrow, with distal setae only.

Male similar to female in general.

Loc. typ.: Rennel Island: Lake Tegano, Hutuna (British Solomon islands).

Localities cited: Rennel Island (Bousfield 1970).

Ecology: living in brackish waters (oligohaline).

Genus RELICTOSEBORGIA n. gen.

Syn.: *Seborgia* (part.) Holsinger 1980: 50.

Type-species: *Seborgia relictata* Holsinger 1980.

Diagnosis: Rather similar to the genus *Seborgia* but with some important differences. Rostrum well developed, lateral cephalic lobes of the head shallow, not reaching the tip of rostrum, anteroventral sinus of head obsolete. Eyes absent.

Antennae 1-2 more slender and longer than these in genus *Seborgia*. Antenna 1 longer than antenna 2, both antennae non telescopic-shaped. Peduncular segments of antenna 1 linear, first segment much larger than second one, not tapering distally. Accessory flagellum 1-segmented, short.

Labrum deeply excavated medially (distally). Labium with large inner lobes. Maxilla 1, maxilla 2 and maxilliped like these in genus *Seborgia*. Mandible: incisor toothed, molar non triturative, palp 3-segmented: first segment exceeding remarkably half of second palp segment.

Gnathopods 1-2 subchelate, large, gnathopod 1 much larger than gnathopod 2. segment 5 of gnathopod 2 unlobed, that of gnathopod 1 poorly lobed. Pereopods 3-4 normal. Pereopods 5-7 normal, alike to each other, with large, ovoid segment 2 lobed. Pleopods and uropods like these in genus *Seborgia*, but peduncle of uropod 3 shorter than single unisegmented ramus. Telson long, entire, smooth.

Males hardly differs from females (gnathopods).

Remarks: Genus *Relictoseborgia* is rather similar to genus *Seborgia* Bousf. but differs from later in non telescopic antenna 1, unequal gnathopods 1-2, large inner lobes of labium, shallow lateral cephalic lobes and obsolete ventroanterior sinus of head, shape of mandibular palp, uropod 3, etc.

RELICTOSEBORGIA RELICTA (Holsinger)

Syn.: *Seborgia relictata* Holsinger, in: Holsinger & Longley 1980: 45, figs. 23-25.

Loc. typ.: U.S.A.: Texas: Hays County, Artesian well in San Marcos.

Distribution: known only from type-locality.

Ecology: living in the subterranean fresh waters.

Remarks: Rostrum exceeding anterior edge of lateral cephalic lobes. Eyes absent. Urosomites free. Main flagellum of antenna 1 distinctly longer than the first peduncular segment, slender and linear, aesthetascs present. Telson smooth. Gnathopod 1 much larger than gnathopod 2.

Seborgia minuta and *R. relictata* exist in two different biotops (*minuta* in brackish waters, *relictata* in freshwaters) very far to each

other (over 7.400 km). It was practically impossible to explain now the strange distribution of these two species as a members of one single genus *Seborgis*. That fact was also one of the points indicating the possibility that both species probably belong to two different genera rather similar to each other. Probably new numbers of both genera will be discovered in the future from U.S.A. and South Pacific region.

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127. PRILOG POZNAVANJU AMPHIPODA. NOVI SLATKOVODNI
PODZEMNI ROD RELICTOSEBORGIA, N. ROD, SA OSVRTOM
NA ROD SEBORGIA BOUSFIELD (FAM. SEBIDAE)

Gordan S. KARAMAN

Re z i m e

Bousfield je opisao (1970) novi rod i vrstu *Seborgia minima* iz brakičnih voda Rennel otoka u južnom Pacifiku. Kasnije je Holsinger (1980) opisao drugu vrstu ovog roda, *Seborgia relictata*, iz podzemnih slatkih voda arterijskog bunara u San Marcos u Tek-sasu (SAD).

Postojanje vrsta iz roda *Seborgia* u dva lokaliteta koja su veoma udaljena međusobno (preko 7.400 km) i u različitim ekološkim uslovima (*minima* u brakičnoj vodi, *relictata* u slatkoj vodi), ukazalo je na potrebu da se detaljno prouče taksonomski karakteri obje vrste i utvrdi da li zaista obje vrste pripadaju jednom te istom rodu ili ne.

Detaljna analiza taksonomskih odlika obje vrste opravdala je naše sumnje i utvrdili smo da *relictata* i *minima* ustvari pripadaju dvjema različitim rodovima. Na osnovu toga smo postavili novi rod *Relictoseborgia*, sa tipom roda *Seborgia relictata* Holsinger 1980.

Postojeći rod *Seborgia* ostaje za sada kao monotipični rod sa tipom roda *Seborgia minima* Bousfield 1970. U radu je data nova dijagnoza ovog roda i tip roda, *S. minima* je ponovo opisan i ilustriran na osnovu materijala iz jezera Tegano na otoku Rennel koji pripada Britanskim Solomonskim otocima u južnom Pacifiku.