CHAPTER EIGHT

Geophagy in Chimpanzees (*Pan troglodytes schweinfurthii*) of the Budongo Forest Reserve, Uganda

A Multidisciplinary Study

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INTRODUCTION

Geophagy occurs widely among primate species (Krishnamani & Mahaney, 2000). While reported for chimpanzees in the wild since the 1960s (Hladik, 1977; Nishida & Uehara, 1983; Goodall, 1986), the geochemical and behavioral study of geophagy in relation to self-medication (Huffman, 1997) was not initiated until the mid-1990s, the first being that of Mahaney and Huffman. This work began in Tanzania with the analysis of termite mound soils, behavioral and parasitological data collected from the Mahale Mountains National Park (Mahaney *et al.*, 1996b; 1998; Aufreiter *et al.*, 2001; Ketch *et al.*, 2001). Further analyses have included termite soils eaten by chimpanzees in Gombe National Park, Tanzania, and exposed subsurface clays eaten by chimpanzees in the Kibale National Park, Uganda (Mahaney *et al.*, 1997, 1998; Aufreiter *et al.*, 2001). Geophagy has recently been noted to occur in a fourth East African population, the Sonso community in the Budongo Forest Reserve, Western Uganda. Early published studies from Budongo did not report any kind of soil eating by chimpanzees. However, more recently, Reynolds *et al.* (1998) referred to the eating of riverbank soil and other authors have noted sporadic termite mound soil eating by chimpanzees in this forest (e.g., D. Quiatt in Reynolds *et al.*, 1998:335; Newton-Fisher, 1999a,b). Termite mounds of the species *Cubitermes speciosus* are present in the Budongo forest (Newton-Fisher, 1999b).

At Gombe, chimpanzees consume *Macrotermes* with the aid of termite fishing tools inserted in a mound's ventilation ducts (Goodall, 1986). Reference is made to the consumption of mound soils of *Pseudacanthotermes spiniger* in Mahale, as being distinct from the consumption of termite mound soil there (Uehara, 1982). In the case of *Cubitermes* at Budongo, however, chimpanzees consume termites along with lumps of earth wrenched from termite mounds. While information exists on the consumption of termites, little consideration is given to the depth reached by termite species. Pomeroy (1976) cites *Pseudacanthotermes* as a builder of smaller mounds in Uganda. *Cubitermes humiverus* is also a builder of small mounds that are characteristically mushroom-shaped. This species' shallow activity in the soil, unlike the other mound builders, is likely to produce high organic contents in mound soils, a characteristic antithetic to geophagy. Furthermore, nowhere is there a detailed analysis of soils that provides information on the different structural components of these mounds. When considering the ingestion of termite mound soils, this information is important for increasing our understanding of their selection by chimpanzees.