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## **OPHIUROIDS OF SOUTH SHETLAND ISLANDS AND ANTARCTIC PENINSULA (ANTARCTICA)**

**M.E. Manjón<sup>1</sup> and A. Ramos<sup>2</sup>**

<sup>1</sup> Dpto de Biología Animal. Fac. de Ciencias Biológicas. Universidad de Málaga. Campus de Teatinos. E-29071 Málaga, Spain

<sup>2</sup> Instituto Español de Oceanografía, Puerto Pesquero s/n, E-29640 Fuengirola (Málaga), Spain.

### **INTRODUCCION**

Since the voyage of the *Belgica* (1897-1899), many expeditions have gathered Ophiuroids in the Southern Ocean, specifically, in the South Shetlands and Antarctic Peninsula zones. Since the beginning of the present century, Ludwig (1903), Koehler (1906, 1912, 1923), Grieg (1929), Fisher (1940), Clark (1950) and Bernasconi (1959, 1970), among others, have all described the material collected during expeditions carried out in this area.

Reviews of Ophiuroids have been published by Fell (1961), Bernasconi & D'Agostino (1971), Mortensen (1936) and Branch et al. (1993)

During Spain's BENTART 95 Survey, the benthos off northern and southern Livingston Island, Deception Island and Bransfield Strait was sampled using different methods (Ramos 1995, Sáiz-Salinas et al. 1997, San Vicente et al. 1997, Arnaud et al. 1998). The Ophiuroids specimens which provided data for the present communication (Figure 1) were collected in 24 localities around South Shetland Islands

### **MATERIAL AND METHODS**

#### *Field sampling*

During the BENTART 95 campaign, epifauna were sampled at 24 stations ranging from north of Livingston (Drake Passage) to the Antarctic Peninsula, at depths of 40 - 1019 m (Figure 1). Table I is a stations list, with location and characteristics.

Sampling was carried out mainly using Agassiz trawl gear with 2.01 m and 1.12 m horizontal and vertical openings, and 10 mm mesh. Trawls lasted 5 minutes, at 2.5 knots (Ramos 1995).

At each station, a subsampling of 50 litres was collected following the semi-quantitative method developed during the EPOS Program on board *Polarstern* (Arnaud et al. 1990). This sampling was sieved through three mesh sizes - 10, 5 and 1 mm --and

asteroids retained in the 10 mm sieve were counted and weighted in order to estimate the relative abundance of their group in the total macrofauna. Specimens of the rest of catch were also collected. All material was preserved in 70% alcohol and dried for further study, constituting these data the basis for the present paper.

#### *Laboratory work*

Once on land, asteroids were checked and transferred to flasks with a new 70% alcohol solution. For taxonomic determination based on external morphological characters, we used a Wild 308700 magnifying glass, with an Olympus Highlight 3001 to illuminate optical fibres, and consulted the works of Fell (1961), Bernasconi & D'Agostino (1971) and Branch et al. (1993).

## RESULTS

Taking as a basis the semi-quantitative data obtained from 24 Agassiz trawls carried out during the BENTART 95 Survey in the South Shetlans zone, frequency and distribution of Ophiuridea are analysed.

Ophiuroids were collected in 17 of the stations (Table II), on all types of bottoms (Table I). Although, due to taxonomic difficulty, some genera are at the present in review, the 2,780 examined ophiuroids belonged to 12 genera. *Ophionotus victoriae* Bell, 1902 was clearly dominant with more than 1,788 individuals (64.31%). This species was in addition present in almost all stations, which would be indicative of its big versatility and survival capacity under very different environmental conditions (depth, granulometry, etc.). The species of *Ophiurolepis* genera, also belonging to Ophiuridae Family, occupied the second place by its abundance and constancy.

The global analysis shows that the specific richness was low and remained constant in the most part of the study zone ranging from 1 to 11 species per station. At the deepest stations, northern of the Livingston Island and at the Bransfield Strait the highest number of species was found (9-11).

The most abundance values are presented at stations located in the inner sea of Deception Island, even though they were due almost exclusively to only one species, *O. victoriae*. As in other work based in benthic data collected during BENTART 95 Survey have been pointed out the Deception Island benthos seem characterised by low taxonomic richness and high relative mass.

A slight substitution of *Ophionotus* by *Amphiurus* seem to observe in some stations in which, though, *O. victoriae* remain being in considerable abundance, this species loses its dominance.

### **Class Asterozoa**

#### **Order Ophiurida** Müller & Troschel, 1840.

##### **Suborder Euryalina** Müller & Troschel, 1840.

##### **Family Gorgonocephalidae** Ljungman, 1867.

##### *Astrohamma* Döderlein, 1930.

##### *Astrohamma tuberculatum* (Köhler, 1923)

##### **Suborder Ophiurina**

##### **Family Ophicanthidae** Perrier, 1891.

##### *Ophiodaces* Köhler, 1922.

- Ophiodaces inanis* Koehler, 1922.  
*Ophiacantha* Müller & Troschel, 1842.  
*Ophiacantha vivipara* Ljungman, 1870.  
*Ophiacantha cosmica* Lyman  
*Ophiacantha pentactis* Mortensen, 1936.  
**Family Amphiuridae** Ljungman, 1867.  
*Amphiura* Forbes, 1942.  
*Amphiura belgicae* Koehler, 1900.  
*Amphiura antartica* Studer, 1876  
*Amphiodia* Verrill, 1899.  
*Amphiodia joubini* (Koehler, 1912)  
**Family Ophiuridae** Lyman, 1865.  
**Subfamily Ophiurinae** Lyman, 1865.  
*Ophionotus* Bell, 1902.  
*Ophionotus victoriae* Bell, 1902.  
*Ophiurolepis* Matsumoto, 1915.  
*Ophiurolepis martensi* Studer, 1885.  
*Ophiurolepis tuberosa* Mortensen, 1936.  
*Ophiurolepis gelida* Koehler, 1900.  
*Ophiurolepis brevirima* Mortensen, 1936.  
*Ophiuroglypha* Hertz, 1926.  
*Ophiuroglypha carnifera* Koehler, 1901.  
*Ophiura* Studer, 1876.  
*Ophiura ambigua* Lyman, 1878.  
*Ophiogona* Studer, 1876.  
*Ohiogona döderleini* (Koehler, 1901).  
*Ophioperla* Koehler, 1912.  
*Ophioperla koehleri* Bell, 1908.  
**Subfamily Ophiolepidinae** Matsumoto, 1915.  
*Ophioceres* Koehler, 1922.  
*Ophioceres incipiens* Koehler, 1922.

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