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FIRST RECORD OF *CHIROTEUTHIS VERANYI VERANYI* (CEPHALOPODA: CHIROTEUTHIDAE) FROM THE CANARY ISLANDS (EASTERN-CENTRAL ATLANTIC OCEAN)

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With 2 figures and 1 table

ABSTRACT. In the present paper *Chiroteuthis veranyi veranyi* (Férussac, 1835) is recorded for the first time from the Canary Islands. Some morphological and morphometric measurements of the specimen studied, as well as some biological features and geographical distribution of this subspecies are given.

KEY WORDS: Cephalopoda, Chiroteuthidae, *Chiroteuthis veranyi veranyi*, Canary Islands.

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RESUMO. No presente trabalho é citada pela primeira vez para as águas de Canárias a espécie *Chiroteuthis veranyi veranyi* (Férussac, 1835) (Cephalopoda, Chiroteuthidae). São ainda fornecidos dados morfológicos e morfométricos do exemplar examinado e informações sobre a distribuição geográfica e aspectos biológicos da subespécie.

PALAVRAS-CHAVE: Cephalopoda, Chiroteuthidae, *Chiroteuthis veranyi veranyi*, Ilhas Canárias.

RESUMEN. Se cita por primera vez para las aguas de las Islas Canarias la presencia de *Chiroteuthis veranyi veranyi* (Férussac, 1835), aportando datos sobre las características morfológicas y morfométricas del ejemplar examinado. Se muestran también la distribución geográfica y aspectos de la biología de la subespecie.

PALABRAS CLAVE: Cephalopoda, Chiroteuthidae, *Chiroteuthis veranyi veranyi*, Islas Canarias.

INTRODUCTION

Until the early 1990's, the genera *Chiroteuthis* Orbigny, 1841, *Chiroteuthoides* Berry, 1920, *Tankaia* Sasaki, 1929, *Valbyteuthis* Joubin, 1931, *Chiropsis* Joubin, 1933 and *Asperoteuthis* Nesis, 1980 were included in the family Chiroteuthidae Gray, 1849 (NESIS, 1987; GUERRA, 1992). After the revisions done by SWEENEY & ROPER (1998) and YOUNG & ROPER (1998), only the genera *Chiroteuthis*, *Asperoteuthis*, *Planktoteuthis* Pfeffer, 1912 and *Grimalditeuthis* Joubin, 1898 were included in this family and comprising approximately 19 species, most of them poorly studied.

The genus *Chiroteuthis* has at least four species in the Atlantic Ocean (JOUBIN, 1924; SALCEDO-VARGAS, 1996; YOUNG & ROPER, 1998): *Ch. joubini* Voss, 1967, in Equatorial regions (JOUBIN, 1933; YOUNG & ROPER, 1998), *Ch. mega* (Joubin, 1932) in south-eastern Atlantic Ocean (VOSS, 1967), *Ch. picteti* Joubin, 1894 recorded from the neritic waters of Morocco near the Strait of Gibraltar (JOUBIN, 1924), but with most specimens recorded from the Indian and Pacific Oceans (GUERRA, 1992; YOUNG & ROPER, 1998) and *Ch. veranyi* (Férussac, 1835, *In* Férussac and Orbigny, 1834-1848).

According to PFEFFER (1912), two subspecies are recognized: *Ch. veranyi veranyi* (Férussac, 1835), from the Mediterranean Sea and eastern Atlantic Ocean, and *Ch. veranyi lacertosa* Verril, 1881 from the western Atlantic Ocean (from New Scotland to the Caribbean). NESIS (1987) accepted these subspecies and expanded the distribution of

Ch. veranyi veranyi to subtropical and southern regions of the Indian and Pacific Oceans. YOUNG & ROPER (1998) did not found significant morphological differences between both subspecies. However, until molecular data is obtained it is considered in the present paper that both subspecies are valid.

Although GUERRA *et al*. (2003) included *Chiroteuthis veranyi* in their checklist, under the assumption that it is a cosmopolitan species, so far no specimens have been collected in these waters. The recent catch of *Ch. veranyi veranyi* near Lanzarote island represents the first known record of this subspecies in the Canary Islands and therefore justifies the present note.

MATERIAL AND METHODS

One specimen collected in Lanzarote island (29° 06.059' N and 12° 44.014' W) (Fig. 1) on the 29th of September 2005. It was found in the mouth cavity of a bigeye tuna *Thunnus obesus* (Lowe, 1839) caught with a longline set at 1,340 m of depth. It was an immature female (stage I), with 80 mm dorsal mantle length, 54g total weight and with both tentacles sectioned (Fig. 2). The specimen was preserved in 10% formalin in seawater and deposited in collections of Natural Sciences Museum of Tenerife – TFMCBM-MO/04772, J. J. Caraballo Santana *leg*.

All measurements were done according to ROPER & VOSS (1983).

