



# Island Paradise for Wildlife and People

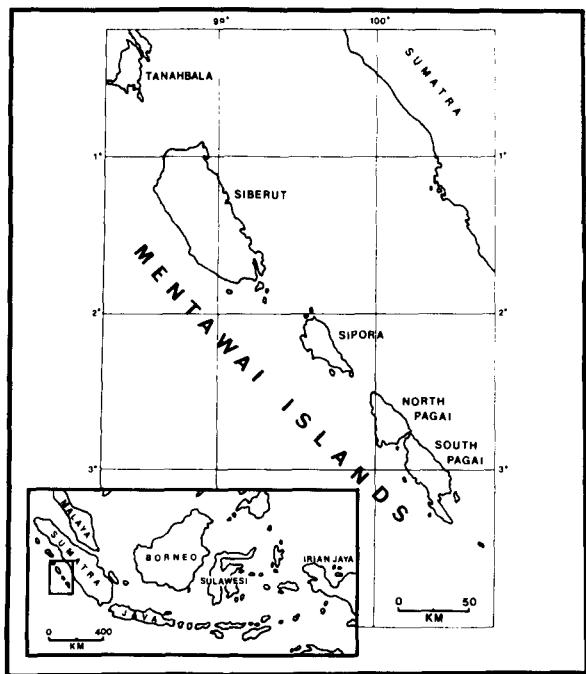
Jeffrey A. McNeely

Kloss's gibbon  
Tony Whitten

**Siberut, the largest of the Mentawai Islands, has a remarkable fauna with at least ten endemic mammal species — which include four primates — one endemic bird, thirteen endemic bird subspecies, and probably endemic insects, reptiles and amphibians still to be discovered. Until the 20th century the Siberut people lived in harmony with their environment, but modern practices are changing their ways, destroying their culture, and threatening the wildlife. The author describes the wildlife, the people, and the programme planned to help both in this difficult transition.**

A million years ago Sumatra looked very different from today. The soil that today forms the eastern lowlands was still up in the central Barisan range, later to be washed down towards the sea, and the west coast extended some 120km further west, forming a wide, flat shelf of alluvial deposits, and covered with rain forest that held a wide range of Pleistocene wildlife. Some ancestors of forms found in Sumatra today, were already there, an early gibbon ancestor, an early form of the pig-tailed macaque, a precursor of the *Presbytis aygula* group of langurs, and an early form of the unique proboscis monkey.

But earth-rending changes were to come. The Barisan range running down the spine of Sumatra was further upthrusted, numerous volcanoes erupted, and the old alluvial plain along the west coast was folded into a deep depression between the mountains and a new range of low-lying hills along the shore. The oceans



Tony Whitten

flowed in to fill the depression (in places over 1500 metres deep), isolating the newly formed hills as offshore islands. Today these remnants of the early Pleistocene coastal lowlands survive in the chain of islands paralleling the west coast of Sumatra, from Simalur in the north to Enggano in the south.

Towards the southern end of the chain lie the Mentawai Islands, the largest of which is Siberut, with an area of 4480 sq km (nearly the size of Bali). Some of the other islands may have been intermittently connected with Sumatra, but the Mentawais appear to have remained isolated since the mid-Pleistocene, one result being a fauna with the world's greatest number of endemic primates on such a small land area. No fewer than four endemic species survive, and two of them have split into several subspecies on the southern Mentawai Islands — Sipora, and North and South Pagai.

Primate evolution in the Pleistocene was greatly affected by the alternating land connections and severances between Sumatra and the Asian mainland as sea levels fluctuated widely. But on isolated Siberut the primates seem to have evolved at a more leisurely pace, and retain many characters that are primitive for their groups. For example, Kloss's gibbon *Hylobates klossi* has the least complex and most variable of all gibbon calls, suggesting that they are similar to the calls of the ancestral gibbons (Hainoff and Whitten, in prep.); the Mentawai langur *Presbytis potenziani* is the only known Old World monkey which lives entirely in male-female family groups,<sup>14</sup> a social organisation from which the more complex 'harem' groups of other langurs may have evolved; the Mentawai snub-nosed langur *Simias concolor* is an endemic genus most closely related to the proboscis monkey of Borneo,<sup>4</sup> but is rather less specialised physically and lives in much less complex social groups, often in family groups;<sup>5,13</sup> and the Mentawai macaque *Macaca pagensis*, although usually considered a distinct species, seems to be the precursor of the pig-tailed macaques *M. nemestrina*, which are widespread throughout south-east Asia.<sup>3</sup>

