

form certificates of qualification; in General Division 7, lanes for steamers on frequented routes, — (a) with regard to the avoidance of steamer collision; (b) with regard to the safety of fishermen; in General Division 8, night signals for communicating information at sea, — (a) a code to be used in connection with the International Code Signal Book; (b) or a supplementary code of limited scope to convey information of special importance to passing vessels; (c) distress signals; and in General Division 9, warnings of approaching storms, — (a) the transmission of warnings; (b) the uniformity of signals employed.

General Division 10 will cover reporting, marking, and removing dangerous wrecks or obstructions to navigation, — (a) a uniform method of reporting and marking dangerous wrecks and derelicts; (b) the division of the labor, cost, and responsibility among the several maritime nations, either by geographical apportionment or otherwise; of the removal of dangerous derelicts, and of searching for doubtful dangers with a view of removing them from the charts. General Division 11 will take in notices of dangers to navigation, and notices of changes in lights, buoys and other day and night marks, — (a) a uniform method of taking bearings, of designating them (whether true or magnetic), and of reporting them; (b) a uniform method of reporting, indicating, and exchanging information by the several maritime nations, to include the form of notices to mariners; (c) a uniform method of distributing this information. General Division 12 will be devoted to a uniform system of buoys and beacons, — (a) uniformity in color of buoys; (b) uniformity in numbering of buoys; and General Division 13 to the establishment of a permanent international maritime commission, — (a) the composition of the commission; (b) its powers and authority.

The programme, as above drawn up, is submitted over the signatures of Rear Admiral S. R. Franklin, U.S.N.; Commander W. P. Sampson, U.S.N.; S. T. Kimball, General Superintendent of the Life Saving Service; J. W. Franklin, master marine; J. W. Shackford, master, merchant marine; and W. W. Goodrich, counsellor-at-law.

The Hydrographic Office desires to obtain the opinions and suggestions of interested parties on the various subjects to be considered, with a view to assisting members of the conference in formulating satisfactory rules. It is hoped, therefore, that those whose opinions are likely to have weight on any of the subjects mentioned, may give the benefit of their knowledge or experience.

#### BOOK-REVIEWS.

*Thermodynamics of the Steam Engine and other Heat Engines.*  
By CECIL H. PEABODY. New York, Wiley. 8°. \$5.

THE author of this book is associate professor of steam engineering in the Massachusetts Institute of Technology, and the book is intended mainly for the use of students in that and similar technical institutions. He presents in a clear manner, and with a minimum of mathematical expression, the general theory of thermodynamics; and his treatment of the properties of gases and vapors, and of the injector, presents several novel and interesting features, especially in the comparisons with experiments. More novel still, and more valuable to the student who intends to adopt steam-engineering as a profession, is the author's treatment of the steam engine. He has considered it advisable to leave untouched all approximate theories based upon the assumption of adiabatic changes of steam in the cylinder of the engine, making instead a systematic study of actual tests of engines in use, for which purpose a large number of test records have been collected, arranged, and compared. This will enable the student to learn what is actually known on the subject, and will point out to him the direction in which future investigations will give the best results, as well as show him how and where improvements may be made.

It will be gathered from the foregoing that this book differs, in some parts, either in substance or in manner of presentation, from other text-books on the subject; but in general, commonly accepted methods have been followed. The formal presentation of thermodynamics is the same as that employed by most authorities, and presents clearly the many difficulties of the subject, besides making plain the processes employed.

The author gives special attention to the investigations of the

action of steam in the cylinder of an engine, considerable space being given to the researches made by Hirn, as well as to the experiments which provided the basis for them. Directions and instructions are given for the designing and construction of simple and compound engines, and also for making accurate tests of their efficiency. Chapters are given on air-compressors and refrigerating machines, which important subjects may profitably be studied in connection with the theory of thermodynamics.

