Jadeite jade from Guatemala: Distinctions among multiple deposits

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New World jade of Middle America came from deposits of jadeitite (jadeite rock) in serpentinite mélanges straddling the Motagua Fault in central Guatemala. A jade source north of the fault was rediscovered nearly 50 years ago, but recent research and development has found that sources north of the fault extend E-W for at least 100 km and to the south there are 3 distinct jade sources in a 15 km diameter zone.

Jadeitites north of the fault are associated with high-pressure / low-temperature "metamorphic rocks" (eclogites and garnet amphibolites) in serpentinites from Pachalum, Baja Verapaz to Río Hondo, Zacapa. These jadeitites are all similar: whitish to gray-green with rare streaks of imperial green, generally coarse grained (mm to cm scale) with albite, white mica, omphacite, and late analcime and NO quartz. Darker green jadeitite is more common away from the fault. Other rocks used as jade and found with jadeitite include deep-green omphacitite (Jaguar) and omphacite-taramite metabasite (Jade Negro). Albitites are associated with jadeitite, and the entire assemblage indicates formation at 6-10 kb and 300-400°C.

The jadeitites south of the Motagua Fault are sourced from three geographic areas in the mountains of Jalapa and Zacapa departments and are individually distinctive:

1- Jadeitites near Carrizal Grande coexist with lawsonite eclogites and blueschists. Colors vary from medium to dark green with veins of dark-green and/or blue omphacite and translucency surpasses most northern jade. Phengitic muscovite is common, followed by titanite, lawsonite, omphacite, minor quartz, garnet, and rare analcime. Jadeite grain size is medium to fine (submillimeter), and alteration is minor. Assemblages indicate formation at 12-20 kb, 300-400°C.

2- La Ceiba jadeitites are generally moderate to intense dark green, with occasional white, lavender, and dark imperial color, and coexist with omphacite-glaucophane blueschists. Grain size is fine, translucency is good, but intense fracturing on a mm–cm scale makes usage as jade difficult. Inclusions and veins consist of quartz, omphacite, diopside, cymrite, actinolite, titanite

and vesuvianite. Formation conditions are 10-14 kb, 300-400°C.

3- La Ensenada jade (marketed as Lila or Rainbow jade) is whitish and opaque with green, blue, orange, and mauve streaks and spots. It is a fine-grained jadeite-pumpellyite rock, veined with grossular (the source of orange color), omphacite, and albite, and contains minor titanite but no quartz. This jade is essentially iron-free and coexists with an iron-free-chlorite rock and lawsonite blueschists that formed at 6-9 kb <200-~300°C.

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Poster

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