

The two conglomerates named above are identical with the Upper and Lower Conglomerates of Professor Safford of Tennessee. They are usually some twenty-five to thirty feet apart, though sometimes separated by a hundred and fifty feet of other strata, and sometimes in direct contact with each other. The lower conglomerate is usually the harder of the two, and is often called the "Mill-stone Grit." In the north-eastern part of the region the most important coal-bearing beds are below this lower conglomerate, and have an average thickness of fifty feet, but there are places where the sub-conglomerate measures have a thickness of seven hundred feet or more, as in parts of Blount County.

The principal seam of coal in the sub conglomerate measures is the Cliff Seam, immediately under the lower conglomerate or cliff rock. Its thickness, like that of all these lower coal seams, is extremely variable, ranging from a few inches to five or six feet. Fifteen or twenty feet below the Cliff Seam is the Dade or Eureka Seam, likewise very variable in thickness, passing, within limited areas, from a few inches to twelve or fourteen feet. This great variability in the thickness seems generally to be due to undulations in the strata forming the floor of the beds, though in some cases to variations in the roof or cover. While there are two or three other seams below these, the two just named have furnished most of the coal mined in the plateau region, and of this the Cliff Seam has yielded the greater part. Between the two conglomerates there is another good workable seam, the Sewanee Seam, from two to three feet in thickness.

While the upper conglomerate forms generally the surface rock over the Plateau Region, there are in many places, and especially as we go south westward, overlying strata with their coal seams, none of which, however, have been worked in this section, but which become more and more important in the direction of the Basin above mentioned, and yielding all the coal there mined. In that direction also the sub-conglomerate coals lose their importance, being mined nowhere in Alabama except in the north-eastern portion of the Plateau Region in Madison, Jackson, and DeKalb Counties.

In these lower Coal Measures there are, very generally, beds of clay iron-stone (carbonate), and of black band, which may some day come into use.

*Homilies of Science.* By DR. PAUL CARUS. Chicago, Open Court Pub. Co. 12°. \$1.50.

THIS book consists of articles on various topics in science, religion, and morals, contributed at intervals to the *Open Court* newspaper, of which Dr. Carus is editor. He tells us in his preface that in early life he intended to be a preacher in the Christian church; his inclination toward the religious life being partly due to his native disposition, and partly, no doubt, to the example of his father, who was a doctor of theology and an officer in the church of eastern and western Prussia. But his studies led him, as they have led many others in our time, to doubt the truth of many of the Christian doctrines, and ultimately to complete religious and philosophical scepticism. He therefore abandoned his intention of entering the church, and after a time became a preacher of the new doctrines that he had adopted, the most conspicuous of which is a blank materialism — a materialism which is not in the least disguised by calling it "monism." But while abandoning all distinctly religious views, Dr. Carus has held fast to the supremacy of the moral law and the need of moral improvement in personal and social life, and the earnestness with which he preaches these truths constitutes the main interest of this book. His remarks on God and immortality will be far indeed from pleasing religious minds; but what he says on ethical subjects, though containing nothing particularly new, will find an echo in the hearts of good men of every creed. He is wholly uninfected with the socialistic heresies now so widely prevalent, and he sternly rebukes those free-thinkers who regard morality with indifference, and scoff at its requirements.

In all that he says about the need of moral improvement and the dignity of man's moral nature, it is needless to say that we cordially agree with him; but we are by no means prepared to follow him in his rejection of all religious belief. We do not believe that the world will abandon theism, though it will undoubtedly

abandon many of the traditional dogmas of Christianity, if it has not already abandoned them. Nor can we agree with Dr. Carus in thinking that the views set forth in his book are the last word of science and philosophy on religious themes. On the contrary, we regard the present as emphatically an age of transition in religion and philosophy; and we believe that the religion of the future will be quite different from the doctrine of Dr. Carus, widely prevalent as his views undoubtedly are at the present time. But as an example of existing tendencies, as well as by its moral earnestness, this book will interest the reader.

