



AN AMERICAN "TUT"

Recalling beauty and glitter of the Egyptian Tutankhamen's burial gifts, the golden burial of an Indian chief has been found in Panama. Shown here as it appeared when first uncovered by archaeologists, it reveals gold medallions, at top, probably from the headdress, ornamented gold plaques worn on the chest, a gold crocodile pendant set with an emerald, gold cuffs, a bead girdle, and many earrods.

been sewed on the front of his war costume. There were also smaller gold plaques, gold cuffs and anklets, ear clips, bells, and beads.

A pendant which Dr. Mason calls "one of the most beautiful and extraordinary gold objects found in America" was on his breast, and it gleamed with an emerald an inch in diameter. The emerald, however, is less interesting than beauty of the goldwork, being pronounced of no great commercial value. Interesting also are earrods, which telescope curtain-rod fashion.

From thick layers of broken pottery, Dr. Mason concludes that those present must have danced or trampled clay dishes into the grave in some ancient and forgotten rite. A crocodile god was worshipped by these Indians, and went to war with them in decorative symbols on the chief's regalia.

Only a small part of the cemetery, which is believed to cover four or five acres, has thus far been excavated. A trench dug by the archaeologists encountered about 30 graves containing hundreds of pottery vessels, and skeletons so fragile from the long-soaking in

rainy seasons that they could not be preserved for study. Digging the big graves must have been a tremendous task, Dr. Mason says, for people with no iron tools.

What Indian people these were, in a region 100 miles west of Panama City, is not yet learned. They are unlike the

famous Mayas or Aztecs and are believed to have had South, rather than North, American culture.

The expedition was undertaken with permission of the Panama government, which will place a share of the discoveries in its national museum.

Science News Letter, July 13, 1940

PHYTOPATHOLOGY

New Method Aids Search For Elms With Dutch Disease

A NEW and cheaper method used in the search for trees afflicted with Dutch elm disease is described by W. E. Ahrens of the U. S. Department of Agriculture. (*Phytopathology*) It has the further advantage of being usable at any time of year, instead of only when the trees are in leaf, as at present.

Mr. Ahren's method depends on the fact that Dutch elm disease causes a marked discoloration of considerable areas in the sapwood, just beneath the bark. Samples of this wood, to a depth of from two to five annual rings, are ob-

tained by driving in a half-inch hollow punch at six-inch intervals all around the trunk. The small wounds thus made are protected against other infections by squirting in a little paint, from a pump-type oilcan.

The thin disks of wood are clipped in two, and if any of them show the discoloration symptom they are taken to the laboratory, where cultures are made to show if the deadly fungus is present.

A high percentage of dependability is claimed for the new method.

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RESOURCES

Collection of Scrap Metals Enforced by Death Penalty

WITH a death penalty to enforce it, the German government is now gathering articles made of copper, brass, tin, bronze, nickel, lead and other heavy non-ferrous metals, the U. S. Bureau of Mines has learned from diplomatic representatives in the Reich. Zinc, however, is expressly excluded because the domestic production has greatly increased in recent years. Part of this has been due to the acquisition of extensive zinc mines in Polish Upper Silesia. Neither are light metals, such as aluminum and magnesium, nor precious metals, desired.

Another decree has enabled the government to requisition, for the lead they contain, all storage batteries from automobiles not in regular use, especially those from private motor cars. These have suffered enforced idleness for some time in order to conserve gasoline. Prices paid vary from .90 mark (36 cents) for a 6-volt 50-ampere battery to 6.40 marks (\$2.56) for one of 12 volts 150 amperes.

Though the German government emphasizes that the campaign is not to be construed as evidence of any dangerous shortage of these metals, officials here believe that even with conquered territory they will still have difficulty in acquiring ample supplies. All German tin has been obtained from overseas countries. The chief European source of nickel has been northern Finland, which also supplied copper. Yugoslavia and Norway have also furnished copper, but it is doubtful whether these countries can supply enough to offset the reduced supply from abroad.

The decree announcing the death penalty to enforce the collection, signed by General Goering, is as follows:

"The collection of metals represents a sacrifice by the German people for the endurance of the war forced upon them.

"Whoever enriches himself by means of these metals, which have been collected or are destined for collection, or

who diverts them from their proper use, does injury to the great German struggle for freedom, and will therefore be punished with death.

"This decree enters into force with its promulgation over the radio. It applies also in the incorporated eastern areas."

Science News Letter, July 13, 1940

INVENTION—RESOURCES

Asks Tin Can Substitutes To Lighten Weight of Rations

With No Need To Worry Over Sufficient Food for Chow, War Department Has Concern Over Transportation

INTENSIFIED efforts to find new substitutes for tin in packing foods may result from Assistant Secretary of War Louis Johnson's appeal to the Institute of Food Technologists to help reduce weight of army supplies.

