R/V *Hero* Cruise 71-2 to Isla de los Estados

OLIVER S. FLINT

Department of Entomology
Smithsonian Institution

The objective of R/V *Hero* Cruise 71-2 was to survey the vertebrate, arthropod, and marine biotas of Isla de los Estados and adjacent areas of Tierra del Fuego, Argentina. Much of Tierra del Fuego has been studied, and its fauna is fairly well known. However, aside from incidental observations and collections, mostly of birds (Salvadori, 1900; Castellanos, 1935, 1937; and Beaglehole, 1961), the fauna of Isla de los Estados has not been surveyed previously.

The island

Isla de los Estados is roughly 60 km long on an approximate east–west axis and is situated across the Estrecho de la Maire from the eastern tip of Tierra del Fuego (see map). The north and south sides are cut by many fjords, some of which almost bisect the island. The topography is generally very rugged, reaching to 823 m in the Montes Bove. The northeastern corner of the island and Islas Año Nuevo are much flatter, however. The shoreline is generally steep, often precipitous, although there are a few bays with sand or cobble beaches.

The lower slopes are covered with a dense evergreen forest of southern beech (*Nothofagus*) and winter's bark (*Drimys*), often with a dense undergrowth of shrubs and bryophytes. On level areas with saturated soil or at high elevations, the land is covered with a moorland-type flora, sometimes hip-deep with rushes. Bedrock is evident everywhere, with the peaks generally barren rock.

Streams and ponds are numerous. The latter occupy glacial basins, some of which (Lago Louisato,

for example) are very large. Most of the streams are no more than a few meters wide, and all of the waters are stained from a golden-brown to nearly black.

The cruise

R/V *Hero* departed Punta Arenas on April 19, 1971, and returned on May 30. This period was well into the early austral winter and as such caused certain shortcomings in the collections. The summer migratory birds had already left the island, and we saw no signs of breeding activity. Many species of insects were no longer in the adult stage or if so were hibernating, thus being much more difficult to find. In spite of the season, significant collections were made, but these now need to be balanced by collections made nearer to midsummer.

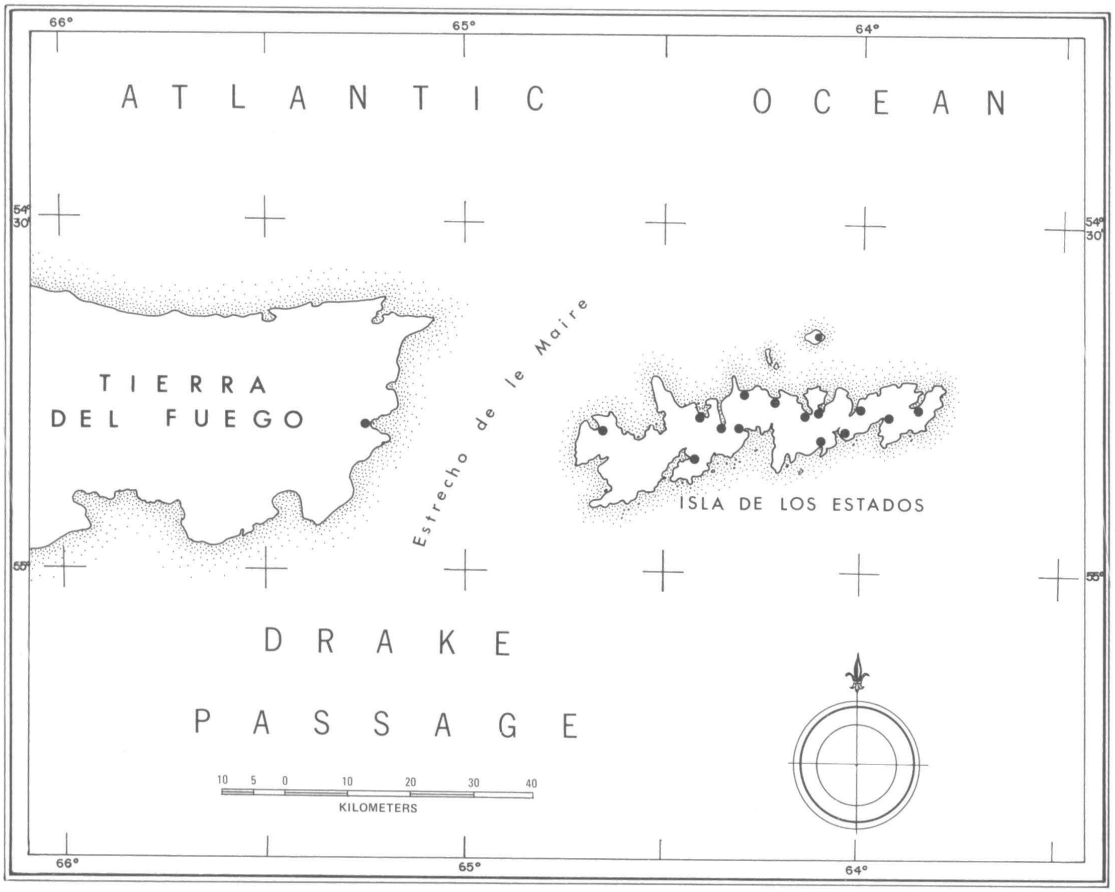
On Tierra del Fuego, we collected at Bahía San Sebastian in the Patagonian steppe region and Bahía Buen Suceso in the evergreen forest region. These collections, taken from the two main vegetational regions of Tierra del Fuego—the most likely source of the Estados fauna—will provide a better understanding of the faunal relationship between the two islands.

