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ONE HAND CLAPPING: MALARIA IN BORNEO, PAST AND PRESENT

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ABSTRACT

Among health problems in Borneo, malaria is a huge concern because of its severity. Malaria is a social ecological disease involving parasites, mosquitoes, and people in conflict. Two simplified scenarios provide a heuristic contrast. (1) For traditional lifestyles, malaria pressure is a function of house construction and siting, smoky fires, village size and degree of isolation, village animal life, water sites suitable for mosquito larval development, human nutrition, sickness remedies, and the extent of land disturbance. In the past, forest lifestyles were in an anti-malaria mode but they lacked many medical services. (2) For current lifestyles, malaria is still a problem. Today modern housing, vector-control practices, anti-malarial drug tactics, health-service practices, human mobility, and ecosystem destruction can promote malarial infection.

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Among health problems in Borneo, malaria is a large concern because of its severity. Malaria is a social ecological disease involving parasites, mosquitoes, and people in conflict. Two simplified scenarios provide a heuristic contrast. (1) For traditional lifestyles, malaria pressure is a function of house construction and siting, smoky fires, village size and degree of isolation, village animal life, water sites suitable for mosquito larval development, human nutrition, sickness remedies, and the extent of land disturbance. In the past, forest lifestyles were in an anti-malaria mode but they lacked many medical services. (2) For current lifestyles, malaria is still a problem. Today modern housing, vector-control practices, anti-malarial drug tactics, health-service practices, human mobility, and ecosystem destruction can promote malarial infection.

INTRODUCTION

Borneans are prone to interlocked health problems, including malnutrition, anemia, and infections such as malaria (Khor, 1998). Women and children are particularly at risk. In the 1980s, 48% of the children and 28% of the women studied on the Bengkoka Peninsula of Sabah had iron-deficiency anemia while malnutrition, filariasis, and malaria were common (Inst. Med. Res., 1983). All these conditions are curable.

The first important malaria survey in Sabah was followed by a larger survey in Sarawak (McArthur, 1947; De Zulueta, 1956). But

no such report exists about Indonesian Borneo – only scraps of data.¹ Today Malaysian Borneo seems to be ahead of the Indonesian part in combating malaria. Yet despite many uncertainties, more is known about malaria than about any other Borneo malady. Knapen (1997, 1998) reviewed the history of malaria and other diseases in Borneo. Clearly, disease circumstances in the past differed from those of today. While we cannot compare the rates of malaria illness long ago versus today, we can consider some relevant issues.

Malaria has villains and victims: the parasite, its vectors, and people. Each has its own behaviour, genes, and life parameters – all varying in space and time (Baer, 1999b). The main parasites in Borneo are *Plasmodium falciparum* and *P. vivax*. Both are microscopic forms that colonize the human liver and red blood cells. The vectors of malaria are anopheline mosquitoes, differing among locations.² Most bite only at night and lay eggs in shady seepages or puddles. The disease seems to be more common in the hilly interior of Borneo than in low coastal areas, and its altitude limit may be above the highest villages. Emphasizing the interior, Harrisson once wrote (1955, p. 329), “Everyone who travels in Sarawak knows that malaria is a scourge among Land Dayaks, some sections of Sea Dayaks, and very extensively indeed among Kayans, Kenyah, and Murut-Kelabits.”

While some Borneo areas have a pronounced dry season in which malaria behaves rather atypically (Suzuki *et al.*, 1988), my focus is on people in ever-wet areas, either forested or deforested. I hope to rebut the statement of Gilles and Warrell (1993, p. 266) that, “Our knowledge on whether or not individuals adapt their behavior to influence their malaria risk is rudimentary.” In my view, information about the socio-ecological risks of malaria in Borneo is readily available.

Let us consider two common Borneo scenarios, with the assumption that malaria is endemic and prevalent in both cases. In the first scenario, people live in stilt houses on hillsides in roadless hamlets situated far apart in the forest.³ They keep animals under

the house but keep infants "off the ground." Mothers breast feed their infants for several years. The people lead smoky lives due to hearth fires, tobacco usage, the burning of hill swiddens, and incense-filled rituals. Their social contacts are mainly local. They avoid storing water that can "grow" mosquito larvae and have few seepages or standing water in their home territory. They eat green vegetables, while wildlife and fish provide adequate sources of animal protein. They practise rotational swiddening but not deforestation. They use herbal remedies but have no modern medical services.

In the second scenario, people live in large deforested villages accessible by road to towns.⁴ Their low-built houses have few animals nearby.⁵ Wildlife has been driven away by development or has been overhunted for food. Infants may be fed bottled milk, even the sweetened-condensed kind. The people lead low-smoke lives for various reasons, but their villages have many seepages, gullies, and often water-collecting strewn refuse. They eat a diet poor in greens and animal protein. In the evenings, they gather to watch TV.⁶ They receive some modern medical services and anti-mosquito ministrations.⁷

In either scenario people may use mosquito coils or bednets in their houses. They might also wear protective clothing outdoors in the evening or early morning. Still, one may ask: Which of the two scenarios has less malaria? Indeed, which is the healthier environment overall?

Some partial answers are well known. While infant and maternal mortality rates are now generally lower than they were 50 or more years ago, other considerations are also important. Demographers, for instance, would ask about long versus short life spans and low versus high morbidity rates. Lack of energy and plain listlessness, in addition to bouts of illness, are both part of real morbidity. Beyond that, malaria is still life-threatening in parts of Borneo. In rural Sabah, for example, over 30% of people can still be infected at any one time (Singh *et al.*, 1996).