*** Name Origin:**

Greek: Pallas goddess of wisdom and after the asteroid discovered in 1803.

*** Sources:**

Obtained with platinum, nickel, copper and mercury ores. Occures primarly in Siberia, the Ural Mountains, Ontario Canada and South Africa.

*** Uses:**

Used in alloys for telecommunication equipment switching systems and electrical relays, catalyst for reforming cracked petroleum fractions, metallizing ceramics, mixed with gold to make "white gold" for jewelry, aircraft sparkplugs, etc.

*** Additional Notes:**

Discovered in 1803 by Wollaston. Palladium is found along with platinum and other metals of the platinum group in placer deposits of Russia, South and North America, Ethiopia, and Australia. Natural palladium contains six stable isotopes. Twenty five other isotopes are recognized, all of which are radioactive. It is also found associated with the nickel-copper deposits of South Africa and Ontario. Its separation from the platinum metals depends upon the type of ore in which it is found. It is a steel-white metal, does not tarnish in air, and is the least dense and lowest melting of the platinum group of metals. When annealed, it is soft and ductile; cold working greatly increases its strength and hardness. Palladium is attacked by nitric and sulfuric acid. At room temperatures the metal has the unusual property of absorbing up to 900 times its own volume of hydrogen, possibly forming $Pd_2H$. It is not yet clear if this a true compound. Hydrogen readily diffuses through heated palladium and this provides a means of purifying the gas. Finely divided palladium is a good catalyst and is used for hydrogenation and dehydrogenation reactions. It is alloyed and used in jewelry trades. White gold is an alloy of gold decolorized by the addition of palladium. Like gold, palladium can be beaten into leaf as thin as 1/250,000 in. The metal is used in dentistry, watchmaking, and in making surgical instruments and electrical contacts.