indifference of border to structure is natural enough. In the second place, the body of each range is usually continuous, although it may be incised by sharp-cut valleys; if the ranges were the residuals of a period of undisturbed erosion long enough to have permitted the excavation of broad intermont valley-lowlands, each range should be divided into isolated mountain groups by the opening of wide branch-valleys in its mass; but if the depressions and the ranges are blocked out by recent faulting, the continuity of the ranges is to be expected.

Both these tests are best met in southern Oregon, where the ranges as described by Russell are very little affected by erosion after faulting. Neither test is well met by certain ranges in southeastern California described by Fairbanks as almost worn down to grade. In Utah and Nevada both tests are well borne; but no definite statement has yet been published concerning the amount of erosion that has taken place in this district since the block faulting; nor has any careful inference been made as to the form that the region had before faulting, some remnants of which may perhaps still be detected on the lower back slope of the ranges. The absence of steep scarps along the faulted border of a range does not bear closely on the problem, although Spurr attaches much importance to it. Recent and rapid faulting would produce a scarp; but similar scarps produced less recently would now be more or less completely dissected and destroyed. Gradual faulting, even if continued into the historic period, would produce only a low basal scarp; the upper part of the fault face would be battered back and ravined. The truncated ends of certain spurs of the Wahsatch range near Prevo, Utah, seem to result from faulting of this kind, the fresh scarp that follows the base of the range being the product of the most recent episode of faulting.

No features due to recent faulting are seen in the Appalachians. The ridges there are intimately dependent upon the harder strata, the base of a ridge always follows the strike of the individual ridgemaker, and the lowlands between the ridges are demonstrably excavated by erosion on weak rocks. All these are conditions which no one has shown to obtain in the Great basin; yet Spurr says: "Suppose the Appalachians, which likewise consist of parallel ridges eroded along lines of folding, should become arid, so that the rivers were unable to remove the detritus and the valleys become choked. There would develop in the course of time exactly what exists in the Basin region, namely, a nearly level desert, containing a series of parallel, synclinal, and anticlinal ranges" (p. 255). The strongest dissent from this unwarrantable comparison must be expressed.

THE KENTUCKY MOUNTAINEERS.

AN article that might serve as the type of many more is a description of the Kentucky mountaineers by Ellen C. Semple ('The Anglo-Saxons of the Kentucky Mountains: a Study in Anthropogeography,' *Geogr. Journ.*, XVII., 1901, 588–623). The dissected Alleghany plateau, which is of mountainous ruggedness in Kentucky and West Virginia, shares with the mountains of North Carolina the unenviable distinction of being less affected by civilization than any equal area east of the Rockies. So many old customs are there preserved that the people have been well named 'our contemporary ancestors.' Miss Semple's account of these primitive Americans is based on personal observation and affords many excellent illustrations of the consequences of living in a region too rough for easy movement and too poor to attract immigrants.

W. M. DAVIS.

THE UNIVERSITY OF CHICAGO'S FIELD WORK IN BOTANY, GEOLOGY AND ZOOLOGY.

PRESIDENT HARPER, of the University of Chicago, in his last quarterly statement gives the following details in regard to field work:

The work in biology at the Marine Biological Station at Wood's Holl, Mass., is largely in charge of University of Chicago men, the director and the majority of the staff being from this institution. The director of the Laboratory of the Brooklyn Institute at Cold Spring Harbor, Long Island, and one of the botanical staff this summer were members of this faculty. The work at both these

laboratories may be looked upon as field work of a somewhat permanent type. The courses are credited at the University of Chicago, although not formally under its charge.

Besides the local field work in connection with residence courses in botany, zoology and geology, field work during the past summer has been conducted at a distance from the University by the departments of geology and botany.

I. GEOLOGY.

1. A course in elementary field geology was given by Mr. R. D. George for four weeks of the second term of the summer quarter, the remainder of the term being devoted to the preparation of a report on the field work. A party of eleven traversed a region in the Mississippi valley between Prairie du Chien, Wis., and Muscatine, Ia. They devoted themselves to a study of (*a*) Paleozoic strata and fossils, (*b*) the topographic features of the driftless area in Iowa and Wisconsin, (*c*) the stratified drift of the valleys, (*d*) the loess, and (*e*) the lead and zinc deposits of the Dubuque region.

2. Professor R. D. Salisbury is in charge of several parties in Montana, Idaho and Utah. These parties consist of advanced students and are working somewhat independently, Professor Salisbury visiting the different parties at intervals and making suggestions regarding the work. A party of two is at Kipp, Mont., a second party of two at Kalispell, Mont. These two parties are investigating the phenomena of local glaciation in the Rocky mountains. Another party of two is at work in the Santa Fé mountains of New Mexico, studying their structural and stratigraphic features. A party of six, under the immediate direction of Mr. W. W. Atwood, is at work on the Wahsatch mountains, studying similar problems.

BOTANY.

1. A party of eight, under the direction of Mr. S. M. Coulter, of Washington University, spent the first part of the second term of the summer quarter at North Manitou Island, passing over later to the mainland in the vicinity of Petoskey and Charlevoix, studying the ecological relations of the flora in these regions. This work is essentially an examination of the way in which plants associate themselves and an investigation of the determining factors of environment for each society.

2. Similar but more extended work has been undertaken by a party of eighteen in charge of Dr. H. C. Cowles. This party has a car on the Great Northern Railroad, and is stopping at various favorable localities through Montana and Washington. Two weeks were spent at Flat Head Lake, Montana, the site of the biological station of the University of Montana, whose facilities were put at the disposal of the party; another week was spent at Belton, Mont.; and other stops were made at Leavenworth and Seattle, Wash. This is the most extended field trip yet offered in the department of botany and has certainly presented unusual advantages to the students for a study of widely different floras under most varied climatic conditions.

NEW YORK BOTANICAL GARDEN.

THE Misses Olivia E. Phelps Stokes and Caroline Phelps Stokes have recently contributed the sum of $3,200 to the Garden, of which $200 is to be added to the Special Book Fund, the remainder is to constitute a fund, the income of which is to be devoted to the protection and preservation of native wild flowers. This will increase the effectiveness of the Garden in a very desirable direction, and enable it to do much in the promotion of a healthy public sentiment in the matter.

Dr. M. A. Howe, assistant curator, accompanied by Mr. William Lange, museum aid, and Mr. Clifton D. Howe, of the University of Chicago, made an exploration of Nova Scotia. Special attention was paid to the collection of marine algæ, of which several thousand specimens, preserved in fluid and dried condition were secured. About 8,000 sheets of herbarium specimens of land plants were secured. The exploration reached New York on September 9. The expenses of the expedition were chiefly defrayed from funds contributed by Mr. George W. Perkins, of the Board of Managers.

Dr. D. T. MacDougal, first assistant, spent a portion of the summer in Montana in cooperation with the biological expedition of the State University. Dr. MacDougal was accom-