But primates are not the only unique animals on Siberut. At least six other endemic mammals occur, including three squirrels, *Callosciurus melanogaster*, *Sundasciurus fraterculus* and *Lariscus obscurus*, the last a species of three-striped ground squirrel in which usually only the juveniles have stripes, and the eight endemic mammal subspecies include the palm civet *Paradoxurus hermaphroditus siberu*, the only form of the species lacking both spots and stripes.<sup>2</sup> The one endemic bird is the Mentawai scops owl *Otus mentawi*,<sup>7</sup> but no fewer than 13 birds have evolved endemic subspecies, including a spectacular form of the crested serpent eagle *Spilornis cheela sipora*.<sup>2,10</sup> The reptiles and amphibians are still under investigation, but early indications are that they also include several endemic species. Insects have not been studied in recent years, but a collection made by C. Boden Kloss in 1924 included a number of new genera and dozens of new species. The vegetation is spectacular tropical rain forest, containing about 15 per cent endemic forms — a great storehouse of genetic resources; many of the forms are rather primitive within their genera (House, pers. comm.). The Mentawai Islands are thus unique, and provide an unmatched laboratory for studies of evolution and island biogeography.<sup>10</sup>

There is no good indication when man first arrived on Siberut, but the language, cultural level, and physical characteristics of the people suggest that they are descendants of some of the earlier *Homo sapiens sapiens* to come to Indonesia; most anthropologists classify them as proto-Malay, indicating that they arrived in the Mentawais at least several thousand years ago.<sup>12</sup> In many ways they are among the most archaic people in Indonesia. In pre-contact times, they had no alcoholic drinks, village chiefs, pottery, crafts specialists, rice or other food grains, or woven cloth, and of course no tobacco. They did not live in villages but rather in clan houses called *umas*, located within a clan territory of one of the many rivers that provide Siberut's only transport network; each *uma* would contain up to 20 families belonging to the same clan. They were animists, believing that everything, from people to monkeys to rocks to water, had its own spirit, which was quite separate from its 'host' and was free to wander as it wished.<sup>11</sup>

Their subsistence pattern was essentially hunting and gathering, with only a bit of primitive dibble-stick agriculture that did not even require that fields be burned. In the incredibly rich low-lying swamps they harvested the sago palm, perhaps the plant that gives man the largest yield for the least labour.<sup>8</sup> Pigs, the only domesticated food mammal, were allowed to run freely in the forest. Trees were cut for making houses or light, graceful dugout canoes; the preferred species was meranti (*Shorea*), and every suitable tree in the forest was owned by an individual and marked for future use. The men used bows and poisoned unfletched arrows with neither rock nor iron arrowheads to hunt pigs and sambar deer, but monkeys were their most important game; gibbons were seldom hunted due to various taboos.

In this rich habitat, the people evolved an intricate balanced relationship with their environment, and some of their cultural controls to guard against overconsumption of their resources, particularly primates, are instructive. One method of control was the *uma*, or clan house, to which all members of the clan belonged. Decisions were made by consensus, and those who could not agree were turned out of the clan and clan house. Members of the *uma* shared food freely, so there was no stimulus to acquire wealth or produce a surplus; status was acquired by being a 'good person', i.e. living up to the clan's ideals. Several

