with the naked-eye estimation of their serial magnitudes, to find what is the relation between the two series; i.e., as the magnitudes increase by apparently equal intervals of brightness, how do the measured illuminating-powers increase? He finds, that, as the psychophysic law requires, the latter increase by a constant *ratio*, but that this ratio is not exactly constant, but decreases slightly (according to a formula given in the paper) with the brightness of the stars.

The critical portion of the journal will perhaps arouse more comment than the original part, because it comes more in conflict with current views on psychological topics. While not taking an aggressive tone, the policy of the journal is evidently to plainly and forcibly state the broader inferences upheld by a technical study of mental facts, and, if necessary, to fearlessly combat views opposed to or neglecting such considerations. The able detailed review of the work of the English Society for Psychic Research is sure to attract attention. The point of view is decidedly negative. The evidence in favor of 'telepathy' is regarded as entirely inconclusive by lack of a host of necessary precautions, as well as a consideration of other modes of explanation. It is an aspect of the question the importance of which will be more and more generally recognized as the first gust of enthusiasm excited by apparently wonderful results subsides. A review of the psychological text-books of Professors McCosh, Bowne, and Dewey is a destructive criticism of the standpoints from which these writers set out, while Professor Ladd's 'Physiological Psychology' receives very just proportions of praise and blame.

In addition to this, there is a review of the 'brain-localization' question by Dr. Starr, of Mr. Galton's views on the persistency of type by Professor Brooks, of Delage's researches on the functions of the semicircular canals by Professor Sewell, and a note on logical machines by Mr. C. S. Peirce, together with a large number of useful minor reviews and notes. An undue number of misprints disfigure some of the pages.

Greeko-Slavonic Literature. By M. GASTER. London, Trübner. 8°.

THE importance of researches on the growth of folk-lore is more and more recognized. While in the early times of this study the lore of each nation was considered as an outcome of its ancient mythology, later on the interdependence of the traditions of nations widely separated in space and time was more clearly understood, and researches on the origin and migration of legends became of greater importance. While this historical point of view is the leading one in the inquiries of most students, the psychological character of each nation as influencing its folk-lore must not be disregarded. The present volume treats of the connection between European folk-lore and the early literature of Slavonic nations. The author treats first of the influence of Bogomilism upon the religious literature which later on became folk-literature of the European nations. He traces the latter back to Greek texts which came to Constantinople from the east, and passed thence to the Bogomils. A second source, equally Oriental in its origin, was supplied by Jewish legends. He discusses the Apocrypha of the Old and New Testaments in its influence upon European literature, and shows in a few instances the interesting phenomena of their transition from tales into ballads, and from ballads into lyrics, in which the name of the hero disappears gradually, and a personal song is changed into a general impersonal one. The author finds in the belief of witchcraft in the Graal legend and other traditions, not those relics of hoary antiquity which they are generally considered, and as which they have become the object of a reconstructive mythology, but a result of the Christian legends and myths, which became the property of the people at a comparatively recent date. In discussing the origin of the romantic literature, Gaster favors the opinion that it was also introduced into Europe by the Slavonic nations, and rejects Benfey's theory that it was communicated to the western people by the Mongolians. In an appendix Gaster tries to solve the problem of the origin of the Glagolitic alphabet, and shows that a connection with the Armenian alphabet is at least probable. The whole volume is an extremely interesting study of the growth of folk-literature, and shows how intricate the channels are from which its sources flow. Great care must be taken in treating questions of this kind, particularly among nations which have no literature, where historical facts, upon which the study must be founded, are entirely wanting. Particularly in this case rash conclusions must not be made until we are better acquainted with the psychological laws of the growth of folk-lore. The historical method as applied by Gaster is the only one that can lead to satisfactory results, but it must be supplemented by an inquiry into the assimilation of legends by different nations and their blending with the more ancient stock of folk-lore. The latter point has been disregarded by the author, and therefore some of his conclusions on the Oriental origin of certain legends cannot be accepted until fuller proof is given.

An Elementary Treatise on Analytical Mechanics. By WILLIAM G. PECK. New York, Barnes. 12°.

THIS is, as its title implies, an elementary treatise on the subject named, and is of substantially the same character as the majority of works of similar purpose, intended for the introduction of the student into the study of analytical mechanics. Dr. Peck, however, has the advantage, as an author, of having had an unusually extended and very fortunate experience in teaching, and his book may be taken as the embodiment of so much of the subject as he has found the average college-man capable of taking up during the average college course of advanced mathematics. It is intended, as stated in the preface, to include all the principles needed by students in technical courses of study, and the calculus is used to a moderate extent in their development.