#### AMONG THE PUBLISHERS.

IN *St. Nicholas* for January Eliza Ruhamah Scidmore, favorably known as a writer on Japanese subjects, tells of "Two Queer Cousins of the Crab" — the giant crab and the little mask-crab that carries the impress of a human face upon its shell.

— John Wiley & Sons have in preparation a work by Simpson Bolland, entitled "The Iron Founder."

—"It would be a wise and timely move," says *Outing* for January, "to prohibit the sale of grouse of all kinds and quail for, say, a period of at least three years. This would give a fair idea of just how much the market-shooters are responsible for the decrease of our game, and should so lessen the annual slaughter as to give the birds every chance to increase."

— Charles Scribner's Sons have now ready "The Real Japan," studies of contemporary Japanese manners, morals, administration, and politics, by Henry Norman, with seventy illustrations from photographs taken by the author; also "The Development of Navies During the Last Half Century," by Captain Eardley-Wilmot, which forms a volume in the Events of Our Own Time Series.

— Macmillan & Co. will publish in the course of January Mr. Henry Jephson's account of the "Rise and Progress of the Political Platform." The work is in two volumes, of which the first deals with the long struggle for the rights of public meeting and of free speech during the reigns of George III. and George IV. The second volume follows the progress of the platform from the agitation for the first reform bill to that which preceded the reform act of 1884. Mr. Jephson finally treats of the position and power of the platform in the present day.

— A unique experiment will be tried in the February issue of *The Ladies' Home Journal*. The entire number has been contributed in prose, fiction, and verse by the daughters of famous parentage, as a proof that genius is often hereditary. The work of thirty of these "daughters" will be represented. These will comprise the daughters of Thackeray, Hawthorne, Dickens, James Fenimore Cooper, Horace Greeley, Mr. Gladstone, President Harrison, William Dean Howells, Senator Ingalls, Dean Bradley of Westminster, Julia Ward Howe, General Sherman, Jefferson Davis, and nearly a score of others. Each article, poem, or story printed in this number has been especially written for it, and the whole promises to be a successful result of an idea never before attempted in a magazine.

— The *Quarterly Journal of Economics* for January contains an important article by Hon. Carroll D. Wright on the "Evolution of Wages Statistics," showing the gradual process by which the statistics of labor have been perfected in the last twenty years, the United States leading the way. S. M. Macvane writes on "Capital and Interest," and H. Bilgram of Philadelphia on "Böhm-Bawerk's Positive Theory of Capital." J. A. Hill makes a careful study of the recent "Prussian Income Tax," and W. B. Shaw presents his annual review of "Social and Economic Legislation by the States in 1891." Various notes and memoranda and the usual careful bibliography for the preceding quarter make up a number having great variety of contents and of interest.

— *The Chautauquan* for February presents the following table of contents: The Battle of Monmouth, by John G. Nicolay; Domestic and Social Life of the Colonists, V., by Edward Everett Hale; Trading Companies, II., by John H. Finley; States made from Territories, II., by Professor James Albert Woodburn; Sunday Readings, selected by Bishop Vincent; Physical Culture, I.,

by J. M. Buckley, LL.D.; National Agencies for Scientific Research, by Major J. W. Powell, Ph.D., LL.D.; The Bureau of Animal Industry, by George W. Hill; Highbinders, by Frederic J. Masters; Our Ships on the Lakes and Seas, by Samuel A. Wood; The Present Position of German Politics, by George Wheeler Hinman, Ph.D.; Spain, Cuba, and the United States, by Rollo Ogden; How a Bill Presented in Congress Becomes a Law, by George Harold Walker; The Balkan States and Greece; Strawberry Hill, by Eugene L. Didier; The Woman's Congress, by Isabel Howland; Legal Domestic Relations, by Mary A. Greene, LL.B.; Making and Testing Flour, by Emma P. Ewing; Opportunities for Women in Washington, D.C., by Mrs. Emily L. Sherwood; Daughters of the Fatherland, by Miss E. S. Braine; How to Restore Health, by Hermine Welten; What Next in Women's Societies? by Margaret W. Noble; Seawomen, by Margaret B. Wright. The editorials treat of The Ethics of Story Telling, Republican South America, and How to Live with Others. There are the usual departments devoted to the Chautauqua Literary and Scientific Circle.

