developed, declared two University of Michigan scientists, Drs. O. S. Duffendack and R. A. Wolfe, before the conference. So high a standard of purity is now required of common elements used in this industry that ordinary chemical methods are not good enough. The spectrograph steps in to do the job.

Dr. R. A. Sawyer, also of the University of Michigan, described new and speedier methods of studying impurities in cast iron and in steel which can detect the presence of chromium in one part in 10,000.

Better Guns

Uncle Sam is using the keen eye of the spectroscope, science's powerful research tool, to make sure he gets the best grade steel for his guns. This was told to the Conference by Major J. L. Guion, who explained how the instrument has replaced chemical analyses in the Army's efforts to detect impurities.

Particularly, the spectroscope has been used to test steel for molybdenum and vanadium, metals often found associated with steel. The best steel for guns or armor-plate has from four to six parts in 1,000 of molybdenum and one or two parts in 1,000 of vanadium. More than this, or even less, makes the steel brittle and liable to crack under pressure of repeated explosions.

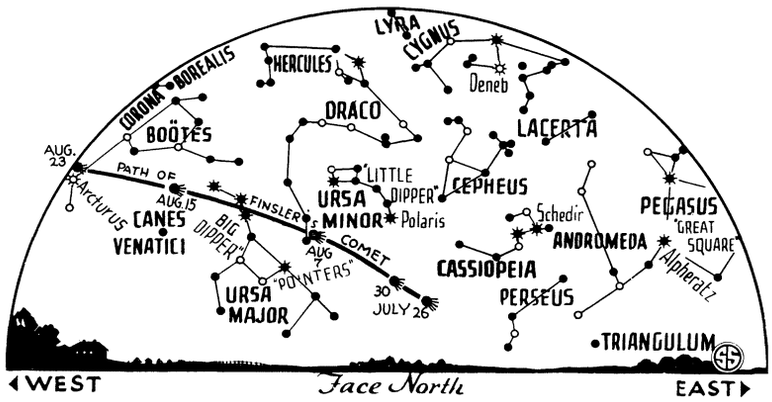
Tin can also be spectroscopically detected in steel, as was explained by Miss Mary E. Warga of the University of Pittsburgh. Tin, she said, is becoming more and more common as an impurity in steel largely because industry is using more scrap metal. The only accurate chemical methods of detecting it are long and tedious, she said, but the spectroscope has proved capable of keeping it within the desired limits, from two to nine parts in ten thousand.

Outside these limits, tin, like molybdenum and vanadium, causes the steel to crack. In this respect, Miss Warga said, the spectroscope was valuable not only in routine analyses of this type but for finding the cause of defects in steel, once they become apparent.

Science News Letter, July 31, 1937

If man's voice were as powerful for his size as that of the tree frog, he could be heard from eastern Washington State to New York City.

A statue recognized as Tutankhamen, because of its likeness to others, was found at Luxor with names of the kings who succeeded him carved on the figure, in place of his.



HOW TO FIND NEW COMET

Use this map to find the Finsler comet discovered on July 4 in Switzerland. Your unaided eye should see it, but a small opera glass will help. At the end of July, the Finsler comet will be seen almost due north and about half way between the Pole star and the horizon. About August 6 or 7 it will be almost on the line between the "pointers" of the big dipper and the Pole star. As it passes through the "handle" of the big dipper it will reach its greatest brilliance and be as bright as the star Megrez, the star in the dipper where the handle joins. The map shows the appearance of the stars in the northern sky at 10:00 p. m. on August 1 and at 9:00 p. m. on August 15.

ANTHROPOLOGY

America's First Humans May Have Become Extinct

Novel Theory Suggests Great Prehistoric Dust Storm May Have Wiped Out Ancient American Hunter of Sloth

AMERICA'S first human population may have become totally extinct, like the mammoths, giant ground sloths, camels and wild horses they hunted with the stone weapons now known to scientists as Folsom and Yuma points.

Dust storms may have been a cause of their disappearance.

These two novel points of view are offered for discussion by Dr. C. Bertrand Schultz of the Nebraska State Museum.

The idea of an extinct race of human beings in America is not new. Extinct races were credited with having built the famous mounds of the Mississippi valley and the Southeast, until research showed that the moundbuilders were Indians, and not necessarily the most ancient Indians, at that.

But the extinct race postulated by Dr. Schultz might well be as old as the cave-man peoples of the Old World—30,000 years or more. The Indians, or their ancestors, may be a much later arriving second wave of immigration from Asia by way of Bering Strait.

Says Dr. Schultz:

"Much new evidence strongly suggests that the 'people,' who lived at the same time as so many of these now-extinct mammals, disappeared from the central North American region at the same time as these mammals. Some great catastrophe must have overtaken the animals in that locality at that time."

