OBSERVATIONS ON EVENING RABBIT ACTIVITY IN RELATION TO WEATHER AND SUNSET*

By Ian Rowley†

Measurements of rabbit activity in relation to weather were made in Tasmania during 1954. These were part of a study to determine how rabbits, *Oryctolagus cuniculus* (L.), behaved and settled down in enclosures (Rowley 1956, 1957). Observations were made at three adjacent and similar enclosures (A, B, and C), each with 20 rabbits on $3\frac{3}{4}$ acres of native pasture.

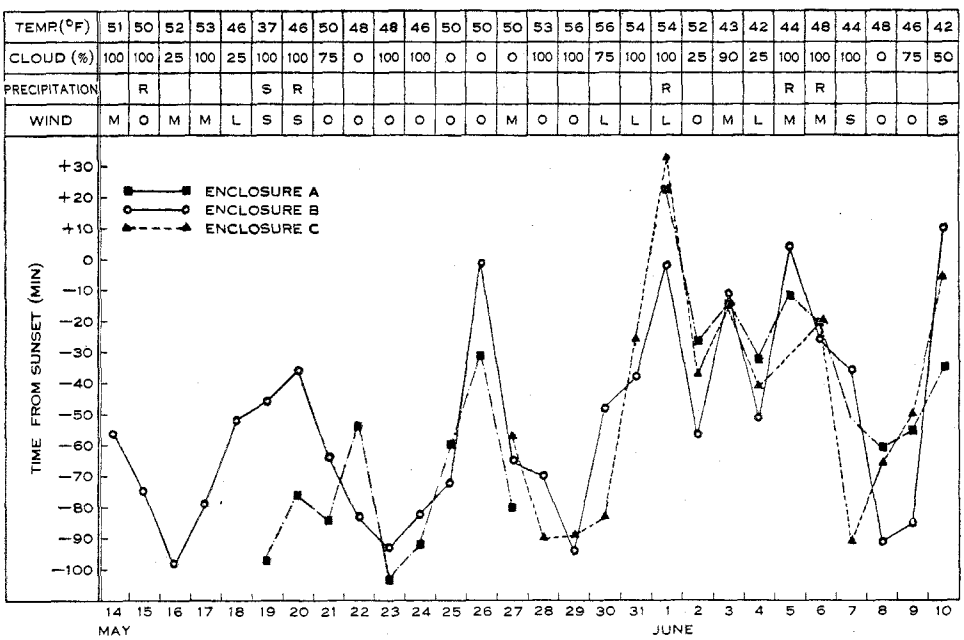

Fig. 1.—Grazing emergence times at three enclosures during 28 days. Temperature: in °F measured at 1600 hr. Precipitation: *R*, rain; *S*, snow. Wind: *O*, nil; *L*, light breeze; *M*, moderate; *S*, strong.

"Grazing emergence" was used as an index of activity; this was the time when one-fifth of the population was *grazing* for the first time that evening. Total counts were complicated by surface-squatting rabbits who, though visible, had not "emerged". Analysis of the results shows that grazing emergence time coincides with the short period when the number of rabbits above ground builds up quickly—a regular feature of warren behaviour and the one used by Dunnet (1957) as an index of the onset of activity.

Figure 1 shows the times of grazing emergence in relation to sunset for B enclosure over a period of 28 days and for A and C enclosures for lesser periods.

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Of the six obvious "peaks" of retarded emergence, two (May 19 and 20, June 5 and 6) are correlated with wind and rain together, two (June 3 and 10) with wind alone, and one (June 1) with rain alone. On May 26 a tractor was working nearby and frequently scared the rabbits; B enclosure, which was between A and the tractor, responded more markedly. The tractor was also working on May 18, but further away. The three "troughs" of very early emergence all occur under conditions of no wind or rain, except for June 7, which was overcast with a strong wind. The early emergence on this day was probably due to the fact that heavy storms during the previous night interrupted normal activity. A cat was preying on the rabbits during the first three days of June and this may have encouraged late emergence. No spectacular barometric falls, such as Southern (1940, 1948) described, were experienced; neither sunshine nor temperature seemed to affect the onset of evening activity.

Responses to weather changes were similar in the three enclosures, as would be expected. Differences between the three populations are evident but inconsistent, no one group emerging regularly before or after the others; this parallels Dunnet's experience with natural warrens (Dunnet 1957).

An earlier experiment was carried out in February and March of the same year, before the enclosures were subdivided. Thirty rabbits on 7½ acres gave grazing emergence figures, the mean of which (sunset −106 min) was nearly an hour earlier than the corresponding winter mean (−50 min) in relation to sunset. By Standard Time the autumn figure (1710 hr) is 70 min later than the winter one (1600 hr). This marked difference is probably due to the longer winter night which permits more grazing and renders early daylight emergence unnecessary.

Thus evening activity appears to be subject to both long-term (seasonal) and short-term (weather and disturbance) fluctuations. Of the latter, those due to wind and rain are the most common. Disturbances, such as heavy predation or bad weather the previous night, may affect activity the following evening.

References

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