SCI. MAR., 64 (1): 107-109 SCIENTIA MARINA 2000

NOTE

Capture of *Grammicolepis brachiusculus* Poey, 1873 (Grammicolepididae) off the Canary Islands*

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SUMMARY: Morphometric and meristic characteristics, as well as estimations of fecundity, of two ripe females of *Grammicolepis brachiusculus* (Grammicolepididae) caught off the Canary Islands are reported. This is the first record of this species for the Canary Islands and its third finding in the North-Eastern Atlantic.

Key-words: Grammicolepididae, *Grammicolepis brachiusculus*, North-Eastern Atlantic, Canary Islands, occurrence.

Grammicolepidids occur worldwide, in tropical and subtropical areas (occasionally also in temperate and cold waters). According to Quéro (1973, 1986), the deepscale dory or thorny tinselfish, *Grammicolepis brachiusculus* Poey, 1873 is the only grammicolepidid species to be found in the North-Eastern Atlantic. This rare species has been recorded off the north-western coast of Spain (only one specimen from the Bay of Biscay) and the Western Sahara (only one specimen from the SW of Cape Bojador), from the Gulf of Guinea southward, Walvis Ridge, off South Africa -Saldanha Bay and Table Bay- to Durban (Indian Ocean); and also in the western Atlantic (Georges Bank -41°30'N-, Gulf of Mexico, British Honduras, West Indies, Cuba, and off Surinam) and in the Pacific (Hawaii and Japan). It is benthopelagic, living in the deep midwater or near the bottom, from 250 m to more than 900 m, but mostly at 500-700 m (Quéro, 1973, 1979; Karrer and Heemstra, 1986; Karrer, 1990; Retzer, 1990).

*Received June 9, 1999. Accepted October 20, 1999.

Morphometric and meristic characteristics as well as radial formulae of this species were reported by Guitart (1975), Quéro (1979, 1986) and Karrer and Heemstra (1986). Data on eggs or reproduction appear unavailable (Quéro, 1973, 1986).

Since *G. brachiusculus* was not included by Brito (1991) in his catalogue of the fishes of the Canary Islands, nor in later papers, the capture of two specimens off El Hierro -the southwestern and warmest island in the archipelago- establishes the first record of this species in Canary Island waters. Specimens were caught in July 1996 on a bottom drop line off the south coast of the island of El Hierro (off Puerto Naos, 27°35'N 17°59'W, at 680 m depth), together with *Beryx splendens* Lowe, 1834 - the target species of an artisanal fishery with handlines and bottom drop lines-, *Beryx decadactylus* Cuvier, 1832 (Berycidae), and *Promethichthys prometheus* (Cuvier, 1832) (Gempylidae).

The main morphometric and meristic characteristics of the two specimens (Fig. 1) are summarised in Table 1. Standard lengths (SL) were 418 and 424

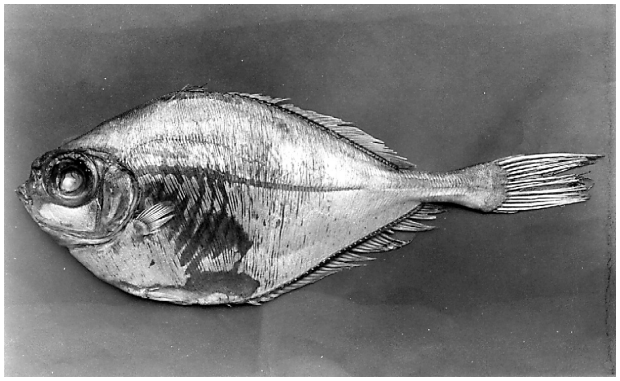

FIG. 1. – *Grammicolepis brachiusculus* Poey, 1873, female, 424 mm SL, of the Canary Islands (ICCM).

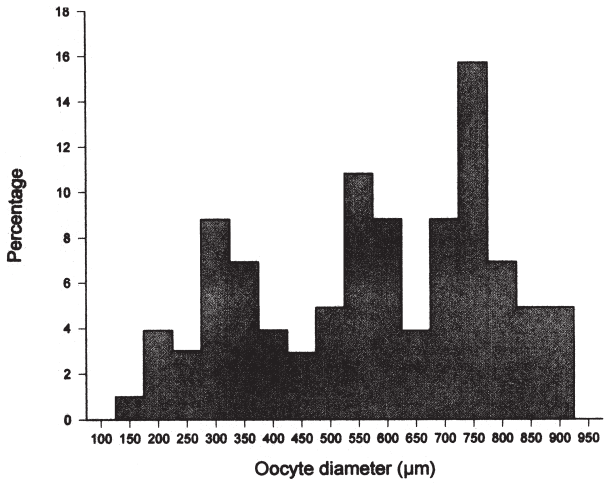

FIG. 2. – Distribution of oocyte diameter in two ripe females of *Grammicolepis brachiusculus* caught off the Canary Islands.

mm, and both head lengths were 4.2 in SL; according to Karrer and Heemstra (1986), the maximum size observed for the species is 640 mm SL, young lesser than 240 mm SL, and head length in adults is 4.2-4.4 in SL. Both body depths were 2.1 in SL; Quéro (1979) and Karrer and Heemstra (1986) reported values of 2.0-2.35 in adults. Radial formulae: D V+33-34, A II+34, C 13+2, P 15, V I+6. Number of lateral-line scales: 120-122; according to Quéro (1979), ca. 115. Number of gill-rakers: 14-15; according to Karrer and Heemstra (1986), (1-2)+12. Colour: silvery; body light violet, purple at hard parts of head (in Guitart, 1975); body silvery, with irregular dark marks (Quéro, 1986); body silvery, young with irregular black blotches on body, black spots on caudal fin, and five black bars on anal fin (Karrer and Heemstra, 1986). Both fish are preserved in our laboratory.