The U. S. Army would like to lessen the weight of a soldier's daily rations in the field, which total five pounds of "chow" plus a pound and a quarter of tin, cardboard, and wood packing. With no need to worry over sufficient food for our soldiers, or for allies whom we might have to ration in defending the hemisphere, the War Department nevertheless does express concern over transporting and processing the food.

Asking food technologists to help develop containers from substances other than tin, Mr. Johnson said: "Every ounce saved in transportation might prove invaluable when men and guns move to the front."

An especial need: the Army's commissariat would like invented flexible moisture-proof containers rugged enough to ship rice, sugar, and beans to soldiers in the field.

Besides solving a transport problem, if the Quartermaster Corps can get along using less tin, it will be helping to raise the nation's stockpile of this strategic material. Mr. Johnson has not forgotten the estimate that tin cans used by the U. S. Army in World War days would have paved a road from Hoboken to Berlin. This country came close to severe shortages several times.

Now, very differently, the War Department cautiously takes into account this hazard:

"In time of war, access to the raw material may be denied us."

By present reassuring reports, plenty of tin is coming to the United States. Netherlands East Indies, supplying about 6% to 10% of our tin, British Malaya, supplying 75%, are sending shipments

right along. But the status of British and Dutch colonies and freedom of the long Pacific shipping lanes are uncertainties which cannot wisely be ignored.

The United States has had tin on its mind for months, for it is a material of which we produce almost none—less than 200 tons a year out of a consumption of 50,000 or more tons. Nearly half the world's output we use.

When war broke out, tin stocks in this country would not have supplied a month's normal requirements. Since then, putting tin on the reserve stockpile list, government purchasing agents have been buying for national security.

That an industrial nation can get along with very little tin, if it must, was demonstrated by Germany in the World War. But it is hard experience. Substitutes partially fill the bill, require much re-tooling and revision of machinery.

Besides the invaluable stockpile for defense, the United States has various "strings to its bow," in the event that tin imports from the Far East should be interrupted.

One possible source of tin is Bolivia, only country on our side of the world to mine tin in important quantities. Bolivia's production quota, set by the International Tin Committee, is the impressively high figure of about 46,000 tons a year, which is, interestingly, very near the amount we have been using.

Actually, however, Bolivia has not been producing up to its quota, due to a variety of handicaps, including the refractory ore, lack of cheap fuel, lack of smelters. Bolivian concentrates have mainly gone overseas to Britain for smelting. As to whether Bolivia's tin industry is expanding to a more productive future, or whether the best of the tin has been mined, reports differ. Some tin is there, certainly, and it is on this side of the world.

Research in packaging, which has al-

ready introduced jackets of parchment, rubberized paper, aluminum foil, glass, and other materials, would gain in importance, should it become necessary to release tin to the Army and Navy's greatest industrial needs.

Twelve billion tin containers are the present annual American supply, about 60% being used for packing food and the rest for commodities ranging from moth balls to aspirin. Tin cans and containers are the chief form that tinsplate takes.

Reclaiming tin from old cans is another tin-saving possibility, which might be tried on a large scale if it ever became economically worth while. At present prices of tin, it is not considered worth extensive salvage.

Tin substitutes, much discussed, have been put to some specific industrial uses. Tin is tin, and thus far nothing duplicating its broad usefulness has been evolved. But such developments are reported as use of a lead bearing metal, tin free, in producing certain automobiles. Use of enamels and materials such as silver and aluminum in can linings has some possibilities.

Peacetime development of substitutes for our deficient raw materials has been advocated for some time by government mineral experts. They have emphasized that tin is too useful for industry to be deprived of it in peacetime merely as a precaution. And they have placed considerable reliance in the stockpile. But they have advocated seeking substitutes, emphasizing that such substitutes to be worth using should cost less or give better performance.

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The largest *census* in history will be taken in 1941 when India's people—probably 400,000,000—will be counted.

Replacing explosives in *coal mining*, a new process pumps oil into an expandable tube in a drilled hole, and when the pressure expands the tube, the coal is rapidly broken into large lumps along its natural parting line.

● RADIO

P. C. Sandretto, superintendent of the Communications Research Laboratory of United Air Lines, will describe the "Visual Highways of the Air" as guest scientist on "Adventures in Science" with Watson Davis, director of Science Service, over the coast to coast network of the Columbia Broadcasting System, Thursday, July 18, 4:00 p.m., EDST, 3:00 EST, 2:00 CST, 1:00 MST, 12:00 PST.

Listen in on your local station. Listen in each Thursday.