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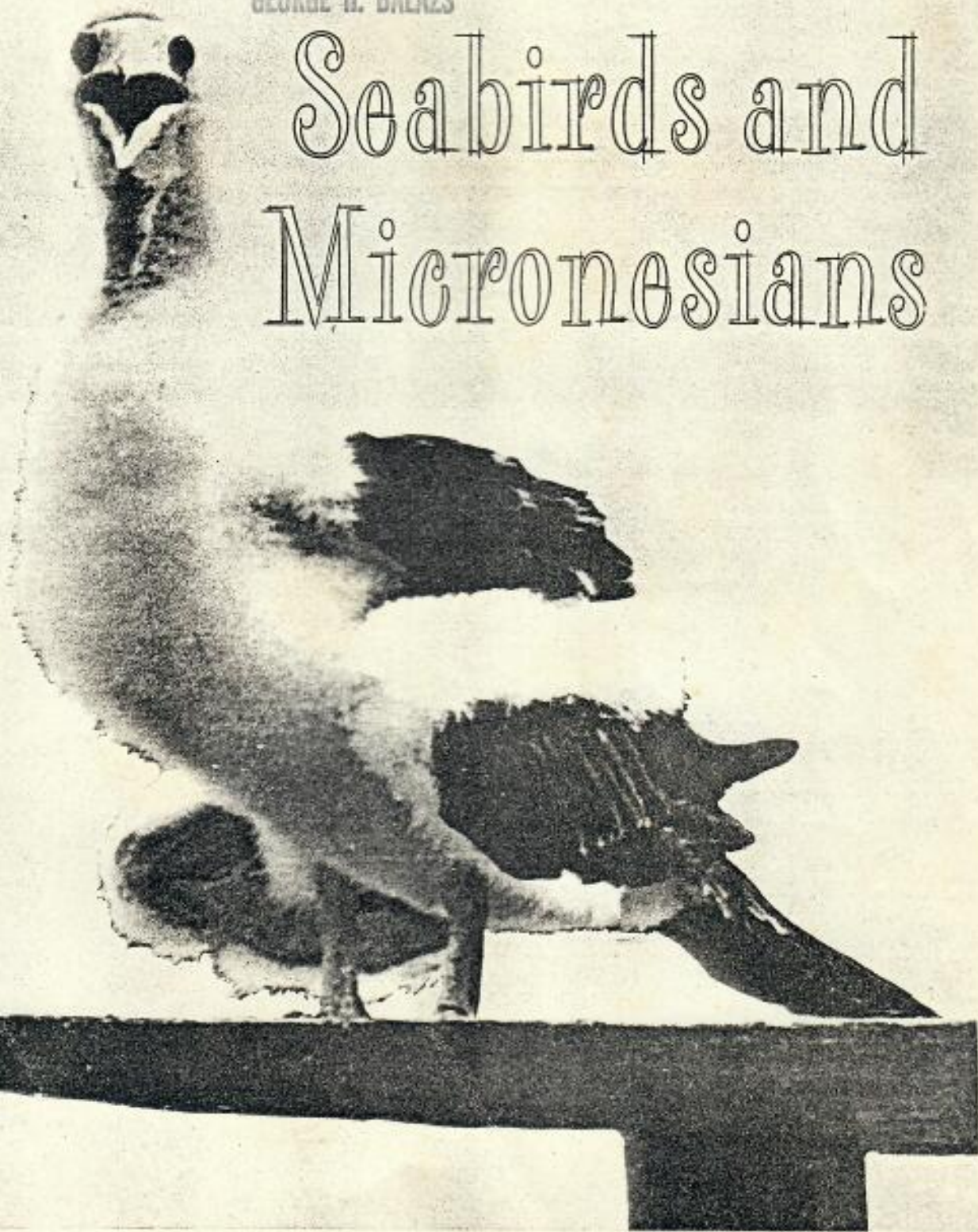
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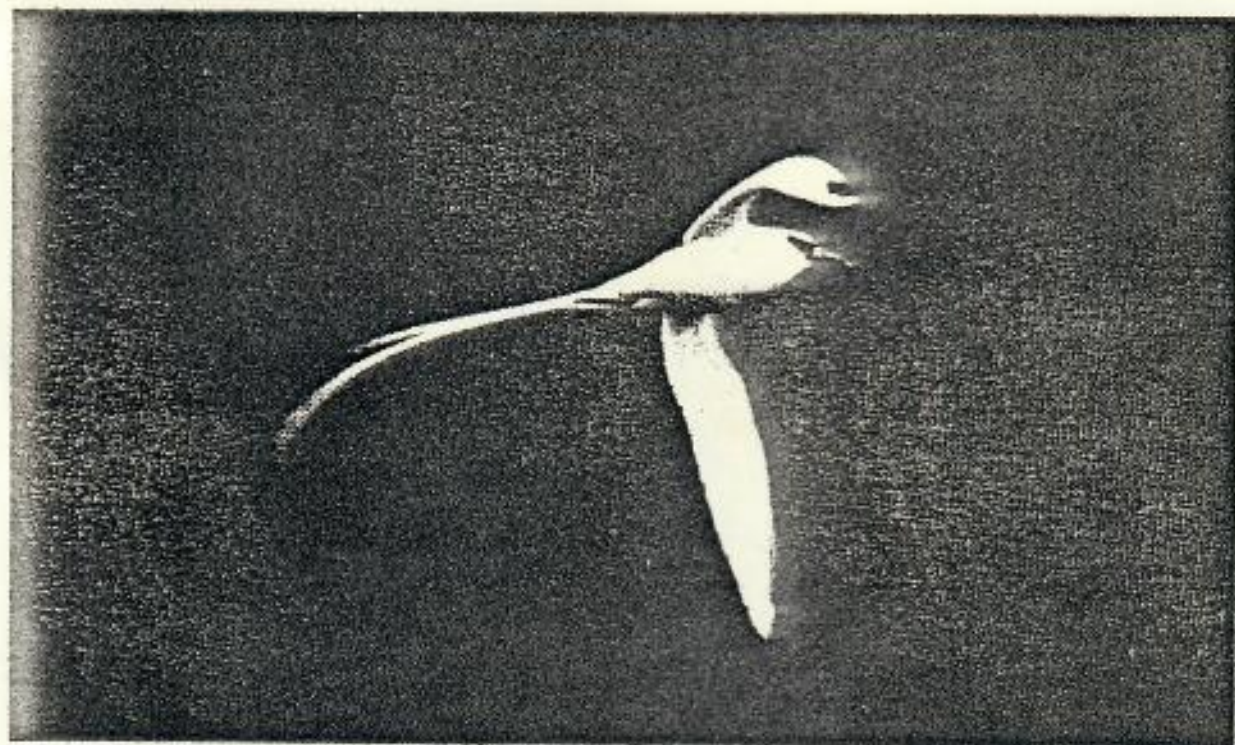
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Seabirds and Micronesians