Though this volume, like all similar text-books, is largely an adaptation for a special educational purpose of the work of other authors and experimenters, more than a general acknowledgment of indebtedness to them would not under the circumstances be deemed necessary; still Professor Peabody has given references in foot-notes wherever direct quotations have been made, which will aid students materially in making more extended investigations.

#### AMONG THE PUBLISHERS.

D. APPLETON & CO. call attention to the fact that "Christianity and Agnosticism" has gone into a second edition.

— Messrs. Houghton, Mifflin, & Co. announce for early publication, "Literary Landmarks: A Guide to Good Reading for Young People, and Teachers' Assistant." By Mary E. Burt, Teacher of Literature, Cook County Normal School, Englewood, Ill. 152 pages. Cloth, 75 cents.

— The *Modern Science Essayist* for July contains an essay on the "Evolution of Society," by James A. Skelton. In the August number, J. Sidney Sampson discusses the "Evolution of Theology."

"Useful Hints on Steam" is the title of a very attractive little volume of nearly a hundred pages, written and published by E. E. Roberts of 107 Liberty Street, New York. It is written in a popular vein, and is intended for beginners.

— Charles H. Kilborn, Boston, have just ready "Round the World with the Poets," selected and arranged by Mary Cate Smith and Sarah C. Winn, intended to afford a series of review exercises in the study of geography. The quotations are arranged beginning with physical features and then giving longer poems relating to particular countries, mountains, rivers, cities, etc. These are followed by an illustrative tour, giving in selections from well-known authors an interesting journey around the world.

— The September number of *Harper's Magazine* will contain two articles by Theodore Child, one describing the American fine art exhibition at the Paris Exposition, which Mr. Child does not hesitate to say is one of the strongest and most interesting of all the foreign departments, and the other giving features of Moscow life that escape the eye of ordinary travellers. In the same number Edmond de Pressensé gives an outline of the religious movement of the present day in France; "London Mock Parliaments," by John Lillie, illustrated by Harry Furness; the distinguished caricaturist, Caran d'Ache, will have a series of sketches of dogs in the "Editor's Drawer;" and Lynde Palmer contributes a story about electricity called "The Pendragon Trial."

— The next volume in the Badminton Library to be published in the autumn, is "Fencing, Boxing, and Wrestling," written by Messrs. Walter H. Pollock, F. C. Grove, Walter Armstrong, E. B. Mitchell, and M. Prévost. This will be followed later by "Golf," to which Mr. Horace Hutchinson, Mr. A. J. Balfour, and Sir William Simpson (among others) will contribute.

— In the September *Scribner's* Lieut. W. W. Kimball, U.S.N., United States Inspector of Ordnance, will describe the various types of magazine rifles which have been adopted by the leading European armies, including the Mannlicher, Hotchkiss, Lee, Mauser, and Vetterli. A number of illustrations will show the contrivances by which the cartridges are fed to the rifle. Andrew Lang will write of Alexandre Dumas. Harold Frederic will begin a new serial romance of the Mohawk Valley in the days of the French and Indian wars and the Revolution. H. G. Prout's article on "Safety in Railway Travel," is the twelfth and last in the very successful railroad series. It is announced that these articles, with

many additions to the text and illustrations, will be collected in a very handsome volume, to be published by Charles Scribner's Sons early in the fall.

— George H. Ellis, Boston, will publish shortly a book of social essays entitled "Problems in American Society," by Joseph Henry Crooker, the author of "Jesus Brought Back." The book will deal with the problems of charity, temperance, political conscience, moral and religious instruction in public schools, and also the problem of solving the question at issue between the Catholic Church and the secular schools.

— G. P. Putnam's Sons have published "Great Words from Great Americans," a neatly gotten up little book giving the Declaration of Independence, the Constitution of the United States, Washington's and Lincoln's inaugural and farewell addresses, etc.; and "Seven Thousand Words Often Mispronounced," by William H. P. Phyfe.

