NICKELIFEROUS SERPENTINE	
SiO_2	39.36
Al_2O_3	2.76
Fe_2O_3	2.77
CaO	1.32
MgO	36.71
NiO	2.57
$H_2O+120°C$	13.85
$H_2O-120°C$	1.54
Total	100.88

This chemical composition is typical of serpentine, except for the small proportion of nickel, and the optical and other physical properties are those of serpentine.

DUMORTIERITE FROM NEVADA

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INTRODUCTION

Dumortierite-sericite schist is being utilized in the production of refractories. In view of this application, the identification of dumortierite assumes added importance. A dumortierite of a Nevada schist gave such strong dispersive effects that ordinary light could not be employed in the determination of refractive index data. Since mineralogists have come to place considerable importance on refractive index determination, the difficulty encountered in the case of this mineral is worth recording. The probable source of the various colors of dumortierite is also mentioned.

OCCURRENCE

A schist occurring on the west slope of Lincoln Hill in the Rochester mining district, Nevada, appears to have been first described by Jones[1] as a result of a reconnaissance through the district in 1913. The schist is better referred to as a dumortierite-sericite schist than as a mica-tourmaline schist as first suggested by Dr. Jones on the basis of a rather hasty reconnaissance. While tourmaline was common in the veins of Lincoln Hill it was rarely found in the schist.

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[1] Geology of Rochester, Nevada: *Min. & Sci. Press*, **106**, No. 20, May 17, 1913, p. 738.

ORIGIN

This schist is referred to as a dumortieritized trachyte by Knopf[2] who presents the following statements regarding its origin: "The extensive development of dumortierite and associated minerals is clearly due to the action of boron-bearing gases, which have undoubtedly escaped from an underlying granite magma and permeated the trachytes as they traveled upward through a closely spaced network of fractures. These emanations were evidently rich in silicon, aluminum, and boron and deficient in alkalies and sulphides."

Jones states that "it is not improbable that the granodiorite that appears near . . . . to the north, underlies the area and the more intense metamorphism of the rocks and the mica-tourmaline veins of Lincoln Hill is due to its influence."

Since the material from Lincoln Hill possesses a marked schistose structure it will be referred to in this paper as a schist. The schist has since been found at several other localities near the huge mass mapped by Knopf.

A brief note recently appeared[3] reporting the purchase of an occurrence of the schist located in Limerick Canyon, not far from Lincoln Hill, by the Champion Spark Plug Company.

A news item has also recently appeared in the Reno *Evening Gazette* stating that a deposit of "dumortierite, a mineral highly useful in the manufacture of spark plugs" occurring in Gypsy Queen Canyon, 6 miles northeast of Oreana, Nevada, has been purchased by interests representing the Champion Company." This occurrence is located near the Limerick Canyon schist.

The new use for andalusite in the manufacture of spark plugs is now well-known. The use of dumortierite is a more recent development. Vernadsky[3a] found dumortierite to be converted into sillimanite at white heat. We now know that this "sillimanite" is in reality mullite. Cristobalite and perhaps an aluminum borate would be expected to accompany the mullite. It is evident from Vernadsky's work why dumortierite should have been considered of possible value in the manufacture of super-refractories.

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[2] Geology and ore deposits of the Rochester district, Nevada: *U.S.G.S. Bull.* **762**, 1924, pp. 19–20.

[3] *Eng. & Min. Jour.-Press*, **120**, No. 17, Oct. 24, 1925, p. 666.

[3a] Bull. Soc. franc. mineral., **13**, 256 (1890).