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PROBOSCIS MONKEY AND AQUATIC APE

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INTRODUCTION

The proboscis monkey, *Nasalis larvatus*, of Borneo is a species of primate which has specifically adapted to live in coastal wetlands. It feeds mainly on young leaves and shoots of mangrove and pedada trees, and is willing to swim when travelling or escaping from predators (Kavanagh, 1983; Napier and Napier, 1985; Medway, 1970). Its habitat and habits make the species interesting to students of human evolution, since there is a persistent although not widely accepted theory that we evolved through an "Aquatic Ape" stage (Hardy, 1960; Morgan, 1972 and 1982). The theory has been considered intermittently by anthropologists, anatomists, physiologists, geographers and science writers over the years, and participation has now come full circle with a recent call for information from marine biologists (Verhaegen, 1985), as was the original proponent. Sir Alistair Hardy.

As a biologist with an interest in animal behaviour and marine ecology (Ellis, 1985), I managed to spend the period April 19- May 11, 1985, in Sarawak, making observations on the behaviour and ecology of proboscis monkeys, and documenting features of their skins and skulls. I was particularly interested in whether the species actively ranged over the several different habitats encompassed under the term coastal wetlands, e.g. mangrove and riverine forest, mud flats and sandy beaches. The hypothetical aquatic ape has not been considered as a ranging species, but since many if not most primates have this behaviour, it becomes important to show whether coastal home-ranging by a pre-human ancestor could have been a significant part of its adaptiveness.

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One problem in hypothesizing an ancestral form from the biology of convergent species is that a living animal is a system. It is a system of integrated anatomical, physiological, ecological and behavioural adaptations. In behavioural terms we can consider an animal as an ethosystem, which must achieve a viable balance of each system compartment to many pressures from natural selection. The balance must be different between species, but also may be different in various life stages, and between the sexes. For example in the proboscis monkey, the most notable anatomical feature of the enlarged nose must be considered not just as a sexual marker characterising the adult male, but in the sense whether it has several selective advantages and disadvantages the balance of which will determine the size of the nose, its detailed structure, and its form in male, female and young (see Figure 1). The large size in the male is known to interfere with drinking, adds tonal qualities to calls, may function to prevent water entering the nose when swimming and may be favoured by females at mating time as in Darwinian sexual selection.

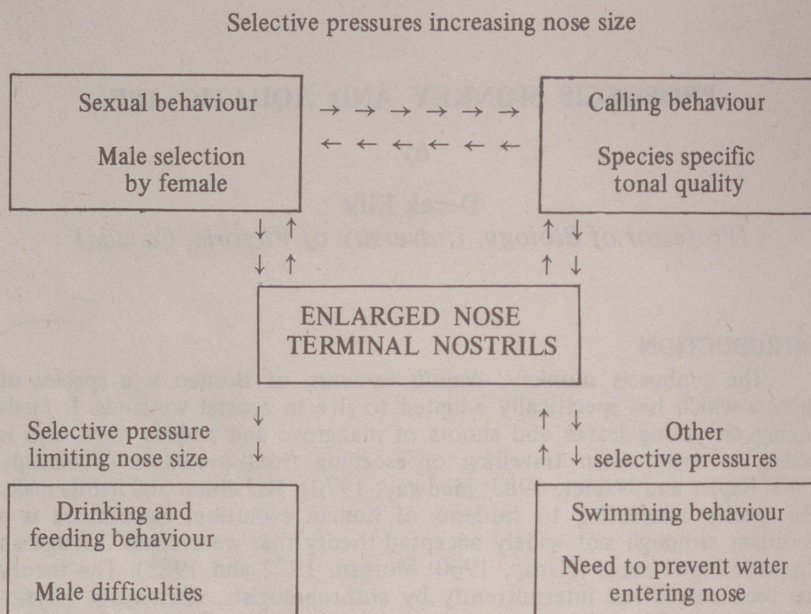


Figure 1. The nose of the proboscis monkey as an example of the concept that the animal must be considered an integrated ethosystem. Adaptive structures and their deployment in behaviours may be subject to several intensifying or limiting selective pressures (see text).

METHODS AND MATERIALS

I spent a day in the Sarawak Museum, Kuching, examining and photographing the reference series of proboscis monkey skins and skeletons there, especially the noses of females and infants. I also spent four days in Bako National Park, hiking the trails to separated coastal wetlands, some of which held well-hidden but audible stocks of the proboscis monkey. I spent four more days in the Samunsam Wildlife Sanctuary, investigating coastal wetlands, and during the late afternoon of three of those days observed for 1–2 hours each day groups of the monkeys feeding and socialising as they settled into their river-edge sleeping quarters for the night.

THE PROBOSCIS MONKEY

Taxonomy

The proboscis monkey is a Colobine (Fig. 2), i.e. an Old-World Cercopithecoid Catarrhine monkey related to the widespread leaf-eating Colobus monkeys of S.E. Asia. Like the Colobus species it is efficiently arboreal, but capable of travelling on the ground, and is herbivorous. It is part of what appears to be an evolutionary clade, sometimes called the “odd-nosed monkeys”, with 3 or 4 related species (Medway, 1970; Groves,