

either of them may be found including the other. In British Columbia, nuggets have been observed to have a crumbly appearance, as if the grains of chromite were bound together by the platinum, and it may be surmised that such nuggets could not have travelled very far. Platinum nuggets with chromite attached to them have been reported from Columbia, Russia, British Columbia, and also one from Plattsburg, in New York State. This last is discussed further on, as it is of special interest. It is of interest to note that chromite suggests a basic igneous rock as the source of chromitiferous platinum nuggets.

PLATINUM.
Source and
associated
minerals.

Olivine.—In some British Columbia nuggets, olivine acts as an envelope to the core of platinum. This would point to a peridotite as the mother rock of these platinum nuggets. Russian nuggets have been found with serpentine attached, which certainly was derived from olivine.

Pyroxene.—In British Columbia, some nuggets have been found with attached crystals of augite, near occurrences of pyroxenite, suggesting this rock as the probable source.

The Russian platinum mines of Tagilsk are located along rivers which rise in the mountains of Soloviev, and this suggested the advisability of searching in the mountains for the original source. The country rock is a fine grained variety of peridotite consisting of colourless olivine, which predominates, bound together by serpentine in which is disseminated chromic iron; the serpentine being probably an alteration of the olivine. At a place where an excavation had been made, probably in search of platinum, a sort of pocket, a foot or so in diameter, was observed in the country rock. It consisted principally of angular grains of chromic iron, and in the interstices were serpentine and a little dolomite acting as a cement. An assay of this rock gave 0.0107 per cent of platinum or about 3 ounces per ton.

Platinum has been observed to be a constituent of some copper ores, in tetrahedrite and bournonite, at Val du Drac in France, at Guadalupe in Spain, in the latter case in a vein; and at the Rambler mine in Wyoming; in this last occurrence it is found as sperrylite, (the arsenide of platinum,) in covellite. Two assays, by Baker & Co., of the matte in ear load lots produced from the Rambler mine furnace gave the following results:

	I.	II.
Gold	0.45	0.16 oz. per ton.
Silver.....	7.40	3.80 "
Platinum ..	1.05	0.74 "
Palladium.....	3.15	1.80 "