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Observational and Recording Techniques

By Roger Ewbank, Liverpool

The validity of the results obtained from most behavioural studies is largely controlled by the quality of the observational and recording methods employed. There are many aspects of technique which may have to be considered. Amongst these are:

(1) *The effect of the presence of the observer.* This may be especially important under zoo conditions. There can be considerable differences in response shown by domesticated species compared with zoo animals reared in captivity, with recently captured specimens, and with truly wild animals.

(2) *Non-systematic observations.* Usually employed out of necessity when a possibly unique behavioural situation has to be studied and recorded on the spot.

(3) *Systematic observations*

(a) Continuous

(b) Intermittent (sampling) $\left\{ \begin{array}{l} (1) \text{ random} \\ (2) \text{ regular (beware cyclical behaviour} \\ \text{pattern rhythms).} \end{array} \right.$

These techniques are usually employed in planned behaviour projects. Continuous observations are used when detail is required; intermittent techniques are useful in determining how often clearly defined patterns of behaviour occur.

(4) *The number of animals that can be observed and recorded by one observer.* This will depend upon the detail required: the less the detail the greater the number of animals that can be recorded.

(5) *The use of teams of observers.* Great care has to be taken to standardize techniques so that variation between observers can be controlled.

(6) *Individual identification of animals.* A most important and, at times, most difficult problem. The identification marks must not only be clear but must be capable of being quickly read at a distance.

(7) *Manual recording of observations.* This often means a visual break as the eye of the observer moves from the animal(s) to the notebook. A recording code can help to limit the duration of the breaks.

- (8) *Mechanizing the observing/recording processes.* Many devices can be used, e.g. digitally controlled event recording (for continuing observations); tape recorders (cuts out visual break between observer and observed—noise may have effect on animals); time-lapse cine cameras (intermittent observations); telemetry; activity meters (e.g. i/r beam which when interrupted activates a recorder); closed-circuit T.V. (complete separation of observer and observed).

Observations on the Behaviour of an Island Community of Feral Goats

By H. S. McTaggart, Edinburgh

For three years observations have been made by the Universities Federation for Animal Welfare on a herd of white feral goats on Holy Island which lies off the island of Arran in the Firth of Clyde. During this time the population has increased from 30 to about 40. The numbers of males and females are approximately equal but the three oldest males are castrates.

During spring and summer there is a marked segregation of the sexes. The females and kids chiefly occupy the steep rugged eastern slopes of the island, the males are usually to be found on the more accessible northern half of the island while two identifiable females occupy territory on the steep western slopes but are commonly found with their kids in company with the males.

In the third week of August the breeding season starts, the females coming to seek out the males, all then returning to the higher parts of the island. Mating, although promiscuous, is based on a male hierarchical system in which the dominant male (usually the oldest) in a group devotes all his attention to a particular female. She may respond and be served, often more than once, or she may take evasive action till he tires of the pursuit. The next male in the hierarchy then takes over and so on down the line. Matings are achieved by adult males of all ages which are imitated by immature males. Sexual activity remains fairly intense for three or four weeks. As it declines the large parties break up into smaller groups of perhaps half-a-dozen animals of mixed sexes which distribute themselves widely over the island with some exchange of individuals between groups. This continues through the winter until the first kids are born. Most are born in late January or early February but a few not until April and one even in mid-May—indicating that although most females conceive in the early intense part of the breeding season a few are not successfully mated until November or December.

The vegetation on Holy Isle consists of various grasses and herbaceous plants, heather, bracken, shrubs including rhododendron and trees. Goats have been observed eating all classes of vegetation as well as seaweed cast up on the shore but they are essentially browsers as opposed to the almost exclusively grazing habits of sheep on the island. Goats penned in a grass paddock

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ate a bed of bracken to the ground before they would eat grass. On release they at once browsed avidly on heather. There is no evidence of any tree barking on the island. It is believed that tree barking only becomes a problem when there is not an adequate supply of coarser browsing such as heather.

Horned goats can be accurately aged from the annual horn rings. The distance between successive rings decreases progressively with age. Following castration the distance between successive rings immediately decreases to a steady one to one-and-a-half inches per annum so that the year of castration can be ascertained.

