

**ATOLL RESEARCH BULLETIN**

**NO. 321**

**HENDERSON ISLAND:  
DEDICATED TO S. DILLON RIPLEY  
BY  
F.R. FOSBERG**

**ISSUED BY  
NATIONAL MUSEUM OF NATURAL HISTORY  
THE SMITHSONIAN INSTITUTION  
WASHINGTON, D.C., U.S.A.  
October 1989**



S. Dillon Ripley  
March 1980

## HENDERSON ISLAND

### DEDICATION TO S. DILLON RIPLEY

We are happy to dedicate this issue, presenting the first scientific results of the Smithsonian 1987 Expedition to Henderson and Neighboring Islands, to S. Dillon Ripley. He is the author of a classic monograph on the rail family of birds and was particularly interested in an endemic flightless rail from Henderson and its island home. He has heartily supported our efforts to promote this expedition, and was instrumental in bringing it about. We only regret that he could not participate in it and study this pristine bird habitat.

Born in 1913, in New York City, Dr. Ripley has had a memorable career in science, especially ornithology, and in public life. His long series of scientific positions, expeditions, and major publications have been detailed elsewhere and are well known. His scientific stature as the world authority on the birds of South Asia and the Himalayas, and on several families of birds, is recognized world-wide. His crowning achievement has been, as its eighth Secretary, to guide the Smithsonian Institution to its present stature as the world's greatest, most widely known and respected, repository, promoter, and dispenser of human knowledge. His two decades at the helm of this Institution have seen unparalleled growth, increase in scope and effectiveness, and brightening of its public image. At present, in retirement, he continues to advise the Institution, and to carry on his scientific work. He will long be known and remembered as one of America's great scientific figures. May he have many more productive and satisfying years.

#### Results of the 1984 Smithsonian Henderson Island Expedition

Henderson island is a small elevated coral island in the south central Pacific Ocean, just south of the Tropic of Capricorn, longitude 128°20' W, latitude 24°20' S. It is one of a scattered group of four islands east of, or forming an eastern extension of, the vast Tuamotu Archipelago. They are, west to east, Oeno Atoll, Pitcairn Island, Henderson Island, and Ducie Atoll. They are among the most remote of all islands from continental land masses and remote, even, from groups of high islands, except for nearby Mangareva, the nearest being the Austral, Society and Marquesas groups. There is no suggestion that there has ever been any connection between them or with any other land. Only Pitcairn has had any human inhabitants in historic time. Archeologic traces of earlier temporary occupation by Polynesians have been found on Henderson. Lack of fresh water would have made lengthy habitation difficult or unlikely.

Previous exploration, and available natural history information, known to the authors up to 1983 was summarized by Fosberg, Sachet and Stoddart, Atoll Research Bulletin no. 272, 1983. Since then, a party of amateur explorers was brought to Henderson by "Operation Raleigh" in 1986. They hacked a trail from the North Beach southward for some distance, perhaps to the south end. No scientific results from this visit have come to our attention. One exotic plant, *Setaria verticillata*, found at North Beach by the Smithsonian party may have been accidentally introduced by the Raleigh group. One native herbaceous species, *Senecio stokesii*, apparently with some pioneer or weedy tendencies, has spread along the cut trail, reported by the Smithsonian party. Coconuts were planted along this trail, either by the Raleigh party or by possible visitors from Pitcairn. Small groves of coconut palms are found at North Beach and Northwest Beach, planted earlier by the Pitcairners. Otherwise the island appears to be in relatively undisturbed condition.

In the early 1980's an American millionaire proposed to build a home on Henderson and bulldoze the vegetation to make a cattle ranch. He had ample means to do this and was willing to pay for the privilege. A small group of scientists interested in island ecology and related disciplines, waged a campaign, ultimately successful, to prevent this destruction of one of the very few remaining pristine island ecosystems.

These, and associated scientists concerned with oceanic islands, then felt that, in the face of such threats, an "across the board" investigation of this uninhabited elevated coral-limestone island was a matter of highest priority. In order to protect it, we must know and understand the island in order to be able to demonstrate its uniqueness and scientific importance.

Plans for a lengthy, one to two months or more, visit were frustrated by lack of funds, budget cuts, as the expense involved would be major. This idea has not been given up, but meanwhile opportunities for a short, preliminary visit were sought. In 1987, through the interest and generosity of George and Ann Nichols, owners of R/V Rambler, a 100-foot three-masted staysail schooner, such an opportunity was offered and a small expedition of five scientists was able to spend nine days on Henderson and to have short visits to Pitcairn, Oeno, and Ducie, with stops also on Easter Island and the Marquesas.

The scientists included the leader, Wayne Mathis, Smithsonian entomologist; Thomas Spencer, then of Manchester University, now of Cambridge University, geomorphologist; Susan Schubel, of New York State Museum, avian paleontologist; Gary Graves, Smithsonian ornithologist; and Gustav Paulay, of University of Washington, zoologist and general naturalist. Prof. David R. Stoddart, then of Cambridge University, now of University of California, Berkeley, geographer and expert on islands extraordinary, was scheduled to participate, but delays in starting and conflicts with teaching duties made last-minute cancellation necessary.

From a base at Northwest Beach, the party was able to explore the north coast, the Northwest Beach area, and the northern third of the plateau and gain a reasonable view of the general geography, surficial geomorphology, vegetation, ornithology, fossil history, marine and insect fauna. Substantial collections of insects and other land invertebrates, marine invertebrates, vertebrate fossils, and land plant and bird specimens were collected.

The east, south and southwest coasts and the southern half of the plateau remain little-known, to even a reconnaissance extent. Much of the coast-line is of perpendicular or undercut limestone cliffs, and is very difficult and dangerous to work if the sea is at all rough. The east coast, exposed to the Southeast Trade Wind swells is especially difficult. Only a well-supported and well-equipped expedition with ample time will yield a thorough knowledge of Henderson Island. Visits at several seasons would be desirable, as the subtropical climate is surely seasonal.

Oeno and Ducie Atolls would also justify more time, though their terrestrial biotas are meagre. This very fact might yield ecological insights obscured by the complexity of richer biotas and more complex environments.

The papers in this issue give valuable information from the results of the field observations. Critical study of material collected remains to be done, and other papers, in more specialized journals will appear in due course.

This expedition should be looked upon as a precursor to the planned comprehensive study mentioned above, with broader coverage and time available for study of ecological processes operating on this fascinating island.

#### Acknowledgments

Several people, especially the crew and owners of the R/V Rambler, provided direct assistance and greatly facilitated our work on the islands as well as on the ship. They include: George and Ann Nichols, the skipper and owners of the R/V Rambler, and their children Pierce and Dominica; Lawrence Schuster and his daughter Talilla; Buck Moravec; Jimmy and Cannan Hewson; and Margaret Wilmot. We note with sadness the passing of George Nichols, who suffered a heart attack while skiing this past spring. Marsha Sitnik and David Challinor helped immeasurably with finances, paper work, and the coordination of innumerable logistical matters. The Pitcairn Islanders extended gracious hospitality and complete access to their Island for the few days spent there. Their generosity will not be forgotten. Lastly we thank Mr. Terence D. O'Leary, then Governor of the Pitcairn Island Group, for permission to conduct the field work and to collect specimens.

F.R. Fosberg