

to the amount of heat arising from compressing the air, which may be noticed here. He says (*Science*, June 27) that if air is compressed 10 inches, that is, from a barometric pressure of 30 inches to 40 inches, the temperature is increased 163°. The formula for computing this, as given by Poisson, is

$$\frac{T'}{T} = \left(\frac{p}{p'}\right)^{0.291},$$

in which T and T' are the temperatures corresponding to p and p' respectively. If we put $T' = 490^\circ$, and $p' = 30$ inches, this formula gives, for $p = 40$ inches, $T - 490^\circ = 43^\circ$ instead of 163° as stated above. Hazen, by his method of experimenting, was able to get a heating of the whole jar of only 4° in compressing to 10 inches, or one-third of an atmosphere. This, he says, is only about one-fortieth of the theoretical value; but it is not so much in error as that, for it is about the eleventh part of the theoretical value. But Espy, in compressing to 10 inches, obtained 36° as indicated by the rise in the gauge after explosion. The theoretical value in this case given by Poisson's formula, the temperature at which Espy operated being 64° , is 45° . This, unless Poisson's formula is erroneous, indicates that the method of getting the amount of heating from the amount of rise in the gauge after explosion, is much more accurate than that of Hazen's.

WM. FERREL.

Martinsburg, W. Va., Sept. 24.

BOOK-REVIEWS.

Belief in God; its Origin, Nature, and Basis. By J. G. SCHURMAN. New York, Scribner. 16°. \$1.25.

THIS book consists of a series of lectures delivered at the Andover Theological Seminary during the present year. The author's object is partly to justify the belief in God, and partly to set forth his own conception of what God is. In discussing the grounds of our belief in the Divine Existence, Professor Schurman makes some excellent points against the agnostics, but fails to present any new or conclusive argument of his own. Indeed, he admits that in his view the existence of God cannot be demonstrated, but holds it to be a necessary assumption to account for the universe. He gives a brief but philosophical sketch of the history of religion, which forms the best chapter in the book. When, however, he comes to state his own view of the nature of God, he takes a position that few theists will be inclined to adopt. His doctrine is an extreme pantheism, essentially the same as that of Spinoza,—a doctrine that denies all reality to finite things, and maintains that they are only modes or functions of God. He says, "Nothing remains for us, therefore, but to surrender the vulgar belief in the existence of a multiplicity of independent things. There is but one real being; and of it A and B and all existing things must be conceived as parts, moments, or functions" (p. 186). If this theory is true, it is obvious that there is no room left for human personality; and Professor Schurman's attempt to save personality can only be characterized as sophistical. We are obliged to add that some parts of the book are too dogmatic for a philosophical work, being characterized by sweeping assertions of which no proof is given or even attempted. On the whole, we cannot see that Professor Schurman has helped us any toward solving the problem of theism.

AMONG THE PUBLISHERS.

"THE Story of a Magazine," a most interesting story of the conception and growth of *The Ladies' Home Journal* of Philadelphia, with portraits and sketches of its proprietor and editor, has been prepared by that magazine in pamphlet form, and will be sent free to any who will write for a copy.

—Civilization; an Historical Review of its Elements," in two volumes, will soon be issued by S. C. Griggs & Co., Chicago. The author is Charles Morris of Philadelphia. This work promises to diverge from the course usually pursued by historians on this subject. It seeks to set forth, in clear and simple language, the evolutionary steps by which the human race has passed upward from primitive savagery to modern enlightenment, and in this way to discover the true philosophy of human progress. With this end in view, the topical method is adopted, and the facts of

history are used to illustrate and embellish, rather than to form the ground-work of the structure.

—*Harper's Weekly* of Oct. 4 devotes four full pages—two of text and two of illustrations—to the recent Mississippi River improvements.

—Andrew Lang is the subject of the engraved portrait in the *October Book Buyer*. The sketch gives an idea of the personality of the man as well as of his career as an author. Rudyard Kipling, whose portrait appears also in this number, is described in an article from which one can learn a good deal about this new and brilliant writer and his books.

—Professor Darwin of Cambridge, England, a son of the world-renowned Darwin, contributes to *The Century* for October a paper of high and original value on "Meteorites and the History of Stellar Systems." A striking photograph of a nebula, in which a system like our own solar system seems to be in actual formation, accompanies this paper. "Prehistoric Cave-Dwellings" is an illustrated paper by F. T. Bickford, on the prehistoric and ruined pueblo structures in Chaco Cañon (New Mexico), the Cañon de Chelly (Arizona),—the ancient home of the most flourishing community of cave-dwellers,—and other extraordinary cave villages.

