

The Ecology of Samoa:
An Annotated Bibliography

by

A. C. Robinson

*Division of Environment and Conservation,
Department of Lands, Surveys and Environment,
Western Samoa.*

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Without the assistance of the Overseas Service Bureau in negotiating the placement in Western Samoa under the Australian Volunteers Abroad Scheme I would not have had this opportunity to learn about the ecology of Samoa.

Dr Anthony Robinson

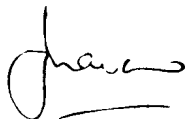
Foreword

The ecology of the Samoan archipeligo has been studied for thousands of years by humans. This research was initially passed on as oral history by the original inhabitants, but later was documented by successive waves of European colonists - missionaries, traders, plantation owners and colonial administrations.

With these and later studies yielding vast quantities of information, it is easy to envisage that researchers may be starting to "go over old ground", duplicating past work. This SPREP report documents as many of these past studies on the ecology of Samoa as is possible in an effort to reduce the chances of this duplication, and to offer directions for future research and studies.

We trust this will be the first of many such bibliographies, as we commence our own period of "the information revolution" in the Pacific islands.

This bibliography was produced as part of the UNDP-funded National Environment Management Project, as part of a national project to document the biological diversity of the Samoan archipeligo. Our thanks goes to Dr Tony Robinson, of Western Samoa's Division of Environment and Conservation, Ministry of Land, Surveys and Environment, Western Samoa for comiling this most useful publication.



Vili A. Fuavao

Director

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1. Introduction

This bibliography is one of the results of two years (October 1992 to August 1994) spent in Apia, Western Samoa working as the Resource Management Officer for the Division of Environment and Conservation, Department of Lands, Surveys and Environment of the Government of Western Samoa.

During this period one of my major tasks was to establish a computer database on the terrestrial biodiversity of the country. This required a thorough survey of the published taxonomic works on the plant and animal groups to be included in the database. The groups finally chosen were:

- Vascular Plants;
- Land and Freshwater Snails;
- Butterflies;
- Reptiles and Amphibians;
- Birds (including sea-birds and vagrant waders); and,
- Mammals (including marine);

As the 'Samoa Biodiversity Database' is designed as a practical conservation planning and management tool, searching for references to the ecology of Samoan species was also a part of the background to its preparation. More references are also included to general conservation management and, where appropriate to the ecological orientation of this bibliography, some environmental impact assessment studies are also included.

There is also some coverage of the marine environment, particularly fish, and also specific Samoan studies of marine ecosystems. As much of the marine flora and fauna of Samoa is widespread throughout the Indo-Pacific region there will be many other references from other areas which, although not cited here, will be useful in Samoa. Additional references to the fisheries of Samoa can be found in Gillett and Sua (1987).

Biogeographically, Western Samoa is very closely allied to the islands of American Samoa (see Fig. 1) and so both the database and this bibliography contains references and coverage of species found in both 'Samoa's'.

There have been two previous bibliographies of this type for the Samoan Archipelago; Pearsall (1991a) which covers the whole archipelago, and is available in computer from the Pacific Environmental and Natural Resource Information Centre (PENRIC) in the South Pacific Regional Environment Programme office at Apia, while Knudsen et al. (1992), which is confined to American Samoa, is a printed document.

This new annotated bibliography, which contains a large number of references in addition to those already available will, it is hoped, form a valuable introduction to the extensive biological literature available on the group and so avoid the unnecessary duplication of existing work.

References to species which also occur outside the Samoan archipelago have been included where relevant. The bibliography is presented alphabetically and then chronologically. Single author references take priority over multi-authored references of an earlier date.

References included in the bibliography are current to June 1994.