— W. W. Pasko, 19 Park Place, New York, has issued the first number of *Old New York*, a journal relating to the history and antiquities of New York City. Mr. Pasko is also the editor. The periodical is intended to cover the entire range of events "from the discovery of the river and bay down to a period within the recollection of middle-aged persons." It will be published in monthly numbers containing sixty-four pages each. The editor invites the co-operation of all those interested and will be glad to be furnished with material. "Nothing will be inserted for sensation; truth, and truth alone, will be his purpose."

— A remarkable chapter of Napoleonic history will appear in the September *Century*, consisting of letters and journals of British officers describing Napoleon's voyage to Elba, also to St. Helena. The first part of the article is a letter written by Captain Ussher, who commanded the "Undaunted," which took the exile to Elba; the last part is by Lieutenant Miles, of the "Northumberland," and consists partly of a diary which the young lieutenant kept while on

the way to St. Helena in the same ship with the ex-emperor. Napoleon talked quite freely about some of his plans — especially with regard to the French navy — told a number of stories, and explained various points in his own career.

— D. Appleton & Co. announce for early publication "European Schools," by L. R. Klemm, which will be fully illustrated and included in the International Education Series; "A First Book in American History," by Edward Eggleston, which will be beautifully illustrated by eminent American artists; and Youmans' "Class-Book of Chemistry," thoroughly revised by Dr. W. J. Youmans, a brother of the author, and made quite up to date by including the latest developments of the science.

— Sir Charles Dilke is engaged upon a new work, entitled, "Problems of Greater Britain." "Though covering in some respects the same ground as 'Greater Britain,'" says the *Athenaeum*, "it will not be, like that book, a record of travel, but a study of comparative politics and a complete survey of the empire. Special attention will be paid to the question of Indian frontier defence, to the situation in Canada and South Africa, and above all to the many important problems which concern the present and future of Australia." The book will be published by Messrs. Macmillan & Co. in January.

— A "floral campaign," for the choice of a national flower, to correspond with the rose of England and the lily of France, is now in progress in many parts of the country, and is arousing considerable interest and discussion among flower loving patriots. Prang & Co. of Boston, who started the campaign, have just issued a little volume containing pictures of the two favorite candidates, the mayflower and the golden-rod, two poems reciting the claims of each, a history of the campaign, and a postal ballot for the use of those who wish to vote on the subject. The polls will close on Dec. 31, this year, when the results will be published. The result of the voting so far is as follows. For the golden-rod, 67 per cent;

### Exchanges.

[Exchanges are inserted for subscribers free of charge. Address N. D. C. Hodges, 47 Lafayette Place, New York.]

I want to correspond and exchange with a collector of beetles in Texas or Florida. — Wm. D. Richardson, P.O. Box 223, Fredericksburg, Virginia.

I want botanical specimens and analyses for exchange. Send list of those desired and those which can be furnished, and receive a similar list in return. Also cabinet specimens and curiosities for the same. Scientific correspondence solicited. — E. E. Bogue, Orwell, Ashta County, O.

I will sell to chapters or individual members of the Agassiz Association, 25 fine specimens of fossil plants from the Dakota group (cretaceous), correctly named, for \$2.50. Send post-office order to Charles H. Sternberg (author "Young Fossil-Hunters"), 1033 Kentucky Street, Lawrence, Kan.

One mounted single achromatic photographic lens for making 4 X 5 pictures, in excellent condition; also one "new model" double dry-plate holder (4 X 5"), for fine geological or mineralogical specimens, properly classified. — Charles E. Frick, 1019 West Lehigh Avenue, Philadelphia, Penn.

Drawings from nature — animals, birds, insects, and plants — to exchange for insects for cabinet; or I will send them in sets of ten each for ten cents in stamps. My drawings in botany are in detail, showing plant, leaves, flowers, seed, stamens, pistils, etc. — Alda M. Sharp, Gladbrook, Io.

The undersigned wishes to make arrangements for the exchange of *Lepidoptera* of eastern Pennsylvania for those from other localities. All my specimens are named and in good condition. — Charles S. Westcott, 613 North 17th Street, Philadelphia, Penn.

