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ON A SPECIMEN OF *STENOPUS SPINOSUS* RISSO FROM THE AZORES

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Through the kindness of Dr. A. DA SILVEIRA VICENTE, Keeper of the Zoological Section of the Museu «Carlos Machado», Azores, I have been able to examine a specimen of *Stenopus spinosus* RISSO preserved in that museum. The specimen is a female, measuring 11.3mm. in carapace length, and is labelled as having been found in S. Miguel, Azores. No other data.

DESCRIPTION

Rostrum slightly longer than half the lengh of the carapace, reaching the extremity of the antennular peduncle, dosally armed with 9 spines and ventrally with 7. On the right side of the rostrum a row of 3 spines is present, of which the distal one is the smalest and the median one the largest; on the left side the rostrum bears a ow of 4 spines, of which the 2 distal ones are the smallest, and the second (from the base of the rostrum) the largest.

Carapace densely covered with spine, arranged more or less in longitudinal rows. Medianly, on the dorsal prt of the carapace, these spines are arranged in a double row of 6 (3 pairs before and 3 pairs behind the cervical groove). This double row of spines does not reach the posterior border of the carapace and is preceded by one single median spine placed just behind the line connecting the poterior border of the orbits. Posteriorly, behind the last pair of spines of the mentioned row, and slightly

before the posterior border of the carapace, there is a median spine. On the carapace, among the larger spines, other much smaller ones can be seen, as, for instance, in the dorsal median double row, where behind the pair of spines placed before the cervical groove, 3 smaller spines can be seen; also among the 3 pairs of spines placed behind the cervical groove, other smaller ones are present.

Abdomen also with spines, those of the 3 last segments directed backwards. On the first and second abdominal segments the spines are specially concentrated on the sides of the segments, the dorsal surface of the first segment bearing only one transversal row of spines. Third abdominal segment similar to the figure given by HOLTHUIS in 1946, and also bearing the shield-shaped area on its posterior part. The 3 last abdominal segments agree in general disposition of spines with HOLTHUIS's figure *(op. cit.)*, with the only difference that, in the present specimen, the spines have a slightly broader shape.

Pleura of the first abdominal segment with a sinuous lower border, which bears 3 blunt spines. Pleura of the abdominal segments 2-5, very broadly rounded, with 3-4 spines on the lower margin.

Telson strongly armed: apart from the pair of terminal spines, it bears on each side, and approximately on the middle of the lateral border, a strong spine; another pair of spines can also be seen on the base of the telson, slightly above the lateral border and slightly before the articulation of the telson with the 6th abdominal segment. Apart from these, each of the two dorsal carinae of the telson is armed with 5 strong spines, and, medianly, on the proximal half, the telson bears a row of about 6 pairs of spines, of which the first pair, being the strongest, is placed slightly before the articulation of the telson with the 6th segment, and the last pair is placed slightly before the middle of the telson.

Ocular peduncles dorsally with some acute spines.

On the antennular peduncle, the first segment is slightly longer than the second; this latter is rather longer than the third segment. Stylocerite agreeing both in shape and size with HOLTHUIS's figure (1946). First antennular segment ventrally with a few minute and acute spines; dorsally, on the outer distal angle, the segment bears 2 strong spines. Second antennular segment ventrally with about 3 small spines, the distal one being the largest; dorsally, the second segment bears, on the border adjacent to the articulation with the 3rd segment, 3 spines, 2 of which are placed on the outer angle. The dorsal margin of the second segment, apart from the

mentioned spines, also bears a median spine, the approximate situation of which can be seen in HOLTHUIS's figure *(op. cit.)*. Third segment of the antennular peduncle dorsally with a spine placed close to the articulation of the outer flagellum, and ventrally with a small spine close to the articulation of the inner flagellum.

First segment of the antennal peduncle with some spines on the inner distal angle of the lower surface. Second segment externally and inferiorly with strong spines. Fourth segment with some small spines on the inner surface, and with one on the lower surface. Fifth segment with a strong spine on the exterior distal angle, and with some somewhat smaller spines on the inner and lower margins.

Antennal scale similar in shape to the figure given by HOLTHUIS *(op. cit.)*, and exteriorly denticulate with about 16 spines (including the final one). Exteriorly, on the proximal part, the scale bears 2 small denticles. Dorsal surface of scale with 2 longitudinal carinae on its exterior half, and bearing medianly a longitudinal row of spines. Ventrally, the antennal scale also has a median row of spines, and, on the proximal part of the inner half, there is another very small row of about 3 spines.

Oral parts, and first and second maxillipeds not dissected.

Propodus of 3rd maxillipeds with 2-4 spines on the distal half of the outer margin; carpus exteriorly with 6-7 spines which on the distal half are arranged in a double row, and the distal spine of which is the strongest; merus exteriorly with a double row of about 6 spines; ischium exteriorly with 10-11 spines, the distal one being the strongest, and interiorly with 7-8 acute spines, widely separated from one another. Apart from this, when the animal is examined from the dorsal side, some spinules on the inner margin of the propodus, carpus and merus can be seen, and also, apparently, some very small ones on the dactylus (the specimen is so transparent and in such a fragile condition, due, possibly, to having been kept in formalin for a long time, that it is extremely difficult to examine certain details). The third maxillipeds, apart from the numerous long setae, bear on the distal part of the inner margin of the propodus near the articulation with the dactylus, a group of small and slender very close setae.