— P. Blakiston, Son, & Co., Philadelphia, have nearly ready a reprint of Gower's (W.R.) "Manual of Nervous Diseases," second edition, issued here by special arrangement with the author. They have just published Greig Smith's "Abdominal Surgery," fourth edition; Muskett's "Prescribing and Treatment in Diseases of Children;" Blair's "The Organic Analysis of Potable Waters."

second edition; and will issue very shortly "A Manual of Autopsies," by Dr. Isaac Blackburn, a revised edition of Naphey's "Therapeutics," and a volume on "Diseases of the Throat, Nose, and Ear," containing a large number of colored wood engravings printed with the text, by E. P. McBride, F.R.C.P., Edinburgh.

— Ginn & Co. announce "Outline of Lessons in Botany, for the Use of Teachers, or Mothers studying with Their Children," by Jane H. Newell, Part II.: "Flower and Fruit." The course begins early in March with the crocuses and other early bulbous plants, and continues with lessons on some common house plants, in order that the pupil may be familiar with the ordinary botanical terms before taking up the spring wild-flowers. Spring flowers are then studied, in the order of their blooming, together with the forest trees, the blossoming fruit-trees, and some of our common weeds. These studies are not analytic only, but deal with the life-habits of the plants, their adaptations for fertilization, dissemination, and protection. Lessons on the stamens, the pistil, inflorescence, the fruit, and other topics are given in connection with the flower studies. The book aims to encourage habits of correct observation, and suggests points for the class to investigate. The book will be found valuable to persons studying by themselves, as it contains copious references to the literature of the subject, as well as original studies. The book contains a classification chart including sixty families.

#### CALENDAR OF SOCIETIES.

##### Women's Anthropological Society of America, Washington.

Jan. 9.—Alice C. Fletcher, A Talk on Folk Lore.

#### Publications received at Editor's Office.

- CARUS, DR. PAUL. Homilies of Science. Chicago, Open Court Pub. Co. 12°. 327 p. \$1.50.
- CHAMBERS'S ENCYCLOPAEDIA. New edition. Vol. viii. Peasants to Roumelia. Philadelphia, Lipincott. Royal 8°. 828 p. \$3.
- EARDLEY-WILMOT, CAPT. S. The Development of Navies during the last half-century. New York, Scribner. 12°. 311 p. \$1.75.
- HART, ALBERT BUSHNELL. Epoch Maps, Illustrating American History. New York, Longmans. 8°. Paper. 50 cents.
- HELEN KELLER. Souvenir of the first summer meeting of the American Association to Promote the Teaching of Speech to the Deaf. Washington, Volta Bureau. 4°. 16 p.
- HOPKINS, G. IRVING. Manual of Plane Geometry on the Heuristic Plan. Boston, D. C. Heath & Co. 187 p. 12°. 75 cents.
- HUIDEKOPER, RUSH SHIPPEN. Age of the Domestic Animals. Philadelphia, F. A. Davis. 8°. 225 p. \$1.75.
- HUNT, THOMAS STERRY. Systematic Mineralogy. New York, The Scientific Pub. Co. 8°. 409 p.
- MASTERPIECES OF AMERICAN LITERATURE. Boston, Houghton, Mifflin & Co. 12°. 470 p.
- MAYCOCK, W. PERREN. A First Book of Electricity and Magnetism. London, Whittaker & Co. 16°. 147 p. 60 cents.
- MINERALS: a monthly magazine. Vol. i. No. 1. New York, The Goldthwaites. 8°. Paper. 30 p. \$1 per year. 10 cents a copy.
- NEW YORK STATE REFORMATORY. Sixteenth Year-Book, containing the annual report of the Board of Managers for the year ending Sept. 30, 1891. Elmira, N. Y. S. Reformatory Press. 8°. Paper.
- NISSEN, HARTVIG. A B C of the Swedish System of Educational Gymnastics. Philadelphia, F. A. Davis. 12°. 116 p. 75 cents.
- OHM, G. S. The Galvanic Circuit Investigated Mathematically. Trans. by William Francis. New York, Van Nostrand Co. 18°. 269 p. 50 cents.
- POWELL, J. W. Tenth Annual Report of the U. S. Geological Survey, 1888-89. Part i., Geology. Part ii., Irrigation. Washington, Government. 2 vols. 4°. pp. 792, 131.
- SCHOOL AND COLLEGE: devoted to secondary and higher education. Edited by Ray Greene Huling. Vol. i. No. i. Jan., 1892. Boston, Ginn & Co. 8°. Paper. 64 p. \$1.50 a year; 20 cents a number.
- SCOTT, ALEXANDER. An Introduction to Chemical Theory. Edinburgh, A. J. C. Black. 12°. 274 p. \$1.25.
- SEXTON, SAMUEL. Deafness and Discharge from the Ear. New York, J. H. Vail & Co. 12°. 89 p.
- THE PHILOSOPHICAL REVIEW: bi-monthly. Edited by J. G. Schurman. Vol. i. No. i. Jan., 1892. Boston, Ginn & Co. 8°. Paper. 128 p. \$3 a year; 75 cents a number.
- WILD, H. Annalen des Physikalischen Central-Observatoriums. Jahrgang, 1890. Theil i. St. Petersburg, Kaiserlichen Akademie der Wissenschaften. 4°. Paper.