California onyx, for minerals and coins not in my collection. — W. C. Thompson, 612 East 141st Street, New York, N.Y.

Any one who has a botanical box in good condition will please write. I will offer about 30 specimens in exchange. — C. B. Haskell, Box 826, Kennebunk, Me.

A few first-class mounted birds, for first-class birds' eggs of any kind in sets. — J. P. Babbitt, secretary Chapter 755, 10 Hodges Avenue, Taunton, Mass.

**HEAVEN AND HELL**, by EMANUEL SWEDENBORG, 416 pages, paper cover. Mailed pre-paid for 14 Cents by the American Swedenborg Printing and Publishing Society, 20 Cooper Union, New York City.

## BOOKS THAT EVERY TEACHER SHOULD POSSESS.

**METHODS OF TEACHING.** A Handbook of Principles, Directions, and Working Models for Common-school Teachers. By John Swett, Principal of the San Francisco Girls' High School and Normal Class. 12mo, Half Leather, \$1.00. "Every teacher may derive immediate practical benefit from its perusal." — F. Louis Soldan, Principal St. Louis Normal School.

**BROWNING'S EDUCATIONAL THEORIES.** An Introduction to the History of Educational Theories. By Oscar Browning, M.A., King's College, Cambridge, England. 16mo, Cloth, 50 cents.

It is a concise and popular account of the main lines of thought that have been followed on educational subjects from ancient times to our own day. Mr. Browning gives a chapter on education among the Greeks; one to Roman education, to Humanistic education, the Realist, the Naturalist, English Humanists and Realists, Locke, the Jesuits and Jansenists, Rousseau, Pestalozzi, Kant, Fichte and Herbart, and finally, the English public school. He writes clearly and pleasantly.

**GENTLE MEASURES IN TRAINING THE YOUNG.** By Jacob Abbott. Illustrated. 12mo, Cloth, \$1.00.

There are few questions connected with the early education of children that are not discussed in the course of the volume, with reference to the leading principle of which it treats, each topic is illustrated by a variety of examples derived from practical life, and the whole treatment of the subject evinces the parental wisdom of the author, his deep insight into the juvenile nature, and his large experience in the work of education.

**DEWEY'S PSYCHOLOGY.** By John Dewey, Ph.D., of the University of Michigan. 12mo, Cloth, \$1.25.

This new and *live* presentation of the subject develops the principles of psychology in such an orderly way, and with such fullness of illustration, that the reader obtains clear, accurate, and connected ideas. It gives definite statements of fundamental facts, progressive development of principles, accurate definitions, and clear and precise discussion, omitting irrelevant detail.

The above named books are selected from HARPER & BROTHERS' List of Publications, and offered on the following terms: 1. Single copies will be mailed to any address on receipt of the price. 2. When Books are ordered for the use of Institute Classes or Reading Circles, or in clubs of six or more, we will send the same by express at a discount of 20 per cent. from the prices given. On account of these special rates, cash must accompany the order. Money may be sent to us by P.O. Money Order or Draft, Registered Letter, or Express. Address,

**HARPER & BROTHERS, Publishers, Franklin Square, N. Y.**

**CONTRIBUTIONS TO THE SCIENCE OF EDUCATION.** By William H. Payne, A.M., Professor of the Science and the Art of Teaching, University of Michigan. 12mo, Cloth, \$1.25.

A timely book, bearing on active controversies of to-day, and casting new light upon them. It is the fruit of long study and broad observation. The author is a clear, strong, practical thinker, bold in his championship of his own ideas, yet reverent towards all conservatism that can claim respect. The book should be in the hands of all who are interested in education.

**MANUAL OF OBJECT TEACHING.** With Illustrative Lessons in Methods and the Science of Education. By N. A. Calkins, Supt. of Primary Schools of New York City. 12mo, Cloth, \$1.25.

