

1905. The Milwaukee Museum is to be congratulated on the promptness with which its report has been issued and on the progress made during the year. The special stress laid upon educational exhibits, and its relations with and assistance to the public schools is of interest, as one of many reminders of the great changes that have taken place in museums. The Milwaukee Museum is fortunate in having a small lecture room for the use of schools, although the lectures given are by a special teacher of the public school system, and not by a member of the museum staff. In this connection it is somewhat amusing to note the claims made by different institutions regarding the value of their educational work, and it may be suggested that besides Pittsburgh and Milwaukee, the American Museum of Natural History, with its loan collection studied, or at least seen, by 365,000 children and its lectures to thousands of pupils, should not be overlooked. There is also the New York Botanical Garden with its museum and lectures, and the Children's Museum of the Brooklyn Institute with its 100,000 visitors, 25,000 readers and lectures attended by all who can crowd in. However, Scripture says that we should not hide our (educational) lights under bushel baskets, and it is well for the public to know that much earnest effort is being expended to make museums interesting and of value to school children.

SOCIETIES AND ACADEMIES.

THE CONVOCATION WEEK MEETINGS OF SCIENTIFIC SOCIETIES.

There will meet at New Orleans:

The American Association for the Advancement of Science.—The week beginning on December 28. Retiring president, Professor W. G. Farlow, Harvard University; president-elect, Professor C. M. Woodward, Washington University, St. Louis, Mo.; permanent secretary, Dr. L. O. Howard, Cosmos Club, Washington, D. C.; general secretary, Professor C. A. Waldo, Purdue University, Lafayette, Ind.; secretary of the council, Dr. John F. Hayford, U. S. Coast and Geodetic Survey, Washington, D. C.

Local Executive Committee.—Honorary president, President E. B. Craighead, Tulane University; executive president, Professor George E.

Beyer, Tulane University; secretary, Henry M. Mayo, The New Orleans Progressive League; treasurer, Mr. Clarence F. Low, of the Liverpool, London and Globe Insurance Company.

Section A, Mathematics and Astronomy.—Vice-president, Dr. W. S. Eichelberger, U. S. Naval Observatory, Washington, D. C.; secretary, Professor L. G. Weld, University of Iowa, Iowa City, Iowa.

Section B, Physics.—Vice-president, Professor Henry Crew, Northwestern University, Evanston, Ill.; secretary, Professor Dayton C. Miller, Case School of Applied Science, Cleveland, Ohio.

Section C, Chemistry.—Vice-president, Professor Charles F. Mabery, Case School of Applied Science, Cleveland, Ohio; secretary, Professor Charles L. Parsons, New Hampshire College of Agriculture, Durham, N. H.

Section D, Mechanical Science and Engineering.—Vice-president, Professor F. W. McNair, Houghton, Mich.; secretary, Professor Wm. T. Magruder, Ohio State University, Columbus, Ohio.

Section E, Geology and Geography.—Vice-president, Professor Wm. North Rice, Wesleyan University, Middletown, Conn.; secretary, Dr. Edmund O. Hovey, American Museum of Natural History, New York, N. Y.

Section F, Zoology.—Vice-president, Professor Henry B. Ward, University of Nebraska, Lincoln, Nebr.; secretary, Professor C. Judson Herrick, Denison University, Granville, Ohio.

Section G, Botany.—Vice-president, Dr. Erwin F. Smith, U. S. Department of Agriculture, Washington, D. C.; secretary, Professor F. E. Lloyd, Teachers College, Columbia University, New York, N. Y.

Section H, Anthropology.—Vice-president, Dr. George Grant MacCurdy, Yale University, New Haven, Conn.; secretary, George H. Pepper, American Museum of Natural History.

Section I, Social and Economic Science.—Professor Irving Fisher, Yale University, New Haven, Conn.; secretary, Dr. J. F. Crowell, Bureau of Statistics, Washington, D. C.

