

BEZOAR STONES

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To be a person of status in the seventeenth century was to be exposed to the jealousies and resentments of others eager to climb the social ladder by whatever means necessary, including murder. Royalty, politicians, and the wealthy had to be aware of plots to destroy them, and take the necessary precautions if they wanted to protect themselves. Rapiers, bodyguards and a loyal circle of associates were often not enough to combat the more insidious means of assassination, especially when it came to difficult to detect poisons. Writing in the early part of the 1600's, Captain Alonso de Contreras, a prominent Spanish soldier of fortune, describes the malicious actions of a cousin who was desirous of his position in an upcoming military campaign. The rival family member had his breakfast eggs laced with arsenic. After first becoming very ill, and fearing death, Contreras began to recover. To aid his progress, a restorative fruit cordial was prescribed for him. That too was poisoned, and the cook was arrested. The following day, Contreras could only manage one bite of lunch before he became ill again. Thinking it was only remaining symptoms of the earlier attempts on his life, his bodyguard naively finished the meal. A few hours later, he was dead, the victim of a third round of poisoning.

Many persons of status accepted potential poisoning as a chronic threat and armed themselves for battle against it. Medicine of the time was often practiced by improperly trained and unlicensed "surgeons" who could often do more harm than good. Those who were wise would take preventive action to avoid having to depend on unreliable "cures." Because wine and other drinks were often laced with arsenic, the most popular poison of the period, many magical devices were employed to negate its deleterious effects before it was consumed. Amethyst, crushed emerald and "unicorn horn" (often narwhal tusk) were all immersed in suspect beverages in the belief that they would render them safe. The most common and effective of these amulets was the bezoar stone. Bezoars are the gallstones of calcium and hair

found in the alimentary tracts of ruminants such as deer, sheep, llamas and antelope. The original bezoars came from goats found in the mountains of Western Persia. They were introduced to Europe from the Middle East sometime in the 11th century, and they remained popular there until the 18th century.



Gold "Poison Cup" and Bezoar Stones recovered from *Nuestra Señora de Atocha*, 1622.

Discoveries on the wreck of *Nuestra Señora de Atocha* show that, in colonial Spanish-America of 1622, bezoar stones were certainly popular, and relied upon. Bezoars were rare, and the extravagant contexts from which they were found on the wreck show the power and esteem that was ascribed to them. The most spectacular item to reflect this belief is the gold "poison" cup, which once held a permanently mounted bezoar in its interior to absorb the poison from any drink it may have held. Another, chicken-egg sized bezoar is beautifully mounted in an engraved and enameled gold framework that was apparently designed to be suspended from a chain. This stone could then be immersed in any drinking vessel to remove toxins. A group of ten unadorned bezoars was found in a silver canister, apparently being shipped to Spain for more formal treatment. Because the *Atocha* traded primarily in South America, it is assumed these bezoars were extracted from llamas or

alpacas, although there are accounts of the Spanish taking them from deer in the New World.

Modern examinations of the properties of bezoars by Gustaf Arrhenius and Andrew A. Benson of the Scripps Institution of Oceanography have shown that they could, when immersed in an arsenic-laced solution, remove the poison. The toxic compounds in arsenic are arsenate and arsenite. Each is acted upon differently, but effectively, by bezoar stones. Arsenate is removed by being exchanged for

phosphate in the mineral brushite, a crystalline structure found in the stones. Arsenite is found to bond to sulfur compounds in the protein of degraded hair, which is a key component in bezoars. The question to be asked now is who figured all of this out 1000 years ago?

By the eighteenth century the marriage of magic and medicine was coming unraveled. Too many ailments, such as epilepsy, jaundice and plague were said to be treatable by bezoars, and people began to grow wary of such claims. The popularity of the bezoar soon faded.

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