**PRIMARY OBJECT LESSONS.** By N. A. Calkins. Subjects Treated: Elementary Arithmetic. — Reading. — Phonetics. — Drawing. — Object Lessons. — Form, Color, and Size. — Simple Lessons on the Human Body. 12mo, Cloth, \$1.00.

**STUDIES IN ENGLISH LITERATURE.** By William Swinton, author of "Harper's Language Series," and Gold Medalist Paris Exposition, 1878. Embellished with portraits and Autographs. 8vo, Cloth, \$1.20.

It is a series of *studies in the masters* of English, from Shakespeare to the present time. The authors chosen are not only of the first rank, but they also represent epochs of literature, marked phases of style, distinctive contributions to literary method.

**A SHORT HISTORY OF THE ENGLISH PEOPLE.** By J. R. Green, M.A., Examiner in the School of Modern History, Oxford, England. 8vo, Cloth, \$1.20.

This book is not a mere record of kings, battles, and wars, but is a history of the *development* of the people in literature, religion, and civil institutions. It contains eight hundred and twenty-four pages, with Colored Maps, Chronological Tables, Genealogical Tables of Sovereigns, Marginal Notations, etc.

for the mayflower, 21 per cent; the laurel,  $3\frac{1}{2}$ ; dandelion, 3; sunflower, 1; and daisy, 1.

— The *Fortnightly Review* for August opens with a paper on "Mr. Gladstone and the Civilized World," by Karl Blind, in which the writer reviews Mr. Gladstone's criticisms on home rule in other countries and applies the lessons to Ireland. Dr. Joseph Thomson, the noted explorer, writes on "Downing Street *vs.* Chartered Companies in Africa," giving the record of British official rule, by one who has had ample opportunities of personal observation. Mdlle. de Bovet contributes a series of conversations with the composer Gounod, embodying his views on art and artists, which have been transcribed by one of his companions, and include much interesting matter never before published. A paper on the "Fortress of Paris," illustrated with a map, explains the great political and strategical importance of the city, which it is claimed is unsurpassed in these respects by any capital in Europe. J. D. Bouchier describes the "Great Servian Festival," the anniversary of the fall of Servia's greatness on the battlefield of Kassovo, in 1389. Walter Pater writes on Giordano Bruno, whose works have received new attention from scholars since the unveiling of his monument in Rome. W. D. Hogarth contributes an article on the "Present Discontent in Cyprus," condensing the history of the island since 1878, when it was taken under the protection of England. W. L. Courtney tells the story of the life of Roger Bacon, with special reference to his life at Oxford, and presents an interesting study of a much neglected figure in English history. Oswald Crauford draws a picture of Spanish and Portuguese bull-fighting; and Professor Tyrell contributes a brief note on Mr. Browning's late attack on Edward FitzGerald. The number concludes with "Some Truths about Russia," by a former resident.

— Messrs. E. & F. N. Spon announce as nearly ready "Practical Electric Bell Fitting: a Treatise on the Fitting-up and Maintenance of Electric Bells and All the Necessary Apparatus," by F. C. Allsop; "A Dictionary of Electric Words, Terms, and Phrases," by E. J. Houston; "Practical Gold Mining, a Comprehensive Treatise on the Origin and Occurrence of Gold-Bearing Gravels, Rocks, and Ores, and the Methods by which the Gold is extracted," by C. G. Warnford Lock; "Egyptian Irrigation," by W. Willcocks, M.I.C.E., with introduction by Lieut.-Col. J. C. Ross, R.E., C.M.G.; and "The Engineer's Sketch-Book of Mechanical Movements, Devices, Appliances, and Contrivances," by Thomas Walter Barber, containing details employed in the design and construction of machinery for every purpose, collected from numerous sources and from actual work, classified and arranged for reference for the use of engineers, mechanical draughtsmen, managers, mechanics, inventors, patent agents, and all engaged in the mechanical arts, with nearly two thousand illustrations, descriptive notes, and memoranda.