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Micronesians

by Erika Wilson

This paper is about seabirds and Micronesians—how they live together and how they affect each other. Seabirds are incorporated in the culture, the art, and the daily lives of the Pacific islanders. By studying seabirds, Micronesian sailors and fishermen navigate more safely and find fish more easily than they might were they ignorant of the habits of their flying companions. Micronesian folklore includes many seabird stories, each displaying a sophisticated fund of information about the animals they describe. During food shortages these birds provided a source of protein to the islanders. The people of Micronesia were constrained by the harsh realities of their struggle for existence to be very aware of their environment. Their knowledge of seabirds is a conspicuous example of the depth and breadth of that awareness.

Man's attitude toward nature, including, of course, his attitude toward birds, is usually a reflection of his culture and the level of his technology. The role of seabirds in the lives of Micronesians has changed as the Micronesians have adapted to technological and cultural changes over the last two centuries.

Soaring on narrow wings close to the swell of the Pacific, a single shearwater scans the surface for squid. Some distance away hundreds of terns dive briefly into the water to catch small fish near the surface. Among the terns big boobies plunge vertically into the sea, capturing larger fish feeding on the small ones. A few graceful tropicbirds sail among the others, swooping suddenly into the water and emerging with a meal. Above them all hang the frigatebirds, ever aloft for a successful booby or tropicbird. Their seven-foot wing span and sharply hooked beak make the frigatebirds formidable as they harass their smaller victims, forcing them to drop their catch, deftly grabbing it as it falls. The seabirds are an integral part of the Pacific Basin ecosystem. They participate in the massive cycling of minerals, water, and solar energy.

