

have been initiated not at the close of the Appalachian revolution, but long afterwards in Cretaceous time. The Appalachian revolution formed the mountains of Arkansas, as well as those of the Alleghany belt. The similarity of structure is so great that a trans-Mississippian extension of Appalachian growth may be reasonably assumed, as has been pointed out by Winslow (Bull. G. S. A., ii., 1891, 231). The existence of a bay, from the Gulf of Mexico northward towards St. Louis, is very improbable as a result of the Appalachian revolution; an east and west constructional mountain belt is a more likely product; and not until this mountain belt was well denuded to a peneplain did a later deformation depress it transversely, admitting the Cretaceous waters northward across it, and thus first forming the Mississippi embayment. Probably in part at the same time, and to a greater extent in later time, the denuded peneplains to the east and west were raised towards their present upland altitude, and as a result of this elevation the existing valleys and lowlands were opened in them during some part of Tertiary time. With these later elevations we may associate the uplift of the filled embayment and the southward growth of the Mississippi as a river. This view of the origin of the Mississippi embayment and of the date of the southward discharge of Mississippi drainage was first published by L. G. Westgate (Amer. Geol. xi., 1893, 251), as a result of conference with L. S. Griswold, who had then recently completed his investigation of the novaculite region of Arkansas.

#### THE CHUNNENUGGA RIDGE AND THE BLACK PRAIRIES OF ALABAMA.

It is, perhaps, too much to expect that the origin of the physiographic features of a region should always receive due attention in a geological report along with the origin of its strata; yet there is no other place so

appropriate for the official publication of physiographical discussions. It therefore occasions regret to find so little account of the origin and meaning of the Chunnenugga ridge and the Black prairies of Alabama in the elaborate report on the Geology of the Coastal Plain lately published by the Survey of that State. "The Chunnenugga ridge is made in great part by alterations of hard limestone ledges and bands of indurated sands of the Ripley. . . . It overlooks the low trough of the black prairies of the Rotten limestone towards the north with somewhat precipitous slopes in that direction, while its descent towards the south is much more gentle" (p. 356). It is manifest that the ridge with its inland-facing escarpment and the denuded inner lowland are typical features of a certain stage in the denudation of a coastal plain that consists of more and less resistant strata; the drainage of the lowland being chiefly gathered by subsequent streams that have been developed along the strike of the beds, and discharged by consequent streams which maintain transverse valleys through the enclosing ridge or upland. This general relation of form and drainage is so often repeated on coastal plains that its occurrence in Alabama deserves mention as a local example of a general physiographic feature; just as the Cretaceous strata on which it is developed deserve mention as local examples of a widespread geological formation.

W. M. DAVIS.

HARVARD UNIVERSITY.

#### THE NEW YORK MEETING OF THE ASSOCIATION OF AMERICAN ANATOMISTS.

THE Seventh Annual Session of the American Anatomists was held in the Medical Department of Columbia College, 437 West 59th Street, New York City, December 28 and 29, 1894.

The Association was called to order Friday, December 28th, by the President, Dr.

Thomas Dwight, in a few introductory remarks.

The report of the Secretary and Treasurer was read and accepted.

The Executive Committee recommended for election to membership the following names, and, on motion, the gentleman were elected :

1. Dr. F. J. Brockway, Assistant Demonstrator of Anatomy, Columbia College, New York City.

2. Dr. W. A. Brooks, Jr., Assistant in Anatomy, Harvard Medical School.

3. Dr. Franklin Dexter, Demonstrator of Anatomy, Harvard Medical School.

4. Dr. B. B. Gallaudet, Demonstrator of Anatomy, Medical Department of Columbia College, New York City.

5. Dr. R. H. Gregory, Jr., Demonstrator of Anatomy, St. Louis Medical College.

6. Dr. C. J. Herrick, Acting Professor of Biology, Denison University, Granville, Ohio.

7. Dr. P. C. Hunt, Assistant Demonstrator of Anatomy, Columbian Medical College, Washington, D. C.

8. Dr. Woods Hutchinson, Professor of Anatomy, Medical Department, University of Iowa.

9. Dr. W. P. Mathews, Demonstrator of Anatomy, Medical College of Virginia, Richmond.

10. Dr. Eugene A. Smith, Professor of Anatomy, Niagara University, Buffalo, N. Y.

11. Dr. P. Y. Tupper, Professor of Anatomy, St. Louis Medical College.

The Executive Committee, while not recommending affiliation with the Society of Naturalists, suggested that, as a rule, the Association should meet at the same time and place. This suggestion was discussed by Drs. Wilder, Spitzka, Dwight and Lamb, and was then adopted.

Dr. Wilder, from the Committee on Anatomical Nomenclature, reported progress.

He also stated that Professor Stowell had resigned from the Committee.

The report of the Committee on Anatomical Material was called for. In the absence of the Chairman, Dr. Mears, Dr. Dwight reported progress.

The Committee on the Anatomical Peculiarities of the Negro also reported progress.

Dr. Huntington was elected to the vacancy on the Executive Committee, caused by the retirement of Dr. Spitzka.

