

typic reciprocity between speltoids, particularly 'sterile base', and compactoids. Awnedness may be of significance⁵; the present material is fully awned, and basal sterility is expressed more fully in awnless speltoids⁵, but it is doubtful whether much importance should be attached to simply-inherited characters. Compactoids provide evidence of the genetical characteristics of chromosome IX, part of the *B* genome of wheat, the origin of which is unknown⁶, but the normal disomic effects of chromosome IX cannot be predicted, and not until an *Aegilops*, or perhaps an *Agropyron*, with a fertile glume is discovered should any evolutionary significance be attached to this character. (*Added in proof*: Okamoto (*Wheat Inf. Service*, 6, 3; 1957) (E. R. Sears, personal communication) has shown that chromosome IX is in the *A* genome, and has thus reduced the historical importance of speltoidy and compactoidy.)

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Bat Erosion as a Factor in Cave Formation

OBSERVATIONS in three bat-infested caves in Trinidad suggest that roosting bats can play a considerable part in cave excavation where the rock is soft. The best example of this bat erosion is to be seen in a cave in soft coral reef limestone in Mt. Tamana. Wherever the roof is dry, as indicated by the absence of stalactite growth, it is pitted with numerous bell-shaped cavities, the upper parts of which are lined, by day, by a layer of closely packed sleeping bats. On the cave floor below each such cavity is a conical mound of bat guano.

Measurement of these cavities with a pair of long wooden calipers showed depths ranging from 3 ft. to 6 ft. and diameters at the mouth from 1½ ft. to 2½ ft. In the deeper ones measured, the terminal dome and upper part of the shaft were of much the same dimensions as a complete smaller cavity, while the lower part of the shaft widened farther. However, the majority were of irregular shape, having merged with neighbouring cavities.

The bell shape, consisting of a tapered shaft surmounted by a dome, accords with the view that the cavities have been excavated by the claws of generations of roosting bats. Certain species tend to sleep clinging to an overhanging surface and crowded close together, and they can be observed to jostle each other, trying to secure a central position. Such jostling could, over a long period, be expected to erode a cavity in soft granular rock. As the cavity deepened, bats would tend to alight at the lip and climb up the shaft to reach the dome. Thus the lowest and oldest part of the shaft would have been

subjected for the longest time to erosion by climbing bats, and could be expected to be of greater diameter than the upper part.

At least nine species of bat have been recorded from these caves, and both total and relative numbers have been observed to vary. Their roosting habits would make an interesting study, but the remoteness of the caves renders such an undertaking difficult.

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The Cromer Forest Bed: Preglacial or Interglacial?

THE relation of the Cromer Forest Bed Series to the overlying glacial deposits and to the earlier Crag Series has long been a problem, but the recent communication in *Nature* by Prof. P. G. H. Boswell¹ should do much to dispel the idea that the Cromerian stage can be described as an 'Interglacial'. No glacial tills or similar deposits have ever been seen below this Series, and therefore from the point of view of stratigraphy its description as 'Interglacial' can only cause confusion. The very few glacial erratics which have been found in and below the Crag can be attributed to the action of sea-ice, and cannot be counted as representing a 'glaciation'; these erratics are so rare that in practice unfossiliferous Crag deposits can be distinguished in the field from most glacial beds by the fact that erratics are scarcely ever found in the Crag.

As regards conditions during the formation of the Cromer Forest Bed itself, Clement Reid² believed that the fossil plants and non-marine shells are in general similar to those now living in Norfolk, with a few exceptions such as *Corbicula fluminalis*. More recently, Woldstedt³ described a pollen analysis of samples taken from part of the Forest Bed Series as showing a phase with early birch and pine forests succeeded later by a mixed oak association. If work now being done at Cambridge confirms Woldstedt's conclusions, this will suggest that a major climatic fluctuation took place during the formation of the Cromer Forest Bed of a type seen in some interglacial episodes, though differing in detail. This apparent contradiction of a climatic fluctuation which is not preceded by a glacial deposit makes an examination of the marine fauna of the underlying Weybourne Crag most important, in order to find out whether this fauna represents arctic conditions.

In the absence of glacial erratics or actual glacial deposits, it has in fact been argued by Zeuner⁴ that the marine fauna of the Weybourne Crag, which underlies the Forest Bed Series, contains sufficient cold indicators to prove glacial conditions before the formation of the Cromer Forest Bed. He considered that an analysis of the marine fauna proves that the cold increased unevenly during Crag times, and that at least two cold episodes represent pre-Cromerian glacial phases; one of his cold episodes is stated to have occurred during the formation of the Weybourne Crag. But Clement Reid² showed that only a few cold indicators are known in the Weybourne Crag, and that only one of these (*Astarte borealis*) is at all common, the rest being very rare indeed; in any event a Mediterranean shell is also known to occur (*Astarte incrassata*). Among the marine