

silver from Peru to be melted in royal mints in Spain.

Dr. Lothrop says: "Hence, our knowledge of the wealth secured from the Incas comes entirely from historical narratives. Altogether these afford but very little information."

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#### METALLURGY

### New Super Pure Metals Approach 99.9999 Per Cent.

ONE OF THE important but little noted scientific serials, with new installments ever appearing, is the story of super-pure metals.

Good advertising and a slogan about purity has sold millions of cakes of soap but some of the new super-purity metals have ratings fantastically higher. Lead that is 99.9999 per cent. fine is now available as metallurgists push their research outward in quest of still further decimal points.

As the purity of metals is increased it is interesting to note that, in general, the resistance to corrosion of the metal diminishes. Somehow there seems to be a link between contaminations in a metal and the ease with which it suffers chemical attack.

Aluminum, antimony, bismuth, cadmium, copper, iron, magnesium, nickel, silver, tin, gold, carbon and platinum of high purity are now available in moderate quantities for scientific research.

Extreme care must be taken in the preparation of super-pure metals. For tin it is common to drop the molten metal into distilled water where it forms into "moss" or into drops that are as convenient, for many purposes, as are the usual small bars of metal.

Super-pure zinc offers the possibility of improving the corrosion resistance of ordinary galvanized steel or iron.

The storage of samples of super-pure metals involves new problems which are only now being overcome. Transparent wrappings for many samples must be examined and carefully selected to prevent contamination. Handling the samples without tweezers is strictly to be avoided.

It is not always necessary to start the production of super-pure metals from refined commercial grades, reports the Bulletin of Arthur D. Little, Inc. Frequently, it is found, a major impurity can be precipitated out and will carry along with it many other impurities.

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#### PUBLIC ASSEMBLY

*Here, apparently, people of the Vannic kingdom used to assemble for public ceremonies. A workman stands by the platform which would have been used in sacrifices or other rites.*

#### ARCHAEOLOGY

## Hillside Fortifications Found at Ruins of Van

HILLSIDE fortifications that kept mighty Assyria from taking the city of Van, Asia Minor, in ancient international struggle, have been unearthed by the American expedition which is probing the buried history of the Vannic kingdom.

Traces of the inner and outer walls and a turret have been found, reports Prof. Robert P. Casey of Brown University, who led the past season's expedition together with Prof. Kirsopp Lake and Mrs. Lake, representing the University Museum, University of Pennsylvania. In time of siege, people of Van probably huddled inside the walls on their high, rocky hill, Prof. Casey concludes.

The expedition found new evidence that this small, almost forgotten kingdom had developed a high culture, when it was wrecked by the conquering Medes about 600 B.C. Beautifully fashioned pottery and implements cut from volcanic stone are among the relics that have lain buried in the ruins. The Vanni made sharp blades from this volcanic stone, and continued to use it long after metal was introduced, the archaeologists discovered. New camera techniques enabled the expedition to make color

photographs of the red, buff, and gray ware for later study.

On the north side of this hill, digging has uncovered a terrace and ceremonial platform, where the court of the kingdom may have assembled. The platform had a drain and other characteristics suggesting religious sacrifices. Adjoining this area, are remains of an ornamental wall of green and white stone, which probably collapsed about the sixth century B.C. Beneath the stones, the expedition found a well-preserved skeleton in reclining or sleeping position.

A trench cut from top to bottom of the hill revealed architectural remains of various periods. The Vannic kingdom is found to be the first to build here, since its walls were built on shelves cut out of the virgin rock.

The Turkish government is cooperating in the excavations.

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Penguins are the only birds that walk completely erect.

Starlings recently swarmed in such hordes about a wood in England that all undergrowth was killed before the birds finally left.