

raphy' and relates the ceremonials by which the males and females are admitted to the rights of puberty and social rank. They are severe in the extreme, but are carried out inflexibly. No explanation of their rites is satisfactory, and that of the author, that it is merely for convenience, is no better than the others.

In the midst of the debasement reflected in the general condition of these tribes, it is interesting to learn that law and order, as they understand the terms, are maintained, and that a culprit is well aware of the punishment following his misdeeds and submits to it. When that punishment is death he quietly digs his own grave and awaits the spear thrusts which consign him to it.

The volume contains nothing on the physical anthropology of the natives and is very meager on their religious views.

D. G. BRINTON.

Iowa Geological Survey, Artesian Wells of Iowa.

Vol. VI., pp. 115-428. By W. H. NORTON. Des Moines, State Print. 1897.

Although the subject of artesian wells and their utilization in the redeeming of the arid regions of the world commands general interest, still one would scarcely expect to find so much of interest to the unprofessional reader in the official report of a State Geological Survey.

The first section of Mr. Norton's report gives one an excellent idea of the artesian well in its historical development as well as in its present distribution, nomenclature and classification. These chapters will amply repay the untechnical reader and will also give the specialist a point of view which he is too apt to overlook in his application to details.

The remaining chapters are devoted to a very satisfactory and exhaustive setting forth of the records of the artesian wells of Iowa. Very many geological sections of individual wells and also of extended regions, together with full and conservative discussion, help to give one a very clear idea of the stratigraphic, hydrographic and hydrostatic conditions which exist in that State. In view of the interest attaching to the question of subterranean temperatures and the valuable information obtained from wells in the Dakotas northwest of Iowa by Mr. N. H. Darton, it is

perhaps to be regretted that the report did not include the temperature of the flowing water, at least where the volume is considerable. From the popular explanation as to why these wells are called artesian, from Artois, instead of Mutinian, from Mutina, to the technical discussion of the stratigraphic conditions in their relation to sea-level, the volume is interesting and instructive; and although it is to be received chiefly as a contribution to our knowledge of the subterranean waters of Iowa, nevertheless it will serve as a valuable key to similar conditions in other localities.

W. HALLOCK.

The Mystery and Romance of Alchemy and Pharmacy. By C. J. S. THOMPSON. London, The Scientific Press (Limited). Pp. xv + 335. 12mo. Ill.

As foreshadowed in the title, the author of this work has not attempted a systematic history of alchemy and of pharmacy, but has gathered much curious information as to the mystery surrounding them in bygone ages and the romance associated with them. The first five chapters deal with the art of healing, the earliest fathers of medicine and the necromantic practices of the Greeks and Romans. In the sixth chapter we are introduced to the alchemists, and here the author shows his unfamiliarity with the results of modern historical researches; he states, for example, that the word chemistry first occurs in the writings of Suidas, whereas everyone knows that it is found six centuries earlier in the astrological treatise of Julius Maternus Firmicus, entitled *Mathesis*. Mr. Thompson also credits the Arabian Geber with knowledge of nitric acid, nitrate of silver and hydrochloric acid, as described in the *Summa Perfectionis* and *Liber Philisophorum* [sic], whereas Berthelot showed in 1893 that these Latin treatises are fraudulently ascribed to Geber, who had no knowledge of the mineral acids. To enhance the romantic and mysterious phase of his subject, Mr. Thompson has introduced several chapters on 'The Black Art,' 'Black Magic' and the occult sciences. The work is stronger on the medical side than on the chemical, the chapters on 'Curious Remedies,' 'Surgery in the Middle Ages,' 'Amulets,

Talismans and Charms,' being replete with curious lore. The sketch of 'Apothecaries and their Bills' throws light on early methods of pharmacy. The title of this volume would lead one to suppose that the romantic features of alchemy at the court of Rudolph II. might be included, but there is no reference to this German Hermes. It is ungracious to criticise a book by its omissions, but it is certainly singular to find no mention of the host of German alchemists who flourished under Rudolph II. and under Augustus of Saxony. Surely the careers of Sendivogius, of Richthausen, of Gustenhover and of Bötticher were sufficiently romantic! Part II. of the volume contains quotations of alchemical and pharmaceutical interest from the writings of Chaucer, Shakespeare, Spencer, Scott, Dumas and other authors. The illustrations are poorly selected, and there is no index.

H. CARRINGTON BOLTON.

SCIENTIFIC JOURNALS.

WE have received from Messrs. Lemcke & Buechner, New York, the first issue of a bibliography of German periodical literature, compiled by Dr. F. Dietrich, and published in Leipzig by Fr. Andrä's Nachfolger. The Bibliography aims to accomplish for German literature what is done by the English 'Index to Periodicals' and our own 'Literary Index,' but pays relatively more attention to scientific journals. Technical science and medicine, including, it appears, physiology, etc., are however excluded, owing to the indexes already established. The present Bibliography, for the year 1896, contains about 8,500 titles from about 275 journals. It is a subject index, the entries not being made under the names of authors, which lessens its usefulness for scientific purposes. Such a bibliography, however, will prove of much value, and we cordially endorse the wish of the compiler that it may be subscribed for by sufficient libraries to pay the costs of publication and permit of its enlargement.

THE *Psychological Index*, a bibliography of the literature of psychology and cognate sciences, has been issued for the year 1897. The compilers, Dr. Livingston Farrand, Columbia University, and Dr. Howard C. Warren, Prince-

ton University, have this year been assisted by M. N. Vaschide, Paris, and Dr. B. Borchardt, Berlin, representing, respectively, *L'année psychologique* and the *Zeitschrift für Psychologie*. The value of the Index is greatly increased by the promptness with which it is issued. It will prove useful not only to psychologists, but also to men of science in other departments having some relation to psychology. No less than 2,465 titles are recorded for the year 1897. Their distribution may be given as an illustration of the field covered by modern psychology, general, 221 titles; genetic, comparative and individual psychology, 626; anatomy and physiology of the nervous system, 322; sensation, 142; consciousness, attention and intellection, 269; feeling, 102; movement and volition, 135; abnormal and pathological, 647.

THE *American Journal of Science* for April opens with an article by Professor Langley on the bolometer. It has been used during recent years to make a map of the lower spectrum, but the publication of results has been delayed in the Government Printing Office, and Professor Langley here gives some account of the improvements that have been made since the instrument was first described. It is now about 400 times as sensitive as then, and will indicate a change of less than one-ten-millionth of one degree Centigrade. Mr. Arthur Durward contributes from the Jefferson Physical Laboratory of Harvard University a series of measurements of the temperature coefficients of the seasoned hard steel magnets whose induction coefficients have recently been investigated by Professor B. O. Pierce. Mr. Charles T. Knipp describes a new method of electrically giving seconds, without reference, however, to other similar devices. Other articles in the current number are: 'Skull of Amphictis,' by E. S. Riggs; 'Condition of Oxidation of Manganese precipitated by the Chlorate Process,' by F. A. Gooch and M. Austin; 'San Angelo Meteorite,' by H. L. Preston; 'Pre-Glacial Decay of Rocks in Eastern Canada,' by R. Chalmers; 'Datolite from Guanajuato,' by O. C. Farrington; 'Clinohedrite, a new mineral from Franklin, N. J.,' by S. L. Penfield and H. W. Foote, and 'Rhodolite, a New Variety of Garnet,' by W. E. Hidden and J. H. Pratt.