Many entire families, such as the American horses, camels, ground sloths, and elephants were wiped out, as well as many genera, Dr. Schultz suggests. The cause of this extinction is not definitely known. Inasmuch as artifacts are often found with now-extinct mammals, it is possible man was a contributing factor in their extermination. Disease is often suggested as a cause.

"Dust storms are recognized as a very important element since twice before in the Pleistocene (early Sangomon and early Peorian) great dust storms apparently caused the extinction of some of the mammalian population and drove others to more liveable climates, perhaps to the Southwest or East," Dr. Schultz contin-

ues. "If this were also the cause of the later disappearance, a few forms may have lingered on in some localities, but not for any appreciable length of time.

"None of their bones have so far been found associated with the earliest basket-maker remains of the Southwest nor with the earliest Indian artifacts of the central North American region. The Indians of the Plains may have belonged to an entirely distinct and later migration from Asia or perhaps the people whose ancestors had lived with the mammoth and horse, returned to their former land when the climatic conditions became normal again.

"But if this latter did happen, evidence points to the fact that considerable time had elapsed between their departure and their return, probably 10,000 years or more."

Science News Letter, July 31, 1937

ARCHAELOGY

Pharaohs in Museums Not True to Life

IT'S NO USE trying to visualize famous Egyptians from their stone portraits.

Egyptian sculptors never had any idea of showing the world that a certain conqueror had a large nose, or that one queen was beautiful and another just medium. If the statue bore the name of the person represented, that made a definite individual of him, to Egyptian satisfaction.

This warning, that Europeans and Americans may as well cease expecting Egyptian art to be like ours, is sounded by Prof. Alexander Scharff of Munich University.

A pharaoh's portrait showed the ideal ruler of that era, Prof. Scharff maintains. The sculptured torso was healthy and vigorous. We can rarely judge age from a king's face.

Prof. Scharff cites a clever experiment, which proved that two statues did not truly picture the same man in youth and old age. A plaster cast was made of a "young" Egyptian's wig, and placed on the "old" Egyptian's bald pate and presto—the two faces were practically the same.

It reminds us of the illusion created at our own National Museum at Washington, where White House ladies' costumes are displayed on figures with identical faces. Rarely do visitors realize it.

Prof. Scharff knows only three Egyptian sculptures that are portraits in modern sense. This, however, leaves out three interludes in Egypt's long history when sculptors did break away to portray real faces—as when Pharaoh Akhnaton encouraged artists to show his curious profile.

Egyptian statues in museums are of two kinds—both religious. Some were hidden in tombs to keep the dead alive. Others, placed in temples, primarily honored a god, even when they boasted the individual's fame.

In either case, says Prof. Scharff, neither craftsman nor patron was interested in a good likeness.

Science News Letter, July 31, 1937

PALEONTOLOGY

Dinosaur Footprints Traced To Ancient Reptile Bones

Giant Tracks in Solid Rock Lead Scientists to Dig For Bones of House-High Prehistoric Monster

ENORMOUS footprints, not in the sands of time but in the solid rock of the everlasting hills, have at last led Dr. Barnum Brown of the American Museum of Natural History to the place where lie the bones of the house-high dinosaurs that made them. Dr. Brown has gone West, to Rock Springs, Wyo., where with a steamshovel borrowed from the Union Pacific Railroad he is digging for the remains of the giant reptiles.

The makers of the great tracks were dinosaurs related to the Iguanodons whose fossils have been found in Belgium and Britain; but the Iguanodons, big as they were, ranked as dwarfs beside their huge American relatives. Their yard-size footprints have been found spaced 16 feet apart, nearly double the stride of the 18-foot-tall Tyrannosaur. It is therefore inferred that the big beasts towered some 35 feet above the ground —higher than a three-story house.

Their tracks were left in the peaty soil of the swamps that were their pastures. Subsequently, floods carried fine sand over the swamps. In time, the buried peat became solid coal, and the fine sand hardened into sandstone. So now when miners in the West take down the coal from the roof, the sandstone casts of the great footprints "hang heavy, heavy over their heads."

The great Iguanodons now being resurrected by Dr. Brown died and were buried back in Cretaceous geologic time, some hundred million years ago. But if you are inclined to give thanks that such monsters do not live today, your sentiment may be tempered by the fact that they were exclusively plant-eaters, and probably no more dangerous than elephants.

Iguanodons and their relatives were a peculiar type of dinosaurs, that habitually went about on their hind legs, with their thick tails to act as balancers, after the fashion of kangaroos. It is not likely that they did as much lively leaping as present-day kangaroos; giant animals of any kind are not much given to that kind of athletics. But they could do some very tall striding—in a literal as well as figurative sense.

The name Iguanodon was given to

FOOTPRINT

The length of this giant track is 44 inches, and it is 32 inches wide. Printed in solid rock, such tracks have led Dr. Barnum Brown, of the American Museum of Natural History to the resting place of the great dinosaurs that made them.