GEOLOGY AND GEOGRAPHY

Chairman: Floy Hurlbut, Ball State Teachers College

Preston McGrain, Indiana Flood Control and Water Commission, was elected chairman for 1949.

ABSTRACTS

On the Outstanding Features of the Great Climatic Cycle, A. V. Lott, Sellersburg.—Studies of cyclic variations in world climates have revealed the existence of a variation which covers such a long period that it may aptly be called "the great climatic cycle." The last cycle of this series began in Paleozoic time and continued into the recent epoch of earth history.

Variations during the period have ranged from the highly developed system of zonal climates which prevails today to the mild and relatively uniform climates of the middle to late Mesozoic. At the beginning of the cycle in Paleozoic time conditions seem to have been similar to the conditions of today. This was followed by a period of widespread continental glaciation, then by a period of mountain building, then by cool temperate climates which developed into warm temperate and then into climatic uniformity. This was followed by warm temperate which developed into cool temperate conditions, then into mountain building, then into a period of widespread continental glaciation and finally into the climates of today.

The author suggests a possible cause of such variations and explains how each climatic condition may develop.

Trends in the Settlement of Indiana as Indicated by the Voting Residences of Certain Elected Officials, John Strietelmeier, Valparaiso University.—The writer is interested in testing 1) whether there is any close correspondence between the distribution of people within a political unit and the distribution of the officials they elect (in this case the governors, senators, and federal representatives elected by the people of Indiana); and 2) whether a series of distribution maps prepared so as to show the cumulative distribution of these officials will disclose any trends in the distribution of the population in general from decade to decade.

He concludes that there is at least a strong tendency for political control to gravitate toward those areas which are numerically strongest and that it is possible to trace with fair clarity the filling up of the state of Indiana by following the movement of its political leaders from decade to decade.

The Present Status and Correlation of the New Albany Shale Flora, J. H. Hoskins and A. T. Cross, University of Cincinnati.—The flora

represented by petrified wood fragments found in the New Albany black shale of Indiana and in other similar Devonian-Mississippian deposits in Kentucky, Tennessee and Ohio is much more extensive than generally recognized. The most abundant assemblage of these plants is found in the Falling Run member (Upper Sanderson) of the Lower Mississippian rocks as defined by Campbell. Fewer plant fragments are to be found in the Lower Sanderson and the Underwood and Henryville formations above.

The shales containing this flora lie above those bearing the well-known Callixylon Newberryi which has not been found *in situ* in strata below the Upper Blackiston (U. Dev.) in this region. Additional species of Callixylon are found in the Sanderson.

It is believed that the wood fragments, which are now principally phosphatic, and which are found either in phosphate nodules or as isolated pieces intermixed with them, were concentrated in the bottom deposits of a black mud sea over a long period of time, during which little or no inorganic sediments were accumulating. The source of the vegetation represented by the petrified wood is uncertain, but the greatest concentration of material is on the west side of the Cincinnati arch between New Albany, Indiana and Danville, Ky. The fossil wood is progressively less abundant to the east, at least as far as Irvine, Ky., and to the south into Tennessee around the Nashville dome. One specimen has been recovered from the principal nodule zone as far south as Chestnut Mound, Tenn. A few fragments have been found in the nodules and shale of the rocks equivalent to the Lower Sanderson (Gassaway fm.) as far south as Rowena, Ky.

The species represented appear to correlate rather well to those found in similar deposits of presumed near-equivalent age in Europe, but among them are only a few which may be considered as typically Devonian or Mississippian in range.