#### Wants.

Any person seeking a position for which he is qualified by his scientific attainments, or any person seeking some one to fill a position of this character, be it that of a teacher of science, chemist, draughtsman, or what not, may have the "Want" inserted under this head FREE OF COST, if he satisfies the publisher of the suitable character of his application. Any person seeking information on any scientific question, the address of any scientific man, or who can in any way use this column for a purpose consonant with the nature of the paper, is cordially invited to do so.

WANTED.—(1) A white man versed in wood and iron working, able to work from specifications and plans, suited for an instructor of boys; his business to have charge of shops of school, outline and direct the work for foremen and students; salary to be \$1,000 per annum (nine months). (2) A man (black preferred) to teach the colored, iron working and forging, subordinate to the preceding; salary, \$720. (3) A man (white) competent to take classes in engineering (assistant's position), but with the ability to perform any of the work required in any of the ordinary engineering courses of our universities; salary from \$1,000 to \$1,500. A. H. BEALS, Milledgeville, Ga.

WANTED.—Two or three efficient computers with good knowledge of Spherical Trigonometry and ready use of logarithms, for temporary employment in the office of the Coast and Geodetic Survey. Applicants should furnish evidence of their fitness for the work. Apply by letter to the Superintendent, Coast and Geodetic Survey, Washington, D. C.

WANTED.—Science, No. 178, July 2, 1886, also Index and Title-page to Vol. VII. Address N. D. C. Hodges, 874 Broadway, New York.

A YOUNG MAN (31) would like a position in a college, laboratory, or observatory, is also willing to assist at a steam engine, etc. Address J. W., care of Science, 874 Broadway, New York.

WANTED.—A position in the philosophical or pedagogical department of a college or university by a young man (30) who has had five years' practical experience in teaching, and who has done four years' post-graduate work in philosophy, devoting his attention during the last two years especially to study and original investigation in scientific psychology and its applications in education. Address E. A., care Science, 874 Broadway, N. Y. City.

WANTED.—A suitable position in Washington, D. C., not connected with the Government, and with a salary not to exceed \$650 a year, by an experienced biologist with six years' university training. Applicant has been a skillful surgeon for fourteen years; is a practical photographer, cartographer, and accustomed to the use of the type-writer. He is also capable of making the most finished drawings, of any description, for all manner of illustrative purposes in science; trained in museum methods and work; also field operations and taxidermy in its various departments, and modeling, production of casts, restorations of paleontological specimens and similar employments. Address U. S. R., care Science, 47 Lafayette Place, N. Y.