— The *Contemporary Review* for August opens with an article on the papacy, which has attracted much attention abroad. The writer says that to re-establish the temporal power, the church must be Anglicized or Americanized. This is illustrated by the startling statement that the papal rescript against the plan of campaign was launched by the pope under the pressure of the English government, against the advice of Persico, who has hitherto been held responsible for that blunder. Sir Morell Mackenzie contributes a valuable paper on the voice, treating of song. The address by Frederick Harrison before the Positivist Society on the centenary of the Bastille is reproduced entire, and presents a graphic picture of some of the more exciting episodes of the French revolution. Sir W. W. Hunter presents a plea for a female medical profession for India, which is, he says, the only hope of reaching Indian women. Canon Cheyne argues for reform in the teaching of the Old Testament, and looks for an idealized church in the future. Incidentally he touches on the agnostic controversy, and the more important of recent theological writings. Frederic Mac-karness reviews some of the recent experiments in governing South Africa by the English authorities; and George J. Romanes writes a scholarly and interesting paper on "Mr. Wallace and Darwinism." Mr. Romanes is a Darwinian, and does not follow Mr. Wallace in some of his recent theories. Managers of picture exhibitions will find much of interest in the paper by M. H. Spielmann

on the "Proposed Royal Academy Reform," in which the writer tells what the proposed reforms are, and what they should be. Philip H. Wickstead presents a study of Ibsen's "Peer Gynt," and affords an instructive insight into the methods of a master who is the literary sensation of the day in England, and who is looked upon by many critics as the greatest dramatist of the age. The number closes with an article on the "Civil List and the Grants to the Royal Family," by Dr. Henry Dunckley, who goes into the subject historically, and gathers many curious and little known facts in a subject which is just now agitating England, and which has attracted no little attention in this country.

— Professor Henry C. McCook of the Academy of Natural Sciences, Philadelphia, is now prepared to issue his natural history of the habits and industry of our orb-weaving spider fauna, under the general title "American Spiders and their Spinning Work." It embraces studies extended over more than fifteen years, and will be printed in three volumes, quarto. Volumes I. and II. will contain the author's personal observations, studies, and illustrations of the habits and industry of spiders. The studies are particularly directed to the spinning habits of the great group of spiders known as orb-weavers; but these are expressed in their relations to all the other tribes in both hemispheres. Volume III. will contain the systematic part of the work, and embrace descriptions of the orb-weavers of the United States, illustrated by a number of fine lithographic plates painted by hand in the colors of nature. The volumes will be profusely illustrated, wholly from nature, the number of engravings in the first volume alone exceeding two hundred. The language is as free as possible from technical terms, and, as the matter principally concerns the life-history of the animals, the chief contents of the work can be readily followed by any intelligent and sympathetic reader. This is especially true of Volume II. The publication of such a considerable work has involved a large expense, and as the circulation is necessarily limited to important scientific societies, leading public libraries, and a small circle of private individuals, the author has been compelled to undertake the entire work and charges of publication. The number of prints will be absolutely limited to five hundred, but an edition of two hundred and fifty copies, which will be known as the "Author's Edition," will now be issued; and the price of the volumes has been fixed, as nearly as could be estimated, at the simple cost of publication. The price for the entire set of three volumes will be \$30 for colored plates, or \$25 for uncolored plates. No volume will be sold separately. All persons subscribing within three months from Aug. 1, 1889, will receive the entire set with colored plates for \$25, delivered, postage paid, in any part of America. The price post-paid for Europe and all foreign countries is £5 4s., English money. After the limited time, no books will be sold for less than the full price, with postage added. Payment will be expected as follows: \$10 on the delivery of Volume I., \$10 on delivery of Volume II., and \$5 on delivery of Volume III. Full payment may be made, if preferred by subscribers, on delivery of Volume I. The first volume will be delivered in the autumn of this year; the second volume, shortly thereafter; and the third volume, which is already in a good state of progress, in the early part of 1890. The several volumes will be mailed with uncut edges in suitable form for library binding. Societies, libraries, and individuals who may purpose to subscribe will materially forward the author's plans by acting promptly.