Section K, Physiology and Experimental Medicine.—Vice-president, Professor Wm. T. Sedgwick, Massachusetts Institute of Technology, Boston, Mass.; secretary, Dr. Wm. J. Gies, College of Physicians and Surgeons, Columbia University, New York City.

At New Orleans in conjunction with the American Association for the Advancement of Science there will meet:

The American Chemical Society.—President,

F. P. Venable, University of North Carolina; secretary, Dr. William A. Noyes, the Bureau of Standards, Washington, D. C.

The Botanical Society of America.—January 4. President, Professor R. A. Harper, University of Wisconsin; secretary, Dr. D. T. MacDougal, N. Y. Botanical Garden, Bronx Park, New York City.

The Association of Economic Entomologists.—January 1, 2, 3. President, Professor H. Garman, Lexington, Ky.; secretary, Professor H. E. Sumners, Ames, Iowa.

At Ann Arbor will meet:

The American Society of Naturalists.—President, Professor William James, Harvard University; secretary, Professor W. E. Castle, Harvard University. President (Central Branch), Professor H. H. Donaldson, University of Chicago; secretary, Professor W. J. Moenkhaus, Indiana University. The Eastern Branch will not meet this year.

The American Society of Zoologists (Eastern and Central Branches).—December 28, 29, 30. President (Eastern Branch), Professor W. E. Castle, Harvard University; secretary, Professor H. S. Pratt, Haverford College. President (Central Branch), Professor Frank R. Lillie, University of Chicago; secretary, Professor C. E. McClung, University of Kansas.

The Society of American Bacteriologists.—December 28, 29. President, Professor Edwin O. Jordan, University of Chicago; secretary Professor Frederic P. Gorham, Brown University, Providence, R. I.

The American Physiological Society.—December 27, 28. President, Professor W. H. Howell, the Johns Hopkins University; secretary, Professor Lafayette B. Mendel, New Haven.

The Association of American Anatomists.—December 27, 28, 29. President, Professor Charles S. Minot, Harvard Medical School; secretary, Professor G. Carl Huber, 333 East Ann St., Ann Arbor, Mich.

The Society for Plant Morphology and Physiology.—December 27, 28, 29. President, Professor E. C. Jeffrey, Harvard University; secretary, Professor W. F. Ganong, Smith College, Northampton, Mass.

At New York City will meet:

The Astronomical and Astrophysical Society of America.—December 28. President, Professor Simon Newcomb; secretary, Professor Geo. C. Comstock, Washburn Observatory, Madison, Wis.

The American Physical Society.—December 28, 29. President, Professor Carl Barus, Brown

University; secretary, Professor Ernest Merritt, Cornell University, Ithaca, N. Y.

The American Mathematical Society.—December 28, 29. President, Professor W. F. Osgood, Harvard University; secretary, Professor F. N. Cole, Columbia University.

At Cambridge will meet:

The American Psychological Association.—December 27–29. President, Professor Mary Whiton Calkins, Wellesley College; secretary, Professor Wm. Harper Davis, Lehigh University.

The American Philosophical Association.—December 27–29. President, Professor John Dewey, Columbia University; secretary, Professor John Grier Hibben, Princeton University.

At Ithaca will meet:

The American Anthropological Association.—December 27–29. President, Professor F. W. Putnam, Harvard University; secretary, Dr. Geo. Grant MacCurdy, Yale University, New Haven, Conn.

At Ottawa will meet:

The Geological Society of America.—December 27, 28, 29. President, Professor Raphael Pumpelly; secretary, Professor Herman L. Fairchild, Rochester, N. Y.

THE AMERICAN PHYSICAL SOCIETY.

THE fall meeting of the Physical Society was held in Fayerweather Hall, Columbia University, New York City, on Saturday, October 28, 1905. President Barus presided.

