Soil ingestion by two wild ungulates, *Antilope cervicapra* and *Gazella gazella* in their natural habitats

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Domestic ungulate livestock as well as wild ungulates in the zoos are usually provided with salt licks for maintaining the levels of micro and macro minerals in their bodies. Studies conducted on the mineral requirements of free ranging ungulates, studied in New Zealand, Australia and Scotland have indicated that these animals ingest substantial amounts of soil while grazing, presumably as soil is the principal reservoir of the mineral elements (Healy, 1968; Healy et al., 1970, Maryland et al., 1977). So far, very little, if any at all, attention has been paid to this aspect in desert adapted wild ungulates, e.g., the Indian antelope, *Antilope cervicapra* (Blackbuck) and the Indian gazelle, *Gazella gazella* (Chinkara) inhabiting the arid terrains of western Rajasthan. This note presents evidences, for the first time, of ingestion of soil by the Indian antelope and the gazelle during summer, the most stressful season in this tract.

Samples of fresh faecal matter of free ranging blackbucks and chinkaras were collected from their respective natural habitats on the outskirts of Jodhpur city (26° 18’N; 73°01’E) during June 1979. Faecal matter of stall fed sheep and goats, provided with the leaves of two top feed plant species, viz., *Prosopis cineraria* and *Zizyphus nummularia* was also collected in order to determine the extent to which the silica in the faeces may be contributed solely by plant leaves. Oven dried (70°C±0.5°C for 7 days) faecal samples were analysed for silica and sodium contents by standard chemical methods. The food and feeding habits of the two wild ungulate species were determined with the help of binoculars.

The preferred plant species and the mean values of faecal silica and sodium contents for the wild and domestic ungulates are presented in Table I. The Indian antelopes, which are exclusively grazers, are mostly fed on the dried grasses available within their habitat. The Indian gazelle, which is a browser, is generally fed on the green leaves of *Maytenus emarginatus* and the newly sprouted leaves of *Zizyphus nummularia*, besides some ground flora.

The silica contents of the faeces of sheep and goats maintained on the two top feeds, viz., leaves of *Z. nummularia* and *P. cineraria* were of the order of only 3.4—5.4 per cent, while in the antelopes and gazelles, feeding on their respective...
preferred feeds in nature, silica accounted for 39 and 26 per cent, respectively, of faecal dry matter. In general, silica in faecal matter may arise either from the silica content of the plant materials consumed or from the ingestion of soil while feeding on the ground flora. The present study has revealed that plant leaves alone may contribute towards faecal silica content to the extents of only about 3-6 per cent of dry faecal matter as observed in stall fed animals. It would therefore, appear that the presence of higher amounts of silica in the faecal matter of the wild ungulates may possibly be due to soil ingestion (Table 1). The presence of sand particles in the faecal matter of the blackbucks and the gazelles was also noted. This would indicate that while feeding the blackbucks and the chinkaras ingest considerable amounts of soil along with plant materials. The presence of comparatively higher amounts of silica in the faeces of antelopes than in gazelles (Table 1) may be attributed to the former’s habit of feeding on dried grasses which usually contain considerable silica due to dust particles trapped in them. Field and Blankenship (1973) reported that dried grasses were usually associated with dust particles. The mean values of faecal silica and sodium contents for the two wild ungulates in the faeces of wild ungulates in the present study were significantly higher than those for the stall fed domestic animals. Hence, a comparatively higher level of excretion of sodium in the faeces of wild ungulates may probably be advantageous to the animals to unload the extra salt load ingested along with soil through the faecal route in order to conserve body water, which otherwise would be required if the excess salt is to be got rid of through the urinary route.

Maryland et al. (1977) reported that the faecal silica content of cattle grazing on crested wheat grass amounted to about 14 and 20 per cent of the dry matter excreted in June and August, respectively, while the average soil ingestion rates were 0.73 and 0.99 kg/animal/day for the two periods, respectively. Radioisotopic studies have shown that soil can serve the animals as a good source of minerals which are generally lacking in the feeds during summer (Healy et al., 1970).

The habit of soil ingestion by the wild ungulates may therefore, be profitable to these animals for the maintenance of macro and micro nutrient status as soil is the principal reservoir of these elements.

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