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FIRST OBSERVATION OF VERVET MONKEYS *CHLOROCEBUS PYGERYTHRUS* FEEDING ON SEAGRASS *THALASSODENDRON CILIATUM* ALONG THE TANZANIAN COAST

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The vervet monkey, *Chlorocebus pygerythrus* (F. Cuvier, 1821), is among the most abundant and widely distributed primates in eastern and southern Africa (Butynski *et al.,* 2013). In Tanzania, it is found throughout most of the country, and in some places, forages in human settlement areas (Foley *et al.,* 2014). *Chlorocebus pygerythrus* is an opportunistic omnivore, with flowers, leaves, seeds and invertebrates contributing a major part of its diet (Struhsaker, 1967; Wrangham & Waterman, 1981; Lee & Hauser, 1998; Butynski *et al.,* 2013; Foley *et al.,* 2014). Vervet monkeys are known to feed on terrestrial grasses *e.g. Panicum* spp, *Sporobolus* spp, *Cynodon* spp and *Cenchrus mezianus* (Leeke) Morrone (Struhsaker, 1967; Butynski *et al.,* 2013), but there are no records of seagrasses as part of their diet. This note reports the first observation of *C. pygerythrus* feeding on the seagrass *Thalassodendron ciliatum* (Forssk.) Hartog (Cymodoceaceae) at Saadani National Park, on the shores of the Indian Ocean. Saadani National Park is one of 22 national parks in mainland Tanzania, and the only one bordering the Indian Ocean (TANAPA, 2020). It comprises the former Mkwaja ranch area, former Saadani game reserve and the Zaraninge forest (Treydte *et al.,* 2005) and is located within the Zanzibar-Inhambane phytochorion (White, 1983). The mean annual temperature in the park is 25°C (Treydte *et al.,* 2005) with the annual rainfall considerably variable between years (Tobler *et al.,* 2003), generally averaging to 900 mm per annum (Treydte *et al.,* 2005). Rainfall in the park is bimodal with a short rainy season from October to December and a long rainy season from March to early June (Treydte *et al.,* 2005; Cochard & Edwards, 2011). Like most of the Western Indian Ocean, the hydrography of Saadani coast is shaped by northeast and southeast monsoon winds which occur between November to March and May to September respectively (Richmond, 2002; Lymo, 2011; Semba *et al.,* 2019). The surface water temperature ranges from 20 to 30°C and is higher during northeast monsoon winds (Richmond, 2002; Lymo, 2011; Peter *et al.,* 2018). At least 10 seagrass species are known along the Western Indian Ocean (Richmond, 2002; Gullström *et al.,* 2002) with *Thalassodendron ciliatum* being among the most common (Gullström *et al.*, 2002).

A group of 22 vervet monkeys were observed on 31 August 2019 foraging along the shores of the Saadani National Park (6°01'42"S, 38°46'44"E) for two hours from 10:00 h to 12:00 h during the low tide. The monkeys spent almost half of the time feeding on the terrestrial herbs *Cynodon dactylon* (L.) Pers., *Sporobolus* sp, *Panicum* sp and *Anthericum* sp on the supralittoral zone, before entering the littoral zone where they foraged on drift patches of the seagrass *Thalassodendron ciliatum* (figures 1 & 2). Identification of the seagrass followed Richmond (2002). The monkeys were observed eating rhizomes and shoots of *T. ciliatum* while avoiding the roots and leaves. Both direct mouth scrape and hand-to-mouth

Figure 1: Vervet monkeys Chlorocebus pygerythrus *feeding on seagrass* Thalassodendron ciliatum *at the beach of Saadani National Park, Tanzania. The monkeys foraging on the patches of sea grasses, and the Indian Ocean on the background (A), a closer look of the two monkeys from photo A (B), a vervet monkey holding a* Thalassodendron ciliatum *in its mouth (C).*

