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Occurrence of *Rossia macrosoma* (Delle Chiaje, 1829) (Cephalopoda, Sepiolidae) along the Adriatic coast of Puglia, Italy

Nalaz vrste *Rossia macrosoma* (Delle Chiaje, 1829) (Cephalopoda, Sepiolidee) uzduž jadranske obale Puglie, Italija

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INTRODUCTION

The subfamily Rossiinae (Naef, 1912) is represented in the Mediterranean Sea by only two species belonging to two different genera: *Rossia macrosoma* (Delle Chiaje, 1829) and *Neorossia caroli* (Joubin, 1902).

The two species, though coexisting in several areas, have different bathymetric distribution patterns, thas is *N. caroli* inhabits higher depths, from 400 to 110 meters (Mangold-Wirz, 1963b), than *R. macrosoma*, which dwells between 100 and 500 meters of depth (Mangold-Wirz, 1963a). In regard to the distribution of the two sepiolids in the Mediterranean, *N. caroli* is restricted to the western part of the basin (Mangold-Wirz, 1963b), whereas *R. macrosoma*, at the presrent state of our knowledge, is more widely distributed.

In fact, in the last few years, the occurrence of the latter species has been repeatedly recorded in the Southern and Central Adriatic Sea. Mandić (1973a and 1973b) and Mandić & Stjepčević (1977) found several specimens of *R. macrosoma* in the Southadriatic pit, at depths ranging from 200 to 500 m; Gamulin-Brida *et al.* (1977) report another finding that took place in the same pit at a depth of m 420. Lastly Jardas (1979) reviews carefully the previous Adriatic findings of *R. macrosoma* and reports some others that occurred on less deep grounds ranging from 143 to 186 m.

All the quoted findings took place either in the eastern side of the Adriatic Sea or nearly Yugoslavian islands.

In this paper we record the presence of *R. macrosoma* also in the western side of the Southern Adriatic Sea. Here sepiolids belonging to such species are netted in small quantities by trawlers that fish on grounds not exceeding m 200 of depth, along the coast of Puglia (Italy).

Besides, in order to characterize the southadriatic population of *R. macrosoma,* we calculated the somatometric indices of the specimens available to us.

MATERIALS AND METHODS

In the months of March, June and July 1981 we collected a total number of 43 freshly netted specimens of *R. macrosoma* from the catch of the trawler »Venere«, which carries out its activity in the area of Mola di Bari (Puglia, Italy) along the western coast of the Southern Adriatic Sea.

This boat, during the above mentioned period of time, usually trawled on muddy grounds ranging from 100 to 200 m of depth, from 3 to 11 miles off the coast.

The collected speciments were examined in the laboratory in order to determine their sex both by exterior attributes (males carry enlarged suckers on hteir 2nd, 3rd and 4th pair of arms) and by the observations of their gonads. In addition we measured the somatometric parameters rounded to the nearest mm (the diameter of the largest arm sucker was rounded to the nearest 0.1 mm) and indexed them as percentage of the dorsal mantle length. Of such indices, split by sex, we calculated the arithmetic mean ($\bar{x}$), the standard deviation (σ), and the *t*-statistic in order to evaluate the significance level (P) of the differences between the means of the indices of the two sexes.

RESULTS

The catches of cephalopods of the species *R. macrosoma* are sporadic and occur only during the warmest months of the year, from spring to early autumn. In these months a boat is able to net just a few specimens of the species in a whole fishing day, and only when it trawls on bottoms exceeding m 100.

The sex ratio of our specimens is 23 males/20 females = 1.15. The range of the dorsal mantle length extends from mm 29 to 54 in males and from mm 26 to 70 in females.

Table 1 summarizes the values of the means ($\bar{x}$) and of the standard deviations (σ) of the somatometric indices split by sex, the values of the *t*-statistic and of the significance level (P) of the difference between the

The arm formula, starting from the longest arm, is 3-2-4-1 in over half of the specimens (26 = 60.5%); in a certain number of them (10 = 23.3%) it is 3-4-2-1; in the remaining ones (7 = 16.3%) there are various sequences; anyhow the arms of the first pair are always the shortest ones.

The head width is lower than the mantle width in 40 of the 43 examined specimens.