—Mr. G. J. Smith has prepared "A Synopsis of English and American Literature," which issues from the press of Ginn & Co. of Boston. It gives first a list of English authors, with the names of their principal works, and accompanied by a chronological view of contemporary history. This is followed by a list of American authors, arranged on a similar plan. The work is in no sense a history, but a mere tabular list, but as such it has some merits. Its principal fault is the exaggerated importance attached to American literature, which is accorded nearly as much space as that of England. The authors in both tables are arranged as far as possible in classes, according to the kind of literature they produced, and reference is further facilitated by two indexes.

—*Babyhood* for October contains an article on the "Common Disorders of Teething Time," which the writer, Dr. John Dorning, contends are in most cases not related to the process of teething. He exposes very strikingly some of the fallacies entertained on this subject, while giving useful hints to the mothers of teething infants. "Massage," by Dr. Sarah E. Post, is probably the first popular article that has appeared on this subject, which is attracting increased attention, especially in connection with certain disorders of infancy. The article is illustrated, and gives directions as to the various kneading motions.

—An article in *Lippincott's Magazine* for October upon "Electric Lighting," by the English scientist Sir David Salomons, will find many readers; for, though electric light has come into such general use, it is but little understood by the general public. The article treats also of electric motive power, which is as little understood as electric lighting. A thoughtful paper upon "University Extension" is from the pen of Professor Skidmore. He advocates the idea of broadening the scope of the university so that the educational advantages it affords may be extended to the masses, and holds that schools should be brought into parallelism with life, instead of serving as introductions to it. In "Book Talk," Julian Hawthorne has an essay upon Rudyard Kipling.

—"Health for Little Folks" is the title of No. 1 of the *Authorized Physiological Series*, just published by the American Book Company. The book is intended for use in primary schools. The method and language are such as to make the matter easily comprehended by the young people for whom it is intended. Some may ask why the subject of physiology is introduced at all in the course of study of the primary schools, and the answer is to be found in the desire of the total abstainers to inculcate their ideas about alcohol in the minds of all pupils of the public schools; and, as many a child does not pursue his schooling far, it is necessary for their purpose that the doctrine that alcohol is a poison should be inculcated while the schools still have possession of the pupil.

—A popular work on the literature of India, entitled "Hindu Literature, or The Ancient Books of India," by Mrs. Elizabeth A. Reed, will soon be issued by S. C. Griggs & Co., Chicago. This volume treats of Hindoo literature from the earliest songs of the

Aryan race to the writings of mediæval days. The author reviews the labors of Sanscrit scholars in this vast field of literature, and then gives a survey of the great Indian epics, whose character and scope are illustrated by copious extracts. Her work has elicited the cordial interest of such authorities as Professor Max Müller and Sir Monier Williams, professor of Sanscrit in Oxford University; and the latter has done her the high honor of revising the chapter on "Krishna."

—Messrs. E. & F. N. Spon announce as nearly ready, "Mining and Ore Dressing Machinery," by C. G. Warnford Lock, being a comprehensive treatise dealing with the modern practice of winning both metalliferous and non metalliferous minerals, including all the operations incidental thereto, and preparing the product for the market; and as just published "Waterways and Water Transport in Different Countries, with a Description of the Panama, Suez, Manchester, Nicaraguan, and other Canals," by J. Stephen Jeans. The purpose of this latter volume is to deal with water-transport only, and more particularly that part of water-transport which is carried on by means of artificial waterways. A good deal of attention has been given in this work to the subject of isthmian canals; and in the appendix will be found a large mass of information as to the extent of the British canal system, and the dates at which the principal canal and river navigations were executed.

—The following announcement by the D. Van Nostrand Company is made regarding their Science Series. No. 9 of the series, "Fuel," by C. William Siemens, is now out of print, but it is to be entirely rewritten and very much enlarged by Mr. Arthur V. Abbott. The additional matter will take up the subject of gas and petroleum as fuel; while the chapter on artificial fuel, by John Wornald, will be retained, with some new matter. Tables will be added, so as to increase the value of the work to students in general. The title of the new edition of No. 57, which will be

ready soon, will be "Incandescent Electric Lighting: A Practical Description of the Edison System, by L. H. Latimer, to which is added the Design and Operation of Incandescent Stations by C. J. Field, and a Paper on the Maximum Efficiency of Incandescent Lamps by John W. Howell." The same firm have in preparation a translation of Dr. Otto Dziobek's "Mathematical Theories of the Motion of the Planets."

—The *Quarterly Journal of Economics*, published for Harvard University by George H. Ellis, Boston, begins its fifth volume with the number for October. The number will contain papers by Professor A. G. Warner of Nebraska, on "Some Experiments in Behalf of the Unemployed," describing interesting experiments in the United States, Germany, and Holland; by Professor S. M. Macvane of Harvard University, on "The Discussion of Value and Wages in the Recent Great Work of Boehm-Bawerk, the Austrian economist;" by Chauncey Smith, of the Boston bar, on "A Century of Patent Law," an account of the patent law of the United States and of its working during the last hundred years; and by Henry Hudson, on "The Southern Railway and Steamship Association." In addition, there will be the usual list of recent publications on economics, and general notes and memoranda, among which is a description, by Herr Stephan Bauer of Vienna, of recent discoveries by him of unpublished material on the French economists.