This work is by no means such a treatise as that of Bartlett, and is necessarily given a much more condensed and less logical form. It covers, however, the full range of work which the student can be ordinarily expected to take, and it may be made to pave the way most satisfactorily to the use of advanced treatises and the works on applied mechanics which are now studied in the best technical schools and schools of engineering. Its accuracy is vouched for by the reputation and experience of its author, and its plan may be seen by inspection to be good and satisfactorily complete. Kinetics and the doctrine of energy are given the place to which they are entitled, — a place denied them in books following the older writers on this subject. We should suggest that the discussion of the mechanics of gases and vapors might be enlarged profitably by the introduction of the pure thermodynamics of the subject, and that the last chapter, that on machines, might be improved by the revision of the descriptive matter, and by a study of modern examples of such apparatus. No criticism lies against this work especially; but it is time that all these elementary treatises on this subject were pruned of their antique illustrations, — the compound balance, for example, — and modern sketches substituted, such, for example, as Dr. Peck gives us in his article on the rotary-pump. On the whole, this book is one of the very best of its class; and the writer has found, by experience in its use, that it is a most excellent text-book.

NOTES AND NEWS.

THE account of the recent trial in England of the Spanish cruiser 'Reina Regente,' resulting in the development of a speed of 20.6 knots over a measured mile, has been received with keen interest at the Navy Department, where every effort has been made to design vessels of like high speed to meet the demands of Congress. The number of war-ships able to make above 19 knots is much smaller than is commonly supposed, and, in fact, the records of the department show that but two other vessels have been able to attain that speed. These are the 'Dogall,' built in England for the Italian Government, which made one run over a measured mile at the rate of 19.66 knots per hour; and the 'Orlando,' built by private contractors for the English Government, which made one run at the rate of 19.25 knots per hour. It is said at the department that these two vessels, together with the 'Reina Regente,' are the outcome of efforts to reach 19 knots, running through many years; and the small measure of success attained renders it unsafe to guarantee so high a speed for the cruisers now building, and known as the 19-knot cruisers.

— A complete list of the papers presented at the meeting of the National Academy of Sciences, held at Columbia College, New

York, recently, is as follows: 'Seismoscopes and Seismological Investigations,' T. C. Mendenhall; 'On the Primary Specializations of the True Fishes,' E. D. Cope; 'A Study of the Behavior of Metals under Variations of Temperature,' William A. Rogers; 'Chemism in its Relations to Temperature and Pressure,' T. Sterry Hunt; 'On the Mechanical Origin of the Structures of the Hard Parts of the *Mammalia*,' E. D. Cope; 'Progressive Series in Chemistry,' T. Sterry Hunt; 'Kilauea, a Basalt Volcano,' J. D. Dana; 'Circulation of the Sea through New York Harbor,' Henry Mitchell; 'On a Study of Color Contrast,' Ogden N. Rood; 'On the Relative Variability of Men and Women,' 'On a New Form of Reproduction in Medusæ,' and 'On the Lucayan Indians,' W. K. Brooks; 'Experiments in Measurements of Statical Electricity in Absolute Units,' and 'On Potential as measured by Work, a Mathematical Discussion,' A. M. Mayer; 'A Comparison of Antipodal Faunas,' Theo. Gill; 'On a Discovery Recently made in Connection with the Flight of Birds,' W. P. Trowbridge; 'On the Determination of Star Magnitudes by Photography,' E. C. Pickering; 'On the Constant of Aberration,' A. Hall; 'The Cretaceous Coals of Western North America,' and 'The Future of Gold and Silver Production,' J. S. Newberry; 'The Temperature of the Moon,' S. P. Langley; 'On a Method of Making the Wave-Length of Sodium Light the Absolute Standard of Length,' A. A. Michelson and E. W. Morley.

— The increase of interest in the sciences centring about a scientific education in England is well shown in the announcements of lectures to be given in connection with the Association for the Education of Women at Oxford. The three courses are, on mind, its conditions and functions, by Mr. W. L. Courtney; on the outlines of the history of education, by Mrs. Scott; and on elementary physiology, by Mr. Dixey.

— It is encouraging to see the appearance of new editions of books of acknowledged excellence. Macmillan's publishing-house has just prepared new editions of Lotze's 'Metaphysics' and of Sidgwick's 'Principles of Political Economy.' The latter contains some emendations and omissions from the text of the first edition, and the preface credits Schönberg with exerting an influence on the author's economic thought. The new edition of Lotze is in two volumes, handsomely gotten up, and offered at a very low price. We trust it will be widely read, for the *Spectator* only expressed the opinion of all philosophical workers when it said, "No man of letters, no specialist in science, no philosopher, no theologian, but would derive incalculable benefit from the thorough study of Lotze's system of philosophy."

— The Industrial Education Association is about to issue leaflets giving concise information on points of its work regarding which questions are continually asked. The first will be ready in a few days, and will state compactly what the argument for manual training is.

