

When such a fish dies inside the host, it can be covered by nacre with the remarkable result shown here. Similar blister pearls have been reported from *Carapus dubius* (Putnam, 1874), the Pacific pearlfish.

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Myanmar cultured pearl production and new gem localities. Each year, Myanmar's eight pearl farms (joint ventures between the government and Japanese, Australian, and Thai companies) produce some 400,000 cultured pearls (table 1). The output has been restricted by limitations on the number of pearl oysters. The largest farms offered 50,000–100,000 cultured pearls in the government's Pearl Emporiums, which are held once or twice a year. The 27th emporium was held September 23–25, 2009. Yangon was the site of the first 26 emporiums, but this year's event took place in Naypyidaw (south of Mandalay). Tender and auction sales for the 424 lots of cultured pearls totaled ~US\$798,000, the most in 18 years. In all, 69% of the lots were sold. This emporium also featured lectures that were open to the public on pearl farming, sorting, and other topics.

A new production of spinel occurred in August 2009 at Bawma, located 9 km northwest of Mogok at coordinates 22°57' N, 96°25' E (elevation ~1220 m). Mostly red and purple spinel was produced, and the largest pieces weighed 1+ g. The spinel is associated with metacarbonate rocks and syenite. The deposit has been known since before World War II, but the recent finds created a gem rush that prompted the township government to stop mining activities. Nearby, colorless crystals of jeremejevite that exceeded 2 cm long were found in early 2009 at Kyauksin village (elevation ~1525 m). The jeremejevite was initially mistaken for quartz by local gem miners. In Kachin State, a new deposit of translucent "moss" green hydrogrossular was found in 2008 near Namhpu. The garnet was found in an outcrop near a stream that has produced ruby.

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Phenakite from Nigeria. Phenakite (Be_2SiO_4) is an unusual mineral that is known in gem quality from some granitic pegmatites and schist-hosted emerald/alexandrite deposits. In October 2009, Dr. Robert Lavinsky (iRocks.com, Dallas, Texas) informed this contributor about a new find of gem-quality colorless phenakite crystals from Nigeria (e.g., figure 11). In partnership with Bill Larson (Pala International, Fallbrook, California), he obtained five crystals that were selected from a parcel offered in Bangkok. In September he

TABLE 1. Annual production of cultured pearls in Myanmar.^a

Year	Number	Weight (momme)
2006–2007	410,791	240,596
2007–2008	443,810	235,917
2008–2009	437,181	238,744
2009 (as of August)	92,178	40,500

^a Source: Biweekly Burmese journals, September 4 and 25, 2009.

obtained another ~30 crystals at the Denver Gem and Mineral Show that ranged up to 5.1 × 3.8 × 3.4 cm. Mr. Larson reported the material was found in August 2009 in the Jos region of central Nigeria, where it is referred to as *okuta didan* (meaning "shining stone" in the local language). The crystals are notable for their transparency and bright, lustrous appearance; they commonly show complex surface patterns that appear to be due to chemical etching.

Although much of the phenakite is sold as mineral specimens, some of the material has been faceted into attractive gemstones. Mark Smith (Thai Lanka Trading Ltd. Part., Bangkok) reported cutting ~100 stones as of October 2009, from a 973 g parcel containing about 45

Figure 11. Nigeria is the source of this phenakite crystal (4.4 × 2.9 × 2.3 cm), which displays complex surface patterns that are characteristic of material from this locality. Courtesy of iRocks.com.





Figure 12. This Nigerian phenakite is impressive for its size (83.45 ct) and transparency. Courtesy of Herb Obodda (H. Obodda, Short Hills, New Jersey); photo by Thai Lanka Trading Ltd. Part.

pieces (typically 10–65 g each) that he obtained in late August. Most of the resulting cut stones weighed 1–10 ct, but larger gems up to 23 ct (eye clean) and 33 ct (very slightly included) were also faceted. The largest cut phenakite weighed 83.45 ct and was virtually free of inclusions (figure 12). Mr. Smith sold a 136.2 g crystal that he

Figure 13. The ruby mining site near the village of M'sawize, Mozambique, is located within the Niassa National Reserve. Photo by V. Pardieu.



estimated would facet an eye-clean 200 ct gemstone.

A literature search revealed only one reference to phenakite from Nigeria: J. Malley and A. Banerjee, "Farbloser Phenakit aus Nigeria [Colorless phenakite from Nigeria]," *Kurzmitteilungen aus dem Institut fuer Edelsteinforschung der Johannes-Gutenberg-Universitaet Mainz*, Vol. 2, 1987, 3 pp. With this new find, we can add one more mineral to the list of high-quality gems produced from Nigeria, which includes tourmaline, topaz, emerald, aquamarine, various garnets, sapphire, and more (J.-C. Michelou, "Le Nigeria. Source de pierres de couleur," *Revue de Gemmologie*, No. 159, 2007, pp. 30–41).

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Update on rubies from Mozambique. In September 2008, rubies appeared in the Tanzanian market that came from a new mine in the M'sawize area of Niassa Province, Mozambique. Then, in February 2009, a second ruby deposit was discovered in the neighboring province of Cabo Delgado, between Pemba and Montepuez. The GIA Laboratory has described the Mozambique rubies in two reports (see V. Pardieu et al., www.giathai.net/pdf/Niassa_Mozambique_Ruby_September13_2009.pdf and S. F. McClure and J. I. Koivula, Fall 2009 GNI, pp. 224–226). In November 2009, one of these contributors (VP) visited M'sawize to document the deposit and obtain samples for GIA's research collection.

The mining site (figure 13) is located ~40 km southeast of M'sawize, in a remote area within the Niassa National Reserve. In July 2009, artisanal miners were expelled from the area by government authorities, and the Reserve continues to search for a solution to deal with illegal digging in this protected area. The area mined for rubies measured ~400 × 200 m, and the hand-dug pits were up to 12 m deep. The pits exploited the eluvium as well as the underlying primary deposit. The rubies formed in veins intruding altered gneiss, possibly of dioritic composition (Dr. Walter Balmer, pers. comm., 2009). The following minerals associated with ruby were identified by one of us (PL): actinolite, anorthite, scapolite, diopside, and epidote. Mica and red garnet were also noted on site. The rubies seen in M'sawize were very similar to those described by Pardieu et al. (2009), ranging from pink to dark red, usually with a tabular habit and weighing up to 40 g. Some showed a silky appearance.

We also attempted to visit the Montepuez deposit, but were unsuccessful due to continued tensions between the police and illegal miners. (In October 2009, the local authorities had convinced most of the miners and dealers to leave the area, while the owner of the private game farm encompassing the deposit was granted a mining license and entered into a partnership with a Thai company.) Several parcels of rubies represented as being from Montepuez (e.g., figure 14) were seen in the Mozambique cities of Nampula and Pemba. The material was similar to the stones described by McClure and Koivula (2009), and was usually a deeper red and flatter in habit than the