

would vary in intensity with the amount of pigment. This, the writer believes, explains the observed relations between the MnO content and the depth of color.

TABLE IV. RELATION BETWEEN MnO CONTENT AND THE DEPTH OF COLOR IN ROSE QUARTZ

COLOR CLASS	NUMBER OF ANALYSES	AVERAGE % MnO	RIDGWAY'S COLOR CLASS	NUMBER OF ANALYSES	AVERAGE % MnO	
Deep rose	i	1				
	ii	1				
	iii	2	.0004	67'' d-e	5	
	iv	1	.0003			
Rose	v	2	.0004	67'' f	5	
	vi	3	.0002 ⁺			
Pale rose	vii	1	.0002 ⁺	67'' g or paler	11	
	viii	1	.0002 ⁺			
	ix	4	.0002			
	x	2	.0002			
	xi	1	.0002			
	xii	2	.0002			
White	xiii	6	.0003	White	6	.0003

There is no impurity visible microscopically to account for the Mn. The conclusion is justified from the analyses that the color of rose quartz is due to some compound of manganese. The valence must be determined from criteria given later.

(To be continued)

CENTRALLASITE FROM CRESTMORE, CALIFORNIA

WILLIAM F. FOSHAG,¹ *United States National Museum*

During the winter of 1921 the writer collected in the Wet Weather Quarry of the Riverside Portland Cement Company, at Crestmore near Riverside, California, a number of specimens of an unusual pegmatite. The pegmatite vein itself could not be located in the quarry face but the blocks on the quarry floor carried pegmatite cutting across limestone as well as contact rock. The veins were made up largely of feldspar with wollastonite, orange colored prehnite and massive greenish datolite. The

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quartz of the pegmatite was wholly or in part replaced by a mineral that proved to be identical with the mineral centrallasite. This occurrence is, therefore, a second locality for this mineral. Excellent material was obtained for a determination of its chemical and physical properties. These show conclusively that centrallasite is distinct from any other mineral and should, therefore, be raised to the rank of a species.

Centrallasite was originally described from Nova Scotia by Henry How.² But one specimen was obtained, a nodular mass made up of a yellowish waxy crust called cerinite by How; a central portion, bluish in color and resembling chalcedony, named cyanolite; and an intermediate part, colorless, lamellar, with radiating structure—the centrallasite. A portion of this specimen is now in the collection of Colonel Roebing. This specimen was generously placed at the writer's disposal for comparison with the California material. Colonel Roebing's specimen was obtained from How and is a part of the type specimen. This centrallasite had the following optical properties: Biaxial, negative; $2V$ small; $\alpha = 1.535$, $\beta = 1.548$, $\gamma = 1.549$.

The centrallasite from California forms platy to compact masses between large feldspar individuals. The feldspar is pure white to gray in color and has a muddy and altered appearance under the microscope. The centrallasite often has a core of quartz or it fringes large quartz individuals. Under the microscope, ramifying veinlets cut through the quartz in all directions. The feldspar, however, is free of any centrallasite. The centrallasite is often intimately associated with the prehnite and datolite.

The California mineral is pearly white when coarse or grayish white when fine grained. It has a decided platy cleavage. In the fine grained specimens the platy cleavage is not apparent and the mineral has a somewhat greasy luster. In the coarser material, plates up to 5 mm. across are aggregated into radiated masses and the luster is then pearly. For the determination of the physical and chemical properties the coarse platy material was carefully selected. The optical properties on this material correspond exactly to those of the original material. The cleavage plates show the emergence of the acute bisectrix, $2V = \text{small}$; $\alpha = 1.535$; $\beta = 1.548$; $\gamma = 1.549$.

The material for analysis was freed from adhering quartz and

² *Edinburgh New Philosophical Journal*, 10, 84, (1859).

showed upon microscopic examination but 1-2% of quartz. The analysis, made by standard methods, is given below. For comparison, an analysis by How is also given.

ANALYSES AND RATIOS OF CENTRALLASITE

	CALIF.	RATIOS		NOVA SCOTIA
H ₂ O	11.88	.660	5×.98	11.41
SiO ₂	57.00	.950	7×1.00	58.86
Al ₂ O ₃	0.26			1.14
CaO	30.86	.551	4×1.02	27.91
MgO	0.20			0.16
K ₂ O	—			0.59
	100.20			100.07

The analysis of the California material leads to the formula 4 CaO. 7 SiO₃. 5 H₂O. These ratios are closer to both the analyses of the California and Nova Scotia materials than those given by How, 2 CaO. 3 SiO₂. 2H₂O, and are believed to be the correct ones. Below these analyses are compared with the theoretical values for the two formulas.

COMPARISON OF ANALYSES WITH CALCULATED VALUES

	N. S.	CALIF.	4:7:5	2:3:2
CaO	29.2	30.9	30.5	34.1
SiO ₂	59.1	57.0	57.2	54.9
H ₂ O	11.7	11.9	12.3	11.0

The centrallasite fuses easily with intumescence to a clear blebby glass coloring the flame orange. It is soluble in hydrochloric acid with separation of silica. H=2.5. Sp. Gr. 2.51.

The relation of the centrallasite to the quartz of the pegmatite leaves no doubt but that it is the result of the action of calcium bearing waters upon quartz. This replacement of quartz accounts for the extremely "acid" nature of the silicate. The solutions that have formed the centrallasite are also responsible for the formation of the datolite and prehnite, and probably followed directly the crystallization of the pegmatite and are genetically connected with it.