— Several of the commissioners of Chinese customs, in their reports for the past year, which have just reached this country, says the London *Times*, refer to the competition in the English market between teas from India and China. The commissioner at Hankow says that at that port for the year the fine teas bought for England have lost all around. "All tea-buyers say that Indian tea is the tea of the future for people who can afford to pay for a good article. There is no reliable market for choice China tea. Cheap tea — 'beautiful two-shilling tea' — bought here to land at sixpence a pound, is what seems to be wanted. It can be sold at a price to suit any pocket, and can be made quite drinkable and given a body by the addition of a few pennyworths of good, full-flavored Indian." Similarly the commissioner at Foochow remarks that one feature of the tea trade of the year has been the neglect of teas over a shilling a pound in the London market almost throughout the season. This discourages the production of the finer kinds of tea in China. Year by year the competition of the Indian teas displaces the finer qualities of the China leaf, "in spite of which there are many of experience in the trade who maintain that if the old quality were again forthcoming from China she would soon recover the position she seems to be losing in the world's consumption of this article." In Shanghai the commissioner reports an increase in the export of tea, but says it is due to the improved demand in England and Russia for low-grade teas, but the merchants have lost no medium and fine quality teas, the rates for them being unprecedentedly low. "This depreciation in their value in England is partly assignable to a falling-off in the Russian demand for fine tea; but the want of keeping properties in China leaf, probably owing to hasty and imperfect preparation, has also a good deal to do with it." Fine China teas have not been bought for Russia because of an increase in the import duty, and, in place of increasing the price to the retail purchaser, an inferior leaf has been purchased."

— The German Academical Union, in its last general meeting at Berlin, laid down the following principles of reform for the German schools: (1) The children are in many ways overburdened by the present scholastic system; (2) There is not sufficient harmony between the school and the home life; (3) The training of the body is not attended to in proportion to that of the mind; (4) The exclusive privileges belonging at present to the classical schools, as securing an entrance to the learned professions, ought to be extended to the modern schools; (5) There ought to be an easy access from the elementary schools to the middle and higher schools; (6) The *Einheitsschule* is the most pressing need of the present time.

— The forty-third annual meeting of the Massachusetts Teachers' Association will be held in the Girls' High-School building, Boston, Friday and Saturday, Nov. 25 and 26. The following programme is published: — Nov. 25, 'English in Secondary Schools,' by William R. Shipman, D.D., professor of rhetoric, Tufts College, discussion to be opened by W. C. Collar, head master of Roxbury Latin School; 'What the Public demands from the Public Schools,' by N. A. Calkins, superintendent of schools, New York City; 'The Care of Children,' by Henry C. Hardon, master of the Shurtleff School, Boston; 'The Care of Our Younger School-Children,' by Ann E. Newell, Alger Primary School, Boston; 'Can the Principles of Civil Government be taught in Schools?' by Albert Bushnell Hart, Ph.D., instructor in history, Harvard University, discussion to be opened by Ray Greene Huling, principal of the High School, New Bedford; 'Some Notes on Secondary Schools in Europe,' by George A. Bacon, Ph.D., editor of *The Academy*, Syracuse, N.Y.; 'Arithmetic in the Grammar School,' by Francis A. Walker, Ph.D., LL.D., president of the Massachusetts Institute of Technology, discussion; 'Modifications needed in the Grammar-School Curriculum,' by A. P. Stone, LL.D., superintendent of schools, Springfield, discussion; 'Language,' by George I. Aldrich, superintendent of schools, Quincy, discussion to be opened by Larkin Dunton, LL.D., head master of the Normal School, Boston; 'Sight-Reading,' by Mary I. Lovejoy, principal of the Broadway School, Chelsea, to be followed by class exercises, illustrating progressive stages in the first, second, and third years, discussion to be opened by William T. Harris, LL.D., Concord. Nov. 26, 'Report of the Committee on Necrology,' by Nathaniel T. Allen, chairman; 'Grammar-School Education' (report of the Committee on Educational Progress), by Ray Greene Huling, chairman; 'Character as an Object of School-Education,' by Louisa P. Hopkins, supervisor of schools, Boston, discussion to be opened by Robert Swan, master of the Winthrop School, Boston; 'How to secure the Better Preparation of Teachers,' by Ellen Hyde, principal of the State Normal School, Framingham, discussion to be opened by A. G. Boyden, principal of the State Normal School, Bridgewater.

LETTERS TO THE EDITOR.

*** The attention of scientific men is called to the advantages of the correspondence columns of* SCIENCE *for placing promptly on record brief preliminary notices of their investigations. Twenty copies of the number containing his communication will be furnished free to any correspondent on request.*

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

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

Amnesia.

IT seems to me that cases of amnesia like those mentioned in *Science* for Nov. 11 are not very rare; certainly three such cases have fallen under my own observation within the last twenty years.