ABSTRACT

The abundance, population structure and other biological aspects of Siriella gracilis were evaluated based on zooplankton collections in the Exclusive Economic Zone of India (Arabian Sea, Bay of Bengal and Andaman Sea) as a part of a multidisciplinary project, Marine Research on Living Resources Assessment Programme. S. gracilis exhibited a wide range of variations in its population dynamics in the study area and the population density over the entire study area ranged from 0 to 29 250 ind. per 1000 m$^{-3}$.

The highest abundance was in the Arabian Sea (70.1% of the total sampled population) followed by the Andaman Sea (22.7%) and the Bay of Bengal (5.2%). Temperature and salinity appeared to have little influence on the general distribution of S. gracilis in the study area. The number of eggs/embryos carried by females exhibited a positive correlation with female size and the maximum brood size was 11. The egg diameter ranged from 0.32 to 0.46 mm and was independent of female size. Even though no significant body length difference was found between spent females and breeding females ($p>0.05$), wet mass of spent females and breeding females was significantly different ($p<0.0001$), obviously resulting from the added weight of the brood in ovigerous individuals.

RÉSUMÉ

L’abondance, la structure de la population et d’autres aspects biologiques de Siriella gracilis ont été évalués à partir de collections de zooplancton réalisées dans la zone maritime d’économie exclusive d’Inde (Mer d’Arabie, Golfe du Bengale et Mer Andaman), dans le cadre du projet multidisciplinaire dans le programme sur la Recherche Marine sur l’Évaluation des Ressources Vivantes. S. gracilis montre de grandes variations dans la dynamique des populations dans la zone étudiée et la densité de la population de l’espèce sur toute la zone a varié de 0 à 29 250 ind. 1000 m$^{-3}$. 

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L’abondance la plus élevée a été dans la Mer d’Arabie (70,1% du total de la population récoltée) suivie par la Mer d’Andaman (22,7%) et le Golfe du Bengale (5,2%). La température et la salinité semblent avoir peu d’influence sur la distribution générale de *S. gracilis* dans la zone étudiée. Le nombre d’œufs/embryons portés par les femelles a montré une corrélation positive avec la taille et la portée maximum a été de 11. Le diamètre de l’œuf varie de 0,32 à 0,46 mm et a été indépendant de la taille de la femelle. Même si aucune différence significative de la longueur du corps n’a été trouvé entre les femelles après la ponte et les femelles en reproduction (*p* > 0,05), le poids frais des femelles après la ponte et des femelles en reproduction a été significativement différent (*p* < 0,0001), un résultat sans doute du à l’apport du poids des œufs chez les individus ovigères.

**INTRODUCTION**

Mysids are one of the major crustacean components of macro-zooplankton, occupying a wide variety of aquatic environments. In general, mysids are omnivores, feeding on detritus, zooplankton and phytoplankton, and thus form a link between microbial producers and secondary consumers (Webb, 1973). The significance of mysids in the ecosystem as energy converter at different trophic levels has been greatly underestimated. Mysids are a substantial dietary component of many invertebrates, such as cuttlefish, cephalopods and decapods shrimps (Aronson, 1989; Hanamura & Matsuoka, 2003; Huang, 2004), and are also prey for many larger predators, such as various fishes (Thiel, 1996; Hostens & Mees, 1999; Viherluto, 2001), birds and seals (Mauchline, 1980), thus playing a part in energy transfer to higher trophic levels. Many ecological and biological studies have been conducted on costal mysids (e.g., Greenwood et al., 1985; Wooldridge, 1986; Mees et al., 1994; Vinas et al., 2005; Yamada et al., 2007; Biju & Panampunnayil, 2009, 2010; Biju et al., 2010; Sudo et al., 2011). Mysids are rich and diverse in the Exclusive Economic Zone of India, and their taxonomy is reasonably well known (Biju & Panampunnayil, 2011). However, a substantial gap exists on information regarding the ecology and biology of mysids in this area. A greater understanding of the abundance and biology of mysids is necessary to implement the knowledge about the ecological role of these organisms in oceanic water. *Siriella gracilis* Dana, 1852 is one of the most abundant species and has been recorded from tropical and subtropical waters of the Indian and Pacific oceans (Pillai, 1973). At present, there is no available information on the biology and ecology of this species. Considering the ecological importance of mysids, the present study was initiated to elucidate the population structure, abundance and biological characteristic of *Siriella gracilis* collected from the Exclusive Economic Zone (EEZ) of India.

**MATERIAL AND METHODS**

**Study area**

The Exclusive Economic Zone (EEZ) of India comprises the northern part of the Indian Ocean and spans an area of 2.02 million km². This zone includes the