now pass through him without his knowing anything about them.

Such studies ought, indeed, to be the foundation of the science of man, involving, as they do, the recognition of his limitations and also his incalculable capacities. It is foolish for scientific men to reject or neglect them on the ground that they are 'visionary' or 'spiritualistic.' What we want is to pursue knowledge in every direction, and to its limits, if we can.

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NOTES ON INORGANIC CHEMISTRY.

In many of the acids, especially of the less strongly negative elements, the oxygen may be replaced in whole or in part by fluorin, a pair of fluorin atoms taking the place of each oxygen atom. This is true of the borates in the third group, all the acids of the fourth group except the carbonates, the vanadinates, columbates, tantalates, arsenates and antimonates in the fifth group, the chromates, molybdates, tungstates and uranates in the sixth. Attempts have been made by Weinland and Lauenstein to enlarge this list and their results are given in a recent *Berichte*.

By the action of hydrofluoric acid on the iodates, difluoriodates were formed, of the formula KIO_2F_2, $NaIO_2F_2$ and $NH_4IO_2F_2$. These salts are comparatively stable when dry, but are decomposed readily by moisture. Efforts to form fluo-periodates, fluo-manganates and fluo-tellurates have thus far been unsuccessful.

The ordinary cadmium sulfate crystallizes with 8/3 H_2O, while the sulfates of magnesium, zinc, iron, nickel, cobalt and manganese contain seven molecules of water of crystallization. Cadmium sulfate, however, forms double sulfates isomorphous with the double sulfates of the others. Mylius and Funk have just succeeded in obtaining a cadmium sulfate with the normal amount of water. A solution of the salt, saturated at 70° is suddenly cooled to —20°, and by agitation a cryohydrate crystallizes out. When the temperature is then allowed to slowly rise, the cryohydrate melts, but leaves a granular deposit of crystals sometimes several millimeters in length, of $CdSO_4$, $7H_2O$, cadmium-vitriol. The crystals are, however, very unstable.

The same *Berichte* contains two additional papers by Professor Söderbaum, of Gothenburg, on the acetylid of copper. It was recently mentioned in this column that he had formed a complex compound by the action of acetylene on an ammoniacal solution of copper sulfate. He now shows that by carrying on the action in quite dilute solutions in the cold, the precipitate contains two atoms of carbon for every atom of copper, and he takes as its formula $C_{24}Cu_{12}$, H_2O. The substance is similar to the one formerly described as obtained in a hot solution, but is rather more explosive, and the humus-like compound formed by its treatment with acids is richer in carbon. Professor Söderbaum proposes this method for the quantitative estimation of copper, as well as its quantitative separation from zinc.

A new element, Bythium, is announced in the *Electrochemische Zeitschrift* by Theodor Gross. A fused mixture of silver sulfid and silver chlorid is electrolyzed in a nitrogen atmosphere, using platinum electrodes free from iridium. In the melt is found a dark gray powder, insoluble in aqua regia and in ammonia. Fused with alkaline carbonate it gives a melt soluble in hydrochloric acid, from which hydrogen sulfid gives a brown precipitate. The yield of the new substance is 5% of the original sulfur used. From the fact that there is a corresponding loss of sulfur, the author considers that this bythium is formed by the decomposition of sulfur, though he admits that since there is a small (3%) loss of chlorin

in the electrolytic reaction, it is possible that bythium may be formed by the decomposition of chlorin. An atomic weight determination will be looked for with interest.

J. L. H.

SCIENTIFIC NOTES AND NEWS.

THE committee on international mails of the postal congress has decided that natural history specimens and articles for scientific collections be admitted to the mails as samples. This will permit of their being sent at the rate of one cent for every two ounces, whereas at present it is necessary to pay five cents for each half ounce or fraction thereof. It will be remembered that this amendment to the regulations of the Universal Postal Union was proposed at the Leiden meeting of the International Zoological Congress at the instance of Dr. Charles Wardell Stiles, and its adoption has been urged by many men of science and scientific associations.

IN the House of Commons, on May 27th, the President of the Board of Trade, Mr. C. P. Ritchie, introduced a bill to legalize the metric system of weights and measures.

TWO fine specimens, male and female, of the rare West Indian seal (*Monachus tropicalis*, Gray) have been received at the National Zoological Park. They were captured on the 11th of May on Campeche Bank, southern part of the Gulf of Mexico.

ON the occasion of a recent excursion of the geology classes of the University of Alabama, in charge of Professor Eugene A. Smith, the public spirit and liberality which are characteristic of the authorities of the Louisville and Nashville Railroad, were exemplified in placing at the disposal of the class a special train, by means of which the boys were enabled to visit all the mines, quarries and other places of interest along the mineral branch of this great system.

THE will of the late Judge John Lowell, of Newton, Mass., gives $3,000 to the American Academy of Arts and Sciences.

IT is reported that some of the heirs at law are contesting the will of the late Alfred Nobel, and that this will delay the distribution of the great prizes established by him.

BY the will of the late Charles F. Lawrence the town of Pepperell, Mass., receives $100,000 for the establishment of a library and art gallery.

THE Council of the Royal Society has recommended for election the following fifteen candidates: Dr. Robert Bell, Assistant Director of the Geological Survey of Canada; Sir William Broadbent, a London physician and neurologist; Dr. Charles Chree, Superintendent of the Kew Observatory; Mr. H. J. Elwes, known for his contributions to ornithology and entomology; Dr. J. S. Haldane, lecturer in physiology at Oxford; Dr. W. A. Haswell, professor of zoology in the University of Sydney; Mr. G. B. Howes, professor of zoology in the Royal College of Science, London; Dr. F. S. Kipping, known for his researches in chemistry; Mr. G. P. Mathews, professor of mathematics in the University College of North Wales; Mr. G. R. M. Murray, the botanist; Mr. F. H. Neville, the physicist; Dr. H. A. Nicholson, professor of natural history in the University of Aberdeen; Mr. J. M. Thomson, professor of chemistry in King's College; Mr. F. T. Tranten, the physicist, and Mr. H. H. Turner, professor of astronomy at Oxford.

THE American Philosophical Society, of Philadelphia, has elected the following foreign members: Lord Lister; Professor H. C. Röntgen, Würzburg; Dr. Fridtjof Nansen; Professor Theodor Tschernyschew, of the Geological Survey of Russia, and Professor A. Karpinski, Director of the Geological Survey of Russia.

DR. A. FISCHER VON WALDHEIM, professor of botany in the University of Warsaw, has been appointed Director of the Botanical Gardens of St. Petersburg.

IT is proposed to erect a monument to the late Professor Anatole Bogdanov, the eminent Russian anthropologist and naturalist, and at the same time to endow a prize for scientific work in Moscow University to bear his name.

AT the annual meeting of the Brooklyn Institute on May 28th Professor Shaler, of Harvard University, made an address in memory of Agassiz.