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SADURIELLA, A NEW GENUS OF ISOPODA VALVIFERA FROM NORTHWESTERN SPAIN

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During the summers of 1962 and 1963 the Geologisch en Mineralogisch Instituut of Leiden University and the Rijksmuseum van Natuurlijke Historie at Leiden carried out a joint exploration of the geology, oceanography and biology of Ria de Arosa, a fiord-like bay in northwestern Spain, north of Vigo. These investigations were not confined to the Ria proper, but also included the affluent rivers like the Rio Ulla and Rio Umia. These explorations will be continued in 1964.

In July 1963 a specimen of a peculiar isopod was found by the oceanographic party when exploring the Rio Ulla, a river emptying in the northeastern corner of the Ria de Arosa. This find caused the biologists to give more attention to the locality where the animal was caught and many more specimens were obtained there during a trip specially organized for the purpose.

A study of the collected material revealed that the isopods are Valvifera belonging to the subfamily Mesidoteinae of the family Idoteidae. However, they could not be fitted into any of the known genera of this subfamily and consequently are described here as constituting a new genus and species.

The facts that (1) the species is not rare in the type locality, (2) the specimens are of good size, measuring up to 15 mm, and (3) they inhabit a habitat which is neither unusual nor difficult to explore, make it difficult to understand why the present form has not been discovered before. As the type locality is not very close to any big harbour, it seems unlikely that the species has been accidentally introduced there from somewhere else. A thorough exploration of other brackish waters along the European southwest coast may show that the species also occurs elsewhere in that area.

Saduriella new genus

A genus of valviferous Isopoda belonging to the subfamily Mesidoteinae. The body is dorsoventrally depressed. The head is wide with an incision in each antero-lateral margin near the eye. The eyes are situated dorsally, they are distinct and pigmented. The coxal plates are present on the last six thoracic somites, from which they are distinctly separated by dorsal sutures. The abdomen has four somites before the telson; the anterior three of these are completely free, the fourth is free in its lateral parts, but fused with the telson in its median portion.

The antennulae are shorter than the antennae; the flagellum consists of a single segment. The antennal flagellum is composed of 7 to 9 segments.

The palp of the maxilliped consists of five articles.

The first three pairs of legs have subchelae, those of the third pair being somewhat smaller than those of the first and second pairs. The last four pairs of pereiopods are ambulatory.

The uropods have the inner ramus distinct, about half as long as the outer.

The type and only species known so far is:

Saduriella losadai new species (fig. 1, 2)

Material examined. — Rio Ulla, west of Catoira, near Ria de Arosa, N.W. Spain; 1.5 to 3.5 m deep; dredged; bottom coarse sand and gravel; 5 and 18 July 1963; Stations 1.307, 1.461, 1.463 and 1.464. — 36 specimens (including 1 female with young).

Description. — The head is wide, being much wider posteriorly than anteriorly; the anterior margin is somewhat sinuous, being concave in the middle. The antero-lateral margins of the head show a small but distinct V-shaped incision at the level of the eyes. Laterally the first thoracic somite is somewhat forward produced and encloses the head, it has no coxal plate. Coxal plates are present in all following thoracic somites and are clearly visible in dorsal view; they are separated from the somites by a distinct dorsal suture and end posteriorly in a distinct sharp angle.

The first three abdominal somites are free and distinct. The fourth is free in its lateral parts, but fused with the telson in its median part. The telson is elongate triangular, measuring about 4/5 of the length of the rest of the body; it is widened slightly above its base.

The antennular flagellum (fig. 2a) is one-segmented, it reaches beyond the end of the antennal peduncle, but fails to reach the end of the antennal flagellum. The antennal flagellum (fig. 2b) consists of 7 to 9, usually 8 segments.