First pereiopods shorter than those of the second pair, slender and with some spinules on carpus, merus and ischium. Chelae shorter than the carpus and very slightly longer than the merus. Fingers of the chelae very slightly shorter than palm. Tip of fingers with tufts of setae. In-

feriorly, on the proximal part and slightly before the articulation with the carpus, the palm bears a small tuft of setae, of an aspect similar to those of the tuft on the distal part of the propodus of the third maxillipeds. A similar tuft is also present on the distal lower part of the carpus, slightly behind the articulation of this segment with the propodus.

Second pereiopods rather longer than those of the first pair. Carpus dorsally with 12-13 spinules; merus dorsally with 8 and ventrally with 1-2 spinules on the proximal part. Chelae shorter than carpus and slightly longer than merus. Fingers slightly shorter than palm.

Third pereiopods much stronger and longer than the preceding ones, and with symetrical chelae. Propodus covered with numerous spines, arranged in more or less conspicuous longitudinal rows. Dactylus dorsally with about 12-14 spinules, which, towards the distal part of the dactylus, are arranged in a row. These spinules do not reach the distal extremity of the dactylus. Tip of fingers strongly curved. On its inferior margin, and placed a little before the middle, the dactylus shows a strong triangular tooth which, when the chelae are closed, fits between the two teeth of the fixed finger. Propodus and dactylus with numerous setae. The carpus bears ventrally 2 rows of 4-6 spines; on the upper part there are 3 longitudinal rows of about 10-13 spines; apart from this, some other scattered spines can be seen, and the distal border of the segment, close to the articulation with the propodus, has a strong spine on each side. The merus is armed ventrally with 10-11 spines, which gradually increase in size towards the distal part of the segment. Dorsally the merus bears a longitudinal row of about 14-16 spines. On each side of this row, rather towards the sides of the segment, there is another longitudinal row of about 12-14 spines. Some other spines can also be seen scattered on the surface of the merus. Ischium ventrally armed with 7-9 spines and dorsally with 8-9. Fingers a little more than 1/2 the length of palm. Carpus nearly of the same length of the merus and slightly longer than the ischium.

Fourth pereiopods with the dactylus biunguiculate and very short, the distal spine longer than the other. Propodus divided into 7 joints, the first and the last of which are longer than the others. Ventrally the propodus bears a row of 21-22 spinules, some of which are broken. Carpus divided into 9-10 joints, of which the 5 distal ones of the left pereiopod bear a spinule on the distal part of the lower margin; of the 5 distal joints of the right pereiopod, only the penultimate does not show such a

spinule, possibly due to injury. Dorsally the segment bears a series of about 17-21 small spines, and, exteriorly, on the articulation with the propodus, near the lower margin, there is another spinule. Merus dorsally with 10-12 spines, and ventrally with 9-11. Apart from these, the inner surface of the merus bears a longitudinal row of about 13-15 spines, and the exterior surface a very irregular longitudinal row of about 9 spines. Ischium dorsally with 4 spines, and ventrally with 5-6. Propodus less than 1/2 the length of the carpus, slightly more than 1/2 the length of the merus and approximately as long as the ischium; carpus about 1.5 times as long as the merus.

Fifth pereiopods with the dactylus also very short, biunguiculate, the distal spine longer than the other. Propodus divided into 7 joints, the first and the last of which are longer than the others. Ventrally the propodus bears a series of 21-23 spinules. Carpus divided into 10 joints, the 6 distal ones of which bear a spinule on the distal part of the lower margin. Dorsally the carpus bears a series of 23 small spines. Exteriorly, in the articulation with the propodus, near the lower margin, there is another spinule. Merus both dorsally and ventrally with 9-10 spines. Exteriorly the merus bears an irregular longitudinal row of 8-10 spines, and interiorly a longitudinal row of about 15 spines. Ischium dorsally without spines and ventrally with 4-5 minute and somewhat blunt spines. Proportions of the several segments of the 5th pereiopods very similar to those of the 4th pereiopods. Length of the 5th pereiopods similar to those of the 4th pereiopods.

Pleopods (excepting those of the first pair) with the protopodite and the two rami spinous on the posterior surface.

Uropods not reaching the tip of the telson. The exopods bear 8-10 teeth on the outer margin, and the endopods, on the proximal half of the outer margin, also show 4-6 teeth. Apart from these, a certain number of spines can be seen on the dorsal and ventral surfaces of the exopods, and on the dorsal surface of the endopods.

REMARKS

Taking into account the characters this specimen presents (3 last abdominal segments with the spinules arranged in conspicuous transversal rows, a lateral row of spines on the rostrum, scaphocerite with the outer margin denticulate till the final tooth and with spinules on the base of the exterior margin and on the upper surface) I have no doubt in referring

it to *Stenopus spinosus* RISSO. In the Western Atlantic the adults of 2 species of *Stenopus* have been recorded, one of which, *S. scutellatus* RANKIN, is very close to *S. spinosus*. However, the former species has been described as not bearing spines on the upper surface of the antennal scale, a character shown by *S. spinosus* and the present specimen.

Stenopus spinosus has been recorded from various localities in the Mediterranean, and there is also one record from the northern part of the Red Sea; in 1952 HOLTHUIS referred to this species 2 specimens from the French Congo and the Belgian Congo. In the collections of the Museu Municipal do Funchal there is also a specimen from Madeira (an ovigerous female, caught on 12. VIII. 1958). In 1957, M.-L. FURNESTIN (*Rev. Trav. Inst. Pêches Marit.*, 21, p. 48) referred larvae caught on the Atlantic coast of Morocco to *S. hispidus* (OLIVIER). Could they, however, possibly be larvae of *S. spinosus*?

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