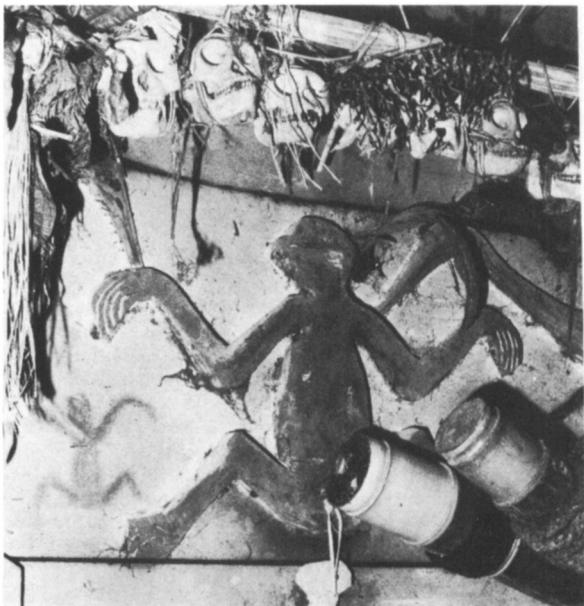
times a year, the *uma* would sponsor religious festivals for the clan called *pulaijat*. During these periods, lasting several weeks to several months and comprising long series of both sacred and secular ceremonies, most of the population abstained from work and from sexual intercourse. The men would go out to hunt monkeys — in earlier times, they also hunted men from the southern Mentawai islands and brought back their heads. A successful monkey hunt was essential to conclude the *pulaijat*, and monkeys were apparently hunted primarily during this period.<sup>9</sup>

The hunt, carried out by fathers and young men, was preceded by a long series of preparations, without which it would fail.<sup>9</sup> The men had to hunt as individuals, not in a group, or the solitary monkeys they sought as prey would escape back to their own group,<sup>6</sup> and the use of traps or dogs was taboo, except in a few areas. With various ceremonies the hunters would attempt to lure the souls of the monkeys into the *uma*, so that when a hunter met an animal whose soul was in the *uma*, the living animal would want to rejoin its soul and thus fall easy prey; monkey skulls were cleaned, decorated, and hung up in the *uma* to make it an attractive place for the monkey souls to live. All these cultural restrictions on hunting (as well as similar restrictions on other forms of resource utilisation) resulted in a culture which lived in balance with its resources, a state of harmony with nature which some people in modern societies are only now beginning to recognise as admirable and vital to their own continued existence. But an ideal 'state of nature' can hardly continue to exist in modern times, and Siberut is changing from a self-sufficient ecosystem to a small part of a 'world exosystem' interconnected by international trade.

The Mentawaians have had sporadic contact with the mainland for hundreds of years, but it was not until the early years of this century that lasting changes occurred. Protestant missionaries first landed in 1902; they left after a few years, but returned in the 1920s to stay. For the wildlife the most important immediate effect was the weakening of taboos and ceremonies so that primate hunting was no longer controlled by traditional regulation and restricted to ceremonial occasions. Today traps are being used in more areas, gibbons are more heavily hunted, and men hunt in teams with dogs, all of which means that hunting is becoming a greater threat to the primates.

The *umas* were replaced by villages built around the churches close to the coast, with the resulting weakening of social control by fellow clan-members; fewer than 10 *umas* now remain, all in remote parts of the island. Cloth quickly replaced bark and banana leaves in most areas, and people were forced either to produce a cash crop or to harvest the wealth of the forest in order to be able to buy it. The acquisition of wealth became a stronger stimulus to producing a surplus; ricefields are being established, and sago discouraged.

Another even more disturbing development is that timber concessions have been given over virtually the whole island, mostly to foreign companies. The logs are floated to Singapore, and the benefit to Indonesia is minimal. To Siberut there is none whatsoever — in fact, quite the reverse, since the *Shorea* species which the men use to make canoes is also the prime market species exploited by the timber concessions, with the result that there will soon be a shortage of canoes, making transport difficult. The early logging was highly selective, confined to the coastal areas, and used only primitive methods; the new concessions use sophisticated modern equipment and take many trees which the Siberut people consider theirs. They are also destroying habitat for the endemic



LEAF-MONKEY SKULLS  
and a gibbon carving  
in a Siberut house  
*Tony Whitten*

primates, and the main logging roads are cutting off the movements of gibbons and langurs.

In traditional times, wildlife conservation was assured by primitive weapons and tools, cultural sanctions, and a complex system of taboos; in today's world, where change is the only constant, new conservation methods are required.

One way to reduce primate hunting is to make more protein available from other sources, and an organisation called Survival International, based in the United Kingdom, has recently agreed with the government to implement a \$200,000 programme to increase the protein supply by improving pig and chicken husbandry, introducing water buffalo, breeding fish in both natural and artificial ponds, and improving offshore fishing techniques; certain cash crops will also be encouraged, notably cloves and nutmeg. This programme is designed to enable the people of Siberut to keep their cultural identity to the degree that they themselves want to do so, so that outside influences will not destroy their way of life or their cultural heritage.

