Koedoe 23:33–34 (1980)

CLASSIFICATION IS INSTRUCTIVE – COMMENTS ON A PUBLISHED TABLE OF ANTELOPE HABITAT PREFERENCES

B. J. COETZEE

Department of Research and Information
National Parks Board of Trustees
Private Bag X402
Skukuza
1350

Pienaar (1974) showed the habitat preferences of South African antelope species in a two-way table. Rows represent species and columns represent habitats. Matrix entries link species to their preferred habitats (Table 1). Species in Table 1 are in taxonomic order, which has no apparent bearing on their habitat preferences. The habitat sequence and habitat hierarchy similarly have little obvious bearing on their significance to antelope species.

Because the table concerns habitat preferences of antelope species, the classification-minded would be inclined to group species on their habitat preferences and habitats on their significance to antelope species. This was done with Table 1 and the results, presented in Table 2, are instructive.

Table 2 contains all the detail of Table 1 plus illuminating abstractions. For instance, is is not immediately clear in Table 1, as in Table 2, that blue duiker, red duiker and bushbuck have quite similar habitat preferences; that this shared habitat is distinctively non-desert forest/thicket; that suni, Sharpe's grysbok and nyala also characteristically occupy thicket; but that despite this close ecological relationship, the latter three species distinguish themselves as a group in avoiding temperate areas.

An example of multidimentional relationships is provided by the following three species groups and three groups of habitats:

Species Groups
I – roan antelope and tsessebe
II – grysbok, blesbok, bontebok and black wildebeest
III – gemsbok, springbok and red hartebeest

Habitat Groups
A – mesic tropical savanna and grassland
B – non-desert, temperate woodland, shrubland and grassland
C – arid tropical savanna and desert/subdesert grassland and shrubland

The three habitat groups, A, B and C, occupy successively drier sections of a moisture gradient. Habitat Group A closely resembles Habitat Group B from the roan antelope and tsessebe point of view, probably in being distinctively wetter compared to Habitat Group C. However, as far as gemsbok, springbok and red hartebeest are concerned, Habitat Group B more closely resembles C than A; probably in B and C being distinctly drier as compared with A. Grysbok, blesbok, bontebok and black wildebeest on the other hand, classify A with C as unsuitable. These various relationships, which are clear at a glance in Table 2, are obscure in Table 1.

Table 2 also suggests a more relevant habitat hierarchy than the one shown in Table 1. The distinction between temperate and tropical at a general level as in Table 1, is rather meaningless because many antelope species occur in both life zones and no species group occupies either most temperate or most tropical habitats. As shown in Table 2 this distinction is meaningful but in several branches and at lower levels of the hierarchy.

Throughout this discussion Pienaar's (1974) data on antelope species was accepted as a starting point. One could also conceivably apply a similar classification strategy starting with less abstract data and animal communities, *e.g.* bird communities, large mammal communities and/or small mammal communities. Many definite sites, each of a size appropriate to the animals studied, may be described in terms of component animal species and their states (*e.g.* presence or density) as well as habitat characteristics. Correlated species may then be grouped together and sites classified on species composition. The habitat characters differentiating between classes of sites may be extracted and grouped hierarchically to correspond with the hierarchical grouping of sites. Such a classification, presented in a two-way table, would correspond to the classification of plant communities on species composition by the Braun-Blanquet approach (*cf.* Westhoff & Van der Maarel 1973).

REFERENCES

PIENAAR, U. DE V. 1974. Habitat-preference in South African antelope species and its significance in natural and artificial distribution patterns. *Koedoe* 17: 185–195.

WESTHOFF, V. and E. VAN DER MAAREL. 1973. The Braun-Blanquet approach. *In:* WHITTAKER, R.H. (Ed.) Ordination and Classification of vegetation. *Handbook of Vegetation Science.* The Hague: Junk.