

Houston Philosophical Society
Minutes of 624th Meeting, April 17th, 2008

CALL TO ORDER: 7:50 P.M.

President Newell Boyd called to order the 623nd meeting of the Society in its 87th year. After the introduction of guests, Dr. Boyd presented the proposed slate of officers for 2008-2009 and the membership nominations of George Barnstone and Albert Kidd. All were approved by the membership. The new officers for the 88th year of the Society are Robert Patten (President), Evelyn Keyes (Vice President), Don Byrnes (Recording Secretary), Laney Littlejohn (Treasurer), and John Boles (Custodian of Records). No election was held for Corresponding Secretary or Bursar. Section heads were also voted on by the section membership, but the results were not immediately determined.

Dr. Boyd introduced the speakers, Drs. Hans Ave Lallemand, Rice Professor, and Jinny Sisson, the Director of the University of Houston field geology course. Doctors Lallemand and Sisson spoke on "Jade Quest."

Myanmar is the preeminent place in the world to find jade. The largest statue is in the main temple in the capital.

Jade is a multitude of green to white, translucent, tough stones that are cut and carved into objects. It is valued mostly by Asians, as reflected in the saying of K'ang Hsu, emperor from 1667-1722: "If jade is discarded. . . there will be nothing valuable to save."

There are three types of jade: (1) serpentinite, which may be green black, or gray; (2) nephrite, which is common and may be white, yellow, green, red, brown, gray, black, or, rarely, blue; and (3) jadeite, which is rare, may be emerald green, mottled green, pink, lavender, blue, gray, bluish gray, white, red, orange, yellow, or black, and is highly translucent, very hard, and with high toughness and great density so that it is very heavy.

Jade is evaluated by holding it to the sun and by using a flashlight to determine its translucency and color. High translucency is very good. You usually can see crystals in it. It is less valuable if there are small cracks in it because it may crack

if carved. Burmese and Japanese jade generally have fewer fractures than Guatemalan.

There are five major plates in the world, from large, like the Pacific, to small, like the Caribbean. When the earth's crust moves apart, salts intrude and solidify. Jade forms as veins in serpentinite in a cold subduction zone, where plates come together. It is deposited from fluids similar to seawater and is exhumed by diapiric ascent, transpression, and/or strike-slip faults. The subduction zone records what is happening down in the earth. If basalt is pushed into a subduction zone it becomes blue schist. At 50-100 kilometers, it becomes jadeite.

There are only ten places in the world for jade. The most important is Myanmar, followed by Guatemala. The rest are in small deposits, some of good quality but protected by law.

Drs. Lallemant and Sisson got permission to go to Myanmar. After arriving, however, they were denied permission to go north. The foreign minister then advised them that the government needed time to consider their request, giving them a week to tour before giving his assent. They were thus able to see most the holy site in Myanmar, a temple complex covered in gold, and the second most holy, Kyaiktiyo, a rock covered in gold that is believed not to fall because the Buddha's hair is beneath it. A further delay resulted in a trip to Bagan Pagan, kingdoms dated to the early second century A.D. that reached their golden age with the conquest of Thaton in 1057. They also saw Anada Paya, a temple, and other outstanding temples, as well as the Irrawaddy River. Finally, they arrived in Nansibon in the north—the jade country—where mineralogists discover jade samples. Dr. Lallemant was unhappy that, after spending a day and a half in the field, he could not come up with the history of the jade.

The second best outcrop of jade is in Guatemala, where it was discovered in 1998 after it had rained for days following hurricane Mitch, causing erosion of the top ten meters of soil. Jade was favored by the Olmecs, but not by the Spanish, and thus the knowledge of where it came from had died out. In 1955 the source was rediscovered, but until the 1970's only the colors favored by the Mayans was found, not the blue jade favored by the Olmecs. Then, after hurricane Mitch, a man who knew the problem went to Guatemala and found blue jade in a shop. He found out the source but was not believed because he had only an amateur's credentials. Dr. Sisson and other geologists were then asked to go down to check

out the blue jade find, were able to verify the find, and decided to stay because they could not go back to Myanmar.

Olmec “blue jade” is actually light blue to light green and may be speckled. The change to Mayan green jade could be due to many things, including fashion, lost knowledge of the source, its being mined out, or volcanic eruptions. It is mined by simple techniques. Scientists find boulders, break rocks, and extract the jade, but this puts fractures in the jade and makes it harder to carve.

According to Dr. Lallemant, the tectonic map of the Northwest Caribbean shows that the Motagua fault zone runs through. “New” jadeite occurrences are primarily on the south side. Basalt goes down into the seduction zone to a depth of 25 kilometers. The jade comes to the surface because it is small and much lighter than the surrounding material so that it can rise when the plates come together. It takes 5,000,000 to 10,000,000 years to bring jade to the surface through the rise in plates. The Aleutian Islands likewise have seduction zones where two plates come together. Africa has none, and therefore jade is not expected there, in contrast to Ross’s Sea in Antarctica, where there is tectonic movement. The age of jade itself cannot be determined, but it is found in metals that can be dated. Likewise, it is possible to tell where jade comes from because of the accessory metals with which it is found.

True jade is extremely hard and will not scratch with a knife or melt like plastic. It is usually carved by diamond drills, possibly quartz in Olmec times, or horsetail rushes, which are full of silica, or garnets, of which there are many in Guatemala. Artificial jade can be made, but there is no market. Therefore, gem quality is not made. The top commercial use of jade is as bathroom tile.

Quirigna is the postclassic Mayan site that guarded the entrance to Copan.