— The *Nineteenth Century* for August contains papers by an imposing list of writers. Frederic Harrison opens the number with "A Breakfast in Paris," giving the views of a number of representative Parisians on the Exhibition and the political state of France. L. Atherly Jones writes on "The New Liberalism," which, with home rule, he believes to be destined to succeed, though possibly not for some time to come. Dr. Burney Yeo presents some valuable suggestions on "Change of Air," which he regards as almost imperative for city people. He also gives an analysis of the ocean cure, with suggestions as to places of resort for invalids. Sir Joseph Fayrer begins a description of the deadly wild beasts of British India, a subject of great importance when it is remembered that 2,618 persons and 61,021 head of cattle perished in 1887 by animals alone, not counting snakes, which caused

the death of 19,740 persons in addition. The Rev. Father Barry argues for a "Gospel for the Century," claiming that the church, like the age, must be progressive. Walter Frewen Lord describes the life and writes of Henrik Ibsen, the Norwegian dramatist whose works are exciting so much attention in England. Lord Brabourne replies to Mr. Gladstone's article on the Irish union in the July number, in a paper in which he takes the great statesman to task for not accounting for the actual condition under which the cruelties he censured so severely were practised. Lord Ribblesdale has a light though interesting study on the "Art of Conversation," relating his own experience in acquiring that difficult accomplishment. Mr. Gladstone neglects politics this month, and returns to his classical studies in a paper on the "Phoenician Affinities of Ithaca," a much argued question among Greek scholars, which he endeavors to answer. Professor Geffcken contributes a paper on "The French in Germany," reviewing the history of French treatment of Germany and Germans in the last few centuries. Germany, he claims, has suffered more in that time from France than she did from the war of 1871, and he therefore argues that the treaty of Frankfort should be regarded as final. Frederick Greenwood presents an interesting essay on love and men and women, entitled "Wool Gatherings;" and John Morley, W. S. Lilly, R. E. Prothero, Sir Frederick Bramwell, H. G. Hewlitt, Frederic Myers, and the Hon. Hallam Tennyson review some noticeable books. The number closes with a rejoinder on female suffrage, by Mrs. Creighton, and a long list of signatures to the protest against suffrage printed in the June number.

— The Clark Electric Company, 192 Broadway, New York, have issued a new catalogue of their arc light apparatus. In this is given, with illustrations, some account of their arc dynamo, with a view showing the interior field and others of the armature, automatic regulator, etc. The single and double arc-lamps are described. The pamphlet closes with a description of their new automatic regulator.

— The current number of the *American Journal of Psychology* is strong in four original papers. The first, by Dr. William Noyes, contains a further account of an interesting paranoiac described by him in an earlier number of the journal (May, 1888). The patient, an artist of talent and originality, has continued his painting, and latterly busied himself with the composition and illustration of a manuscript book of two hundred pages. The six plates accompanying this article reproduce nearly fifty pictures, of which three are taken for comparison from his pre-asylum work, and two-thirds of the rest are pen-and-ink drawings from the book. Considerable extracts, both of prose and verse, are given, the latter especially showing the same mixture of facility and imperfect finish that characterizes his pictures. It is rare that an alienist has the opportunity of observing a case where the disordered mind has such varied and delicate means of expressing itself. The next article is an experimental study, by Dr. C. F. Hodge, of the effect of electrical stimulation upon ganglion cells. The outcome of these careful experiments is a method "by which changes due to functional activity can be as easily and certainly demonstrated in a ganglion as in a gland." Electrical stimulation noticeably decreases the size of the nucleus, makes it jagged in outline, obscures its reticulation, and makes its stain darker. In the cell protoplasm it causes vacuolation and slight shrinkage, and makes its stain less readily. The nuclei of the cell capsule are also shrunken. These changes are figured in an accompanying plate. In the third article, Dr. E. C. Sanford concludes his series on personal equation, taking up especially the amount and cause of personal differences under the simplest conditions of observation. He brings together the contributions of the astronomers and physiological psychologists, and considers the theories of Bessel, Wolf, and others. A bibliography of a hundred titles or more is appended. Dr. W. H. Burnham furnishes a very interesting paper on the illusions and hallucinations of memory, or, as the phenomena have been termed, paramnesia. An example of a single class is the not uncommon feeling of strange familiarity in totally unfamiliar circumstances. Other kinds are rarer, but by no means unknown. Important contributions have come from the alienists, notably from Kraepelin, whose classification Dr. Burnham follows. The author

