

collections. Following this is the 'Review of Recent Geological Literature' and the 'Author's Catalogue of Recent Geological Literature.' The September number contains a valuable discussion of 'The Basic Rocks of Northeastern Maryland and their Relation to the Granite,' by Alfred Gray Leonard. The author describes several rocks, all from a limited area, ranging from acid to ultra-basic. He attempts 'to show that these types are intimately associated in their geological occurrence and closely related in composition; that many of the types graduate into others by intermediate varieties, and that they probably represent facies of one original magma.' The article is accompanied by four plates of microphotographs illustrating rock structures, and a map showing the distribution of the varieties in the area studied. 'A Preliminary Geologic Section in Alpena and Presque Isle Counties, Michigan,' by Amadeus W. Grabau, has a plate showing a geological section at Thunder Bay accompanied by a description of the various outcrops. This is followed by 'Editorial Comment on the Archæan of the Alps.'

THE October number of the *American Journal of Mathematics* (Vol. XXIII., No. 4) has the following articles:

Memoir on the Algebra of Symbolic Logic, by A. N. Whitehead; Secular Perturbations of the Planets, by G. W. Hill; Representation of Linear Groups as Transitive Substitution Groups, by L. E. Dickson; A Class of Number Systems in Five Units, by G. P. Starkweather.

The Osprey for August contains articles on 'Birds about Lake Tahoe,' by Milton S. Ray; 'Life History of the Prairie Warbler,' by Jno. W. Daniels, Jr.; 'Camping on the Old Camp Grounds,' II., by Paul Bartsch; 'Cage Birds of Calcutta,' by Frank Finn, and the seventh instalment of 'The Osprey or Fishhawk: Its Characteristics and Habits,' by Theodore Jill.

DISCUSSION AND CORRESPONDENCE.

DIFFERENTIATION OF SUBJECTS AND TITLES IN COLLEGES.

IN your last issue Professor F. W. Rane makes objection to the all-comprising title of professor of agriculture, and very properly

points out that the subject is now so differentiated that the nomenclature in professorship should follow suit. While the claim is perfectly proper, I cannot suppress a smile in reading the signature of the 'Professor of Horticulture and Forestry.' Why should not Mr. Rane begin differentiation at home? Horticulture and forestry are two so widely different subjects that the man who proposes to teach them both must, indeed, be able to turn his coat most readily. Both, to be sure, have to deal with trees, being both branches of the wider field of arboriculture; but each deals with entirely different classes of trees, for entirely different purposes by, entirely different—I might almost say opposite—methods. The forester is after the substance of the tree; the final object of his efforts is attained by the cutting, the removal of the tree. The horticulturist's object is not the substance but the fruit, or, if he be a landscape gardener, the form and beauty of the tree, both aims being only fulfilled by the presence of the tree. These different objects are attained by entirely different methods, as could be readily pointed out, did space permit.

I would not wish to discourage any laudable attempt to make students of horticulture and of other agricultural branches know something of forestry, but it is a question whether they can get much professional knowledge of either the one or the other subject from an undifferentiated professor of horticulture and forestry. As we have now two fully organized colleges of forestry, the one at Yale with two, the other at Cornell with three, professors of forestry, without any other branches to teach, it would appear quite time for other colleges, who find it necessary or desirable to educate foresters, to realize the wide difference between the various branches of arboriculture, and not mix up botany, horticulture, landscape gardening and forestry in their courses and professors' titles.

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A FINAL WORD ON DISCORD.

TO THE EDITOR OF SCIENCE: Mr. Max Meyer, in his criticism a few weeks ago, implied that I had made a mistake in a book review. This,

it appears, was not because I had objected to a certain numerical statement about discord, but because I had referred to a curve by the late Professor Mayer which Mr. Meyer considers worthless. The work of Helmholtz in the same domain he also considers worthless. He quotes Melde and Stumpf, who differ with Mayer and Helmholtz. He concludes by saying "Upon the *cause* of discord the psychologists have *not* agreed; it is yet unknown—at least to the psychologists."

For many years I have been convinced that beats do not constitute the sole cause of discord, but that probably they constitute one efficient and important element. So far as this may be admitted, Mayer's curve is the nearest approach to an expression of facts within the range he selected. The present controversy seems to be chiefly regarding authorities. Criticism intended to be destructive is not a substitute for constructive evidence. The opinions of Melde and Stumpf are of course worthy of respect, but they do not prove Helmholtz and Mayer to be wholly wrong. It does not seem to me that the subject is of sufficient importance to call for further discussion.

W. LE CONTE STEVENS.

WASHINGTON AND LEE UNIVERSITY,
October 12, 1901.

THE BICENTENNIAL OF YALE UNIVERSITY.

THE program of the bicentennial exercises of Yale University being celebrated this week is as follows:

MONDAY, OCTOBER 20.

10:30 A. M.—Divine service in the Battell Chapel. Sermon by the Rev. Joseph Hopkins Twichell, A.M.

Special divine services in Center Church, sermon by the Rev. Newman Smyth, D.D.; in the United Church, sermon by the Rev. Joseph Anderson, D.D.; in Trinity Church, sermon by the Rev. Walton Wesley Battershall, D.D.; and in the First Methodist Church.

3:00 P. M.—Address by the Rev. Professor George Park Fisher, D.D., LL.D., on 'Yale in its Relation to Christian Theology and Missions'; Battell Chapel.

8:00 P. M.—Organ recital by Professors Samuel Simons Sanford, A.M., and Harry Benjamin Jepson.

SUNDAY, OCTOBER 21.

9:30 A. M.—Dedication of the Ives-Cheney Memorial Gateway.

10:30 A. M.—Address by Thomas Thacher on 'Yale in its Relation to Law'; Battell Chapel.

Address by Professor William Henry Welch, LL.D., on 'Yale in its Relation to Medicine'; Battell Chapel.

3:00 P. M.—Address of welcome to guests by President Arthur Twining Hadley, LL.D., with responses; Battell Chapel.

5:00 P. M.—Reception of the guests of the university and representatives of the alumni by President Hadley, in the Yale Art School.

8:00 P. M.—Assembly of students and graduates on the campus.

9:00 P. M.—Torchlight procession of students and graduates.

TUESDAY, OCTOBER 22.

10:30 A. M.—Address by President Cyrus Northrop, LL.D., on 'Yale in its Relation to the Development of the Country'; Battell Chapel.

Address by President Daniel Coit Gilman, LL.D., on 'Yale in its Relation to Science and Letters'; Battell Chapel.

2 P. M.—Football games at Yale Field; Yale University vs. Bates College; Yale University vs. team of graduates.

4:30 P. M.—Choral performance of Professor Horatio Parker's 'Hora Novissima,' by the Gounod Society and the New Haven Symphony Orchestra; Hyperion Theater.

8 P. M.—Illumination of the campus; student dramatic performance and singing in the campus amphitheater.

WEDNESDAY, OCTOBER 23.

(Commemoration Day.)

10 A. M.—Assembly of guests and graduates on the campus.

10:30 A. M.—Procession of guests and graduates to the Hyperion, as escort to President Roosevelt. Commemorative poem by Edmund Clarence Stedman, L.H.D., LL.D.

Commemorative address by David Josiah Brewer, LL.D.

Orchestral and choral music.

Greek festival hymn by Professor Thomas Dwight Goodell, Ph.D., the music by Professor Horatio Parker, A.M.

Conferring of honorary degrees on President Roosevelt and others.

2:30 P. M.—Concert by the Boston Symphony Orchestra, Mr. Wilhelm Gericke, conductor; Hyperion Theater.