

# The Biology and Geology of Tuvalu: an Annotated Bibliography

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**ABSTRACT.** Over one thousand references of published monographs, papers, letters, notes and reports concerned with the geology and biology of the nine islands of Tuvalu, the former Ellice Islands, are indexed and annotated. Excluded are meteorological, ethnological, human geographical, historical, administrative and sanitary publications. Medical references are included where these impinge on the zoological or botanical. Fifty papers come from Soviet sources and include results of recent expeditions from that nation in the archipelago.

RODGERS, K.A. & CAROL CANTRELL, 1988. The biology and geology of Tuvalu: an annotated bibliography. Technical Reports of the Australian Museum No.1: 1-103.

## Introduction

The central Pacific nation of Tuvalu (Ellice Islands) consists of nine small islands and atolls scattered along an approximate north-north-west to south-south-east bearing between 5° and 10½°S latitude and 176° and 179½°E longitude. Apart from the similar island chain of Kiribati to the north and east, the nearest land is Rotumah, 400 km to the south-west, with the main islands of Fiji a further 200 km south. The Phoenix and Tokelau groups lie about 700 km east while the Santa Cruz Islands are the first landfall 1500 km west. As a consequence of this isolation, the 36 square km area of the archipelago provides the sole land area due south of the equator and west of the 180° meridian in an expanse of 2,000,000 square km of the central Pacific. From north to south the nine islands are Nanumea, Niu-tao, Nanumaga, Nui, Vaitupu, Nukufetau, Funafuti, Nukulaelae, Niulakita (Fig.1).

Specimens of the animal and plant life of the islands start to appear in the collections and herbaria of Western Europe from about the mid nineteenth century on. The geology of Funafuti, including its lagoonal sedi-

ments, reefs, submarine topography, stratigraphy and deep structure and composition were described in some detail following three coral reef boring expeditions mounted by the Royal Society in 1896, 1897 and 1898, and a fourth visit by Professor Agassiz of Harvard in 1899. These descriptions, along with reports on collections of the flora and fauna, served to make the natural history of this atoll the best documented of any in the Pacific and Indian Oceans at the turn of the century (Rodgers, 1985).

Little, however, was known of the geology and biology of the other eight islands. Agassiz had made a survey of some of their reefs and collected a few specimens. Other information of scientific value, as well as a few collections which existed in herbaria and museums (e.g. Mueller, 1876; Butler, 1878; Sharpe, 1878) had come largely from missionary sources. Moreover, these collections were not systematic nor comprehensive. Neither were the majority of those from Funafuti. Few had been assembled by a specialist in a particular field while some of the identifications