The mandible (fig. 2c) very closely resembles that of *Chiridotea,* as figured

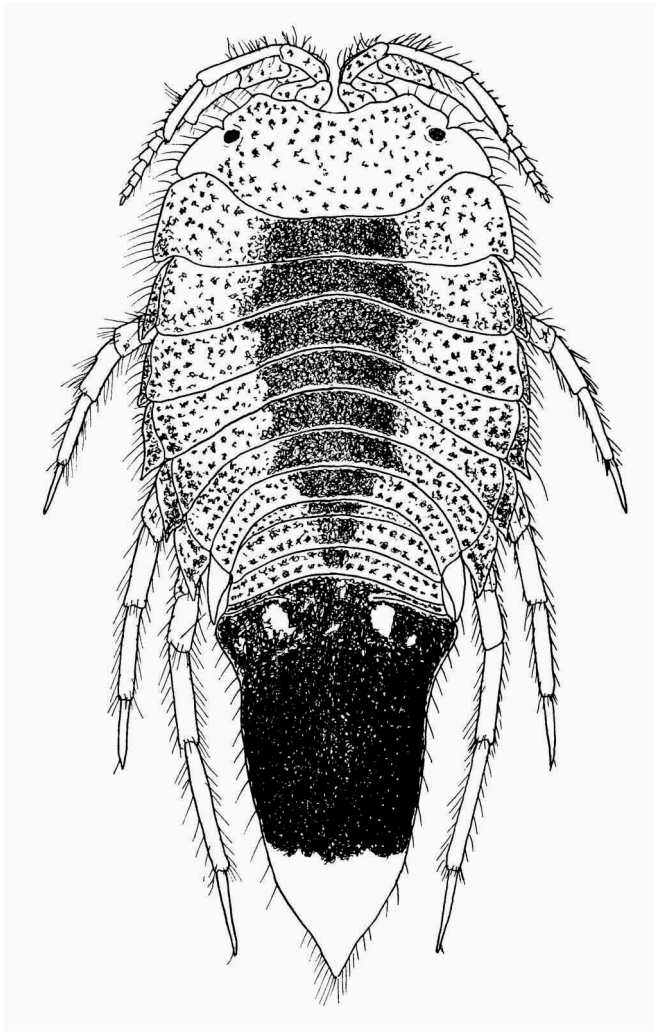

Fig. 1. *Saduriella losadai* new species, female in dorsal view. × 9.

by Bowman (1955) for *Chiridotea almyra* Bowman. The inner lacinia of the maxillula (fig. 2d) bears two long setose spines at the apex, while a very small seta is present there also. The maxilla (fig. 2e) is of the normal shape. The maxilliped (fig. 2f) has the palp five-segmented: the distal segment is narrow, the four others are quite broad.

The first three pereiopods (figs. 2g) are provided with subchelae, which are very similar in shape. The propodus of the first leg is almost twice as long as wide. The dactylus bears a single elongate spine on the posterior