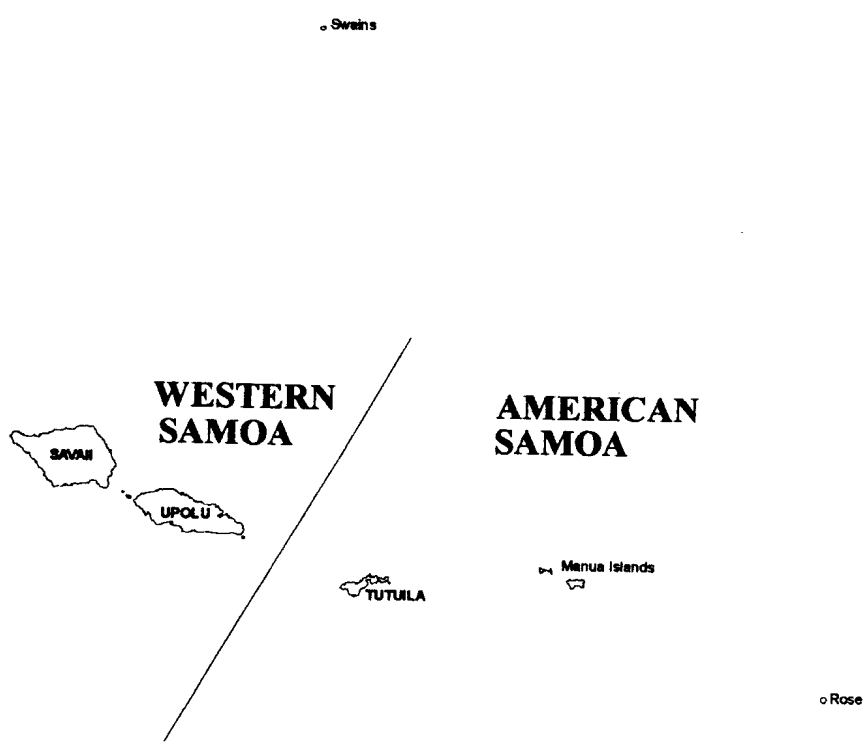
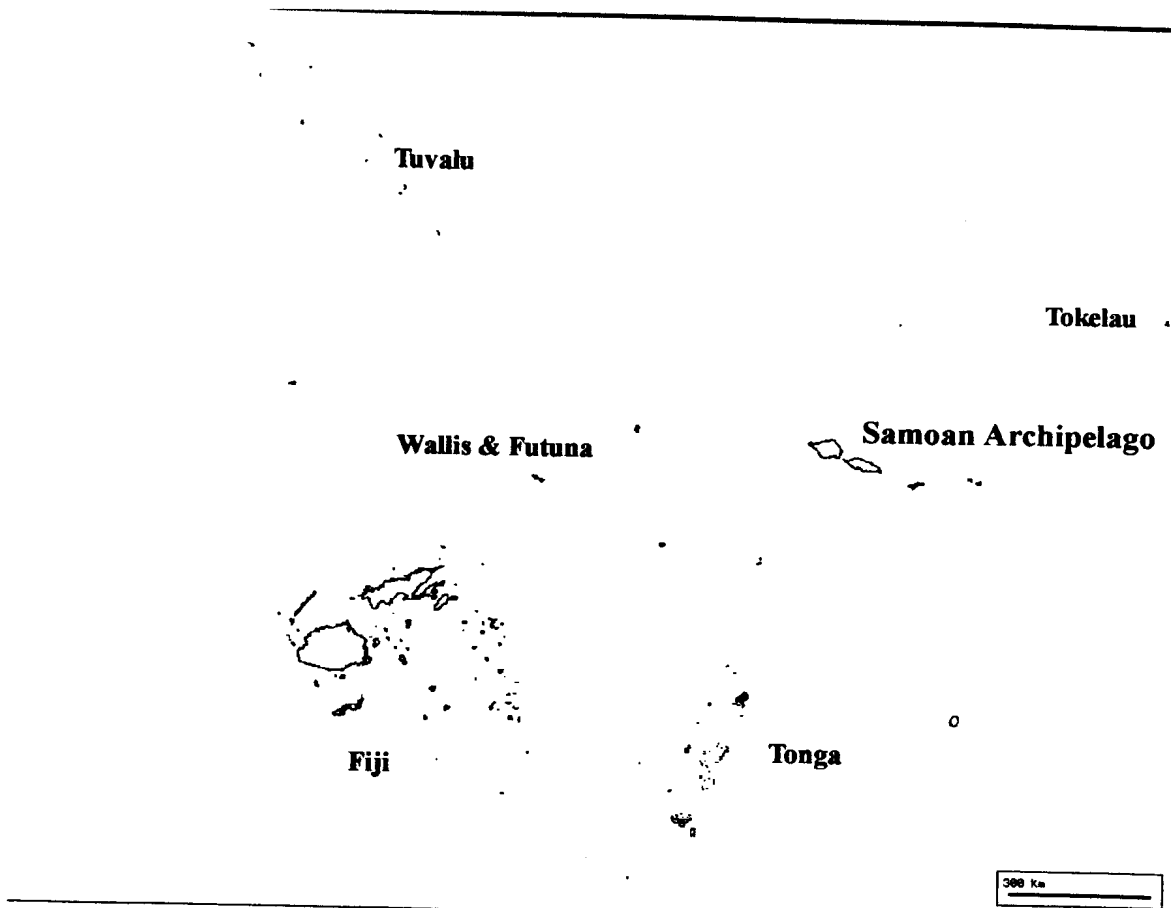