—Messrs. Funk & Wagnalls send us two numbers of their series of "American Reformers." The first is a life of "Wendell Phillips the Agitator," by Carlos Martyn, and is not a good beginning of the series. It gives, indeed, a large amount of information not only about Phillips himself, but also about the anti-slavery agitation and other movements in which he was engaged, and contains many extracts from his speeches. But the author's style is full of "gush" and magniloquent expressions, such as would have been displeasing to Phillips himself, and will be equally so to every

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CONTENTS OF OCTOBER NUMBER.

Life in Death, as Manifest in Falling Leaves.
Curious want of Ingenuity in the Harvesting Ants of France.
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Some Thoughts on Light.
Cysticercoids Parasitic in *Cypripedium*.
Some remarks on the Pucciniae attacking Galium.
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Reviews. Title. Preface. Index.

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cultivated reader. The other book, "Horace Greeley the Editor," by Francis Nicoll Zabriskie, is a better work. The author, in our opinion, has too high an estimation of his hero, yet he exposes Greeley's faults, and perhaps says a little too much about his eccentricities. On the whole, though it bears, like Mr. Martyn's work, the marks of too great haste in writing, it will serve a purpose as a popular biography of Greeley. Let us hope, however, that the authors of the remaining books of the series will all use a sober and simple style, with careful avoidance of rhetoric.

— "English Sanitary Institutions, Reviewed in their Course of Development, and in Some of their Political and Social Relations," is the title of a volume by Sir John Simon, K.C.B., which the Cassell Publishing Company announce. The book is the result of some twenty-eight years' experience and of various official relations to the business of sanitary government. The author has written for the lay as well as the professional reader, and has as far as possible avoided technicality in the expression of his views.

— The contributors to the October *Magazine of American History* present a rare combination of eminence in the scholarly world. The number opens with a paper on the "Sources and Guarantees of National Progress," by Rev. Dr. R. S. Storrs of Brooklyn. This is prefaced by a portrait of the distinguished author, and, occupying twenty-eight of the pages of this periodical, is from first to last a procession of brilliant passages, clear, forcible, suggestive, showing what principles developed the little settlements into a great nation, whose future history is as secure as the past if only that moral life remains which characterized the founders of empire on this continent. The second paper, entitled

"The American Flag and John Paul Jones," is from the pen of Professor Theodore W. Dwight of the Columbia Law School, New York. "Southold and her Homes and Memories," one of Mrs. Lamb's entertaining articles, is illustrated with antique dwellings of one of the oldest towns on the continent. "The Historic Temple at New Windsor, 1783," together with a curious picture recently discovered, comes from the well-known jurist, Hon. J. O. Dykman. "About Some Public Characters in 1786," we have a readable group of extracts from the private diary of Sir Frederick Haldimand. The "General Characteristics of the French Canadian Peasantry," by Dr. Prosper Bender, furnishes much interesting data on a theme of present interest. "The Mountains and Mountaineers of Craddock's Fiction," by Milton T. Adkins; "Anecdotes of Gen. Grenville M. Dodge," by Hon. Charles Aldrich; "The Story of Roger Williams retold," by H. E. Banning; "Antiquarian Riches of Tennessee;" and the several departments of miscellany,—follow. This magazine is in close sympathy with current affairs.

— Mr. T. Wemyss Reid, the biographer of the Right Hon. W. E. Forster, has performed an equally friendly office for the late Richard Monck-Milnes (Lord Houghton). "The Life, Letters, and Friendships" of this poet will form the subject of two volumes which the Cassell Publishing Company have now in press.

— The Johns Hopkins University has issued a pamphlet on "The Study of History in Holland and Belgium," by Paul Frédéricq, translated from the French by Henrietta Leonard. The same author had previously described the methods of historical teaching in England, France, and Germany, and he here endeavors to apply

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what he learned in those countries to the improvement of historical teaching in his own neighborhood. The historical courses at both the Dutch and the Belgian universities are characterized as quite meagre, the subject not having been accorded due prominence by the authorities. The teaching is mainly what M. Frédéricq calls theoretical, the object being to impart historical information without any attempt at original investigation. M. Frédéricq has perhaps too low an opinion of such teaching, and lays almost the whole stress of his remarks on the need of practical

courses for the study of history in its sources. Some of the Belgian professors, including the author himself, have established volunteer courses of this kind; but something more effective and permanent is, in his opinion, necessary to place the study on a satisfactory basis. In Holland the state of things seems to be rather worse than in Belgium, though at the University of Amsterdam there is an important course in political geography, under the guidance of M. Kan, which extends over a period of three years.

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