The society adopted the following minute expressive of the great loss sustained by itself and by the world of science in the death of our vice-president, our colleague and our friend, Professor DeWitt Bristol Brace, on October 2, 1905.

It was under the shadow of this bereavement that the autumn meeting of the society was convened—a bereavement which is a personal one to nearly every member of the organization. A frequent contributor to the program, a vice-president of the society, a charter member, and the genial friend of every other member, Professor Brace will be long and keenly missed by every one of us. For not only have our proceedings been enriched by his contributions to knowledge, but those in attendance upon our meetings have always been inspired by his devotion to pure science,

by his clear grasp of the vital connection between fact and theory and by his experimental skill.

Born at Wilson, New York, on January 5, 1859, he took his bachelor's degree at Boston University in 1881, at the same time specializing in physics at the Massachusetts Institute of Technology. In his graduate work, he had the good fortune to come under the influence of Rowland and Helmholtz, with the latter of whom he took his doctor's degree. Two years of mathematical physics with Kirchhoff was also a potent factor in his development.

His researches, covering a wide range of optical subjects, are described mainly in *Wiedemann's Annalen*, the *Philosophical Magazine*, the *Astrophysical Journal* and the *Physical Review*, during the twenty years following 1885, when his doctor's dissertation appeared in the first-mentioned periodical.

Those who were associated with him as students at Baltimore and Berlin, those who have worked with him as colleagues in the University at Lincoln, those students who have come under his guidance in the laboratory and those who have accepted the generous hospitality of his home, unite in admiration of the fine qualities of mind and the high ideals which made him at once a successful teacher and an effective investigator.

His modesty was innate, his courtesy never failing, his energy and singleness of purpose a powerful stimulus to all who knew him.

The papers presented were as follows:

GEO. A. HULETT: 'Standard Cells with Electrolytic Mercurous Sulphate as Depolarizer.'

F. L. TUFTS: 'The Phenomena of Ionization in Flame Gases and Vapors.'

L. A. BAUER: 'Instruments and Methods used in the Magnetic Survey of the North Pacific Ocean by the Carnegie Institution of Washington.'

F. C. BLAKE and C. R. FOUNTAIN: 'The Transmission and Reflection of Electric Waves by Screens of Resonators and Grids.'

CARL BARUS: 'The Nucleation of Dust-free Air, Energized or not, Observed at Successively Increasing Supersaturation.'

C. C. TROWBRIDGE: 'The Duration of the After Glow Produced by the Electrodeless Discharge.'

E. L. NICHOLS and ERNEST MERRITT: 'The Decay of Phosphorescence in Sidot Blende.'

FANNY COOK GATES: 'The Conductivity of the Air due to the Sulphate of Quinine.'

C. D. CHILD: 'The Conductivity of the Vapor from a Mercury Arc.'

E. B. ROSA: 'The Construction and Measurement of Standards of Inductance.'

E. B. ROSA and N. E. DORSEY: 'Preliminary Report on a New Determination of v , the Ratio of the Electromagnetic and Electrostatic Units.'

The next meeting of the society—the annual meeting—will be held in New York City, December 29–30, 1905.

ERNEST MERRITT,
Secretary.

THE GEOLOGICAL SOCIETY OF WASHINGTON.

At the 170th meeting of the society, on November 8, the following papers were presented. Mr. C. D. Walcott discussed 'The Cambrian of Western Utah.'

The Morrison Formation and its Relations with the Comanche Series and the Dakota Formation: Mr. T. W. STANTON.

The Morrison formation is the dinosaur-bearing horizon, long known as the Atlantosaurus beds, lying between the Red Beds and the Dakota formation along the foothills of the Front Range in Colorado. Similar beds of approximately the same age occur widely distributed in the Black Hills region, Wyoming, Montana and western Colorado. The deposits are all non-marine and they have usually been referred to the Jurassic on account of the character of the reptilian fauna, though some authorities have recently assigned them to the Lower Cretaceous.