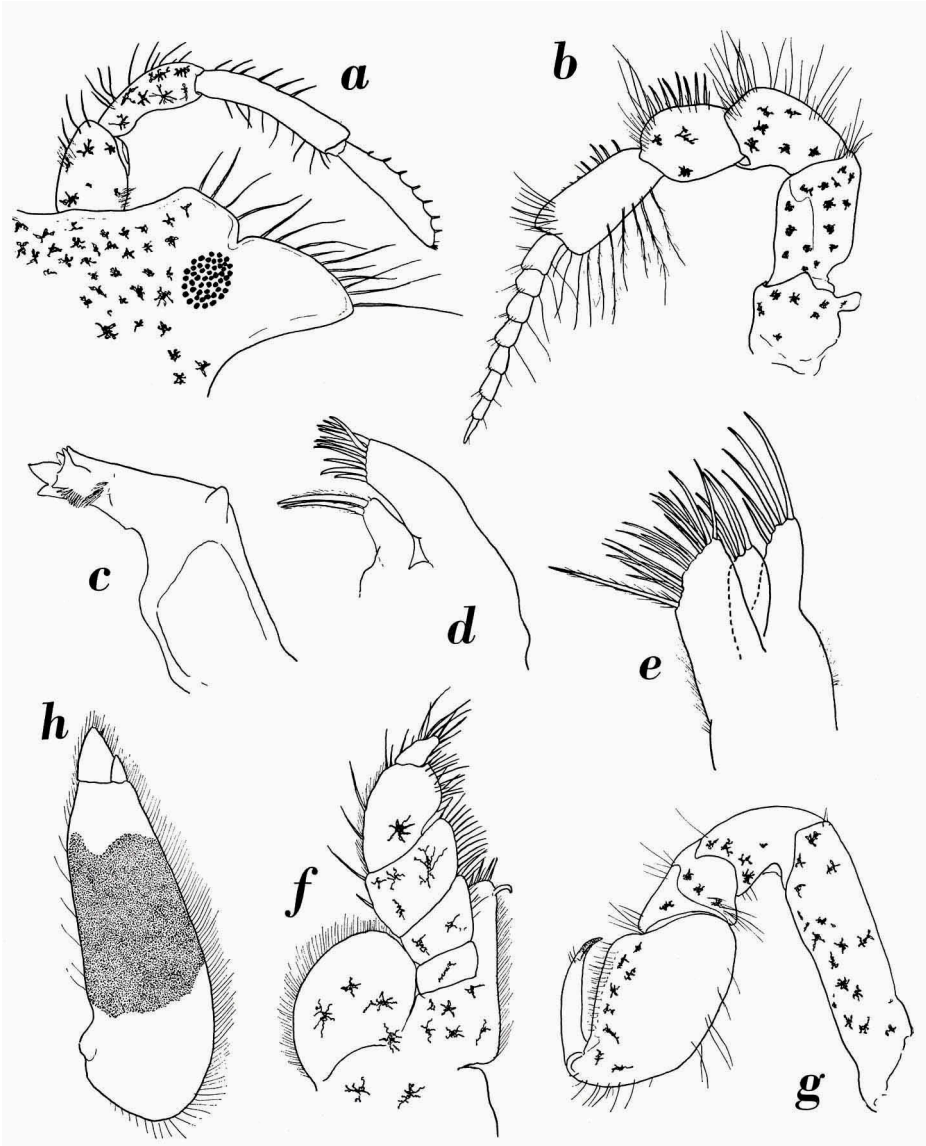

Fig. 2. *Saduriella losadai* new species. a, lateral part of head with antennula; b, antenna; c, mandible; d, maxillula; e, maxilla; f, maxilliped; g, first pereiopod; h, uropod. a, b, f, g, × 22.5; c, d, × 35; e, × 60; h, × 10.

margin, near the base of the tip. The subchelae of the first two legs are of the same size, that of the third is somewhat smaller. The last four pereiopods are ambulatory. The sixth leg is longest, though it is only slightly longer than the seventh.

The pleopods are soft and supple. They are covered by the large uropods (fig. 2h), which consist of a large protopod, with at the top two rami. The outer of these rami is about $^1/_6$ of the length of the protopod, while the inner ramus is about half as long as the outer. Both rami are triangular in shape.

Size. — The largest specimen is a female carrying young in the brood-pouch, it measures 15 mm in total length (measured in the midline from the anterior margin of the head to the tip of the telson). The smallest specimen (not including the young carried by the largest female) is 6 mm long. The young from the brood-pouch are 2 mm in length.

Colour. — The specimens are of a pale colour with numerous scattered black chromatophores. The greatest concentration of chromatophores is in the median area of the anterior thoracic somites and in the anterior part of the abdomen. The dark median area on the thorax is widest on the second and third somites, narrowing slightly anteriorly and rather strongly posteriorly. Also the coxal plates of thoracic somites 2 to 6 are dark, those of somites 5 and 6 being darkest; the coxal plate of somite 7 usually is entirely colourless, though in very dark animals it may carry some chromatophores. The free abdominal somites show a colour pattern which is a continuation of that of the thorax. The larger part of the telson is very dark, being almost uniformly black; only the distal third is without chromatophores, while in the extreme basal part a few light spots, sometimes fused to a single larger spot, are visible. The postero-lateral lobe of the head shows no chromatophores, while these are also absent from the flagella and the distal parts of the peduncles of both antennula and antenna. The legs bear some scattered chromatophores. In the first and second legs the upper part of the palm is uncoloured. In the ambulatory legs the distal two or three segments are colourless, while leg 7 does not show any chromatophores at all. The uropods have a very wide dark transverse band over their middle. There is an considerable variation in the intensity of the dark colour of the animals; this is due both to the degree of expansion of the chromatophores and to variation in their number.

