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Annual variation of foraminifera from a sublitoral zone near Cachoeira River mouth, Paranaguá Bay (Paraná, Brazil)

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The Cachoeira River flows into Antonina's Bay, located in the upper sector of Paranaguá estuarine system. With the conclusion of Governador Pedro Viriato Parigot de Souza Hydroelectric Power Plant constructed in 1971, the hydrographic basin of Cachoeira River was connected with another hydrographic basin. Annual discharge of Cachoeira River before the transposition was 21.13 m³/s but after the transposition it increases 33%, with an annual average discharge of 31.45 m³/s. This contributes to changes on the Antonina Bay. From March 2003 to February 2004 foraminiferal assemblages were studied at the Cachoeira River mouth. Samples were collected monthly in the sublitoral zone with a Petit Ponar grab; three replicates with 50 cm³ of surface sediment were preserved in 4% buffered formaldehyde solution for foraminiferal and thecamoebian analysis. In the water column temperature, salinity, Secchi disk, depth and dissolved oxygen were measured. In the sediment grain size, total organic carbon, total carbonate and Chlorophyll *a* concentration were measured. Depth varied from 0.6 m to 2 m in the study area and water transparency varied from 0.34 m to 1.15 m. At the bottom, water temperature ranged from 19°C to 29°C, salinity from 0 to 19 and dissolved oxygen (% saturation) from 60.8% to 96.4%. Very fine to medium sand prevails in the area, but coarse to medium silt was also present. Chlorophyll *a* concentration varied from 0.2 to 8.3 µg.g sed⁻¹ and phaeopigments varied from 2.5 to 10.2 µg.g sed⁻¹. Total organic matter ranged from 2.6% to 18.6% and total carbonates from 1.9% to 12.9%. Preliminary results of faunal analysis show low species richness agreeing with the results of other studies in similar environment. Seventeen foraminiferal species (*Ammonoastuta inepta*, *Ammobaculites* sp., *Ammonia parkinsoniana*, *Ammotium* sp., *Arenoparrella mexicana*, *Asterotrochammina* sp., *Criboelphidium excavatum*, *Haplophragmoides manilensis*, *Haplophragmoides wilberti*, *Miliammina earlandi*, *Miliammina*

fusca, *Paratrocammina* (L.) *guaratibaensis*, *Siphotrochammina lobata*, *Triloculina* sp., *Trochammina inflata*, *Trochamminita salsa*, *Trochammina* sp.) and 7 thecamoebian species (*Centropyxis constricta*, *Centropyxis acuelata*, *Cyclopyxis impressa*, *Diffflugia capreolata*, *Diffflugia urceolata*, *Lagenodiffflugia vas*, *Trigonopyxis arcula*) were registered. Agglutinated foraminifers dominate, with *A. mexicana* and *H. wilberti* being the dominant ones. Only three calcareous foraminiferal species were registered; these euryhaline species are abundant and commonly found in the estuary, but at the studied area they were registered in low frequencies, in the winter months and when runoff decreased. Low standing stock was frequent during the year, contrasting with standing stock values of other adjacent sublittoral and intertidal zones within the estuary. This was attributed to strong bottom currents present. Empty thecamoebians occurred at the studied area indicating probable downstream transport from the river.