In Texas there is a great development of marine Lower Cretaceous rocks known as the Comanche series. The upper, or Washita, group of this series extends beyond the lower groups toward the north and west, so that in southern Kansas and eastern New Mexico it rests on the Red Beds, and, as it is limited above by the Dakota formation, it there seems to hold the same position as the Morrison formation in the general geologic column.

The work of Messrs. W. T. Lee and N. H. Darton during the past three or four years

has extended the known limits of the Comanche series with its marine fossils to the northwest corner of Oklahoma and into north-eastern Colorado, and it has also proved the extension of the Morrison formation into the same area. These geologists believed that they had traced the Morrison formation laterally into the marine beds of the Comanche series and that they had thus proved it to be of the same age.

During the past summer the area in question was examined by Messrs. Lee, Stanton and Gilmore and it was found that the beds containing the Comanche fauna overlie the Morrison formation wherever both horizons occur in the same section. This relation was seen on Purgatoire River south of La Junta, Colorado; on the Cimarron from Garrett, Oklahoma, to the neighborhood of Folsom, New Mexico; on the Canadian north of Tucumcari, New Mexico; and finally in Garden Park, near Canyon City, Colorado, at the noted locality for Morrison vertebrates. At all these localities the Comanche horizon has previously been included among the beds referred to the Dakota, and the error in correlation when the Comanche fossils were supposed to have come from beds of Morrison age was due to the failure to locate the fossils accurately in the local sections. The Morrison formation underlies all the Comanche beds that extend into the same area, and is, therefore, distinctly older than those with which it was supposed to be contemporaneous. The question whether it is Upper Jurassic or Lower Cretaceous is still left open. The Dakota formation is much more intimately connected with the Comanche series than is the Morrison.

The Subdivisions of the Shenandoah Limestone: Mr. R. S. BASSLER.

The name Shenandoah limestone proposed by Darton for the Valley limestone of early geologists was made to include all the limestones in the Valley of Virginia occupying the interval between the Cambrian quartzites and the Upper Ordovician shales. The lower portion of the great limestone series had been found by Mr. Walcott to include Lower, Middle and Upper Cambrian rocks, but the

Ordovician portion had been determined only to the extent that Trenton strata were supposed to occur at the top. The work of the writer in Virginia brought out the fact that the geologic succession of the Ordovician division was quite different in various parts of the Valley. In northwestern Virginia a great thickness of Beekmantown is overlaid by 1,000 feet of Stones River, and this in turn by 400 feet of Black River, while the strata-bearing Trenton fossils form the lowest division of the overlying shales. In central western Virginia the Black River alone rests upon the Beekmantown, but in southwestern Virginia two distinct arrangements were noted. Along the western edge of the Valley the Beekmantown is followed by 1,000 or more feet of Stones River but no Black River, while along the eastern side only the Black River occupies the interval between the overlying shales and the Beekmantown. In each case the Trenton does not form the upper part of the limestone, but is the basal member of the overlying shales.

The Shenandoah limestone, therefore, is a broad term, embracing strata of Cambrian and Ordovician age, the geologic succession of the latter varying in different parts of even the type area.

M. L. FULLER,
Secretary pro tem.

THE NATIONAL GEOGRAPHIC SOCIETY.

THE National Geographic Society, whose headquarters are in Washington, will conclude the eighteenth year of its history on December 31 of this year. The society has a membership of considerably over 10,000, which makes it the largest geographical association in the world. About 1,400 of its members reside in Washington, while the others are well distributed throughout the United States and in foreign countries. The annual dinner of the society will be held at the New Willard in Washington, D. C., on December 20. The Secretary of War, Hon. William H. Taft, and Mrs. Taft will be the guests of honor of the society. The following program of meetings for 1905 and 1906 has been arranged for Washington. The majority of the addresses are published in the magazine of the society.

PROGRAM OF MEETINGS.

The Popular Course.

