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Animals News

129

BRITAIN

Tidal rhythms

Rhythmic bursts of activity are a common feature of animal behaviour. Often the periodicity is *circadian* (24-hour), like sleeping and waking, but other rhythms, particularly tidal ones, are also known. A great deal of discussion has centred round the origins of biological rhythm and many scientists have suggested that the 24-hour cycle can be inherited.

Recent work at University College Swansea (reported in the *Journal of Experimental Biology* Vol. 47 No. 2) makes it clear that the tidal rhythms found in marine animals are also very deep seated. Crabs were reared in the laboratory under normal conditions of darkness and light, but away from any tidal influences, and their patterns of activity were observed before and after a period of chilling to 4°C. (Earlier experiments with crabs collected off the shore and from non-tidal stocks had shown that the chilling stimulus would reinitiate their rhythmic patterns of behaviour.)

The crabs which had been reared away from any tidal influences showed a burst of activity immediately after the chilling which was followed by periodic activity with a roughly tidal cycle of occurrence.

The experimenters, Barbara G. Williams and E. Naylor, point out that the cycles are not synchronised with actual tides. But they show that there is a basic rhythm, which appears to be inherited and which could respond in nature to environmental factors such as hydrostatic pressure, which would allow for precise adjustment to actual tides.

Badger damage

During a survey of grassland in the Conway valley in Snowdonia, officials of the Nature Conservancy have come across extensive damage to upland pasture which they attribute to badgers (*Proceedings, Zoological*

Society of London, Vol. 153 No. 4). The damage was first seen above the village of Dolgarrog, where 20 to 30 yards downhill from an active sett the grass had been torn up in patches leaving piles of dead grass covering up and stifling the growth underneath.

Two months later a similar, but more extensive, area of damage was discovered about 600 yards away. The two areas are separated by a hydro-electric water pipe, a light railway, and a water channel — all of which could be negotiated by badgers. Some 2,000 square yards of grass was affected by the damage, which was similar in appearance to the effects of rooting pigs. The tracks of badgers were very evident, and close by there were two sets of dung pits. Since the area is heavily wooded there may be several setts which are active. If badgers are the culprits, then it is difficult to see the motive.

There are many species of arthropods in the upper layers of the soil and on the soil surface. In certain years the larvae of the garden-chaffer (*Phyllpertha horticola*) become very abundant in the upland grasslands of Snowdonia, and Dr R. Elfyn Hughes, the Director, Wales, of the Nature Conservancy, recalls similar damage occurring during such an abundance several years ago. However, there was no evidence to implicate badgers at the time and in the present case there is no evidence of large numbers of chafers. Certainly if they were there they would have been a valuable source of food which badgers might be expected to exploit. The damage to the grass, which is serious, occurs in two ways — first by a direct loss in production, and second by the invasion of the bare patches by less productive grass.

CANADA

Lupins and lemmings

Fossil remains of collared lemmings in the Yukon have helped to establish the age of what appear to be by far the oldest living organisms known.

During mining operations at Miller Creek in 1954 a system of burrows was found 10 to 20 feet down in frozen silt. In the burrows were skeletal remains of collared lemmings, animals that live today in the arctic tundra, and which must have left the region of Miller Creek at the end of the last Ice Age, about 10,000 years ago. Together with the skeletons were vegetable remains — evidently material brought in by the lemmings as food — which included seeds of the arctic lupin.

Some of these seeds were tested recently for their ability to germinate.

Amazingly, six of the seeds germinated and have produced normal plants of which one has since flowered. Carbon-14 dating has indicated that animal remains from similar burrows are from 10,000 to 200,000 years old. The claim that seeds can remain viable for such an immense period is so remarkable that it should be confirmed by carbon-14 — dating a sample of the seeds themselves.

SOUTH-EAST ASIA

Rare rhinos studied

The rare Javan and Sumatran rhinoceroses have been the subject of two recently reported research programmes. David Strickland, working on the Sumatran species in Malaya's Sungei Dusun Reserve (which has been specifically set up to protect a local population of the animals), concludes that the reserve is ideal for the rhinos and could support larger number if necessary. His report emphasises the need for improvements in management and protection to keep abreast of rapidly accelerating rural development. He has confirmed the presence of at least three Sumatran rhinos in the reserve.

At the same time a similar study of the Javan rhino, sponsored by the WWF, has been completed by Dr Rudolf Schenkel and his wife. Their report (although they emphasise the difficulty of accurate census work) that the rhino population of the Udjong Kulon reserve in Java contains a very low proportion of young animals and no calves less than a year old. Total numbers are between 21 and 28 animals. The Schenkels suggest that these findings indicate a critical situation in the rhino population which might be improved by effective protection of the area.

INTERNATIONAL

Sei whales endangered

Antarctic whaling operations may be putting the survival of the sei whale at risk. A report by the FAO on the 1966-7 season reveals a 30 per cent decline in the population of the area as compared with the previous season. The report suggests that sei quotas will have to be substantially reduced if extinction of the species is to be avoided, and recommends that operations should be transferred to the South Pacific and Indian Ocean where the stocks of sei are more plentiful.

New SSC secretary

Colonel Jack Vincent has been succeeded as secretary of the Survival Service Commission of the IUCN by Dr Colin Holloway of the University of Aberdeen.