The seabirds of Micronesia are placed in three orders of the class "Aves." Within these orders the seabirds of this area are divided into the following ten families: Diomedidae (Albatrosses), Procellariidae (Shearwaters), Hydrobatidae (Storm-Petrels), Phaethontidae (Tropicbirds), Suidae (Boobies), Phalacrocoracidae (Cormorants), Fregatidae (Frigatebirds), Stercorariidae (Jaegers), Laridae (Gulls), and Sternidae (Terns). Of these the boobies, the tropicbirds, the frigatebirds, and the terns are most commonly seen by Micronesians. The seabirds range in size from the magnificent eleven-foot wingspan of the albatross to the diminutive one-foot wingspan of the storm-petrel. The birds' plumage colors are many combinations of white, black, and brown, but in the facial skin, beaks, and feet a wide variety of colors can be seen, including lemon yellow, pink, red, green, black, blue, and brown.

The feet of seabirds are uniformly webbed for movement in the water. Their beaks, however, have great diversity of form. Many are narrow and pointed, others are thick and blunt. This range of beak structure is strongly correlated with the type of food each species takes from the ocean. Seabirds take seafood of all kinds (fish, squid, crustacea, and pelagic molluscs), garbage from ships, and the nestlings and eggs of other seabirds, but competition for food is almost entirely intra-specific—mixed groups of seabirds do not feed on the same things. Terns feed on small fish fleeing from larger predatory fish which in turn are taken by boobies at one depth or by tropicbirds at another

depth. Shearwaters are mostly surface feeders, relying on floating squid. Only the frigatebirds do not hunt for themselves, but are scavengers, stealing from the boobies and tropicbirds and raiding colonies for unattended nestlings.

Seabirds range over vast stretches of the Pacific; migration is common. About half of the species seen in Micronesia are migratory species. With the exception of the terns and the boobies, seabirds lay one egg each season. The development of the young is relatively slow compared with land birds; the long immature stage is possible because these birds nest in colonies on "safe", inaccessible islands. As well as being slow to mature, seabirds are slow in becoming breeding adults. Most of the larger species are several years old before they begin nesting.

Seabirds figure in many Micronesian myths and tales; the frigatebird is the most common. The unusual flying abilities of this bird are skillfully woven into stories. "The Stolen Wife and the Flying Canoe", for example, concerns Jol, a young husband, who builds a canoe in the shape of a frigatebird so that he can retrieve his wife, Jat. Jol knows that the frigatebird makes long flights without resting, often under unsuitable conditions for sailing canoes. His frigatebird canoe has similar powers.

Another tale which centers around the flying abilities of the frigatebird is "Bunene and the Frigatebird." Bunene, a young, attractive girl, refuses all her suitors, saying she only wants to fly with Molob, the frigatebird. Her desire is fulfilled, but after some hours aloft Bunene complains of thirst and hunger. Molob tells her that he lives on the winds, it is both his drink and his food.* Bunene becomes quite weak and begs to be returned to land. Molob places her on the beach of her home island, nearly dead. In the version collected by Eve Grey in "Legends of Micronesia," the girl dies; her death served as an object lesson to others wishing for the impossible. On the other hand, the version related by John Mungel in his collection of stories from Yap has Bunene begging for food from a

* This is an interesting concept; the Micronesians knew the frigatebird took fish from other birds, but its source of drinking water wasn't known until recently. Seabirds drink seawater and excrete a very salty viscous fluid from a special gland above the eyes; the secretion drains down the bill.

former suitor; the suitor graciously fills her need and she becomes a model wife. Again, there is a clear moral.

Frigatebirds and terns were also viewed symbolically. For example, in one story a boy is flying a kite which blends into the form of the frigatebird in effortless flight. The boy's deceased mother comes to him as a Black-naped Tern, asking him to go away with her. The story is an involved one, exploring interpersonal and family relationships. In the end the boy goes with his mother, and his mother is constantly reminded of the boy by the flying kites (Higginson).

The Crested Terns of Ponape take pity on Sakie, a mistreated girl who often wanders sadly. One day they envelope her in their midst and take her away; these terns are called *Sakie* in memory of the girl.

Mixed groups of seabirds were seen as cooperating in their struggle for existence. The tale of "The Birds and the Eel" from Ulithi is an example of cooperative effort. Eight types of birds deplore the predatory behavior of the eel; the members of each group try to capture him. Two groups, *hori* and *moli*, combine their talents to make a strong rope of coconut fiber which succeeds in holding the eel. This emphasis on cooperative effort has obvious application in a society structured around extended family obligations.