November 10.—‘A Review of the Russo-Japanese War—from the Sinking of the *Variag* to the Signing of the Treaty of Portsmouth,’ by Mr. Robert L. Dunn, special correspondent of *Collier's Weekly* in the far east.

November 24.—‘The Panama Canal,’ by Hon. James R. Mann, member of congress from Illinois.

November 25.—‘My Captivity in Morocco,’ by Mr. Ion Perdicaris.

December 8.—‘What Shall be Done with the Yosemite Valley?’ by Mr. William E. Curtis, illustrated. The Yosemite Valley has been ceded to the federal government by act of the California legislature, but has not yet been formally accepted by congress.

December 21.—‘A Military Observer in Manchuria,’ by Major Joseph Kuhn, U.S.A., illustrated.

December 22.—‘An Attempt at an Interpretation of Japanese Character,’ by Hon. Eki Hioki, first secretary of the Japanese legation.

January 5.—‘Russia and the Russian People,’ by Mr. Melville E. Stone, general manager of the Associated Press. It will be remembered that it was Mr. Stone who two years ago persuaded the Czar Nichols to grant freedom from the censor to foreign correspondence from St. Petersburg.

January 9.—‘The Ziegler Polar Expedition of 1903-1905,’ by Messrs. W. S. Champ, Anthony Fiala and W. J. Peters.

January 19.—‘Railway Rates,’ by Hon. Martin A. Knapp, president of the Interstate Commerce Commission.

January 31.—‘China,’ by Hon. Charles Denby, of the state department, and for many years resident in China.

February 2.—‘Austria Hungary,’ by Edwin A. Grosvenor, LL.D., professor of international law in Amherst College, author of ‘Constantinople,’ ‘Contemporary History,’ etc.

February 10.—‘A Flamingo City, Bird Life in the Bahamas,’ by Dr. Frank M. Chapman, of the American Museum of Natural History.

February 16.—‘Africa from Sea to Center,’ by Mr. Herbert L. Bridgman, illustrated. Africa in transition to-day challenges the attention of the world. Few intelligent Americans know to what extent its possibilities have been developed since Livingstone's day, a development that in rapidity promises to exceed that of North America.

February 23.—‘The Personal Washington,’ by Mr. W. W. Ellsworth, of the Century Company, illustrated. This is not a lecture in the ordinary sense of the word, but it is an exhibition, through

the medium of the stereopticon, of the greatest collection of prints, manuscripts and letters referring to the personal side of Washington ever brought together.

March 2.—‘Our Immigrants: Where They Come from, What They Are and What They Do After They Get Here,’ by Hon. F. P. Sargent, U. S. commissioner general of immigration, illustrated.

March 16.—‘Oriental Markets and Market Places,’ by Hon. O. P. Austin, chief U. S. Bureau of Statistics, illustrated.

March 30.—It is hoped that official business will permit the secretary of the navy, Honorable Charles J. Bonaparte, to address the society on ‘The American Navy.’

April 13.—‘The Regeneration of Korea by Japan,’ by Mr. George Kennan, illustrated.

Scientific Meetings.

November 17.—‘Morocco,’ by Mr. Ion Perdicaris.

November 22.—‘Sixteen Years in China,’ by Rev. Charles A. Killie, F.R.G.S., official photographer of the siege of Peking, illustrated.

November 29.—‘The Panama Canal,’ by Mr. Bunau-Varilla.

December 1.—‘The Development of the Mineral Resources of Alaska, with particular reference to the Fairbanks and Nome Regions,’ by Mr. Alfred H. Brooks, chief of the Alaskan Division U. S. Geological Survey.

December 15.—‘Surveying our Coasts and Harbors,’ by Hon. O. H. Tittmann, superintendent U. S. Coast and Geodetic Survey.

December 29.—‘Problems for Geographical Research,’ by Gen. A. W. Greely, U.S.A. ‘The Binding Power of Road Material,’ by Mr. A. S. Cushman.