TABLE 1. – *Grammicolepis brachiusculus* off the Canary Islands. Morphometric and meristic characteristics in two specimens caught in July 1996.

Characteristic	Spec. 1	Spec. 2
Morphometrics (mm)		
Standard length	418	424
Head length	100	102
Preorbital length	26	28
Predorsal length	132	135
Preanal length	175	176
Orbital diameter (horizontal)	45	44
Interorbital distance	34	36
Maximum body depth	198	205
Caudal peduncle depth	24	24
Dorsal fin length	210	219
Anal fin length	200	203
Total weight (g)	1216	1372
Gutted weight (g)	1074	1188
Meristics		
Dorsal fin rays	V+34	V+33
Anal fin rays	II+34	II+34
Caudal fin rays	13+2	13+2
Pectoral fin rays	15	15
Ventral fin rays	I+6	I+6
Lateral line scales	122	120
Gill-rakers	15	14

Both specimens were ripe females. Gonads of the two specimens were stored in Gilson fluid. Oocyte diameter was measured in a sample of 50 oocytes in each specimen. Maximum oocyte diameters were 950 and 920 μm. A similar distribution of oocyte diameters was found in both individuals and therefore results were combined for statistical analyses. The FAO-ICLARM Stock Assessment Tools (FISAT) (ver. 1.0) program was used for applying Battacharya's method to separate the normal distributions of mixed samples. Means obtained were 311±80.5, 570±58.1 and 753±27.3 m (Fig. 2). Total fecundity estimates were 70795 and 76180 oocytes. Batch fecundity estimates were: 1010 and 881 oocytes per g of gonad, and 66 and 64 oocytes per g of gutted weight.

DISCUSSION

Both Canary Island specimens show the typical morphometric, meristic and colour characteristics as described by Quéro (1986). The present morphometric measurements are in accordance with the fact that the body of this species becomes more elongated with age, as reported by Quéro (1979, 1986) and Karrer and Heemstra (1986).

According to Quéro (1979), only one 280 mm SL specimen from the north-western African coast (Cape Bojador, 26°08'N 14°30'W), and one 400 mm SL specimen from the north-western Spanish coast (near Sisargas, 43°50'-44°10'N 8°40'-

9°00'W, ca. 600 m depth), were apparently known from the North-Eastern Atlantic. Therefore, this new record for the marine ichthyofauna of the Canary Islands, based on two adult specimens, seems to be the third capture of this species in this area, the second in the Eastern Central Atlantic, and also seemingly the first finding ever recorded in the Macaronesian biogeographical region (archipelagos of the Azores, Madeira, Canaries and Cape Verde).

According to Brito (1984) and Brito *et al*. (1996), the upper bathyal benthic ichthyofauna of the Canary Islands are in accordance with the inclusion of this archipelago within the Atlanto-Mediterranean biogeographical marine region of Briggs (1974). Both benthic and benthopelagic forms, living on the insular slopes, show a dominance of Atlanto-Mediterranean species but with remarkable presence of tropical and subtropical Atlantic species. *Grammicolepis brachiusculus* could represent a valid example of this last group of species.

These faunistic characteristics of the Canary Islands can be explained, in part, by their geographical location (close to the African and European continents but separated from them by great depths). Moreover, the Canaries are situated in the eastern boundary flow which is the descendant branch of the subtropical gyre of the eastern central Atlantic. As a result, the Canary Islands are connected to the American, European, and north-western African coasts, receiving a permanent larval flow (Brito, 1984; Rico *et al*., 1995; Brito *et al*., 1996).

Another characteristic of the Canary Islands marine ecosystem is the fact that many deep-sea species (mainly those carry out vertical migrations towards the surface during the night) are completely integrated into the dynamics of this insular ecosystem. This is a consequence of the close proximity of deep-sea bottoms to the coast (in general, the insular shelves are very limited in width) (Aguilera *et al*., 1994; Franquet and Brito, 1995). Several of these deep-sea species are target, secondary, or accidental species of the local small-scale fisheries. *Grammicolepis brachiusculus* could also represent a case of this last group of species. In contrast, deep-sea species occur far off the shore in continental marine areas.

The fact that the two specimens captured were ripe females may suggest that this benthopelagic species conforms to a stable population off the Canary Islands (at least off El Hierro island, 27°35'N 17°59'W). Moreover, the capture of one young specimen in a neighbouring area of the north-western African coast (26°08'N 14°30'W) (Quéro, 1979) may also suggest a wider population in this subtropical zone of the Eastern Central Atlantic Ocean.

The asynchronous development of oocytes in both ovaries may reflect the partially reproductive character (heterochronous species) of *G. brachiusculus* off the Canary Islands.

ACKNOWLEDGEMENTS

We wish to thank our colleague Prof. Dr. A. Brito (University of La Laguna) for his comments and for critically reading the manuscript.

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Scient. ed.: M. Harmelin-Vivien