has been fortunate in collecting a number of illustrative cases (such tricks of memory seem frequent in dreams, with some people at least), which parallel in normal life the grosser cases of the insane. The subject has also a practical bearing; for Hughlings-Jackson, while admitting that the feeling of reminiscence above mentioned does occur in normal people, would regard its frequent occurrence as a confirmatory symptom of a certain form of epilepsy. In persons of somewhat defective memory and judgment, as children and old people, a skilful lawyer can, by proper manipulation, create, entirely without the consciousness of the witness, a memory of events that never happened; and, like Professor Royce, the author would account for many cases of presentiments, telepathy, etc., reported by trustworthy people, as cases of pseudo-memory. The number contains, as usual, reviews and abstracts of literature on the nervous system and experimental and abnormal psychology, besides miscellaneous notes. In the abnormal section is included also a paper of practical suggestions to physicians in asylums, hospitals, etc., for the observation of patients suffering from mental and nervous diseases, by Dr. H. H. Donaldson. The suggestions are accompanied throughout by references to the literature.

#### LETTERS TO THE EDITOR.

\*.\*Correspondents are requested to be as brief as possible. The writer's name is in all cases required as proof of good faith.

The editor will be glad to publish any queries consonant with the character of the journal.

Twenty copies of the number containing his communication will be furnished free to any correspondent on request.

#### Sunset Glows.

WE have just been enjoying a re-appearance of sunset glows like those following the Krakatoa eruption of 1883, though much less bright. The phenomenon was first noticed here after sunset of July 13. On the 14th and 15th it seemed to increase in intensity. After this it declined, and I think could not be clearly distinguished after the 20th.

I noted a whitish glow around the sun, occupying a space of about fifteen degrees' radius, as in "Bishop's ring." The outer-colored ring characteristic of that corona seemed to be entirely lacking.

I have remarked the following peculiarities in which these differ from the Krakatoa glows: they are very much less bright, perhaps like those after a lapse of several months.

A notable difference is in a beautiful tertiary glow. This consisted of a rich and delicate rosy flush occupying a tract of sky in the west, say of sixty degrees horizontally, and from five down to ten degrees of altitude. At the edges this melted into purple upon the clear blue of our North Pacific sky. A faint purple tint extended along the horizon quite to the south: no color in the north. There are islands a little north of west, intercepting reflections. This third glow failed to gather down and deepen upon the horizon like those preceding it. I think its tint the most beautiful I have ever seen in the heavens, like that of some rare and perfect jewel.

A very marked peculiarity is the early time at which the primary and secondary glows take place. The primary glow gathers soon after the sun is down, and is at its height while daylight is yet strong. Hence it is less conspicuous, although its broad streaming radiations of glowing surface are very remarkable.

The secondary glow promptly follows, and makes the grand display. It is nearly finished before any stars are visible. The Krakatoa secondary began in a somewhat darkened sky, — as dark as when the late tertiary appeared, — and lingered until after full darkness, slowly settling down into a low, dense, blood-red stratum, which simulated the reflection of a remote conflagration.

That strange dull-red glow was entirely absent from the late appearances. The secondary gathered and settled away in a bright orange glow. Both at its close and throughout its course, this secondary substantially resembled the Krakatau primary as seen several months after the eruption. Like that, it presented at its close a well-defined and serrated upper edge, bordered by dark sky. The serrations of the latter, however, were small and numer-