

Medusae from the sea around Laccadive group of islands (7°-18°N/69°- 76°E)

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ABSTRACT

Forty-four species of hydromedusae belonging to 20 families were obtained from the samples collected during the period 1985-1987. Studies on abundance, diurnal variation and distribution are investigated. High densities were observed from samples collected at night. The dominant species of this area were *Solmundella bitentaculata*, *Liriope tetraphylla*, *Aglaura hemistoma*, *Rhopalonema velatum* and *Cytaeis tetrastyla*.

INTRODUCTION

Laccadive group includes 21 coral islands and banks in the southeastern Arabian Sea, about 100 to 250 km away from the southwest coast of India. Information on the medusae of this region is scanty (Vannucci & Santhakumari, 1969, Vannucci *et al.* 1970). Distribution of hydromedusae from Indian Ocean was studied by Vannucci & Navas (1973). The present investigation enhances the knowledge on the occurrence, abundance, variation and distribution of hydromedusae from this area.

MATERIALS AND METHODS

Collections were made onboard *FORV Sagar Sampada* (3 cruises) during 1985-1987. The studies were based on 116 samples collected from the area, around the Laccadive groups of islands, by oblique tows from 150 m depth to surface using a Bongo - 60 net (mesh aperture 0.33 mm) equipped with a calibrated flow meter. The samples were preserved in 5% formaldehyde. Hydromedusae were identified up to species level. The estimated abundance is expressed as no./1000 m³.

RESULTS AND DISCUSSION

Forty-four species belonging to 20 families were obtained from these samples. The list of species are given below:

Order: Anthomedusae

Family: Tubulariidae

Euphysa aurata Forbes, 1848

Ectopleura sacculifera Kramp, 1957

Family: Corymorphidae

Cnidocodon leopoldi Bouillon, 1978

Family: Cladonimatidae

Cladonema sp.

Family: Cytaeidae

Cytaeis tetrastyla Eschscholtz. 1829

Cytaeis vulgaris Agassiz & Mayer, 1899

Family: Hydractiniidae

Podocoryne apicata Kramp, 1959

Family: Bougainvillidae

Bougainvillia fulva Agassiz & Mayer, 1899

Kollikerina octonemalis Maas, 1905

Family: Pandaeida

Merga tergestina (Neppi & Stiasny, 1912)

Leukartiara octona Fleming, 1823

Pandea conica Quoy & Gaimard, 1827

Family: Calycopsidae

Heterotiara minor Vanhoffen, 1911

Order: Leptomedusae

Family: Companulariidae

Phialidium hemisphaericum Leuckart, 1856

Phialidium simplex Browne, 1902

Family: Lovenellidae

Eucheilota menoi Kramp, 1959

Family: Phialuciidae

Phialucium condensum Kramp, 1953

Octophialucium indicum Kramp, 1958

Octophialucium begelowi Kramp, 1955

Family: Eirenidae

Eirene elliceana (Agassiz & Mayer, 1902)

Helgicirrho malayensis (Stiasny, 1928)

Family: Eutimidae

Eutima curva Browne, 1905*Eutima commensalis* Santhakumari, 1970

Family: Aequoreidae

Aequorea aequorea (Forskal, 1775)*Aequorea conica* Browne, 1905*Aequorea parva* Browne, 1905

Order: Limnomedusae

Family: Proboscidae

Proboscidaactyla ornata

Order: Trachymedusae

Family: Rhopalonematidae

Rhopalonema velatum Gegenbaur, 1856*Rhopalonema funerarium* (Vanhoffen, 1902)*Pantachogon scotti* Browne, 1910*Amphagone apicata* Kramp, 1957*Amphagone apsteini* (Vanhoffen, 1902)*Crossota alba* Begelow, 1913*Aglaurea hemistoma* Peron & Lessuer, 1809*Aglantha digitata* Müller, 1775*Aglantha elata* (Haeckel, 1879)*Aglantha intermedia* Begelow, 1909

Family: Geryoniidae

Geryonia proboscida (Forskal, 1775)*Liriope tetraphylla* Chamisso & Eysenhardt, 1821

Order: Narcomedusae

Family: Aeginidae

Aegina citrea Eschscholtz, 1829*Solmundella bitentaculata* Quoy & Gaimard, 1833

Family: Solmariidae

Peganta clara Begelow, 1909

Family: Cuninidae

Cunina octonaria Mc Crady, 1857*Cunia tenella* Begelow, 1909

The data from all the samples of 3 cruises are pooled together and presented in Fig. 1. The maximum density of medusae 3882/1000 m³ was observed from Ratnagiri coast. This peak was chiefly contributed by the dense swarms of the Trachymedusan species *Liriope tetraphylla*. It is a warm water, holoplanktonic, euryhaline, eurythermal cosmopolitan species. The range 500 and above are seen more in areas in between Mangalore and south of Cochin. *Solmundella bitentaculata* and *Aglaurea hemistoma*

