

On carphosiderite.

SOME labelled or previously reported 'carphosiderites' from St-Léger, Mâcon, France, and from Greenland have been identified, on further examination, as jarosite^{1, 2, 3} or as natrojarosite.² X-ray diffraction data on 'carphosiderite' from Greenland (U.S. National Museum, specimen number R 6266) have been published,^{4, 5} but unfortunately were not accompanied by a chemical analysis. The studies on this mineral species are so scanty that it seems useful, in order to obtain more information on its validity or to avoid confusion, to check the chemical composition. The U.S. National Museum supplied for this examination a small sample of the 'carphosiderite' (U.S.N.M. R 6266) from Greenland and also of the natrojarosite⁶ (U.S.N.M. 86932) from Soda Springs Valley, Nevada.

It will be seen that the 'carphosiderite' (U.S.N.M. R 6266) is in fact natrojarosite.

The X-ray powder photographs of both samples are almost identical. The chemical analysis of the 'carphosiderite', carried out on 0.33 g., gave the following figures:

	%	Recalculated %	Molecular ratio
Insoluble (hot HCl 1 : 1)	12.3	—	—
H ₂ O- (< 110°)	1.3	—	—
H ₂ O+ (> 110°)	12.1	13.9	0.771
SO ₃	27.3	31.4	0.392
Fe ₂ O ₃	42.7	49.1	0.307
Al ₂ O ₃ + P ₂ O ₅	nil	—	—
CaO	nil	—	—
MgO	nil	—	—
Na ₂ O	4.8	5.5	0.089
K ₂ O	(0.1)	(0.1)	(0.001)
Total	100.6	100.0	—

In the insoluble were recognized some grains of a green monoclinic pyroxene, presumably augite, and of pyrite (both minerals checked by X-rays). The total water content was determined according to the method of Penfield as modified by Hartwig-Bendig.⁷ The other components were estimated in the soluble fraction. Iron was determined by cerimetry. The calcined ammonia precipitate agreed with the Fe₂O₃ so determined, and from this the absence of weighable Al₂O₃ and P₂O₅ was concluded. The sulphate was weighed as BaSO₄ after removal of iron. The alkalis were determined by flame spectrophotometry using standards of similar base composition. The figure for potassium is un-

certain, but indicates a maximum value, as this was the limit of sensitivity of the method.

The molecular ratios are in good agreement, for sodium, iron, and sulphur, with those of natrojarosite $\text{NaFe}_3(\text{SO}_4)_2(\text{OH})_6$. The determined water content is, with respect to this formula, somewhat high, but it may be supposed that the material responsible for the insoluble slightly affects the water ratio.

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¹ A. Lacroix, *Min. France*, 1910, vol. 4, p. 145.

² R. Van Tassel, *Bull. Inst. roy. Sci. nat. Belgique*, 1956, vol. 32, no. 24, p. 9 [M.A. 13-369].

³ A. A. Moss, *Min. Mag.*, 1957, vol. 31, p. 407.

⁴ S. B. Hendricks, *Amer. Min.*, 1937, vol. 22, p. 773.

⁵ C. M. Warshaw, *ibid.*, 1956, vol. 41, p. 288.

⁶ W. F. Hillebrand and S. L. Penfield, *Amer. Journ. Sci.*, 1902, ser. 4, vol. 14, p. 211.

⁷ M. Hartwig-Bendig, *Zeits. angew. Min.*, 1941, vol. 3, p. 195.

Isokite from Mangualde, Portugal.

D. J. FISHER's discovery of isokite replacing triplite from the old tin mines of Slavkov, Bohemia,¹ an environment quite different from the carbonatite in which isokite was originally found,² aroused the writer's interest in other triplite localities. This has led to the identification as isokite of a mineral described but not named by A. M. de Jesus³ from Mangualde, in the province of Beira, Portugal, which historically would now appear to be the first locality for this mineral. The mineral was described as a fluophosphate of calcium and magnesium, but was not named as the chemical analysis was unsatisfactory, totalling only 90.58 % (after the oxygen-fluorine correction), and it could only be compared with cryphiolite, the one substance then recorded of similar composition, but now a discredited species.⁴

As described by de Jesus, the mineral forms dull white earthy crusts on partially oxidized and hydrated triplite (his *metatriplite*). A specimen recently obtained through the courtesy of Professor de Jesus and J. Lima-de-Faria consists of massive black triplite (enclosing patches of pale brown triplite) thinly encrusted here and there in irregular cavities