there are a few references to the manor of Torpel in the Soke of Peterborough. During the twelfth and thirteenth centuries this manor was owned by a succession of Roger de Torpels, who gave knight service to the Abbot of Peterborough. Torpel castle, which must have been larger than its contemporary, Castle Heddingham in Essex, was presumably their home. It is too early to say exactly when the castle was abandoned, but that had probably happened by the fourteenth century, although the manor continued as an administrative unit for several centuries after that.

Recent references to the castle are either obscure or inaccurate, or both. In the nineteenth century Victoria County History of Northamptonshire there is a reference to a Torpel Manor House in the parish of Ufford. In fact, the castle is in the parish of Bainton. The measurements of the so-called manor house that are given are also inaccurate. A nineteenth century local journal contains a mention of a rectangular Roman ruin in the wood, which no doubt refers to the tower. In the English Place Names Society volume on Northamptonshire, which was published in the thirties, there is a reference to a ruined castle. Somebody must have visited the wood and recognized the castle for what it was, but in those days there was less enthusiasm for recording and scheduling historic monuments, and the castle was not brought to the attention of the ministry.

Changes in the county boundaries also seem to have helped to keep the castle secret. The Soke of Peterborough was until 1962 part of Northamptonshire, but was then incorporated into Huntingdonshire. This doubtless explains why the castle was not recorded by the Royal Commission on Historic Monuments, which surveyed Huntingdonshire in the thirties. An application for scheduling is now being put to the ministry.

PESTS

Rats too Fertile

An attempt to control the rat populations of two Californian rubbish dumps using an antifertility agent has failed, apparently because the rats refused to eat the treated bait after the first taste. R. E. Marsh and W. E. Howard of the University of California at Davis used bait treated with mestranol, a synthetic oestrogen which is sometimes used in contraceptive pills for humans (*J. Wildlife Management*, **33**, 133; 1969).

Many city rubbish dumps in California support rats, principally the Norway rat, *Rattus norvegicus*, and sometimes ground squirrels, *Citellus* sp, and the house mouse, *Mus musculus*. Rats are so fecund, and open dumps provide such good food and shelter, that it is difficult to control the large populations with poisons, and a means of regulating reproduction is badly needed. Marsh and Howard knew that mestranol given to rats for two or more days markedly affects the fertility of the females and they also knew that Norway rats tend to refuse treated bait after first accepting it. To help overcome this difficulty the bait was changed for each baiting of the dumps, using different brands of dog food.

The treated bait was scattered over the rat infested areas of the dumps three times at four week intervals. The mestranol clearly inhibited reproduction; after the first four weeks 44 per cent of the population were juveniles, and after 12 weeks only 13 per cent were juveniles. But the decrease in fecundity turned out to be the result of the effects of the first dose of mestranol only. After seven weeks there was a sharp increase in the number of young rats present, which indicated that the effects of mestranol lasted only about thirty days, even though treated bait was available for much longer. Although the bait was eagerly accepted at first, on the second and third occasions the rats consumed very little of their mestranol diet. If this ostensibly attractive method of controlling vertebrate pests is to be successful, the animals will have to be induced to take the bait more than once. Howard and Marsh conclude that either the acceptance of treated baits must be improved, or a scheme will have to be developed that rotates different antifertility agents as well as different baits.

NUCLEOPROTEINS

Specificity of Histones

from our Cell Biology Correspondent

The discovery last year that the amino-acid sequences of histone fractions isolated from the chromatin of pea cell and calf thymus nuclei are virtually identical (*Nature*, **220**, 650; 1968) did much to convince the most dyed in the wool sceptics that histone chemistry is, after all, a respectable field, even though it is littered with sullied reputations. If a protein sequence has been conserved with only two replacements throughout evolution, since the divergence of the lines leading to peas and cattle, then the protein presumably has some crucial function which is unprecedentedly sensitive to mutational change. That conclusion seems inescapable. But what are the histones doing? It seems that they act as repressors of gene expression, but, unlike the lactose operon and λ phage repressors, histones apparently lack specificity for particular DNA base sequences. Furthermore, there seem to be far fewer species of histones than genes so there cannot be a one to one correspondence between genes or operons and specific histones.

The histones could, of course, act as non-specific blanket repressors preventing the expression of large sections of the genome, but, if so, what controls the specificity of gene repression in nucleated cells? One suggestion, which has been in the air since 1963, is that an RNA molecule provides an auxiliary mechanism conferring specificity on a histone by acting as an adaptor in a way analogous to transfer RNA. Bonner's group set about finding this RNA and, sure enough, reported in 1965 that the chromosomal proteins, histones and acidic proteins isolated from chromatin contain associated RNA. Since that time this so-called chromosomal RNA has been detected in several cell types, and it is claimed that chromosomal RNA is organ specific, chiefly found in the nucleus and has very heterogeneous base sequences. These are all properties expected of a histone adaptor. On the other hand, it has never been fully characterized. That has not, however, deterred Bonner's group (Beckhor, Kung and Bonner, *J. Mol. Biol.*, **39**, 351; 1969) and the Huangs (*ibid.*, 365) from trying to test the effect of chromosomal RNA on the specificity of histone repression *in vitro*.

Both groups have done essentially the same experiment. Most of the DNA in native chromatin is re-