January 12.—Annual meeting. Reports and elections. ‘Progress in the Reclamation of the West,’ by Mr. F. H. Newell, chief engineer reclamation service.

January 26.—‘The Carnegie Institution,’ by President R. S. Woodward.

February 9.—‘The Introduction of Foreign Plants,’ by Mr. David G. Fairchild, agricultural explorer, U. S. Department of Agriculture.

February 24.—‘Hunting with the Camera,’ by Hon. George Shiras, member of congress from third district, Pennsylvania.

March 9.—‘The United States Bureau of the Census,’ by Hon. S. N. D. North, director.

March 23.—‘The Death Valley,’ by Mr. Robert H. Chapman, U. S. Geological Survey.

April 6.—‘The Total Eclipse of the Sun, July, 1905, as Observed in Spain,’ by Rear Admiral

Colby M. Chester, U.S.N., superintendent U. S. Naval Observatory.

April 20.—'The Protection of the United States against Invasion by Disease,' by Dr. Walter Wyman, surgeon-general Marine Hospital Service.

The Magazine.

The magazine of the society contains many large colored maps. Four such maps were published in the 1905 volume: (1) A chart of the world, 25 x 45 inches, and in four colors, showing all submarine cable systems and connections and the steamship routes of the world; (2) a map of northern Manchuria, in two colors, 18 x 44 inches; (3) a map of the Philippines, in four colors, 23 x 36 inches; (4) a map of the Panama Canal region, in five colors, 24 x 33 inches. The magazine is very handsomely illustrated. All members of the society receive the magazine free of charge.

THE TORREY BOTANICAL CLUB.

THE meeting of October 10 was held at the American Museum of Natural History, with President Rusby in the chair and twenty-two persons present.

A letter was read from Mr. Edward W. Berry, tendering his resignation as recording secretary of the club, owing to his removal to Baltimore.

The announced program for the evening consisted of informal reports on the summer's work and observations. Several from whom reports were expected were unable to be present.

Professor Francis E. Lloyd gave an account of his summer's experiences at the Desert Botanical Laboratory of the Carnegie Institution at Tucson, Arizona. On the way thither a visit was made to the Tularosa Desert in southern New Mexico. This desert is largely an old lake bed of a comparatively recent geological period. The moving white sands which compose the desert overlie the mesa and consist chiefly of gypsum, and a little below the surface there is a considerable amount of available water, which, however, is saline. The vegetation of the region is peculiar, showing various adaptations to the intense light. Several interesting cases were observed showing how yuccas and other plants are able by continued vertical growth to keep their tops

above the drifts of sand and how in the process they help to build up and hold the dunes. *Rhus trilobata* and also a shrubby labiate form very marked pillar dunes. The gypsum sand is partly soluble and it solidifies about the vertically elongating roots and stems; the outer parts of the dune may then erode and be removed by the wind, leaving an isolated pillar-like mass surmounted by the tops of the living shrubs. An interesting and not especially common plant of the region of Tucson is *Cereus Greggii*, of a habit so peculiar and aberrant that it does not seem to be a *Cereus* at all. Like certain other desert plants it has an underground storage system which is very large in comparison with the above-ground parts. The rapidity with which foliage appears on desert plants after rains has been often noted, and it has been a question in how far growth of leaves may be stimulated by the direct access of water to the above-ground parts without the intervention of the root-system. This point was tested during the past summer by experiments at the Desert Botanical Laboratory. By means of a siphon, water was supplied directly to the leaf-buds and stems, in such a way as to prevent the water from reaching the ground. It was found that the desert plants thus stimulated produce leaves in the course of a few days. Very noticeable changes occur within twenty-four hours, both when plants are stimulated as described and after natural irrigation by rains. Professor Lloyd further observed diurnal nutations and nyctitropic movements in an amaranth growing near the Desert Laboratory. Photographs were shown illustrating the observations commented upon.

