

Salt River valley is the only anthracite ever found west of the Mississippi.

The ollas lie within one of the Toltec pueblos. A few hundred yards from the largest are the ruins of a large castle, the walls of which were exposed by the work of the Hemingway expedition. Under the circumstances the question is natural, "Can this coal be an artificial product made by these Toltecs?"

I must admit that, while I cannot see where the coal could come from, the theory of its manufacture is improbable, indeed. Modern science can take wood, and by heat and pressure and at great expense produce a lignite. Charcoal, a pure carbon, is, of course, easy to obtain, but the production of anthracite, with its baser percentage of earthy matter, is beyond the skill of the modern experimentalist. If manufactured by the Toltecs, it is probable that it was made in the great retorts where found, though not a sign of an air blast hole could be detected, nor an implement that would aid in a lucid explanation. Fragments of pottery fairly cover the ground near by, all marked with the common Toltec ornamentation of terraces, lightning flashes and wave lines, but in no manner do they throw light upon the subject.

There seems to be no logical or plausible theory to offer. The anthracite is there; let him who can read the riddle.

PRECIOUS STONES

[Washington Post.]

In speaking of the occurrence of precious stones in this country Mr. Kunz said: "Although nearly all known varieties of precious stones are found in the United States there has until recently been little effort made to search for them on an extensive and systematic scale, the indications usually not promising a sufficient return for any great outlay of capital. But there has lately been advance in this direction, for, whereas in 1889 mining for gems was carried on in only two states, there were mined during the last year the following precious stones: Tourmaline in Maine, emeralds in North Carolina, turquoise in New Mexico, sapphires in Montana, and opals in Washington, Idaho and Oregon.

"Nearly all of the gems secured by the various methods of mining are either sent to the large cities in small parcels to be sold, sold as souvenirs where they are found or sent to other localities to be sold as having been found where they are sold.

"Diamonds are found scattered over the country, but up to date never in commercial paying quantities. The two chief diamond belts are along the southern base of the Alleghenies from Virginia to Georgia, and along the western base of the Cascade and Sierra Madre mountains in northern California. There have also been unconfirmed reports of scattered gems found in other localities, and within a year or two considerable excitement was aroused by the reported occurrence in central Kentucky of mineral beds closely resembling the diamond bearing earth of the African mines. But it was afterwards found that there were im-

portant differences between this deposit and the Kimberly clay, the most vital of which was that the Kentucky strip bore no diamonds.

"Sapphire is found chiefly among the crystalline rocks along the base of the Appalachian mountains from Chester, Mass., to southern Georgia. The largest corundum crystal ever found, which was five times larger than any other known crystal, is now in the collection of Amherst college. It suffered somewhat in the disastrous fire of 1892.

"During the last two years turquoise has been actively mined for by two companies, the American Turquoise company and the Azure Turquoise company; a few minor attempts by others having been made. The first of the two above named companies engaged in mining six miles from Cerrillos, N. Mex., reopening some of the mines originally worked by the Indians, and have found turquoise equal in color to the finest Persian material. Its stability in retaining color is equally great, not changing within a short time, as does the Egyptian turquoise, which was so extensively placed on the market about the time when the Persian mines were ceasing to yield.

"Stones have been found at these new localities weighing up to sixty carats each, one of which was sold for about \$4,000; and it is now possible for the first time in the last half century to match a perfect turquoise necklace.

"The Azure turquoise mines are in Grant county, N. M. The material is of rather a robin's egg blue; that is, with a faint greenish tinge. The stones are not the sky blue of the more northern locality, but it is claimed by the owners of the mine that they are not subject to change of color.

"Turquoises have always been known as an unstable gem. Even the finest Persian stones are liable to change occasionally with scarcely any warning, the alteration probably being due to the turquoise coming in contact with acid exhalations from the skin or with fatty acids or alkalies in soap, although wearers of turquoise are especially warned to remove the rings while washing their hands. Recent observations also indicate that turquoise is liable to injury from perfume. The sale of turquoise during the year 1891 from these two localities has probably exceeded \$100,000, and for 1892 \$175,000, and a greater amount for 1893 is expected, as quantities of this gem from an American market have been sold abroad for the first time. This gem has given the most substantial evidence of gem mining in the United States.

"Garnets are also found throughout nearly the same region as the turquoise. One of their peculiarities is that the most of them are ready mined for the prospector, who find them dug out around the ant hills and scorpion holes. They are collected by the Indians and sold to the Indian traders. They are the superiors in some respects to the 'Cape rubies' that are found in mining for diamonds in South Africa. Some of the exceptionally fine ones have brought \$50 to \$100, though fine one-carat stones seldom bring over \$5. The garnet output from this region amounts to about \$5,000 in cut stones annually.

"Opals and amethysts are the two other precious stones of the greatest

importance in this country. The new opal beds in Oregon, where \$20,000 worth of the gems is reported to have been obtained in 1892, promise, if properly worked, to be one of the most important of our gem deposits from a financial point of view."

THE KANSAS SILK STATION.

[Dry Goods Chronicle, N. Y.]

Kansas boasts an unique institution in her state silk station at Peabody, Marion county. It is a veritable novelty, and Kansans are proud of its existence. This station has been established about eight years, and legislative enactment provides that it be maintained by biennial appropriations from the commonwealth. Thus far nearly \$40,000 have been expended upon it.

At the present time the treasury of this institution is in healthy condition, and indications point to a continued prosperous situation. Dr. Buck is the superintendent now in charge of the industry. He has filled this office during the past six years.

Regarding the *modus operandi* employed, he writes as follows:

"The station consists of ten acres of land, on which are raised mulberry trees and various other food-furnishing plants, and a two-story building about 40 x 80 feet, equipped with boiler, engine and ten reels. From four to ten hands are employed in the station throughout as great a portion of the year as is necessary to work up all the cocoons that are purchased.

"The primary work of the station is to raise silkworm eggs for free distribution to such Kansas residents as will make an honest effort to grow worms. From 50 to 150 ounces of eggs are produced each year, which means vast numbers of worms. Two years ago 125 ounces were sent out to forty-eight counties and a large quantity of cocoons was purchased. After the cocoons have been raised by those to whom the eggs are furnished, the station buys them at the rate of \$1 per pound and reels them, selling the commercial silk.

"This reeling process is a very tedious one, and constitutes the bulk of the work done at the station. There has been absolutely no improvement in silk reeling devices during the past 200 years and the machines are crude in the extreme. The inefficiency of these reels and the necessity of paying much higher wages for reelers than in other silk producing countries militates against the financial success of this branch of the station. Girls are paid from \$3.50 to \$4 per week, whereas in France, according to a statement made recently to me by the French silk commissioner, 50 cents a week is the common price. The consequence of this is that it costs \$1.25 per pound to reel silk at Peabody, against only 20 cents in France.

"The silkworm eggs are furnished to applicants in April, and the work of hatching and raising the worms is done during the latter part of April and May. Only about six weeks are required to raise the worms, and that is the only portion of the year that can be employed in the business. Reeling the silk can be carried on throughout the season, as the cocoons are not perishable. No great amount of silk is required in the successful growth