

NOTES ON INORGANIC CHEMISTRY.

SEVERAL months ago M. and Mme. Curie separated from pitch blende a strongly radio-active substance for which they proposed the name *polonium*. In the *Comptes Rendus* for December 26th, in conjunction with M. Bémont, they describe another supposedly new element in pitch blende for which they propose the name *radium*, while the elementary character of polonium is confirmed. Polonium in its chemical nature seems to resemble bismuth, while radium is analytically indistinguishable from barium. Indeed, it would appear, especially as the spectrum of the new substance is apparently identical with that of barium, except one line, that in their samples radium is present only in small proportion and as an impurity in barium. The claim that it is a new element is based upon the radio-activity of the substance. Barium is not radio-active, while the substance obtained from pitch blende is extremely radio-active. By solution of the chlorid in water and precipitation with alcohol the substance may be fractioned until the chlorid is 200 times more active than uranium. In the spectrum of this substance Demarey finds a line whose wave-length is 3814.8, and which is not due to any known substance. The further the chlorid is fractioned the stronger this line appears. An atomic weight determination showed a variation from that of barium only within the limits of experimental error.

In the January number of the *American Chemical Journal* the work of E. C. Franklin and C. A. Kraus on liquid ammonia (already noticed in this JOURNAL) is continued. Since many inorganic salts are soluble in liquid ammonia, the probability of metathetic reactions, analogous to those in water, would be great. Such the authors find actually take place. Using the nitrates of sixteen metals, and the sulfid, chlorid, bromid, iodid, chromate and borate of ammonium as precipitant, it is found that those salts which are insoluble in ammonia are readily precipitated. The reactions with ammonium sulfid present the most interest, as the compounds formed differ in many cases at least from those formed in aqueous solution, as is

evidenced by their color; for example, that with cobalt is pink, with nickel and with cadmium, white. The cobalt and the cadmium compound assume the normal color of the sulfid on adding water. These seem to be complex compounds, as the precipitate from magnesium nitrate with ammonium sulfid was examined and found to correspond best to the formula $2\text{MgS}, (\text{NH}_4)_2\text{S}, x\text{NH}_3$, where x is 9 or 10.

CONSIDERING in a second paper some of the properties in liquid ammonia the authors show its close relation to water. As a solvent for salts it is only surpassed by water; it closely approaches water in its power of dissociating electrolytes; indeed, some salts conduct electricity better in ammonia solution than in aqueous solution; in many compounds it plays the same part as water of crystallization; its specific heat is as great as that of water and its molecular elevation constant is lower than that of any other substance yet measured. As a solvent it differs from water in not dissolving the sulfates and sulfites, the alkaline carbonates, phosphates and oxalates, and hydroxids. In its solvent power for organic substances it comes nearer alcohol than water. The solid ammonia is not, like water, specifically lighter than the liquid, nor does it exhibit a maximum density above its melting point. Altogether, the investigations which Professor Franklin is carrying out on liquid ammonia promise to enrich our chemical knowledge in no small degree.

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CURRENT NOTES ON ANTHROPOLOGY.

BAD FORM IN ANTHROPOLOGICAL WRITINGS.

In a note to one of his recent articles Dr. S. R. Steinmetz criticises, with just severity, two faults conspicuous in some writers on anthropology (though surely not peculiar to works in this branch). The one is the appropriation, without any or sufficient acknowledgment, of the work of others. This may arise from inadequate preparation, an ignorance of what others have written, or a half-knowledge of it, as well as from deliberate intent.

The second fault is constant self-repetition and self-reference. I can name a writer whose references to his own writings exceed those to

all other authors combined. Whether this is vanity, or simply because he does not read the works of others, may be left an open question.

An author who omits references to what his predecessors have accomplished should be read with constant suspicion and distrust.

THE MANGYANS OF MINDORO.

THOSE who have read Professor D. C. Worcester's account of the Mangyans of the Island of Mindoro, in the Philippines, which he contributed to the *National Geographic Magazine* (1898, No. 6), must have finished his article with the impression that these were about the lowest savages belonging to the human species.

Professor Worcester, however, does not mention the remarkable and redeeming fact that these people are literary; that they have and have had, so long as they have been known, a phonetic alphabet and written records. I have a copy of a document in this alphabet before me, given in the appendix to Paterno's work, 'Los Itas' (Madrid, 1890); and, in 1895 Dr. Foy published a study of it, with numerous examples, in the 'Abhandlungen' of the Ethnographic Museum of Dresden. A brief article on the subject, by the eminent specialist, Professor Blumentritt, may be found in *Globus*, March, 1896 (No. 11). We cannot place such a people in the status of savagery.

THE JEW AND THE GYPSY.

UNDER the above promising title, Mr. W. H. Wilkins edits a volume of the literary remains of Sir Richard F. Burton (H. F. Stone & Co., Chicago). Nearly 300 pages are devoted to these two wandering peoples. The reader who expects new and entertaining facts from Burton's wide experience will be disappointed. The essay on the Jew contains nothing that has not appeared elsewhere, and that on the Gypsy is largely taken up with an ancient and barren controversy. The only portion of the former article which contained original observations the editor thought fit to suppress.

Burton's work in ethnology, though varied and abundant, was superficial and prejudiced. He was not thorough, and his enthusiasm, for and against, led him repeatedly to adopt and defend untenable opinions. Probably the most

carefully studied work of his life was that which his widow burned immediately after his death.

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AGRICULTURAL EDUCATION IN RUSSIA.

THE forthcoming number of the *Experiment Station Record* describes the plans of the government of Russia for the establishment of a system of agricultural education. At a recent meeting of the Agricultural Council, an advisory body, of which the Minister of Agriculture is Chairman, an outline presented by the Minister was considered at length and a general plan of agricultural education was elaborated. The introductory to this document states that notwithstanding the fundamental importance of agriculture to Russia and the great fertility of some of the Russian soils, "the crops obtained even on the black soil are only one-third to one-half as large as those harvested from the incomparably inferior soils of western Europe. Almost everywhere in Russia the primitive processes of farming are persistently followed by the farmers, while the number of persons who are fitted by education and training to disseminate information on the rational methods of agriculture is comparatively insignificant." The scheme is outlined for (1) higher education, furnished by independent agricultural institutes located in the chief agricultural zones of Russia, and by chairs of agriculture and allied sciences in the universities; (2) agricultural high schools, which are in the nature of technical schools and schools with courses in agriculture; (3) lower agricultural schools; and (4) the diffusion of general agricultural information. The schools for the so-called lower education include (a) secondary agricultural schools, (b) primary agricultural schools, (c) agricultural classes, and (d) practical agricultural courses. These lower schools are to be under the jurisdiction of the Minister of Agricultural and Imperial Domains. They are to be maintained at the expense of municipalities, local communities, associations, etc., but may receive a part of their support from the government. They are to have the franking privilege for official mail matter and packages not exceeding 36 pounds in weight. The secondary schools are to be established on