Dr. William A. Murrill spoke briefly of his collections of fungi during the summer at Ohio Pyle, Pa., in the District of Columbia and in the Mt. Katahdin region of Maine, describing also some of his camping experiences in the Maine woods. Dr. Murrill was impressed by the boreal character of the fleshy fungi found about Mt. Katahdin, many of them recalling species that he had collected in Sweden.

President Rusby reported on a Torrey Club

excursion to Pompton Plains, New Jersey, where *Capnoides flavulum* was among the rare plants obtained; also on a club excursion to Great Island, New Jersey. Great Island is a hummock of sand surrounded by a salt marsh and lying between Newark and Elizabeth; it has numerous interesting plants, some of them being characteristic of the pine-barren flora of the region further south.

Professor E. S. Burgess remarked upon his summer's visit to the Pacific Coast. Collections and field studies of asters were made in New Mexico, Arizona, California and Oregon. Mt. Hood, Ore., proved an especially interesting field. Asters were found growing there in close proximity to snow and ice.

Mrs. Britton alluded briefly to collecting experiences in Bermuda during September. Most of the species of ferns, mosses and hepatics are found there only in the 'caves' or sink-holes. Her collections indicate considerable additions to the list of mosses published in the Report of the *Challenger* Expedition.

Dr. J. H. Barnhart spoke of the International Botanical Congress held at Vienna in June, which he attended as a delegate from the New York Botanical Garden.

MARSHALL A. HOWE,
Secretary pro tem.

THE NEW YORK SECTION OF THE AMERICAN
CHEMICAL SOCIETY.

The second regular meeting of the New York Section, American Chemical Society, was held at the Chemists' Club, 108 West 55th Street, Friday, November 10, at 8:30 P.M., with an attendance of 78. The chairman, Dr. F. D. Dodge, presided.

Chrome Tanning: OTTO P. AMEND.

The first really important advance in practical chrome tanning was undoubtedly made by August Schulz in 1884. Schulz treated his skins in a bath containing bichromate of potash plus an acid until they were saturated, and after this they were placed in a second bath containing sulphurous acid or hyposulphite of soda plus an acid. This process has since been called the two bath process.

The one bath process consists in treating the skins with a basic solution of a chromic salt. Such a salt can be produced by adding washing soda to a chromium salt until sufficiently basic and then heating.

Differences in basicity have an important bearing on the tanning properties of chrome solutions. Chrome alum, on account of its acid character, penetrates the skin quickly, but fails to tan the skin thoroughly, is easily washed out, and produces leather of a greenish color. When more basic solutions are used, the penetration is slower, the tannage more complete, the chrome less easily washed out and the leather produced is of a more bluish shade. When the solution becomes very basic, the chromium salt will precipitate on dilution, but remains stable and perfectly dissolved in a concentrated solution.

Analysis of a number of chrome liquors on the market show that nearly all of them are produced by the reduction of bichromate of potash or soda, by means of glycerin, alcohol or glucose; most of them being sulphates.

5-Brom-2 Amino-benzoic-Acid and some of its Derivatives: MARSTON TAYLOR BOGERT and WILLIAM FLOWERS HAND.

5-Brom-2-acetaminobenzoic acid was prepared by direct bromination of acetanthranilic acid, and also by the oxidation of 5-brom-o-acettoluid. On saponification, it gave the 5-brom-2-aminobenzoic acid, while boiling acetic anhydride changed it to 5-brom-2-acetantranil. 5-brom-2-acetaminobenzonitrile was obtained by the direct bromination of acetanthranilic nitrile. The above compounds were described, together with certain of their derivatives.

Fischer's Classification of Stereo-Isomers: M. A. ROSANOFF.