Fig. 1: The location of the Samoan Archipelago, and the islands that comprise it.

Source: DEC Biodiversity Database, June 1994.

1. Annotated Bibliography of Ecological and Related Studies in Samoa

001

AMERICAN SAMOA DEPARTMENT OF EDUCATION (1981) *Animals of Samoa*. Pago Pago, American Samoa. 47 pp.

(Species checklists with vernacular names for birds, insects, echinoderms, reef fish, marine molluscs, marine crustaceans, amphibians and reptiles.)

002

AMERICAN SAMOA NATURAL RESOURCES COMMISSION (1991) *Endangered species in American Samoa and a strategy for their protection*. (Draft interim report) American Samoa Government, Pago Pago, American Samoa. 40 pp.

003

AMERSON, A. B., JR., W. A. WHISTLER, AND SCHWANER, T. D. (1982a) *Wildlife and Wildlife Habitat of American Samoa*. I. Environment and Ecology. USDI Fish and Wildlife Service, Washington, D. C. 119 pp.

(The results of a biological survey of the islands of American Samoa from June 1975 to December 1976. This volume documents the vegetation from 42 study plots and describes 16 vegetation communities on the seven islands.)

004

AMERSON, A. B., JR., W. A. WHISTLER, AND SCHWANER, T. D. (1982b) *Wildlife and Wildlife Habitat of American Samoa*. II. Accounts of Flora and Fauna. USDI Fish and Wildlife Service, Washington, D. C. 151 pp.

(Lists of species of plants, reptiles and amphibians, birds and mammals from the islands of American Samoa and some associated ecological information.)

005 ✓

ANDREWS, G. J. AND HOLTHUS, P. F. (1989) *Marine Environment Survey: Proposed Aleipata Islands National Park, Western Samoa*. South Pacific Regional Environment Programme, SPC, Noumea, New Caledonia. 68 pp.

(A survey of the marine ecosystems surrounding the coast and islands of the SE end of Upolu. The range of marine habitats is mapped and recommendations made for the establishment of a marine protected area.)

006

ANON. (undated) *Greenpeace Pacific Campaign. Sea Turtles*. Greenpeace, Australia.

(A summary of the decline in the sea-turtle populations throughout the Pacific with information on species identification and basic turtle biology.)

007

ANON. (1976) *Lake Lanoto'o - A project to establish a National Park in Samoa*. Unpublished Report

(Suggested boundaries for a national park in the upland area of Upolu centred on Lake Lanotoo.)

008

ANON. (1991) *Locally available fresh vegetables*. Nutrition Centre, Health Department, Western Samoa.

(A guide to the nutritional value and hints on preparation of a range of both Polynesian and more recently introduced leafy vegetables.)

009

ANON. (1992) *A Park to protect Flying Foxes. Bats 10: 3&19*.

(Describes progress towards the establishment of the National Park of American Samoa.)

010

ANZDEC LIMITED CONSULTANTS. (1990) Land Resource Planning Study Western Samoa, Final Report. Asian Development Bank TA 1065-SAM.

(Description of methods and presentation and discussion of results of the land use mapping and planning study. A series of digitised maps (using ARC-INFO software) were produced at a scale of 1:20 000 covering topography, roads and villages, land tenure, geology, soils and land capability based primarily on interpretation of 1974 aerial photography.)