Greater protein supplies, coupled with intensive growing of cash crops and rice, which leaves less time free for hunting the elusive primates, could certainly reduce hunting pressure. But some of the suggested changes, such as introducing buffalo and cash crops, could have unpredictable effects on the forest ecosystem. So it is important to set aside a few areas where none of the effects of modern man will be felt, but which local people can use in traditional ways. As part of the Indonesian Government plan for the development of Siberut, the Directorate of Nature Conservation has already established a reserve in the central part of the island, but this includes several large settlements and some timber concession areas and does not have natural boundaries. However, a conservation master plan, including proposals for a system of reserves for the island and its offshore waters, has now been prepared by a team from the WWF Indonesia Programme, based on field work by Anthony Whitten of Cambridge University. This is described in the article starting on page 166. WWF support will also contribute to the establishment of the reserves by supplying equipment and support for the guards.

Siberut's age of innocence is surely past, but efforts are being made to ensure that its transition into the modern world will not destroy its culture entirely, and that its unique fauna will be able to survive as an example of the great natural diversity of Indonesia.

### Acknowledgments

Our trip to Siberut was made possible by funds from the World Wildlife Fund and other support from the Directorate of Nature Conservation and Wildlife Management. In Padang, Kepala Selski Sanusi was very helpful, as was the Kepala Rayon of Siberut, Sabri. On Siberut, we greatly appreciated the hospitality and companionship of Jane and Tony Whitten, who also provided us with a great deal of information. John Seidensticker and John Payne were affable field companions whose discussions on Siberut conservation were a great stimulus for this paper; Seidensticker's ideas on evolution of Siberut primates were especially intriguing. Alan House gave us much insight on the vegetation, and Larry Hirschfeld was a great help in explaining some of the aspects of Mentawai anthropology and providing us with several relevant papers. Finally, our trip to Siberut would not have been nearly so enjoyable and informative without the cheerful guidance of Potiphar.

### References

1. CHASEN, F.N. and C.B. KLOSS 1926. Spolia Mentawaiensia: Birds. *Ibis*: 269-306.
2. \_\_\_\_\_ 1927. Spolia Mentawaiensia: Mammals. *Proc. Zool. Soc. Lond.*: 797-840
3. FOODEN, J. 1975. Taxonomy and evolution of liontail and pigtail macaques. *Fieldiana Zoology* 67: 1-169.
4. GROVES, C.P. 1970. The forgotten leaf-eaters, and the phylogeny of the Colobinae. In: Old World Monkeys: evolution, systematics and behavior. Napier and Napier (eds.). Academic Press, New York.
5. KAWAMURA, C. et al. 1977. Japan-Indonesia Joint Project on Comparative Studies of Colobus Monkeys in Indonesia: Periodical report of activities no. 4. 14pp. Mimeo.
6. LOEB, E.M. 1929. Mentawai Religious Cult. *Univ. of Calif. Publ. in Amer. Archaeol. and Ethnol.* 25 2: 185-247.
7. MARSHALL, J.T. 1978. Systematics of smaller Asian nightbirds based on voice. *Ornith. Monogr.* 25: 1-58
8. NAKAO, S. 1966. Origins of Cultivated Plants and Agriculture. Iwanami, Tokyo. (In Japanese)
9. NOOY-PAI M, H. 1968. The culture of the Pagai islands and Sipora. *Tropical Man*. 1: 153-241.
10. RIPLEY, S.D. 1944. Birds of the west Sumatra islands. *Bull. Mus. Comp. Zool.* 44 8: 308-430
11. SCHEFOLD, R. 1973. Religious conception on Siberut, Mentawai. *Sumatra Research Bulletin* 2 2: 12-24.
12. SUZUKI, P. 1958. Critical Survey of Studies on the Anthropology of Nias, Mentawai, and Enggano. Koninklijk Instituut Voor Taal-, Land- en Volkenkunde, Den Haag.
13. TILSON, R. 1977. Social organisation of simakobu monkeys (*Nasalis concolor*) in Siberut Island, Indonesia. *J. Mammal.* 58 2: 202-212.
14. \_\_\_\_\_ and R. TENAZA 1976. Monogamy and duetting in an Old World monkey. *Nature* 263 5575: 320-321.

*Opposite SIBERUT FOREST Tony Whitten*