The author demonstrates that Emil Fischer's subdivision of the sugars and their derivatives into two enantio-morphous families is erroneous in a number of cases and therefore self-contradictory. He proposes a corrected classification which brings out the family relationships, of those compounds with great clearness, settles definitely the controversies that have arisen on the subject, and eliminates much

current misapprehension. For example, ordinary tartaric acid, generally considered as a relative of ordinary glucose, is presented by the new classification as a relative of the antipodal, levo-rotatory glucose. As a matter of fact, ordinary glucose changes, gradually, to arabinose, erythrose, threose, and, not ordinary, dextro-rotatory, but the levo-rotatory tartaric acid.

Chemical Examination of Æthusa Cynapium:

FREDERICK B. POWER and FRANK TUTIN.

The *Æthusa Cynapium* Linn., or 'fool's parsley,' known also as the 'lesser hemlock,' is a well-known annual garden weed, which is indigenous to Europe and northern Asia, and is the only representative of the genus. Numerous cases of poisoning have been attributed to this plant, in most of which it appears to have been mistaken for common garden parsley.

The author was led to take up his investigation because of the conflict of opinion as to the poisonous properties of the plant. He reports finding a small amount of an essential oil of a rather unpleasant odor, corresponding to 0.015 per cent. of the weight of the entire fresh plant. An amount of resinous substances corresponding to 0.8 per cent. A small amount of *d*-mannitol from which a hexaacetyl derivative was prepared. A considerable amount of inactive glucose and amorphous coloring matter, and an exceedingly small amount of volatile alkaloid, having the peculiar characteristic odor of coniine, and which like the latter yielded butyric acid on oxidation.

F. H. POUGH,

Secretary.

THE UNIVERSITY OF COLORADO SCIENTIFIC SOCIETY.

DURING September and October, 1905, the society held six meetings with programs as follows:

PROFESSOR WILLIAM DUANE: 'Recent Discoveries in Radioactivity.'

PROFESSOR R. D. GEORGE: 'The Cœur d'Alene Mining District.'

DR. LUMAN M. GIFFIN: 'A Quarter-Century Evolution of Medical Education.'

PROFESSOR JOHN A. HUNTER: 'Tungsten Steel.'

PROFESSOR T. D. A. COCKERELL: 'Characters of Rocky Mountain Flora.'

DR. J. E. WAXHAM: 'Medical Ethics.'

DEAN F. B. R. HELLEMS: 'A Bronze Tablet and its Relation to Roman Constitutional History.'

The average attendance at the meetings was forty. Membership is not restricted to those connected with the university but is open to citizens of Boulder. A number of business and professional men have joined the society.

FRANCIS RAMALEY,

Secretary.

BOULDER, COLO.,

November 5, 1905.

THE CLEMSON COLLEGE SCIENCE CLUB.

THE 58th regular meeting of the Clemson College Science Club was held on Friday evening, October 25. Dr. Metcalf, Professor Chambliss and Professor Howard gave informal talks on their summer's work. Dr. Metcalf and Professor Chambliss spent several months in the rice fields of South Carolina, the former studying diseases of rice and the latter the insects injurious to the plant. A full report of rice diseases will shortly appear in a government publication. Professor Chambliss found the number of insects injurious to the rice plant to be twenty-one instead of eight, as formerly reported. One of the species found is undoubtedly new.

The principal paper of the evening was by Professor J. N. Harper, on 'The Breeding of Wheat.' It was based on experiments which he has carried on for the past three years and the conclusion reached was that the amount of protein in the wheat grain can be increased by physical selection and that the increased amount can be recognized by physical tests.

FRED H. H. CALHOUN,

Secretary.

THE ELISHA MITCHELL SCIENTIFIC SOCIETY.

THE 162d meeting of the society was held on November 14, when the following program was presented:

MR. J. E. LATTA: 'A Note on Electrocutation.'

MR. N. C. CURTIS: 'Pillet's Method of Finding the Shortest Distance between two Lines.'

MR. R. O. E. DAVIS: 'The Theory of Electrons.'

A. S. WHEELER,

Recording Secretary.