ELROQUITE AND PHOSPHOCHROMITE DISCREDITED

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Elroquite and phosphochromite were first described as new minerals from the island of Elroque, Caribbean Sea, by C. U. Shepard in 1877. Elroquite is reported in Dana (1892) as an apple-green to gray, massive, hydro-silicate of Al_2O_3 and Fe_2O_3 which is mixed with opaline silica. The green colour is attributed to an admixed chromium phosphate—named phosphochromite.

As a result of this inadequate description, the mineral names were not well-received and are not reported in many text-books. Hey (1955) lists elroquite as a doubtful species and Chudoba (1959) recommends that the name be discarded. However, elroquite and phosphochromite have apparently never been fully examined, and as not only type specimens but some of Shepard's original material was available, re-investigation of these minerals was considered useful. A specimen of each species was available for study. Both are labelled in the same hand-writing and on the phosphochromite specimen the following is stated:

Shepard's original material. "Phosphochromite," the name given by him to a hypothetical phosphate of chromium supposed to be the colouring matter of elroquite.

The phosphochromite specimen consists of a light-weight, porous, pale-green crumbly material which is largely mono-mineralic except for a few small, scattered surface patches of reddish brown iron oxide. As the main green substance was originally defined as a chromium phosphate, a portion of the specimen was crushed and scanned by using the *x*-ray fluorescence method. Iron and phosphorous were detected as the major constituents, but chromium (and titanium) were found to be very low, in the order of 1/25 or less than that of iron. Semi-quantitative spectrographic analysis further indicated that Al and Si are minor constituents whereas the following elements are present in only trace ($< 1.0\%$) amounts: Cr, Ti, Ca, Mn, Mg, V, Sc, Cu. Several *x*-ray powder patterns of the material gave identical results which are in good agreement with a pattern of variscite, $AlPO_4.2H_2O$, from Manhattan, Nevada, and with the published measurements of McConnell (1940). Thus, Shepard's phosphochromite is ferrian variscite.

Except for a slightly higher chromium content, *x*-ray fluorescence analysis of the sample labelled elroquite gave results similar to those

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obtained for "phosphochromite." The specimen in this case consists of large, clear to white, quartz fragments and a white friable material, both being seamed and cemented by green "phosphochromite." *X*-ray powder patterns confirmed that the green material is ferrian variscite; quartz patterns were obtained from the large colourless fragments and the white friable material. The only other materials evident in thin section are a few scattered grains of rutile and a small amount of a pale brown isotropic substance which is presumably Shepard's opaline silica. An *x*-ray powder pattern made on the latter material gave only weak lines for quartz. Thus, although Shepard's material does contain ferric iron and alumina, these elements are present in the ferrian variscite and not in any distinct mineral to which the name elroquite was applied. Elroquite should be discarded, being essentially a mixture of quartz and ferrian variscite.

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THE PROBABLE IDENTITY OF LAITAKARITE AND SELENJOSEITE

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During a study of sulphosalt minerals, commenced in 1938 at the University of Toronto, several museum specimens from Falun, Sweden, labelled "galenobismutite" (ROM, M12992, USNM, 84460), weibullite (USNM, R6532) and "seleniferous chiviatite" (NRS 24083, type material), were examined in polished section and by *x*-ray diffraction methods. All specimens consist of an intergrowth of two minerals. Preliminary data on the two phases were presented by Peacock & Berry (1940, p. 68, 69). The fibrous component was described as weibullite and the platy component as an undetermined mineral with a platy habit. Because of the intimate intergrowth of the two components, the chemical composition