Type. — Holotype is the largest female, which carries young in the brood-pouch, from Station 1.464, Rio Ulla, west of Catoira; about 1.5 m deep; bottom coarse sand; dredged; 18 July 1963, 13.00-13.15 h. It forms part of the collection of the Rijksmuseum van Natuurlijke Historie and is registered under no. Crust. I. 1601. The other specimens are paratypes.

Habitat. — The specimens were found in a rather restricted locality in the Rio Ulla about 7 km above its mouth. The Rio Ulla is a fairly wide stream, being about 350 to 500 m wide near Catoira. The salinity of the water fluctuates strongly, depending on the tides and the amount of water carried by the

river, while at the bottom the salinity is higher than near the surface. On 30 July 1962 the salinity of the surface water was 0.97 ‰ Cl. at 10.00 h. and 5.61 ‰ at 15.15 h.; on 3 July 1963 the salinity (measured at 14.20 h.) was 6.86 ‰ Cl. at the surface and 9.58 ‰ at the bottom. Algae belonging to the genera *Enteromorpha* and *Fucus* were observed at the type locality. The bottom where the isopods were found consisted of coarse sand and gravel; pieces of wood and acorns were also found in the dredge hauls.

Remarks. — When first collected the specimens of *Saduriella* were thought to belong to the genus *Chiridotea*, to species of which genus they indeed show some resemblance, not only in the general shape of the body, but also more or less in the habitat. In fact the present new genus belongs with *Saduria* Adams, 1852 and *Chiridotea* Harger, 1878, in the subfamily Mesidoteinae. *Saduriella* differs from *Chiridotea* by that (1) the palp of the mandible consists of five instead of three segments, (2) the inner lacinia of the maxillula bears two instead of one long setose spines, (3) the front does not end in a median triangular tooth, and (4) the third pereiopod is smaller than both the first and the second. *Saduriella losadai* is larger than any of the known species of *Chiridotea*; the largest of these, *Chiridotea coeca* (Say), attains a length of 13 mm, while the maximum length of the other species varies between 6 and 9 mm. From *Saduria* the present new genus differs by that (1) the fourth abdominal somite is free laterally and fused with the telson medially, instead of being entirely free, (2) the inner ramus of the uropod is about half as long as the outer, while in *Saduria* it is much smaller, and (3) by being smaller (the species of *Saduria* reach sizes of 56 to 100 mm).

The genus *Chiridotea* inhabits the east coast of North America from Nova Scotia to Florida, where it is found in shallow, sometimes brackish, waters with sandy bottom. *Saduria* has an arctic circumpolar distribution and furthermore is found as a glacial relict in the Baltic, the Caspian and the Aral Seas and in some other arctic and subarctic inland seas, it is not found anywhere on the Atlantic coast of western Europe.

The new species is named for Don Luis Losada Lago of Villagarcia in recognition of his energetic and continuous support of and profound interest in our exploration of the Ria de Arosa.

Resumen

En esta contribución se describe *Saduriella losadai*, una especie nueva de Isopoda Valvifera, que al mismo tiempo está el tipo de un nuevo género. Los animales de esta especie han sido encontrados en las aguas salobres del Río Ulla cerca de Catoira, unos 7 kilómetros más arriba de la desembocadura de este rio a la Ría de Arosa

(Galicia). *Saduriella* se parece al género *Chiridotea* de la costa oriental de la América del Norte, y tambien al género *Saduria* que es ártico circunpolar. La especie nueva ha sido dedicada al Don Luis Losada Lago como manifestación de agradecimiento por su vigorosa y continua ayuda y su interés en nuestras investigaciones de la Ría de Arosa.

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