The following papers were then read :

1. 'The best arrangement of topics in a two years' course of Anatomy in a medical school.' Dr. Gerrish. Discussed by Drs. Huntington, Baker, Wilder, Bevan, Allen, Shepherd, Lamb and Dwight.

2. 'History of the Development of Dentine.' Dr. Heitzmann.

3. 'On the Value of the Nasal and Orbital Indices in Anthropology.' Dr. Allen. Discussed by Drs. Wilder, Huntington and Dwight.

4. 'Loose characterizations of vertebrate groups in standard works.' Dr. Wilder. Discussed by Drs. Baker, Dwight and Allen.

5. 'The comparative anatomy of the cerebral circulation, with an exhibition of a series of anomalies of the circle of Willis.' Dr. Leidy. Read by title in the absence of the author.

6. 'Convulsions of the hemispheres of *Elephas Indicus*.' Dr. Huntington. Discussed by Drs. Wilder and Baker.

An inspection of the Medical Department of Columbia College was made in the evening, under the conduct of Dr. Huntington.

On Saturday, the 29th, the President appointed Dr. Gerrish to fill the vacancy upon the Committee on Anatomical Nomenclature, caused by the resignation of Professor Stowell.

The reading of papers was resumed :

7th paper. 'Classification of the tissues of the animal body.' Dr. Baker. Dis-

cussed by Drs. Heitzmann, Wilder, Dwight and Lamb.

8. 'Anomalies—Their significance.' Dr. Dwight.

9. 'Some muscular variations of the shoulder girdle and upper extremity, with especial reference to reversions in this region.' Dr. Huntington.

10. 'Some anomalies of the brain.' Dr. Wilder.

11. 'The correlation between specific diversity and individual variability, as illustrated by the eye muscle nerves of the *Amphibia*.' Professor C. Judson Herrick.

The discussion on papers 8 to 11, inclusive, was then opened by Dr. Baker, and continued by Dr. Shepherd (who illustrated his remarks with specimens), Dr. Wilder, Dr. Lamb (who also showed a specimen), Dr. Huntington, and concluded by Dr. Dwight.

Dr. Wilder exhibited a brainless frog and made remarks thereon.

On motion, the thanks of the Association were tendered to the College, and particularly to Dr. Huntington, for their hospitality.

The following members were present at some time during the session: Allen, Baker, Bevan, Bosher, Dwight, Ferris, Gerish, Hamann, Heitzmann, C. J. Herrick, Huntington, Lamb, Moody, Shepherd, Spitzka, Weisse, Wilder. Total, 17.

#### CORRESPONDENCE.

##### A CARD CATALOGUE OF SCIENTIFIC LITERATURE.

EDITOR OF SCIENCE—*Dear Sir:* Your invitation to open in the columns of SCIENCE a discussion of the projected Catalogue of Scientific Literature to be prepared by international coöperation, the claims of which were presented in your issue of February 15, affords me a welcome opportunity to fall publicly into line with a great movement that I believe destined to prove of the highest importance to scholarship. As a

few of your readers are aware, I printed privately, last summer, a brief circular advocating a similar enterprise. At the time of doing so I was at an out-of-the-way spot in the country, where it was impossible to exchange inspirations, except by post, with friends whose interest in the scheme might have been counted upon; but upon canvassing the subject in my own mind I became so convinced that the learned world was in sore straits in this matter, and that the way out was clear, that I felt sure I should presently discover that other restive spirits were beginning to agitate in the same direction. Little did I expect, however, to meet with so conspicuous and agreeable a confirmation of my premonition as came to me several weeks after the issuance of my circular (though dated before it), in the printed report of the Harvard committee, which has now appeared in SCIENCE. (The original communication of the Royal Society I have seen for the first time, through your editorial courtesy, in the proof sheets of SCIENCE.)

Although several of the suggestions contained in my own little circular were promptly outgrown by me, it may appear not inappropriate, on the principle of comparing small things with great, to reproduce here the contents of this highly aspiring but wholly unpretentious little document:

##### UNIFORM CARD MEMORANDUM INDEX.

The accompanying slip (size  $2\frac{1}{4} \times 3\frac{1}{2}$  inches, 5.7 x 8.9 centimetres), designed to be cut out and filed alphabetically in the manner of a card catalogue, is printed as a tentative specimen of a projected *Uniform Card Memorandum Index*, and is herewith privately submitted to representatives of a few of the leading universities, learned societies and publication agencies, with a view to securing influential approval of the general plan, together with useful suggestions and criticisms as to its practical application. It is proposed that all the universities, learned societies and high-class periodicals of the world should coöperate (from January, 1895) in the production of such a uniform *memorandum index*, by publishing, as a supplement (or appendix, or both) to every number of their original publications, a brief slip-digest of the contents of each article—or even of important portions of each article, as may appear to be warranted. These supplements could be easily prepared (the digests being furnished in all or in most cases by the authors themselves), would be inexpensive both in their original form of publication and as separate slips, and would incalculably facilitate both the distribution and the classification for instant reference of all the newest results of discovery and research. Those interested in such a project are earnestly requested to communicate on the subject, before September 15, with the undersigned.