Annual summary report to 'Small Grants in Aid of Research 2022'

'Directional asymmetry across postnatal ontogenetic development of Odontoceti skeletons'

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The latest funding provided by this award allowed an increase in sample size and supported initial advances in related research. The aim of this project is to describe the shape variation and magnitude of directional asymmetry in skeletons of odontocetes during postnatal ontogenetic development. Geometric morphometrics using three-dimensional landmarks are being applied to investigate the functional aspects of asymmetry, evaluating selective pressures and adaptations to habitats in Pontoporiidae, Monodontidae, Phocoenidae, Delphinidae. Data were collected during visits to the following zoological collections: Museu Nacional/Universidade Federal do Rio de Janeiro (MN/UFRJ), Grupo de Estudos de Mamíferos Aquáticos do Rio Grande do Sul (GEMARS) and Natural History Museum of Denmark (NHMDK). We have currently increased the data set by 120 specimens, including: Pontoporiidae *Pontoporia blainvillei*; Monodontidae *Monodon monoceros* and *Delphinapterus leucas*; Phocoenidae *Phocoena phocoena,* and; Delphinidae *Lagenorhynchus acutus, Lagenorhynchus albirostris, Orcinus orca, Steno bredanensis, Sotalia guianensis, Tursiops truncatus, Stenella frontalis* and *Globicephala melas*. Cetacean skeletons present a notable body reorganization relative to terrestrial ancestors, including ontogenetic changes necessary for the maintenance of locomotor and sensory functionality in the aquatic environment. Hence, the morphological variations will be analyzed with respect to physical maturity. These results have not yet been published, but are being worked on, and I am grateful to the Society for Marine Mammalogy for the indispensable financial support provided so far.