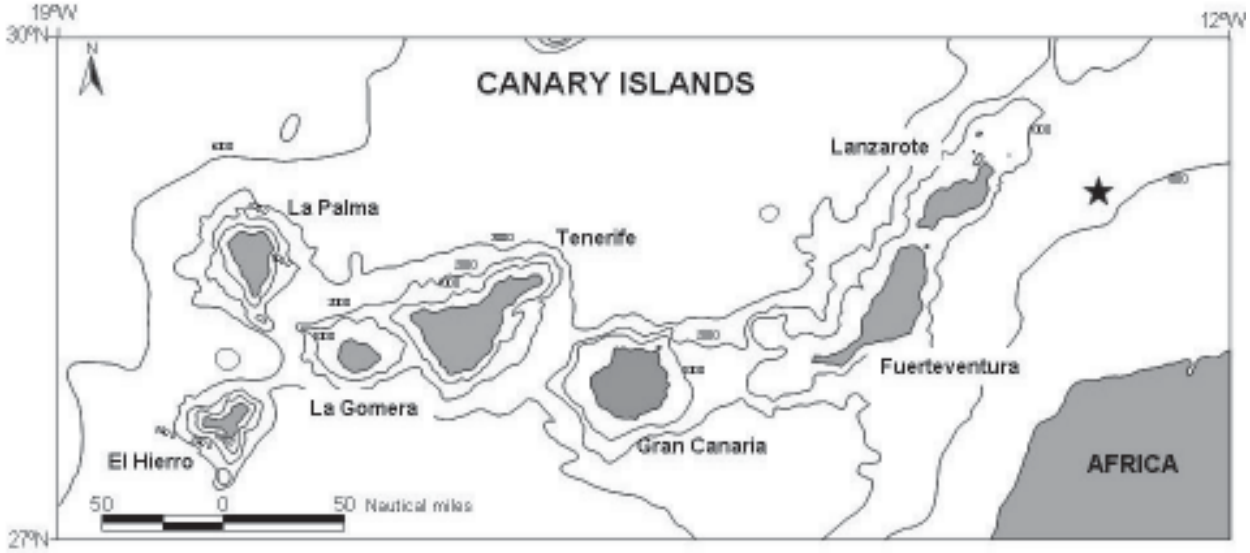

Fig. 1 - Capture location (★) of *Ch. veranyi veranyi* in the Canary Islands.

Fig. 2 - Dorsal view of *Ch. veranyi veranyi* TFMCBM-MO/04772.

DESCRIPTION

External morphological features of this specimen are in agreement with LOZANO Y REY (1905), MAGAZ (1934) and GUERRA (1992) and the subspecific diagnostic characters agree with NESIS (1987), exception made for the tentacles, which are incomplete.

The specimen has a gelatinous conic body with the cephalic and brachial regions longer than mantle and with the anterior half portion of body wider than the posterior one, the latter having an acute end and bearing two rounded fins.

Eyes are voluminous, with light organs on the ventral side of the eyeball forming two parallel bands. One round photophore is located on the anterior region and two on the posterior one between the ends of the bands. Funnel locking-cartilage with a central depression and two projections. The two photophores on ink sac are rounded and not truncated at both ends.

Brachial formula: ventral arm (IV) > dorso-ventral (III) > dorso-lateral (II) > dorsal (I). Ventral pair of arms longer and stouter than the others, showing a well developed swimming keel, with wide lateral edges and prominent chromatophores along the arm. Arms with biserial suckers (ventral pair being the smallest).

Tentacles are missing. According to NESIS (1987) they are long and thin. Tentacle clubs have protective membranes at both sides and a marginal or central constriction between the basal region and the third half.

All measurements are given in Table 1.

TABLE 1 - Biometric data of *Ch. veranyi veranyi* in Canary Islands. (All measurements in millimetres and weights in grams).
ML: dorsal mantle length; **MW**: mantle width; **HL**: head length; **HW**: head width; **FL**: fin length; **FW**: fin width; **FuL**: funnel length; **FuW**: funnel width; **AL**: arm length; **TeL**: tentacle length; **Lm**: tentacular club length; **S**: sex; **MS**: maturation stage; and **TW**: total weigh.

	Body	Left arm	Right arm	Observations
ML	80			
MW	28			
HL	49			Dorsal
HW	21			Dorsal
FL	36			
FW	34			
FuL	14			
FuW	10-12			Very poor condition
A LI		56*	111	*Sectioned
A LII		134	140	
A LII		140	154	
A LIV		187	192	
TeL		56*	62*	*Sectioned
S	♀			
MS	I			
TW	54			

GEOGRAPHICAL DISTRIBUTION

Ch. veranyi veranyi was recorded from the western Mediterranean Sea by LOZANO Y REY (1905), at Banyuls-sur Mer (León Gulf), and by MORALES (1958), who records a female specimen with 95 mm dorsal mantle length. Probably the specimen recorded from the Jonic Sea by TURSI *et al*. (1994) also belongs to this subspecies.

In the Atlantic Ocean, *Ch. veranyi veranyi* is distributed from the Reykjanes Ridge (south-east of Iceland) to Namibia, including the archipelagos of the Macaronesian

biogeographical region (NESIS, 1987). Nevertheless, RODHOUSE & LU (1998) reported this species as circumantarctic; therefore, it seems that several species could be included in the same taxon.

BIOLOGY

According to GUERRA (1992) and YOUNG & ROPER (1998), the biology of *Ch. veranyi veranyi* is poorly known. Embryonic development is relatively complex (NAEF, 1923) and paralarval (called "Doratopsis stages") and juvenile specimens are planktonic (CLARKE, 1966; LU & ROPER, 1979). Adults are found in bathyal to mesopelagic waters (down to 2000 m depth) and undertake daily vertical migrations, being a making part of the acoustic deep scattering layers (DSLs). This species bears numerous cavities in the arms, head and mantle, filled with liquid (usually ammonium chloride) less dense than seawater in order to attain neutral buoyancy. Main available data come from individuals in the stomach contents of large predators, mainly scombrids, dolphins and sperm whales (JOUBIN, 1900; BOUXIN & LEGENDRE, 1936; CLARKE, 1980).

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