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SCIENTIFIC AND ANALYTICAL CHEMISTRY.

Preliminary Note on a New British Mineral containing Cerium, by A. H. CHURCH, *M.A.*

DURING a recent visit to Cornwall I obtained from Mr. Talling, of Lostwithiel, a small specimen of a mineral which seemed to be worthy of examination. Mr. Talling himself had always been of the same opinion since he first met with the specimen, and it is to his sagacity and perseverance that British mineralogy owes a new and most interesting species.

The mineral is distinctly crystallised, and occurs as a coating of not more than one-tenth of an inch in thickness, upon a siliceous matrix in which a grey-green mineral resembling hornblende is disseminated.

The crystalline form of the mineral appears to be that of an oblique rhombic prism. The crystals are arranged in fan-shaped groups, so that only one of the end-faces of the prism can be examined. This upper end-face (001, if I have read the crystal aright) has a brilliant lustre, almost adamantine, and the easiest cleavage of the crystal is parallel to it. The acute prismatic edges of the crystal are symmetrically truncated by small planes. The hardness of the mineral is about 3. It is transparent and pale smoke-grey.

The mineral was carefully picked over, and half the specimen, about one gramme, submitted to analysis. With this small amount, the quantitative results are accordant and satisfactory.

Qualitative analysis showed the presence of phosphoric acid, lime, water, and an earth resembling alumina. But it was soon found that this, as precipitated by ammonia, was really the hydrate of cerium, or rather of the mixed oxides of cerium, lanthanium, and didymium. The insoluble oxalate, the double cerous-potassic sulphate, the borax bead, orange yellow when hot, and all the other characteristics of the cerium group, were readily obtained from minute fragments of the mineral. The following mean percentages are deduced from seven determinations; two of P_2O_5, two of $Ce''O$, two of H_2O, and one of $Ca''O$.

	Experiment.
P_2O_5	28·49
$Ce''O$	51·97
$Ca''O$	5·49
H_2O	14·93
	100·88

The mineral is, then, a hydrated phosphate of cerium and calcium, for I have been led to the opinion that the calcium is here not an intruding but an essential element. The known phosphates of cerium are monazite and cryptolite; the latter contains no calcium, the former less than 2 per cent. calcium, while in neither of these minerals is there any water.

From the analyses may be deduced the formula

$$Ce''_3Ca''\,PO_4,8aq,$$

which demands the following percentages:—

P_2O_5	27·73
$Ce''O$	52·73
$Ca''O$	5·47
H_2O	14·07
	100·00

Adopting the older atomic weights, the mineralogical formula may be abbreviated thus,—

$$(Ce_3Ca_1)_3\,\dddot{P} + 4\dot{H}.$$

In the course of a few weeks further details regarding the properties, &c., of the new cerium mineral will be published.

Laboratory, R.A. College, Cirencester, September 9.

PHARMACY, TOXICOLOGY, &c.

Oxygenated Saline Waters, by B. W. RICHARDSON, *M.A., M.D., London.*

DR. RICHARDSON laid before the British Medical Association specimens of oxygenated saline waters. In these solutions he had succeeded in combining peroxide of hydrogen (containing ten volumes of active oxygen) with various saline substances, and especially with salts of iron. The waters, when properly diluted, were almost tasteless, the taste being so unobjectionable that children could take them, and adults could drink them at meals in place of common water or other fluid. The solutions presented were, a diuretic water carrying nitrate of potassa and spirit of nitric ether; a simple aperient water, conveying sulphate of potassa; and two chalybeate saline waters, one containing phosphate, the other persulphate, of iron, with a little free oxide of iron. The waters were all mildly aperient. They were used for adults in proportions of two ounces for a dose, ordinary water being added so as to fill a tumbler. Specimens were diluted in this way and handed to the members. Dr. Richardson said that the water containing the persulphate of iron was the best chalybeate aperient he had ever used. It remained fresh for weeks, and in appearance resembled to perfection a natural mineral chalybeate water. It differed, however, from such water in that it contained a little sugar and was rich in oxygen. Each dose contained a grain of the iron salt. The formula for this water was as follows:—

Peroxide of hydrogen (Ten volumes of oxygen.)	ʒi.
Sulphate of potassa	ʒij.
Chloride of sodium	ʒss.
Sulphate of iron	grs. xij.
Simple syrup	ʒi.
Water to	ʒxxiv.

Dose: Two fluid ounces to be taken with as much water as will fill a tumbler.

In obstinate cases of constipation with anæmia, and in cases of asthenic gout this solution was most useful. The advantages derived from the peroxide of hydrogen in these waters were most important, the peroxide quickening the eliminative action, and producing free secretion and excretion.

In reply to a question as to the manufacture of these waters, Dr. Richardson said that any Practitioners who had the peroxide of hydrogen could make the waters for themselves, but they were very efficiently made by Messrs. Garden and Robbins, of Oxford-street, London.

PROCEEDINGS OF SOCIETIES.

COLLEGE OF PHYSICIANS.

"*On Animal Chemistry.*" A course of Six Lectures by WILLIAM ODLING, M.B., F.R.S., F.R.C.P.

Wednesday, May 10, 1865.

LECTURE 5.

(*Continued from page* 115.)

Some of these intermediate products of tissue metamorphosis, more particularly the hippuric and uric acids, leucine, and tyrosine, are of sufficiently constant occurrence