

## **EXPLORATION FOR GOLD IN DARIEN PROVINCE, PANAMA**

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### **ABSTRACT**

The authors have conducted a geologic sampling program on an exploratory mining concession in Darien Province, Panama. The mining company was dredging free gold, trapped by obstruction in modern stream beds. The concession is located in a tropical rain forest. Access is by helicopter, canoe, or by foot. The nearest road is about 150 km to the north. Jungle growth is dense, rainfall high, and travel on the ground is difficult except by foot in the smaller streams which are subject to flash flooding. Insects, "killer"-bees, and snakes are abundant. Malaria and yellow fever are known from this region. Outcrops, except in streams, are deeply weathered, covered with thick vegetation and lateritic soil and nearly invisible unless directly in one's path of advance.

Dredge operations on the concession were limited to about 5 hours per day, less when water was muddied by rain runoff. Most of the gold recovered is coarse (2 mm and larger). Most gold nuggets are partially flattened, but there is also a component of wire gold and crystalline gold indicating a not too distant lode source. It is common practice to dredge out certain stream obstructions and then return, after a few rainstorms, to the same obstruction for more gold.

Volcanic rocks (basalts and andesites) of probable Late Cretaceous age underlie the concession. Gold occurs as free gold in quartz veins associated with a pale (leached?) volcanic breccia and jasper. We sampled one volcanic sedimentary rock containing gold which introduces the possibility of paleo-placer sources. However, our study indicates the immediate and best targets are lode gold and modern stream alluvial deposits both requiring much heavier equipment than is now on the scene, better access (particularly roads), and better re-supply methods (an airstrip). We are certain that the Darien Province will become a major mining district. Geologists should promote mining methods which will not totally destroy one of the last great, truly awesome, stands of jungle in the world.