NOTES AND NEWS

PLEONASTE FROM MINERAL COUNTY, NEVADA

VINCENT P. GIANELLA,
University of Nevada, Reno, Nevada.

As pleonaste, the iron-magnesia spinel, has not previously been found in Nevada, other than in microscopic crystals in thin sections, a description of recently discovered large masses of this mineral should be of interest. This spinel was first brought to my attention, early in 1940, through specimens sent in for determination.[1] This material was found by prospectors working in the Garfield Hills, one and a half miles southwest of Kinkead siding. Kinkead siding is on the Hazen branch of the Southern Pacific railroad and is eleven miles east of Hawthorne on U. S. Highway 95.

A visit was made to the region, specimens collected, and a brief study made of the area. The principal rocks of the region are a series of limestones, probably dolomitic, which have been intruded by a granitic rock. Small irregular masses of the intrusive were seen at several places within the sedimentary rocks. No detailed study was made of the areal geology but, from the lithology of the formations and reference to the excellent work of Muller and Ferguson in this area,[2] there can be little doubt that the limestones are a part of their Luning formation of Upper Triassic age. In the vicinity of the contact characteristic pyrometamorphic minerals have been developed in the limestone with the formation of garnet, light to dark green epidote, idocrase, zoisite, and other lime silicates. The idocrase occurs in light brownish-yellow crystals, some of which are well-formed and as much as three fourths of an inch in length. Copper mineralization is present near the contact and mining on a small scale was carried on there many years ago. At these copper prospects there is a considerable amount of chrysocolla and minor quantities of malachite, azurite, and other oxide copper minerals.

The spinel-bearing area is about a half mile east of the copper prospects. At this place the sediments strike approximately east and west and stand nearly vertical. The pleonaste, dark green to nearly black in color, is present in roughly lenticular masses up to two feet wide and fifty or more feet long. These masses are parallel to the strike of the sediments and extend for a distance of several hundred feet. These masses appear to favor a certain horizon although smaller masses are found in adjacent beds. As only a small area was seen during the study of the spinel-bear-

[1] The pleonaste was identified by the Nevada State Analytical Laboratory.

[2] Muller, S. W., and Ferguson, H. G., Mesozoic stratigraphy of the Hawthorne and Tonopah quadrangles, Nevada: *Geol. Soc. Amer., Bull.* **150,** 1573–1624 (1939).

ing limestone it is altogether probable that the pleonaste is much more widely distributed than is known at present. Pleonaste occurs in rather pure crystalline masses and is also intergrown with calcite and other minerals. Usually the pleonaste occurs in finely-granular aggregates with occasional octahedra. Some specimens reveal well-formed octahedra, some of which may be four, or more, centimeters in length.

A sample was prepared for analysis by carefully crushing some of the better material and screening out the fines. A treatment with dilute hydrochloric acid removed the calcite, and other impurities were then removed by careful sorting under a binocular microscope. Further separation was accomplished through the use of a heavy liquid. The final sample was quite pure. The specific gravity (3.530) was determined by the pycnometer method and the index of refraction ($1.725 \pm .002$) by comparison with index liquids.

ANALYSIS OF PLEONASTE

	(1)[a]	(2)
	%	%
SiO_2	2.05	
Al_2O_3	66.86	67.93
Fe_2O_3	5.72	5.81
Cr_2O_3	none	
FeO	2.01	2.04
CaO	none	
	100.47	100.00

[a] Average of two concordant analyses.

1. Analysis of pleonaste by Wilbur G. Hedquist.
2. Analysis recalculated to 100%, considering the silica as an impurity.

I wish to acknowledge my appreciation of the work of Mr. Wilbur G. Hedquist who prepared the sample and ran the analyses and also aided in the determination of the specific gravity.

FULL FIELD VIEW OF INTERFERENCE FIGURES

F. H. GOLDMAN

Ordinarily it is not always possible to obtain clear interference figures which will occupy the full field when employing a polarizing microscope such as the Spencer #37. To do so would necessitate either raising the condenser above the stage (this is the combined condenser N. A. 1.40 and N. A. 1.0) or moving the lamp directly under the polarizer. It was found that the equivalent result was obtained with not too great loss of light by inserting a ground glass disc, or plate, directly below the polarizer. In the Spencer #37 there is provided a slot which will accommodate such a disc very nicely.

Such a ground glass plate will also eliminate the central bright spot of light obtained when using a very low-power objective such as a 40 mm. 2.8× without the necessity of removing the condenser.