On Estados itself, 15 bays and ports almost completely encircling the island were visited: Bahía Crossley, Bahía Capitán Cánepa, Puerto Celular, Primera Bahía, Puerto Vancouver, Bahía Blossom, Puerto San Juan del Salvamento, Puerto Cook, Isla Observatorio, Puerto Año Nuevo, Puerto Basil Hall, Puerto Roca, Bahía Colnett, Puerto Parry, and Puerto Hoppner. From 1 to 3 days were spent at each locality. Weather permitting, parties were put ashore in the morning and afternoon, and occasionally at night.

Collections made

Messrs. Ernani G. Menez and Dean A. Shinn Smithsonian Institution, collected marine organism (1) from rocks or sand along shore, (2) in tidepool and kelp holdfasts on intertidal rock benches, (3) b grab sampling from the bottom, (4) by a 3-mete Isaacs-Kidd midwater trawl, and (5) by a standar bottom trawl. In addition, freshwater lakes an streams were sampled whenever possible. A total o 84 stations were sampled, resulting in an accumula tion of approximately 250 fish, 75 gallons of in vertebrates, and 55 gallons of marine benthic algae.

The ornithologists, Messrs. J. P. Angle and D Bridge of the Smithsonian Institution, were in charg of collecting birds and mammals. Detailed lists o species seen were made each day, and sea logs wer kept while the ship was under way. Specimens o birds were collected by shooting (both on land an from *Hero*'s boat), mist-netting (using a loose, black nylon net to entangle birds that blundered in), and

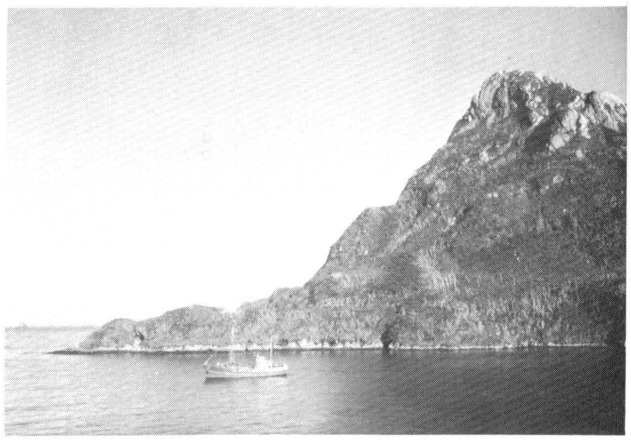


Location map showing areas of investigation during *Hero* Cruise 71–2.

picking up those that flew on board at night. Small mammal traps were set at localities where overnight stops were made. Approximately 480 specimens were collected during the trip, representing 54 species of birds and eight of mammals. Fifty-one species of birds were recorded from Estados, of which 13 are new records for the island. A total of 322 specimens of 40 species were collected on the island. The total number of species found was considerably reduced because the migratory species had already left the island.

Insects and terrestrial arthropods were collected by Dr. Oliver S. Flint, Jr., and Mr. Gary F. Hevel of the Smithsonian Institution. Insects were collected by sweeping the vegetation and by looking in rotten wood and under bark, logs, kelp, and kelp holdfasts along beaches. Streams and ponds were also searched. Equipment included a malaise trap (a large, tent-like, cheesecloth trap that automatically channels insects that fly through its open sides into containers), berlese funnels (funnel-shaped containers that allow insects to crawl out of debris and into containers), and, at night, an ultraviolet light. Approximately 8,000 insects belonging to 17 orders were collected. The variety of insects was unexpectedly great considering the lateness of the season but probably represents only a fraction of the species to be found in summer. Ectoparasites were found on 145 specimens belonging to 35 species of birds and all four (or possibly five) species of rodents.

Dr. Ricardo A. Ronderos and Lic. Luis A. Bulla from the Facultad de Ciencias Naturales y Museo de La Plata collected both marine fauna and terrestrial arthropods. Dr. Ronderos collected the intertidal invertebrate fauna, yielding examples of nine phyla contained in 250 lots plus two lots of benthic fish. Lic. Bulla collected more than 5,000 arthropods. These belong to 10 orders of insects as well as Arachnida, Symphyla, and Pauropoda.

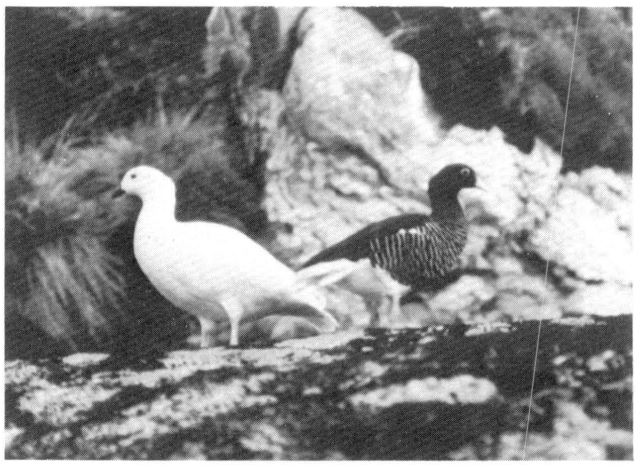


O. S. Flint, Jr.

Hero at Puerto Celular, Isla de los Estados.

O. S. Flint, Jr.

Malaise trap at Bahia Crossley, at western end of the island.



D. Bridge

Male (left) and female *Chloephaga hybrida* at Puerto Basil Hall.

Acknowledgements

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