011

ARMSTRONG, J. S. (1932) Hand-list to the Birds of Samoa. John Bale, Sons and Danielsson, Ltd., London, U.K. 91 pp.

012

ASHMOLE, M. J. (1963) Guide to the Birds of Samoa. Pacific Scientific Information Center, B. P. Bishop Museum, Honolulu, Hawaii. 21 pp.

(A compilation of published accounts and specimens in the Bishop Museum to produce an annotated species list for the Samoan archipelago together with brief descriptions of each species.)

013

ATHERTON, J. (1994) Planning new Conservation Areas in Western Samoa: A Case Study. MSc thesis, School of Agricultural and Forest Sciences, University College of North Wales, Bangor, U. K.

(The results of a questionnaire survey in the villages of Saanapu and Salaoa, Upolu, about establishment of a Conservation Area Programme in their mangrove forests.)

014

BAILEY, J. M. (1992) The Leaves we Eat. South Pacific Commission, Noumea, New Caledonia.

(Information on cultivation and preparation as food of 22 species of leafy vegetables grown on various Pacific islands.)

015

BAKER, H. B. (1938) Zonitid Snails from Pacific Islands Part 1:1. Southern Genera of Microcystinae. *Bernice P. Bishop Museum Bulletin* 158.

(Includes descriptions of Samoan species Liardetia striolata and Lamprocystis upolensis.)

016

BAKER, H. B. (1941) Zonitid snails from Pacific Islands Parts 3 & 4. *Bernice P. Bishop Museum Bulletin* 166.

(Includes measurements and description of Samoan species Trochomorpha troilus troilus, T. t. savaii, T. navigatorum, T. luteo-cornea, T. samoa, T. tuber, T. apia and T. tentiolorum.)

017

BALAZS, G. H. (1979) Status of Sea Turtles in the Central Pacific Ocean. In: The Biology and Conservation of Sea Turtles. Smithsonian Press, Washington DC, USA.

(Notes on sea turtle populations in Hawaii, American and Western Samoa, Tokelau and Tuvalu.)

018

BALAZS, G. H. (1991) Historical summary of sea turtle observations at Rose Atoll, American Samoa 1839-1991. Southwest Fisheries Center, Honolulu Laboratory, N.O.A.A., N.M.F.S., Honolulu, Hawaii. 6pp.

(Report on observations of green turtle nestings from all expeditions to Rose Atoll.)

019

BALAZS G. H. (1993) Homeward bound: Satellite tracking of Hawaiian Green turtles from nesting beaches to foraging areas. *Proceedings of the 13th Annual Symposium on Sea Turtle Conservation and Biology, 23-27 Feb 1993.*

(Results of tracking three female Green Turtles from their nesting areas in French Frigate Shoals to their feeding areas in Kaneohe Bay, Oahu.)

020

BALAZS, G. H., SIU, P. AND LANDRET, J-P. (1993) Ecological aspects of Green Turtles nesting at Scilly Atoll in French Polynesia. *Proceedings of the 13th Annual Symposium on Sea Turtle Conservation and Biology, 23-27 Feb 1993.*

(The history of Green Turtle exploitation on Scilly Atoll and results of recoveries of turtles tagged here together with a series of conservation recommendations for this important rookery.)

021

BANKS, R.C. (1984) Bird Specimens from American Samoa. *Pacific Science* 38:150-169. illus.

(About 1200 bird specimens representing 43 species from the islands of American Samoa were examined and an annotated list produced which includes detailed information on the reproductive state of many of the specimens.)

022

BARTLEY, N., MORRELL, T. E. AND CRAIG, P. (1992) Status of sea turtles in American Samoa. *Department of Marine and Wildlife Resources Biological Report Series*. Pago Pago, American Samoa. 24 pp.

(Results of village interviews to determine the status and utilisation of sea turtles in American Samoa.)

023

BARTRAM, E. B. (1933) Polynesian Mosses. *Occasional Paper of the Bernice P. Bishop Museum* 10:1-18.

