ABSTRACT: A crustacean survey was made in Sepetiba Bay, Rio de Janeiro state, southeastern Brazil. Twelve sandy beaches were sampled on five islands in this embayment. A total of 3024 individuals were collected, belonging to 21 species, which are grouped in 16 families, seven infraorders, seven suborders, and four orders. Isopods, followed by amphipods and tanaids, showed the highest abundance, amounting to over 92% of the dominance of crustaceans. The main species were *Excirolana armata*, *Excirolana braziliensis* (isopods), *Atlantorchestoidea brasiliensis* (amphipod), and *Monokalliapseudes schubarti* (tanaid), which together accounted for about 80% of crustaceans of the beaches studied. *Excirolana braziliensis* had the highest frequency. The majority of species found are typical of sandy beaches, with large spatial distribution.

INTRODUCTION

Crustaceans are typically marine invertebrates (Brusca and Brusca 2007), and are commonly found in coastal ecosystems, like estuaries, mangroves, rocky shores and sandy beaches (Ri-Qing et al. 1997; Smith 2005; Sanchez-Moyano and Garcia-Asencio 2011; Cardoso et al. 2011). Thus, many species have a great importance in the economy, since several species are part of the human diet as well as they are used as bait in fishing (Williams 1974; Brown 1995). Moreover, these invertebrates can be used in the assessment of environmental quality (Fowler et al. 1978; Bergamino et al. 2009; Amaral et al. 2010).

In sandy beaches all over the world, crustaceans usually show a high dominance and frequency, especially on beaches which are more exposed to waves (Defeo and Brusca 2007). Among members of carinofauna in this environment, peracarids (especially isopods, amphipods, and mysids) and decapods (anomurans and brachyurans) are the most abundant (McLachlan and Brown 2006).

Sepetiba Bay, located in the southern state of Rio de Janeiro is a tropical ecosystem near the city of Rio de Janeiro. This bay holds one of the most important commercial ports in the Brazilian southeast region, with intense touristic, fishing, and industrial activities. For this reason it is considered an area of potential development, emerging as a great industrial and tourist center (Lacerda et al. 1987).

The purpose of the present work was to list the species of crustaceans inhabiting sandy beaches distributed on islands in Sepetiba Bay, state of Rio de Janeiro, Brazil. Thereby, this study will enable future works about the ecology of these species and the responses to the influence of the harbor in this region.

MATERIALS AND METHODS

The material studied is derived from project "Caracterização espacial da macrofauna de praias arenosas em cinco Ilhas da Baía de Sepetiba, Rio de Janeiro". Sepetiba Bay (22°54’ - 23°04’ S; 44°34’ - 44°10’ W) is a sedimentary embayment located in Rio de Janeiro state, southeastern Brazil, with an area of 520 km² (Cardoso et al. 2011). On each microtidal sandy beaches of five islands (Boi, Flexeiras, Catita, Escalhau, Bonita, Jardim, Gamboa, Leste, Estopa, Pitangueiras, Sul, and Pier) one sampling was carried during 2007 and 2008 (Figure 1). The collected sediment was sieved through a 0.50 mm mesh, and the retained material was taken to the laboratory, where the organisms were sorted by species, counted, and fixed in 5% buffered formalin. Identification was based on Mañé-Garzón (1949), Loyola e Silva (1960), Lemos de Castro and Brum (1969), Barnard and Karaman (1991), Melo (1996; 1999), Loyola e Silva and Alves (2000), Serejo (2004), Felder et al. (2009), and Souza-Filho (2011). Nomenclature and taxonomy were based on Martin and Davis (2001) and articles used to identification. The specimens were deposited in the crustaceans collection at Museu Nacional, Universidade Federal do Rio de Janeiro (MNRI).

RESULTS AND DISCUSSION

A total of 3024 individuals of carinofauna were collected, belonging to 21 species, which are distributed in 16 families, seven infraorders, seven suborders, and four orders (Table 1). Isopods, in conjunction with amphipods and tanaids showed the highest abundance, amounting to over 92% of the dominance of crustaceans.

The main species were the peracarids *Excirolana armata* Dana, 1853, *Excirolana braziliensis* H. Richardson, 1912 (isopods) *Atlantorchestoidea brasiliensis* (Dana, 1853) (amphipod) and *Monokalliapseudes schubarti* (Mañé-Garzón, 1949) (tanaid), which together accounted for about 80% of crustaceans of the beaches studied. *Excirolana braziliensis* had the highest frequency, occurring...
in more than 80% of beaches.

The cirolanid isopods are considered generalists in terms of occupation of the adverse environment that represent the sandy beaches (McLachlan and Brown 2006), justifying the fact that these isopods were the most frequent crustaceans on the beaches studied. Among the species of cirolanids, *E. braziliensis* and *E. armata* noteworthy for having a broad geographical distribution, often being found in coexistence (Defeo et al. 1997). The first occurs in tropical, subtropical and temperate along the coasts of the Atlantic and North Pacific (Cardoso and Defeo 2003) while the second is more restricted, occurring from Rio de Janeiro to Argentina (Ribetti and Roccatagliata 2006). The high abundance of *A. brasiliensis* found on the beaches studied corroborate with the study by Veloso et al. (2003), showing that this species is typically found in high abundance on the exposed sandy beaches of Rio de Janeiro. Besides this amphipod, the tanaid *M. schubartii*, had high abundances, however occurring only at two beaches (Gamboa and Pier beaches), which one are characterized by fine sediment (Cardoso et al. 2011). It can be explained by the fact that this species is related to high concentrations of organic matter that is usually associated with fine sediment (Bemvenuti et al. 1978; McLachlan and Brown 2006).

Other species founded, but not with high abundances and frequencies, are typical inhabitants of sandy beaches and have a large spatial distribution as the mole crab *Emerita brasiliensis* Schmitt, 1935 (decapod) that is commonly found in the intertidal of reflective sandy beaches along the Atlantic coast of South America from Rio de Janeiro (Brazil) to Montevideo (Uruguay) (Defeo and Cardoso 2004). Accordingly, the blue crab of genus *Callinectes* Stimpson 1860 is a swimming decapod that is widely distributed from Nova Scotia to northern Argentina (Norse 1977). Another common species of sandy beaches which was found in only two beaches was the hermit crab *Pagurus criniticornis* Dana, 1852. These high abundances of hermit crabs may be related with the dominance of gastropods *Cerithium atratum* in these beaches (Cardoso et al. 2011), since *P. criniticornis* has a clear preference for living in empty shells of this gastropod (Dominciano et al. 2009).

During the identification of specimens for this work, a new genus and new species was found and described by Souza-Filho (2011). It is the amphipod *Ruffosius fluminensis* (Figure 2) that was found in four of the beaches studied.

The description of this new genus and new species shows the importance of a taxonomic survey in environments where the studies are scarce, thus sandy beaches of Sepetiba Bay are a potential area for the discovery of new species and new occurrences. Moreover, these organisms that inhabit this environment can be used as bioindicators, once the beaches are ecosystems that suffer with the human action, for example recreation, cleaning and pollution (Defeo et al. 2009).
FIGURE 2. Ruffosius fluminensis Souza-Filho, 2011. Sul beach, Sepetiba Bay, Rio de Janeiro, MNRJ21823. Scale bar: 0.5 mm.

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