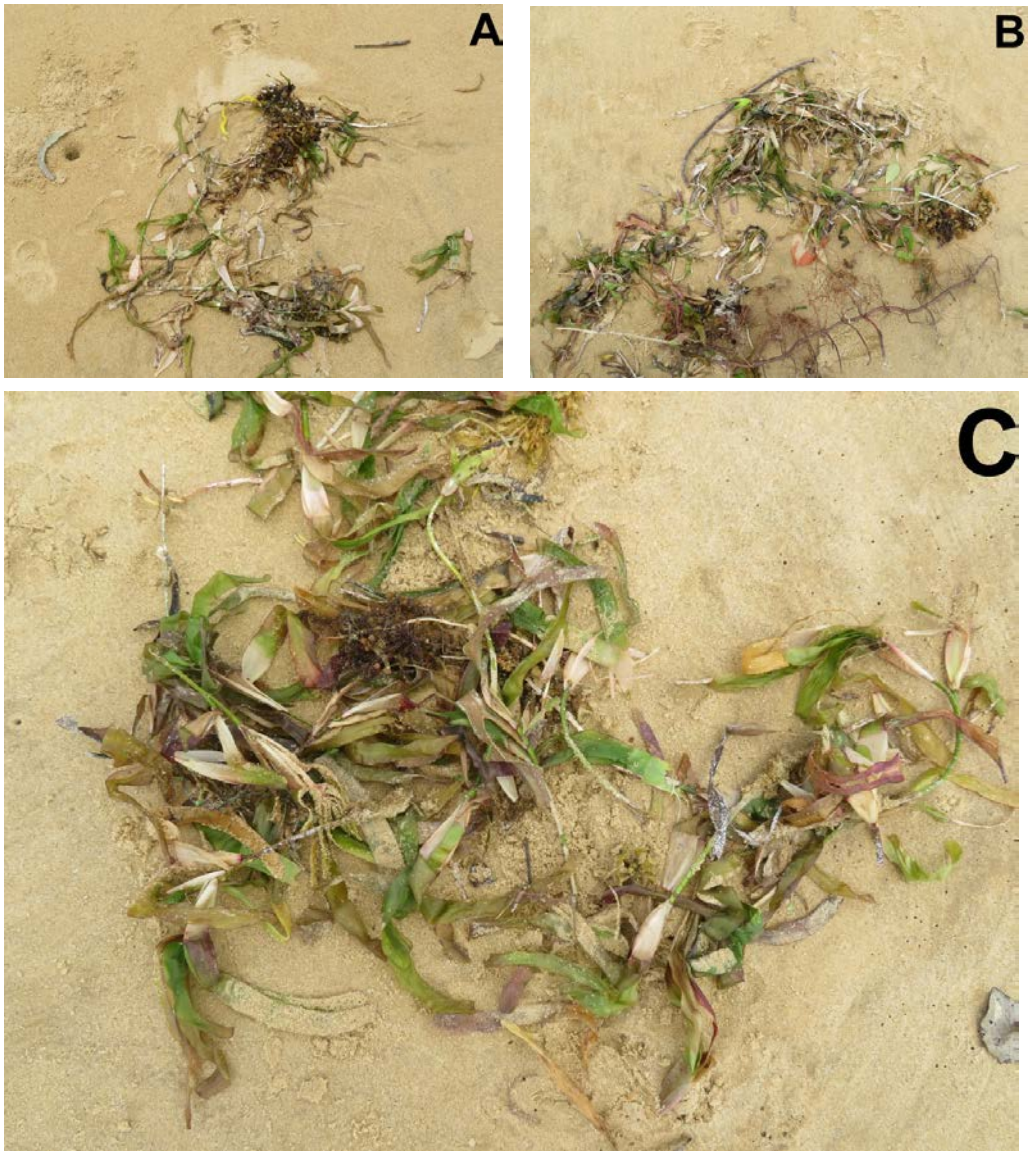

Figure 2: Parts of seagrass Thalassodendron ciliatum *left after forage by vervet monkeys. Note the footprints of vervet monkeys at A and B.*

movements were used when the monkeys were feeding on the terrestrial grasses but only hand-to-mouth movements were used when feeding on *T. ciliatum*. A number of studies on non-human primates utilizing marine foods exist, in which marine animals dominate as food items (Son, 2003; Stewart *et al.,* 2008; Lewis & O'Riain, 2017), especially invertebrates (Son, 2003).These reports indicate that marine resources contribute only small proportions of the primate's food and that the animals invest little of their time on these feeding grounds (Lewis & O'Riain, 2017). However, detailed studies on feeding behaviour of vervet monkeys in Saadani National park will shed more light on feeding habits of primates along the Tanzanian coast. This observation supports the opportunistic nature of vervet monkeys as

they are known to take advantage of available food resources (Struhsaker, 1967; Butynski *et al.,* 2013). This is the first reported record of the seagrass *T. ciliatum* constituting a food item in the diet of vervet monkeys despite the occurrence of this seagrasses along parts of the distribution range of vervet monkeys.

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