

GEOLOGY and GEOGRAPHY

Chairman: A. H. MEYER, Valparaiso University

Professor E. R. Smith, DePauw University, was elected chairman of the section for 1945.

A new explanation of the circulation of the atmosphere, A. V. LOTT, Sellersburg.—This explanation of the circulation is based upon the view that the major atmospheric movements are due primarily to the heating and the expansion of the air which lies immediately above the earth's surface. This heating and expansion raises the cold air of the stratosphere to such a high level that it affects the earth's surface in middle latitudes only during the winter months. However, a cooler sun produces less heat and the ensuing expansion is unable to force the stratosphere up to its former high level. Therefore the base of the stratosphere descends. This movement, which permits the cold air of the stratosphere to be brought down to the earth's surface by the circulation around the basic centers of action and the migratory air masses, ushers in a cold period of earth history which must continue as long as the base of the stratosphere remains at the low level. The temperature of an air mass varies inversely with its altitude. Therefore, temperatures at the base of the stratosphere rise as the stratosphere descends. This eventually causes the earth to become covered by a stratosphere which is warm at its base, and then the former cold period develops into a warm period which must continue as long as the base of the stratosphere remains at the critically low level. When more heat is received from the sun there is greater expansion in the troposphere. This raises the base of the stratosphere to a higher level. Its temperature falls and the colder air is brought down to earth in the higher latitudes. Thus the warm period gradually develops into a cold period which continues until the base of the stratosphere either rises or descends, a descending stratosphere bringing on another warm period while a rising stratosphere introduces a climate like that of today.

Effective organization and functioning of geography a challenging issue in American education. ALFRED H. MEYER, Valparaiso University.—War agencies, journalists, and professional educators in the United States have been shocked at our civic unpreparedness to think of present day national and international problems in geographic terms. Questionnaires submitted by the writer to both college and high school authorities concerning the status of geography organization and instruction reveal an unwarranted divergence of opinion as to the true nature, functions, and objectives of systematic and regional geography.

If geography is to share responsibility with the other sciences, social and natural, in a citizenship training program which embodies an understanding of global realities, then geography must not only be given a

recognized place in the educational curricula of our country, but it must be taught and functionally integrated with other disciplines on a sound philosophical and academic basis. To this end it behooves us to examine some of the chief historical contributions to the field, particularly those which reflect the philosophical and functional aspects of geography as a unique chorographic science.

Status of geography and geology as subject matter in the curriculums of colleges and universities of Indiana. BENJAMIN MOULTON, Indiana University.—In response to the growing interest in geography the question arises as to the availability of such training in the colleges and universities of Indiana. Data on the training offered was obtained from the catalogues of the institutions involved. Conclusions are: Eighteen schools of twenty-one offer three semester hours or more of geography. Geography courses in almost one-half the institutions are taught by teachers who are not specialists in geography. Of Indiana's six institutions of over 1,000 students two do not offer any appropriate training in geography, one offers only 12 hours. Only five institutions offer training that would adequately prepare for the teaching of high-school geography.

The future need of geography as a cultural course and in the training of teachers is sufficiently important that there is need for improvement in geographic instruction in Indiana's colleges and universities.

Notes on the Pleistocene of Palm Beach County, Florida. ERNEST RICE SMITH, DePauw University.—Through a zone some six to eight miles west of the present Atlantic coast, a few feet below the surface, are found highly fossiliferous Pleistocene marls. They are some three to six feet in thickness and their remains may be found along many of the drainage ditches crossing the zone. Fresher material, however, can be obtained from the marl pits operated by the Palm Beach County Highway Commission, especially at the Hypoluxo and Cross State Pits. Earlier studies of these deposits have been based on the spoil banks along the drainage ditches and various investigators have determined their age to be of the Pamlico terrace of the last interglacial period. Practically all species are identical with those found on the east coast of Florida today, although there is considerable difference in percentage of given species in the faunas between the Pleistocene and the Recent. There are abundant representatives of Protozoa (Foraminifera, both arenaceous and calcareous), Annelida, Mollusca (all except the Cephalopoda) and Arthropoda (chiefly Ostracoda, Cirripedia and Malacostraca) together with sparser Coelenterata (Anthozoa), Bryozoa and Chordata (Otoliths of Pisces).