#### Exchanges.

[Free of charge to all, if of satisfactory character. Address N. D. C. Hodges, 874 Broadway, New York.]

Wanted to buy or exchange a copy of Holbrook's North American Herpetology, by John Edwards, 5 vols. Philadelphia, 1842. G. BAUR, Clark University, Worcester, Mass.

For sale or exchange, LeConte, "Geology;" Quain, "Anatomy," 2 vols.; Foster, "Physiology," Eng. edition; Shepard, Appleton, Elliott, and Stern, "Chemistry;" Jordan, "Manual of Vertebrates;" "International Scientists' Directory;" Vol. I. *Journal of Morphology*; Balfour, "Embryology," 2 vols.; Leidy, "Rhizopods;" Science, 18 vols., unbound. C. T. MCCLINTOCK, Lexington, Ky.

For sale.—A 6½ x 8½ Camera; a very fine instrument, with lens, holders and tripod, all new; it cost over \$40; price, \$25. Edw. L. Hayes, 6 Athens Street, Cambridge, Mass.

To exchange Wright's "Ice Age in North America" and LeConte's "Elements of Geology" (Copyright 1882) for "Darwinism," by A. R. Wallace, "Origin of Species," by Darwin, "Descent of Man," by Darwin, "Man's Place in Nature," Huxley, "Mental Evolution in Animals," by Romanes, "Pre-Adamites," by Winchell. No books wanted except latest editions, and books in good condition. C. S. Brown, Jr., Vanderbilt University, Nashville, Tenn.

For Sale or Exchange for books a complete private chemical laboratory outfit. Includes large Becker balance (200g. to 1-10mg.), platinum dishes and crucibles, agate mortars, glass-blowing apparatus, etc. For sale in part or whole. Also complete file of *Silliman's Journal*, 1862-1885 (62-71 bound); Smithsonian Reports, 1854-1883; U. S. Coast Survey, 1854-1869. Full particulars to enquirers. F. GARDINER, JR., Pomfret, Conn.

For exchange or sale at a sacrifice, an elaborate microscope outfit. Bullock stand; monocular objectives, one-sixth homogeneous immersion, four-tenths, and three inch, Bausch & Lomb, also one-fourth and one inch Spencer. Four eye-pieces. Objectives are the best made. Address Mrs. Marion Smith, 41 Branch Street, Lowell, Mass.

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—Saxon & Co., London, will publish in March an English edition of Félix Régamey's "Japon Pratique," an explanation of the Japanese modes of working in wood, metal, lacquer, porcelain, and stuffs, accompanied by more than a hundred designs.

—Macmillan & Co. announce for early publication a new volume of the Library of Philosophy, entitled "The Philosophy of Aesthetics," by Bernard Bosanquet, A.M., author of "Logic; or, the Morphology of Knowledge," and translator of Lotze's "System of Philosophy."

—Longmans, Green, & Co. announce a new edition of "A Hand-book of Florida," by Charles Ledyard Norton.

—The opening article of the February *Popular Science Monthly* will be on "Personal Liberty," by Edward Atkinson and Edward T. Cabot. It bears chiefly on the labor question, giving the results of an exhaustive examination of the decisions of the courts concerning restrictions on hours and modes of labor, regulation of

the method of payment, etc. The pottery articles in the industrial series will be followed by two on another attractive subject—the making of musical instruments, by Daniel Spillane. The first of these, to appear in February, is devoted to "The Piano-Forte." It describes the precursors of this instrument, and recounts the steps of improvement by which this country has reached its present high position in the piano manufacture. The article is illustrated. President David Starr Jordan of Stanford University will have an account of how the hot-springs and lava-cliffs of the Yellowstone Park were formed, and what adventures have befallen the finny inhabitants of its lakes and streams. The article is called "The Story of a Strange Land," and it will be illustrated with several full-page and smaller views. "Urban Population" is the subject of the fourth of the Lessons from the Census, by Hon. Carroll D. Wright. It shows just how much ground there is for the current apprehension in regard to the increase of the slum population of cities. This paper also will appear in the February number.

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