

being multiplied. A question requiring further consideration is the number of sizes of particles—separates—to be recognized and the limits of these. Several systems of groupings are now in use.<sup>10</sup> The finer the particles the greater is the influence of a given mass of them upon the character of the soil. Many more divisions should, therefore, be made in the fine material than in the coarse material. It is an open question whether, as survey work has been done in the United States, sufficient divisions have been made below the sand classes. Undoubtedly field separation of materials by hand examination is not likely to be more refined than is possible with the divisions now generally made. However, finer distinctions in the mechanical analysis of material smaller than 0.005 mm. may explain some variations in types of soil not otherwise recognized and these form the basis for more detailed study of individual types.

The structure of a soil as determined by the order of stratification and the thickness of the layers may also be the basis of type separation. This is independent of general structural differences due to the general mode of formation and the characters of the rock.

The soil type is the unit for soil study and should be as nearly alike in all parts as is possible. It is the most important grouping of material primarily because it does represent the chief physical differences in soils. The next most important grouping is the soil series and these two will be most generally identified with particular crop and agricultural interests in practise. This does not minimize the value of the larger separations, which, as has been suggested, are essential to reasonable accuracy in these last two groups.

<sup>10</sup> Briggs, L. J., et al., "The Mechanical Analysis of Soils," Bul. 24, Bureau of Soils, U. S. Dept. of Agr., 1904.

Of course the final test of a survey must be in the field man who applies these principles to a particular set of conditions. Owing to the intimate overlapping of several fields of natural science in this work it is evident that he should be a man of broad training, including especially geology and the principles of soil fertility, and he should have keen power of observation and correlation. Scarcely any experience or training which the field man may possess but finds use in the ideal soil-survey man.

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#### THE BRITISH ASSOCIATION

A PRELIMINARY program has been issued for this year's meeting of the British Association, which, as already announced, is to take place at Dundee from September 4 to 11. The meeting will be the eighty-second of the series, the twelfth in Scotland, and the second in Dundee, the association having previously met in that city in 1867.

The opening meeting will be held in the Kinnaird Hall on Wednesday evening, September 4, when Professor E. A. Schäfer, F.R.S., will assume the presidency and deliver his inaugural address. In the same hall the first evening discourse will be delivered on Friday, September 6, by Professor W. H. Bragg, F.R.S., on "Radiations Old and New," and the second on Monday, September 9, by Professor A. Keith, on "The Antiquity of Man." The reception room and offices will be established in the Albert Institute, and a considerable proportion of the sections will have their meeting-rooms in the University College.

Arrangements have been made with the railway companies for the issue to members of return tickets at reduced fares, available for the period of the meeting and eight days after, and excursions during and after the meeting, for the purposes of scientific field-work, are expected to prove particularly important this year. The famous Alpine flora of Clava and Glenesk, the fossil fish beds of Dura Den, and the geology of the Stonehaven region and of the Western Highlands

are among the objects of contemplated visits. The President will have the assistance of a body of vice-presidents representative of the administrative, educational, ecclesiastical and commercial interests of Dundee and its neighborhood, headed by the Lord Provost of the city, Mr. James Urquhart, LL.D., and in the notice of entertainments to be arranged in connection with the meeting the names of the Earls of Moray, Strathmore and Camperdown and of Lord Kinnaird appear as hosts.

#### *PENSIONS AT THE UNIVERSITY OF CHICAGO*

As has already been noted in *SCIENCE* the trustees of the University of Chicago have arranged a system of retiring allowances, and for this purpose propose to set aside a sum not less than \$2,000,000. The trustees do not reserve the power of altering the statute to the disadvantage of those in the service of the university at the time it was enacted. The full statute reads as follows:

1. Any person in the service of the university and sixty-five years of age who holds the position of president of the university, director or associate director of the university libraries, or university examiner, and who has been for a period of fifteen years in the service of the university, in a rank not lower than assistant professor; and any person in the service of the university and sixty-five years of age, who has been, for a period of fifteen years in a rank not lower than assistant professor, a member of the teaching staff of the graduate schools of arts, literature and science, the graduate divinity school, the law school, or the colleges, may retire from active service, or be retired by the board of trustees on an annual allowance to be computed as follows:

(a) For fifteen years' service, 40 per cent. of the average annual salary received during the five years immediately preceding the time of retirement.

(b) For each year of service beyond fifteen years, 2 per cent. of the said average annual salary.

But no annual allowance shall exceed 60 per cent. of the said average annual salary, nor shall it exceed \$3,000.

A person between sixty-five and seventy years of age, eligible to a retiring allowance, may retire, or may be retired by the board of trustees; at the

age of seventy years he shall retire, unless the board of trustees specially continues his service.

2. The widow of any person in receipt of, or eligible to, a retiring allowance at the time of his death, shall be entitled to one half of the amount of his allowance during the period of her widowhood, provided she was his wife at the time of his retirement and had been his wife for not less than ten years before his death.

3. No right or claim under this statute shall vest in, or accrue to, any person until a retiring allowance shall become due and payable under and in accordance with it; and the exercise of the right or power of the board of trustees to terminate the service, or reduce the salary, of any person shall not give to such person any claim or cause of action hereunder against the university.

4. The board of trustees reserves the right to suspend the retiring allowance of any person, who, while in receipt of such allowance, accepts an appointment on the staff of any other institution of learning.

5. The obligation of the university to pay retiring allowances shall be neither greater nor less than its obligation to pay salaries to persons in active service, so that if misfortune should compel a percentage reduction of salaries, retiring allowances may be reduced in the same proportion.

6. Nothing in this statute shall preclude the board from granting other retiring allowances, or allowances on account of disability to officers of administration or instruction, or their widows, where the term and character of service, or the special circumstances of the case make the same appropriate, or from adding a term of years to the actual years of service of a person who enters the service of the university as an associate professor or of higher rank.

7. The board of trustees retains the power to alter this statute, but the alteration shall not have any effect as to persons of the class or rank mentioned in Art. 1, at the time of such alteration.

#### *SCIENTIFIC NOTES AND NEWS*

MRS. MARY MAURY WORTH, of Richmond, Va., and other descendants of Matthew Fontaine Maury, the eminent hydrographer, have presented to the United States through President Taft the Maury medals, commissions and correspondence.

DR. KARL CHUN, professor of zoology at Leipzig, has been awarded by the University