Another seabird group effort is related by the Marshallese. A man-god is quite successful in conquering the Marshall Islands; he decides to also take *Bikar*, the bird island. The seabirds, however, valiantly protect their island by the force of sheer numbers.

Sometimes the physical appearance of seabirds became the object of a myth. Both the Common Noddy and the White-capped Noddy have white feathers in the crown. The origin of these white caps is explained as follows: A man wishes to give the Common Noddy good luck in the form of *ao*—a white, paste-like substance he obtained from the eel. Just at dusk, however, the White-capped Noddy manages to fool the man into placing the *ao* on his head. When the man discovers his mistake, he places the small amount of remaining *ao* on the Common Noddy as two streaks. Both noddies were then considered good luck signs by fishermen.

Reading the behaviors of seabirds as omens is common throughout Micronesia. Peter Child reports in

his book on birds of the Gilbert and Ellice Islands, that "There is a belief among some Gilbertese that if the cry of this bird (Phoenix Petrel) is heard from the ridge of someone's house during the night there will be a death in that family in the near future." * In *Birds of the Eastern Carolines* there are numerous references to the omens of seabirds. For example, the Lesser Frigatebird is a sign of strong winds; the Dufour Shearwater is an omen of typhoons or disease and is considered bad luck to catch one. Likewise, the Wedge-tailed Shearwater, a rare visitor in the area, foretells bad news and heavy winds. The White-capped Noddy, as previously mentioned, is good luck for fishermen, but its call heard at night indicates the turning away of a lover. The sooty Sooty Tern is said to bring rain and sometimes bad news, and the Masked Booby is a contradictory fellow, a bringer of typhoons or tuna.

Seabirds figure in another aspect of Micronesian lore—the *sealife* of the navigators. Between any two islands there is a purely mythical *sealife* route which consists of various signs such as the sighting of whales, birds, or fish, according to Tom Gladwin in "East is a Big Bird." Included in such *sealife* routes are the terns, boobies, frigatebirds, and tropicbirds, but not, interestingly, the shearwaters. This is probably due to the relative scarcity of these birds.

SEABIRDS IN ARTS AND CRAFTS

Seabirds are incorporated in Micronesian art; however, the motif can be quite stylized, making it difficult to determine which birds are being depicted. The frigatebird's striking silhouette, with its long narrow wings and forked tail, makes it fairly easy to recognize, and the tropicbird's long tail-streamers are also easily picked out.

The careful recording of Palauan decorative art work on houses by members of Thilenius' South Sea Expedition shows that the frigatebird, the booby, and the tropicbird were used as decorative motifs. The frigatebird was also seen as a motif in the Central Carolines by the same German group during their voyages through Micronesia. Gladwin remarks in his

* Since the calls of the shearwaters are often described as terrible moaning and groaning, their supposed evil influence is understandable.

book on navigation that the canoes are always decorated at the ends with a large V-shaped piece of wood "...said to represent the tail of a frigatebird..."

Seabird feathers were extensively used in Micronesian crafts and personal adornment. Peoples of the Eastern Carolines used the feathers of the White-tailed Tropicbird, the Tern, and Sooty Tern to make fans; they also used the feathers of the Dusky Shearwater to decorate fishing hooks, and the feathers of the Red-footed Booby for personal adornment during dancing festivals. The long primary feathers (in the wings) of the frigatebird were used by the Gilbertese for canoe crests for their clans.

SEABIRDS IN THE DIET

My interest in the relationships between seabirds and Micronesians was sparked by some reading I was doing on bird populations. The late, renowned British ornithologist, David Lack, wrote, "Shearwaters (are) called mutton-birds for food." He was writing about shearwaters which occur off the coasts of Australia and New Zealand, but I thought the practice might be more widespread. In fact, I found references to another shearwater being taken by the Hawaiians in G.C. Munro's *Birds of Hawaii*:

The natives used the old birds as well as the young for food, netting them as they flew to the mountains in the evening. The young birds were considered a delicacy, kapu to the common people and reserved for the chiefs. The old birds were apparently not kapu as their flavor was so strong that they could not be eaten till they had been salted for a considerable time.