024

BARTRAM, E. B. (1957) Mosses of Upolu, Western Samoa. *Papers of the Bernice P. Bishop Museum* 22:

025

BEICHLE, U.R. (1987) Lebenstraum, Bestand und Nahrungsaufnahme der Zahntaube, *Didunculus strigirostris*. *Journal fur Ornithologie* 128:75-89.

(The distribution, habitat preference and natural history of the Tooth-billed Pigeon which is endemic to Savaii and Upolu. Describes and illustrates the use of it's distinctive beak in extracting seeds from the fruits of Dysoxylum spp. An estimate of the total population of 4800-7200 individuals is presented. Also includes the only published photographs of the species (a captive bird).)

026

BEICHLE, U.R. (1989) Common Myna on Upolu: First record for Western Samoan islands. *Elepaio* 49:85-86.

027

BEICHLE, U.R. (1991) Status and Acoustical Demarcation of Pigeons in Western Samoa. *Notornis* 38:81-86.

(The distribution and abundance of the six species of native pigeons in Western Samoa and written descriptions and sonograms of their calls.)

028

BEICHLE, U.R. AND MAELZER, M. (1985) A conservation programme for Western Samoa. Pp 297-299 In: Diamond, A.W. and Loveday, T.E. (eds). *Conservation of Tropical Forest Birds*. International Council for the Protection of Birds, Cambridge, U.K.

(A proposal for the establishment of 7 conservation reserves in Western Samoa and recommendations for other conservation measures aimed at the needs of the country's endangered pigeons.)

029

BELL, L.A.J. (1986) Coastal Zone Management in Western Samoa. Pp 57-73 In: South Pacific Commission. *Report of the Third South Pacific National Parks and Reserves Conference (Apia 1985)*. Volume II. Collected Key Issue and Case Study Papers. Noumea. 295 pp.

030

BELL, L. A. J. (1989) Marine Conservation: Present Status in Western Samoa. Pp 87-94 In: Thomas, P. E. J. (ed.). Report of the Workshop on Customary Tenure, Traditional Resource Management and Nature Conservation (Noumea 1988). South Pacific Regional Environment Programme, SPC, Noumea, New Caledonia. 119 pp.

031

BELLINGHAM, M. AND DAVIS, A. (1988) Forest Bird Communities in Western Samoa. *Notornis* 35:117-128.

032

BERNICE P. BISHOP MUSEUM, DIVISION OF INVERTEBRATE ZOOLOGY (1981) Key to freshwater shrimps of American Samoa (Tutuila): Key to freshwater crabs of American Samoa. Honolulu, Hawaii. 212 pp.

033

BEULIG, A., BEACH, D. and MARTINDALE, M. Q. (1981) Influences on daily movements of *Acanthaster planci* during a population explosion on American Samoa. Abstract In *Proceedings of the Fourth International Coral Reefs Symposium, Manilla, Volume 2.*

034

BIBBY, C. J., COLLAR, N. J., CROSBY, M. J., HEATH, M. F., IMBODEN, C. H., JOHNSON, T. H., LONG, A. T., SATTERSFIELD, A. J. AND THIRGOOD, S. J. (1992) Putting Biodiversity on the map: Priority areas for Global Conservation. International Council for Bird Preservation, Cambridge, U. K. 90pp.

(Using a computer analysis of published bird distributional data from all over the world to demonstrate patterns of endemism and a worldwide classification of Endemic Bird Areas. In a scale running: Critical, Urgent and High, the Samoan archipelago was rated as Urgent.)

035

BIOSYSTEMS ANALYSIS INC. (1992a) A comprehensive Wetland Management Plan for the islands of Tutuila and Anu'u, American Samoa. Economic Development Planning Office, American Samoa Coastal Management Program, American Samoa Government, Pago Pago, American Samoa. Tiburon, California U. S. A. 212pp.

(Maps, descriptions and management problems of the swamps, marshes, ruderal and cultivated wetlands of all the islands of American Samoa with detailed recommendations for future management.)

036

BIOSYSTEMS ANALYSIS INC. (1992b) A Citizens Guide to American Samoa's Wetlands. Economic Development Planning Office, American Samoa Coastal Management Program. American Samoa Government, Pago Pago, American Samoa.