Table 1. Arithmetic means ($\bar{x}$) and standard deviations (σ) of the somatometric indices of males and females, and significance levels of their differences (P).

	males		females			
	$\bar{x}$	σ	$\bar{x}$	σ	t	P%
Mantle width	89.9	7.9	95.2	7.6	2.23	5
Head width	79.3	9.0	80.1	10.2	0.28	—
Arm length: dorsal	120.3	11.5	107.1	11.1	3.79	0.1
dorsolateral	138.8	8.2	132.0	10.9	2.31	5
ventrolateral	145.7	11.8	137.5	13.4	2.12	5
ventral	130.3	10.9	129.0	13.7	0.35	—
Diameter of the largest arm sucker	7.2	1.1	3.7	0.5	13.51	0.1
Tentacle length	397.9	33.8	403.9	38.6	0.54	—
Club length	69.9	6.9	81.3	9.1	4.58	0.1
Fin length	46.0	3.9	49.3	4.8	2.50	2
Fin width	29.6	3.4	31.4	4.6	1.46	—

DISCUSSION

The value of the sex ratio (1.15), very close to 1, cannot be considered reliable for the whole population of *R. macrosoma* of our district, owing to the limited number of specimens taken in accoun. In this regard we emphasize the fact that, up to date, the pattern of bathymetric migrations and distribution, during the year cycle, of the sepiolid in our district is completely unknown. Anyway it is not improper to suppose that the trophic and genetic displacements are similar here to the ones found in other districts of the Mediterranean (Mangold-Wirz, 1963a).

The values of standard deviation (σ) show a more or less wide variability of the various somatometric indices and, thus, of the related somatic parameters (table 1).

The arm formula is variable as well; it basically follows the typical sequence of the family Sepiolidae, being the 3rd pair of arms the longest one and the 1st pair the shortest one (Naef, 1923).

The head width is lower than the mantle width, which is the opposite condition of *N. caroli;* but this feature is not common to all the observed specimens. Therefore we cannot regard such a character to differentiate the two species. Anyway the mean values of the indices of the head width that we computed (76.3 for the males group; 80.1 for the females group), are, at any rate, lower than the ones relative to *N. caroli* (90.4 and 87.8 respectively) reported by Mangold-Wirz (1963b). Furthermore, it is noticeable that our indices are higher than the one recorded for *R. macrosoma* (= 64) by the same Author (Mangold-Wirz, 1963b).

The difference between this last value and the values we found for the head width index could have been caused by the limited amount of specimens we measured. But the breadth of such difference makes us deem that it can rather depend on the differentiation of *R. macrosoma* in distinct geographical races within the Mediterranean Sea. This hypothesis, which certainly needs to be confirmed by the examination of a larger number of specimens, is also corroborated by the fact that, in the genus *Rossia,* the larval stages do not

udergo a planktonic phase (Mangold-Wirz, 1963b), which favours the rise of local races. At last we cannot reject the possibility that the indices of a single specimen may vary according to the state of contraction of its pallium (Boletzky, personal communication). Indeed in some individuals this organ keeps narrow and stretched in length for a few hours after death and afterwards slowly relaxes and shortens.

As regards the sexual dimorphism, we found that females reach a bigger size than males, in conformity with what reported by Mangold-Wirz (1963a). We found, moreover, significant and highly significant differences between some somatometric indices of the two sexes (table 1).

Finally, about the bathymetric distribution of *R. macrosoma* in our district, we said above that such cephalopods are fished only during the warm months. We were not able to establish whether this sepiolid migrates in wintertime to deeper bottom levels as typical of the species, or it is not netted merely because the fishing boats during the cold season usually do not trawl on grounds exceeding 100 meters.

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NALAZ VRSTE *ROSSIA MACROSOMA* (DELLE CHIAJE, 1829) (CEPHALOPODA, SEPIOLIDAE) UZDUŽ JADRANSKE OBALE PUGLIE, ITALIJA

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KRATAK SADRŽAJ

Autori izvještavaju o nalazima vrste *Rossia macrosoma* (Delle Chiaje, 1829) u obalnim vodama pokrajine Puglie, odnosno uz zapadnu obalu južnog Jadrana. Iznose također pregled ranijih nalaza ove vrste na nekim drugim dijelovima Jadrana tokom posljednjih deset godina.

U području Mola di Bari (Puglia, Italija) primjerci *R. macrosoma* su lovljeni koćom tokom toplijeg dijela godine na ribolovnim područjima na dubinama između 100 i 200 m.

Autori obrađuju detaljno 43 primjerka ove vrste. Obrađuju se somatometrijske karakteristike s obzirom na spol. Statističkom obradom dobivenih podataka autori ukazuju na neke razlike između spolova te na varijabilitet somatskih karaktera općenito.