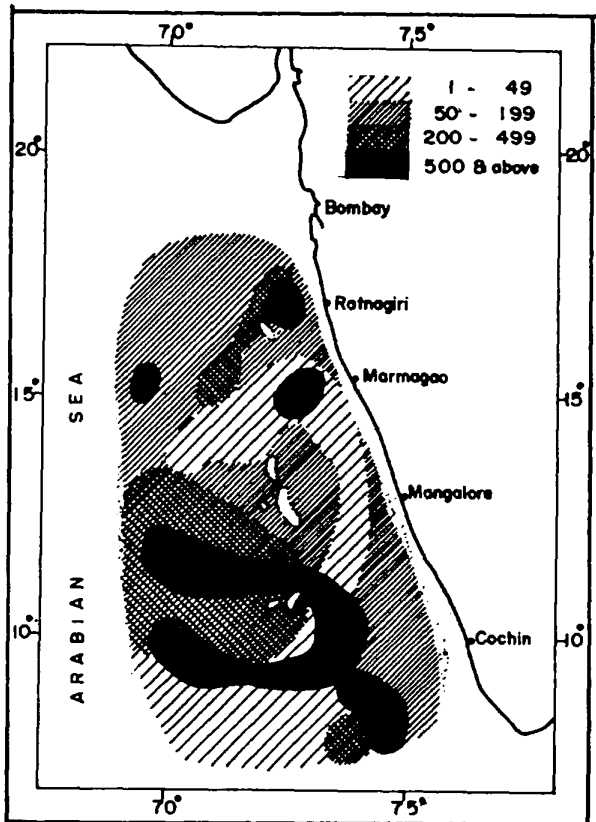


Fig. 1— Distribution of medusae during 1985, 1986 and 1987 from Laccadive Sea

occurred in large numbers and supported for the high densities. The next values, ranging from 200-499, were observed in places near to the higher values and were closer to the coasts. *Rhopalonema velatum* was the next abundant species and found more in the southwest areas. It is also euryhaline, eurythermic species and found to be widely distributed in almost all watermasses. *Cytaeis tetrastyla* multiplies through intensive vegetative reproduction and thus contributed for the high numbers in the coastal areas. Species next in order of abundance were *Amphagon apicata*, *Aglantha elata*, *Cnidocodon leopoldi*, *Bougainvillia fulva*, *Phialidium hemisphaericum*, *Crossota alba*, *Cytaeis vulgaris*, *Octophialucium indicum*, *O. begelowi*, *Eirene elliceana*, *Cunina tenella*, *C. octonaria*, *Eucheitota menoni*, *Aequorea acquorea* and *A. conica*. Rest of the species were rarely seen from very few stations. *Eutima commensalis* is reported as an endemic species of Cochin estuary and its occurrence

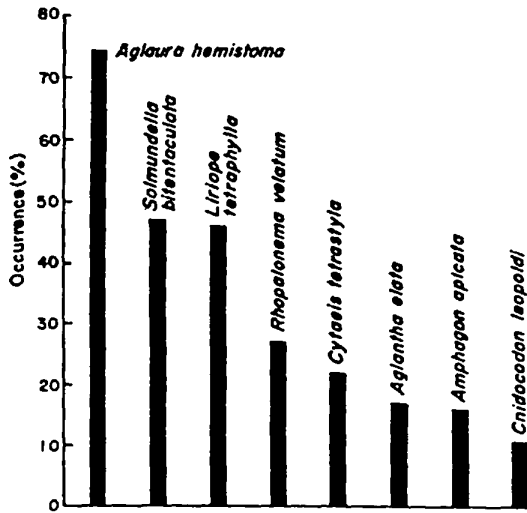


Fig. 2— Percentage composition of abundantly occurring species of this area

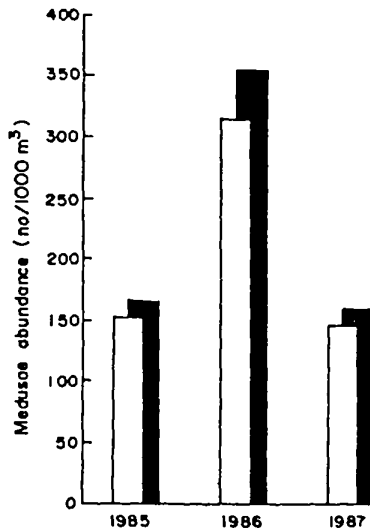


Fig. 3— Day and night variation of the medusae. White column represents day and black column represents night

from off shore area might be quite accidental. The hydroid of this species lives as endocommenal inside the mantle cavity of the shipworms (Santhakumari, 1970). Some species like *Ectopleura succilifera* was found only once. Vannucci & Navas (1973b) recorded it from the upwelling areas of Indian Ocean. Goswami (1979) reported *Eirene ceylonensis*, *Eirene* sp. and *Obelia* spp as common forms from Laccadive sea. But these species were not found from the present samples. *Obelia* spp might have escaped the net because of the large mesh size (0.33 mm).

The percentage composition of the dominant and commonly occurring species are shown in Fig. 2. Of all the 44 species *A. hemistoma* is the most commonly found species with 74% of occurrence. The dominant species were distributed throughout this area. In the population, juveniles and immature specimens were more than the adult ones. Occurrence of juveniles in most of the collections suggesting continuous breeding.

All the samples considered for the study were put under day and night categories and the results obtained are presented in Fig.3. Increase in values were noticed from night collections. Santhakumari (1991) reported diel variation of medusae from west coast of India.

The probable existence of stable eddy systems above 100 m depth and close to the islands might be one of the factors leading to the abundance of decapod larvae (Sen Gupta *et al.* 1979). This view augments the present findings of the abundance of medusae near to the coasts. Here in the present study more than half of the species are meroplanktonic forms. It is clear from the present study that Anthomedusae and Leptomedusae contribute much to species diversity while Trachymedusae and Narcomedusae are responsible for the density of the population. Thus an assemblage of meroplanktonic and holoplanktonic species are discernible in this region.

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