(A clear and well - illustrated guide to the wetlands of American Samoa, their flora and fauna and their value to the people.)

037

BIRKLAND, C. (1989) The faustian traits of the crown-of-thorns starfish. *American Scientist* ? :10pp.

038

BIRKLAND, C. AND RANDALL, R. H. (1979) Report on the *Acanthaster planci* (Alamea) studies on Tutuila, American Samoa. University of Guam Marine Laboratory, Agana, Guam. 74pp.

039

BIRKLAND, C. E., RANDALL, R. H., WASS, R. C., SMITH, B. AND WILKENS, S. (1987) Biological resource assessment of the Fagatele Bay national marine sanctuary. U. S. Department of Commerce, N. O. A. A. Technical Memorandum, NOSMEMD3. Washington D. C. 232 pp.

040

BIRKLAND, C. E., RANDALL, R. H. AND AMESBURY, S. S. (1991) Coral and reef fish assessment of the Fagatele Bay national marine sanctuary. U. S. Department of Commerce, N. O. A. A. Technical Memorandum, NOSMEMD. Washington D. C. 126 pp.

- 041
BLOCKSTEIN, D. E. (1987) Preliminary Report on the Ecology and Status of the Tooth-billed Pigeon or 'Manumea' (*Didunculus strigirostris*) in Western Samoa. unpublished photocopy. 7 pp.
(A project in the Asau district from July-December 1986 recorded Tooth-billed Pigeons between 300-900m but only in areas of native forest. Descriptions of their abundance and feeding habits are given.)
- 042
BOUGAINVILLE, LOUIS DE (1967) A Voyage around the World (1766-1789). English Translation, N. Israel/Amsterdam. De Capo Press. New York.
(The earliest European record of the culture of the Samoans.)
- 043
BRAUTIGAM, A. AND ELMQVIST, T. (1990) Conserving Pacific Island flying foxes. *Oryx* 24:81-89
- 044
BROWN, W. C. (1957) The distribution of terrestrial reptiles in the islands of the Pacific Basin. *Proceedings of the 8th Pacific Science Congress* 3A:1479-1491.
- 045
BROWN, W. C. (1991) Lizards of the genus *Emoia* (Scincidae) with observations on their evolution and biogeography. *Memoirs of the California Academy of Sciences* 15:1-94
(Keys, descriptions and photographs of seven of the eight species of Emoia currently recognised from the Samoan archipelago together with comments on the biogeography of the genus.)
- 046
BRYAN, E. H., JR (1930) Insects of Samoa: A review. *Proceedings of the Hawaiian Entomological Society* 7:445-451.
- 047
BRYAN, E. H., JR. (1935) Samoan and Scientific Names of Plants found in Samoa. Unpublished typescript. Pacific Science Center, B. P. Bishop Museum, Honolulu, Hawaii. 38 pp.
- 048
BUCKLEY, T. (1986) The impact of *Acanthaster planci* coral kills on the Samoan reef fish community. *Department of Marine and Wildlife Resources Biological Report Series*, Pago Pago, American Samoa. 39pp.
- 049
BURT, C. E. (1930) Herpetological Results of the Whitney South Sea Expedition 4: Description of new species of lizards from the Pacific Islands. *American Museum Novitates* 427:1-3.
(Original description of Emoia murpheyi from specimens collected at Salailua, Savaii.)
- 050
BURT, C. E. AND BURT, M. D. (1932) Herpetological-results of the Whitney South Seas Expedition 6: Pacific island amphibians and reptiles in the collection of the American Museum of Natural History. *Bulletin of the American Museum of Natural History* 63:461-597.
(A report on the reptiles and amphibians collected during the expedition in 1925. It includes records of Gehyra oceanica, Lepidodactylus lugubris, Cryptoblepharus poecilopleurus (as C. boutonii poecilopleurus), Emoia adspersa, E. cyanura, E. murpheyi, E. nigra and E. samoensis from Samoa.)
- 051
CAMERON, S. S. (1962a) Western Samoa: Land, Life and Agriculture in Tropical Polynesia. Whitcombe and Tombs Ltd.
- 052
CAMERON, S. S. (1962b) Vegetation and Forest Resources. Pp 63-77 In: Fox, J. W. and Cumberland, K. B.(eds.). Western Samoa: Land, Life, and Agriculture in Tropical Polynesia. Whitcombe and Tombs Ltd., Christchurch, New Zealand. 337 pp.
- 053
CARY, L. R. (1931) Studies on the coral reefs of Tutuila, American Samoa with special reference to the Alcyonaria. *Carnegie Institution Publication* 413:55-98.