The first link to Micronesia came in a Yale University Bulletin about tropical seabirds in which the authors noted:

However, the population of *Ph. rubricauda* may also not be in equilibrium at the present time since this species is subject to sporadic illegal slaughter by Gilbert and Ellice islanders, who apparently consider it a delicacy.

I have since found references to ten specific species of seabirds taken by Micronesians for food; it is

interesting that none of them are shearwaters! This is due, I think, to a lack of nesting shearwater colonies in Micronesia. Most shearwaters are only occasional visitors to the islands and, as noted earlier, are often associated with negative omens such as death or storms.

I did not find any references to seabirds being eaten in the Marianas or in the Palau district. These islands had, however, several species of game birds, doves, and ducks, which were eaten. In general, these are easier to capture than seabirds; they would, therefore, be preferred food items.

From Truk to the Marshalls a lime for trapping sea swallows (terns) made of the sap of the breadfruit boiled with coconut milk was used. Different islanders had favorite ways of utilizing the lime, varying from smearing it on the branches of roost trees to directly applying it to the wings or body of roosting terns. Gilbertese also used bird lime: "...with long lime-sticks the natives took the young of the sea-swallows from their nests in the pandanus-trees."

Other Micronesians took seabirds with nets on long poles, usually in conjunction with decoy birds. On Nauru and Ocean Island, where capturing frigatebirds unharmed was important, the bola was employed, also in conjunction with decoys. And on the island of Ifaluk in the Central Carolines nets on short handles were used to take frigate terns, as reported by E.G. Burnows and M.E. Spiro in their ethnographic study of Ifaluk:

More ingenious, and demanding respect for acrobatic skill, is the method of netting noddies terns. They sometimes visit the islands in great numbers. At such times the men hunt them by climbing at night the coconut trees in which the terns roost, and catching them in large, light nets with short handles and wooden rims.

The authors continue that their informant captured some terns one night and his wife cooked them. The authors found the birds "surprisingly tender and well-flavored."*

The species taken for food in the Carolines include the White-tailed Tropicbird, the White-capped Noddy, the Common Noddy, the White Tern, the Sooty Tern.

* I can't resist suggesting that they were done to a turn.

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the Bridled Tern, the Blue-gray Tern, and the Brown Booby. The terns were obviously the preferred type for eating.

In the Marshalls eating seabirds and occasionally their eggs seems to have been more prevalent than elsewhere. May Murai's nutritional study of 1953 lists four species of tern, the frigatebird, and the booby as food items. A few years later Harold Weiss reports sailing from Jaluit to a small uninhabited island on the atoll "... where the islanders gathered eggs and captured about 20 sooty terns to take home for eating." This is an interesting observation because it is the only first-hand reference I found of eggs being taken as food by Micronesians. A.B. Amerson notes in his study of Marshallese ornithology that a Urlik native said they gathered birds and their eggs three times a year from Tuka Atoll.

In the Gilbert Islands seabirds were eaten, but the Gilbertese were not as fond of seabirds as were the Polynesian Ellice Islanders to the south. Child reports that terns, frigatebirds, and boobies were used for food. The eggs of the Gray-backed Tern and the Sooty Tern were eaten during food shortages. N.P. Ashmore adds the Red-tailed Tropicbird to the list, in a study in the Yale University Bulletin.

On Nauru seabirds were eaten during hard times but not regularly. There is no mention of frigatebirds being eaten on Nauru, despite the large numbers that were caught for pets.

SEABIRDS AND SEAMEN

Micronesians have limited resources on their small islands, but they have exploited many of these resources to an amazing extent. The Micronesian, prior to the arrival of the Europeans, was keenly aware of his environment; he had to be alert to natural events and be ready to take advantage of them. It is not surprising, therefore, to learn that Micronesians used their knowledge of seabirds as an integral part of their sailing and fishing practices.

The most careful documentation of the use of seabirds in navigation was done by Gladwin in his book *East Is A Big Bird*. To the navigators of Puluwat the sighting of specific birds at sea was most important:

For the Puluwat navigator one technique for homing on an island which is out of sight is so

heavily relied upon that it overshadows all others. This is the observation of the flight of seabirds. (The navigator will) watch for seabirds, some species of which range to predictable maximum distances from land and reliably signal that an island is near.

