Sex determinants in the male have been tentatively classified as comprising a large acrocentric X and small metacentric Y. The Y chromosome is distinguished by being the only metacentric chromosome in the genome. The female is identified by the presence of two acrocentric X chromosomes, which without the use of appropriate staining techniques cannot be convincingly distinguished from acrocentric chromosomes of similar size.

It is evident from material utilized in this study that the springbok subspecies are characterized by a monomorphic karyotype at the gross level throughout their distribution in Southern Africa.

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Plant Food in the Diet of the Spotted Hyaena

Several authors have reported on the diet of the spotted hyaena *Crocuta crocuta*. Asterly-Maberly[1] reported the presence of cassava and maize husks from hyaena stomachs in Malawi and Deane[2] recorded the presence of grass from the stomachs of two hyaenas killed in Natal. There is little information on the inclusion of other plant food in the diet of this animal, however, so that the present observation that spotted hyaenas deliberately eat the fruit of *Acanthosicyos horrida* is of interest.

Spotted hyaenas are frequently encountered in the vicinity of the Kuiseb river, Namib Desert Park, South West Africa, usually running singly or in pairs but larger groups have been noted. Because of the aridity of the region and the comparatively small number of large game animals for much of the year, spotted hyaenas probably have to spend more time searching for food than in areas such as the Serengeti National Park[3], and thus tend to be more opportunistic in their feeding habits.

On two occasions, both in the late afternoon, solitary spotted hyaenas were observed feeding on the large, spiny fruits of *Acanthosicyos horrida* (a cucurbid). The plant is restricted in this area to the northern edge of the "dune sea", bordering on the Kuiseb river. Other mammals, including *Oryx gazella* and *Canis mesomelas*[4], also eat the fruit of this plant. In one observation the hyaena moved off shortly after being sighted but had been seen to be feeding on the fruit of *A. horrida*. On the second occasion the animal was under observation for several minutes and during this time it removed one fruit from amongst the spiny stems by using the forefeet (this has also been observed in *C. mesomelas* by the author) and then proceeded to eat the fruit, discarding much of the outer skin.

In addition to these observations, tracks of spotted hyaenas were noted on five occasions at *A. horrida* plants and at two of these sites fresh pieces of fruit skin were present. In all except one of the observations the hyaena tracks led directly from the riverbed to an *A. horrida* plant and then returned to the river. This indicated that the animals went deliberately to the plants and were not on casual feeding forays.

In addition to these findings 200 spotted hyaena scats were collected from the Kuiseb river and examined. Although plant remains were found only in one scat, these being three seed husks of *A. horrida*, it should be noted that the efficient digestive juices of the spotted hyaena would probably break down most of the plant food that might have been consumed and thus any evidence of this would be destroyed.

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Occurrence and Possible Use of Non-sulphur Purple Bacteria in Effluent Treatment Processes

Two groups of anaerobic bacteria perform their life processes at the end of the chain of anaerobic fermentative and respiratory processes.[1] The one is the methanogenic bacteria which convert fermentative endproducts such as volatile fatty acids (VFA) and alcohols to methane, and the other is the photosynthetic bacteria which photometabolise the fermentative end-products, with a higher efficiency than the methane-formers.[1]

The *Rhodospirillaceae* (non-sulphur purple bacteria)[2] utilize organic compounds in their metabolism. The widespread occurrence of this group[3] and their reported higher metabolic efficiency than methane-formers, pose two questions in relation to effluent treatment processes: 1) Do these bacteria occur in sewage treatment plants? 2) Can these bacteria be utilized in sewage or effluent treatment processes?

To determine the presence of non-sulphur bacteria in different

Table 1 Composition of basal medium

Component	Concentration (g/l)
$MgCl_2 \cdot 6H_2O$	0.2
K_2HPO_4	1.0
$FeSO_4 \cdot 7H_2O$	0.01
$CaCl_2 \cdot 2H_2O$	0.02
$MnCl_2 \cdot 4H_2O$	0.002
$NaMoO_4 \cdot 2H_2O$	0.001
NaCl	0.5
Yeast extract (Difco)	0.2

*p*H adjusted to 7.0 with 0.1 N HCl and 0.1 N NaOH