054

CASPERS, H. (1984) Spawning periodicity and habitat of the palolo worm *Eunice viridus* (Polychaeta:Eunicidae) in the Samoan Islands. *Marine Biology* 70:229-236.

055

CERNOHORSKY, W.O. (1967) Marine Shells of the Pacific Vol.I, Pacific Publications, Sydney.

056

CERNOHORSKY, W.O. (1972). Marine Shells of the Pacific Vol.II Pacific Publications, Sydney.

057

CHANDLER, K. C., LARSEN, A. T. AND WALLIS, F. P. (1978). The Forest Resources of Western Samoa. P. F. Olsen and Co. Ltd. Rotorua, New Zealand. 2 Vols.

058

CHEW, W. L. (1987) Aleipata Marine National Park and Biosphere Reserve (Western Samoa): A Feasibility Report. unpublished photocopy submitted to the Government of Western Samoa. UNESCO, Jakarta, Indonesia. 43 pp. illus.

059

CHELSEA INTERNATIONAL CORPORATION (1983) National marine sanctuary site considerations: recommendations and final report. Washington D. C. U. S. A. 290 pp.

060

CHESLER, R. (1983) Proposal to initiate baseline coral reef research in Fagatele Bay. Department of Marine and Wildlife Resources, Pago Pago, American Samoa 4pp.

061

CHILD, P. (1979) Some Bird Observations from Western Samoa. *Notornis* 26:171-179.

(Observations in Western Samoa from 21 August to 8 September 1978. Includes first records of the Siberian tattler (*Tringa* (now *Heteroscelus*) *brevipes*), Little Tern (*Sterna albifrons*) and Crested Tern (*Sterna bergii*.)

062

CHRISTENSEN, C. C. (1943) Revision of the Pteridophyta of Samoa. *Bulletin of the B. P. Bishop Museum* 177:1-138 illus.

(Lists 201 species of ferns of which 32 are endemic to the Samoan archipelago and 9 are descriptions of new species. Also lists 17 species of fern-allies of which 5 are endemic. There have been considerable taxonomic revisions since this was published and it is now of limited use in Samoa.)

063

CHRISTENSEN, C. C. (1980) Preliminary Summary of the Terrestrial Mollusks of Tutuila, American Samoa. Unpublished Report, Bernice P. Bishop Museum, Honolulu, Hawaii.

064

CHRISTENSEN, C. C. (1984) Are *Euglandina* and *Gonaxis* effective agents for biological control of the Giant African Snail in Hawaii? *American Malacological Society Bulletin* 2:98-99.

(Argues that these species' effectiveness as biological control agents is unproven and that they have had a disastrous effect on the indigenous land snail fauna.)

065

CHRISTOPHERSEN, E. (1927) Vegetation of Pacific Equatorial Islands. *Bulletin of the Bernice P. Bishop Museum* 44.

066

CHRISTOPHERSEN, E. (1935) Flowering Plants of Samoa. *Bulletin of the B. P. Bishop Museum* 128:1-221.

(Report on a collection of Samoan plants in August-November 1929 and June 1931-January 1932. There are 34 new species or varieties described, some of which are no longer considered valid.)

067

CHRISTOPHERSEN, E. (1938) Flowering Plants of Samoa II. *Bulletin of the B. P. Bishop Museum* 154:1-77.

(Includes information on specimens not covered in the 1935 report and descriptions of an additional 19 new species and varieties.)

068

CLENCH, W. (1949) Cyclophoridae and Pupinidae of Caroline, Fijian and Samoan islands. *Bulletin of the Bernice P Bishop Museum* 196:1-52.

(Descriptions and illustrations of *Ostodes upolensis*, *O. savaii*, *O. garreti*, *O. plicatus*, *O. tiara*, *O. cookei*, *O. adjunctus* and *O. strigatus* from the Samoan archipelago.)