The birds specifically used were the Common Noddy, the White Tern, and the Sooty Tern which range up to 20 miles from land, and the Booby which is less common around Puluwat but which is a reliable homing bird with a range of 25 miles. At dusk these birds can be seen heading toward land. Frigatebirds, tropicbirds, and shearwaters are considered unreliable indicators of land both in terms of distance and direction. Navigators from the Gilbert Islands also used seabirds as Child notes: "Probably much of the old Gilbertese navigation was based upon the regular flying routes of seabirds."

An equally practical use of seabird behavior, according to Gladwin, was incorporated in fishing: "It is the birds which signal to the fisherman that the fish are coming in a school." Micronesian fishermen watch feeding seabirds for indications of bonito, tuna, and other fish. References to this practice are widespread.

SEABIRDS AND LEISURE ACTIVITIES

Frigatebirds around Ocean and Nauru Islands need to be careful because the islanders are well known for their practice of capturing frigatebirds and keeping them as pets. In her book on Nauru, Nancy Viviani states: "... the Nauruan pastime of capturing frigate birds with a bolus and training them with tamed birds to eat on command was practiced for entertainment and as a religious rite." In an earlier account of Nauru and Ocean Island I found references to a full-time "falconer" who took care of the king's frigatebirds; although no obvious function for this practice was found.

The frigatebirds were captured by setting out decoy frigatebirds to attract unsuspecting birds. The natives then used a type of bola consisting of a pear-shaped, finely polished piece of tridacna shell (on Ocean Island aragonite was used) with a hole at its upper end through which a long line could be fastened.

The frigatebirds so captured and tamed wander about freely during the day but return at night to roost

and receive special food. These birds were once used to send messages back and forth. A.F. Ellis reports: "A well authenticated record exists of the 160-mile journey (between Nauru and Ocean Island) having been done by one of these birds in two hours."^{*}

Child reports that the Gilbertese used the long feathers of the frigatebird in a game called *Kabune*, but he gives no further details.

PRESENT STATUS OF SEABIRDS

The protection of wildlife is currently a matter of concern in most countries. An increased awareness of the ecological relationships between all living species has discouraged a narrow and exploitive view of nature. The degree of commitment to sound conservation practices, however, varies widely throughout the world.

During the period of expanding population in Hawaii around the turn of the century, for example, Hawaiians eradicated seabird colonies from accessible areas such as Manana Island. On the other hand, the Marshallese have shown considerable insight into conservation practices, as reported by W.B. King in his 1973 study of the conservation status of Birds of Central Pacific Islands:

The Marshallese utilize seabirds and their eggs for food. They recognize the importance of affording protection to seabirds to preserve their populations as a renewable resource. They have traditionally considered Taongi, Bikar, Jemo, and islets of Taka and Jaluit as bird sanctuaries, on which the taking of birds and eggs for food is restricted but not prohibited.

^{*} An average speed of 80 mph is most unusual in any species of bird. I would say that the bird had a good tailwind all the way.

Modern pressures, however, can destroy such policies, as is the case with Jemo Island where the land was cleared and planted with coconuts around 1900. Ready cash from copra production for store goods has made harvesting seabirds unnecessary.

Occasionally colonial governments took steps to protect the wildlife of Micronesia. In the Gilbert and Ellice Islands Crown Colony a Wild Birds Protection Ordinance was passed in 1921.

In almost every aspect of Micronesian life seabirds have decreased in importance. Christianity made the old myths and stories a part of folklore rather than a part of the modern cultural values of Micronesians. People have less time for decorative artwork; modern jewelry replaces the shells and feathers of the past. Certainly the taking of seabirds as a source of food has been drastically curtailed; it is much easier to buy meat, poultry, and fish at the store. The introduction of outboard motors and of the compass has made the observation of seabirds in navigation irrelevant. As an indicator of fish schools, however, birds are still most reliable.

It is my hope that Micronesians will not destroy their ornithological heritage through neglect and exploitation of bird habitat. Too often birds are not missed until they are extinct; the sound of the sea would be less varied if the seabirds were lost, and the damaging effects on the intricate marine ecosystems would be felt if they were gone. Seabirds once played important roles in the lives of Micronesians, in their myths, art, diet, and life styles of island living and inter-island trade. Despite the many changes in Micronesia the seabirds are still there, often in reduced numbers, but still maintaining diversity in Micronesian ecosystems.