069

COCKERELL, T. D.A. (1924) Bees from the Tonga and Samoa islands. *Annals of the Entomological Society of America* 17:392-394.

070

COHEN, D. M. AND WOURMS, P. (1976) *Microbrotula randalli*, a new Ophidioid fish from Samoa and New Hebrides, whose embryos bear trophotaeniae. *Proceedings of the Biological Society of Washington* 89:81-98.

071

COLE, T. G., WITSELL, C. D., WHISTLER, W. A., MCKAY, N. AND AMBACHER, A. H. (1988) . Vegetation Survey and Forest Inventory, American Samoa. *USDA Forest Service, Pacific Southwest Forest and Range Experiment Station, Berkeley, CA. Resource Bulletin PSW.25:1-14*

(A calculation, using aerial photography, of the proportion of various forest and non-forest vegetation types on the islands of American Samoa together with brief descriptions of the forest types and a short species list.)

072

COLEMAN, N. (1991) *Encyclopaedia of Marine Animals*. Angus & Robertson Australia.

073

COLLINS, D. AND HUMPHRIES, S. (1991) Western Samoa. National Report for the United Nations Conference on Environment and Development. United Nations, New York.

(General summary of environmental management in Western Samoa presented at the Rio Conference.)

074

COMMITTEE ON INTERIOR AND INSULAR AFFAIRS (1988)

Establishing the National Park of Samoa. U. S. National Park Service, Washington D. C. USA 12pp.

075

COMSTOCK, J. A. (1966) Lepidoptera of American Samoa with particular reference to biology and ecology. *Pacific Islands Monograph 11 Entomology Department, Bernice P. Bishop Museum Honolulu, Hawaii, USA.*

(Butterflies and moths collected on the islands of American Samoa from June-October 1961 with notes on food plants and photographs and drawings of eggs, larvae pupae and adult stages for a number of the species.)

076

COOKE, C. M. (1928) Food habits of *Partula zebra* Gould. *Bulletin of the Bernice P Bishop Museum* 47:5-12

(Report on the ingestion of shells of other snails by this normally herbivorous species possibly to obtain the calcium carbonate from these shells.)

077

COOKE, C. M. AND CRAMPTON, H. E.

(1930) New species of *Partula*. *Occasional Papers of the Bernice P Bishop Museum* 9:3-9.

(Description of *Partula* (now *Samoana*) *thurstoni* and *Partula* (now *Eua*) *expansa* from Samoa.)

078

COWIE, R. H. (1992a) Evolution and Extinction of Partulidae, endemic Pacific Island land snails. *Philosophical Transactions of the Royal Society of London*. 335:167-191.

(An extensive review of the biogeography, ecology, intraspecific variation, reproductive isolation and speciation in this characteristic Pacific island land snail family.)

079

- COWIE, R. H. (1992b) The Impact of Alien Species on Island Ecosystems: Extended Abstracts of a Symposium, 30 May 1991, Honolulu, Hawaii. XVII Pacific Science Congress. *Pacific Science* 46:383-384.
(Introductory address to the Symposium.)

080

- COWIE, R. H. (1993) Why tree snails are becoming scarce in Samoa. *Hawaiian Shell News* 61: 1 & 9.
(Report on the 1992 land snail survey of American Samoa.)

081

- COX, P. A. (1979) Use of indigenous plants as fish poisons in Samoa. *Economic Botany* 33:386-396.
(The use of *Tephrosia purpurea* (as *T. piscatoria*) and *Barringtonia asiatica* in fish poisoning at several villages in Savaii and Upolu in 1978 and 1979.)

082

- COX, P. A. (1980a) Two Samoan technologies for breadfruit and banana preservation. *Economic Botany* 34:181-185.
(Photographs and descriptions of the long-term preservation of breadfruit and bananas in leaf-lined pits and a record of the further preservation of the 'masi' so produced in special baskets which it was claimed could last for 'generations'.)

083

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(A description of the trade in fruit bats in Guam and its effects on fruit bat populations throughout the Pacific region with a series of recommendations on future management of these bats.)

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