



Radio "Divining Rod" May Locate Buried Treasure

Palo Alto, Calif., Scientist Builds Instrument Sensitive to Underground Metals

By Frances Ayres

WHO hasn't dreamed of finding hidden pirate loot or of unearthing golden fortunes of long-dead misers? The fascination of buried treasure has held men for centuries, but it was not until science took a hand that there have been any definite hopes of a reward.

The procedure for today's fortune seeker is simple if he is equipped with the radio eye of the Metallscope, a recently completed invention of Dr. Gerhard Fisher, Palo Alto, Calif., radio authority, who won renown as the designer of the radio compass for the dirigible Macon.

This super-sensitive ore detector is built along strictly scientific lines and is no kin to the "dip needles" and "hazel sticks" used by superstitious prospectors and treasure hunters.

The Metallscope is as simple to operate as it is accurate. The user has no need for technical knowledge. All he has to do is to pick up the instrument, which is built in a light wooden frame with handles for carrying, adjust the earphones, and start walking over the area where he believes treasure is buried.

WHEN the radio beams from the transmitter come in contact with metal under the surface of the ground, a volume of noise like radio static sounds in the earphones and the meter on the Metallscope records the find. By covering an area of about 25 feet, the hunter can learn the exact location of the metal by noting where the earphones and the meter show the greatest oscillation. Then he starts digging!

The response of the instrument increases with the amount of water or moisture surrounding the hidden ore. Thus it can be used effectively for locating sunken treasure ships. The two units can be lowered in a watertight bag, while wires connect the receiver to the earphones above the water.

"The Metallscope consists of two units carried in a balanced position. One is the transmitting unit which sends into the earth a series of radio beams. These are received by the receiving unit, equipped with a special headphone," explains Dr. Fisher.

SEARCHING for buried treasure is not the use for which Dr. Fisher invented the Metallscope. It is equally efficient for discovering hidden veins of commercial ore and can be used successfully in locating lost pipe lines under city streets.

But it is as an aid to treasure hunters that the Metallscope has figured most prominently since its perfection a few months ago. With it, Herbert Sutherland of Arizona located silver and gold bullion worth \$15,000 on the site of an old mission, and there is a steady demand for Metallsopes from the Bahamas, South Africa, and ports in the Caribbean where pirates are said to have buried their loot.

In fact, the Metallscope might well uncover a great hoard of treasure resting now on the bottom of sundry seas. Shifting tides and heavy disturbances under water often shift sunken vessels great distances from the spot at which they sank. Recent efforts to locate the *Lusitania* illustrate the point. The area in which the ship went down after being torpedoed is well established, yet searchers worked for weeks endeavoring to locate the hulk. Through use of the Metallscope, or a similar device, much useless effort would have been eliminated.



Dr. Gerhard Fisher and the Radio Treasure Finder.



Far from the beaten trails, these daring Western women are pioneering in unusual occupations. Left to right above: Mildred Gordon, girl desert explorer, shown with two Seri Indian women; Catherine Reidy, who makes a business of capturing rattlesnakes; Sally Brewer, who guards the ruins of Wupatki, 75 miles from Flagstaff, Arizona; Fox Hastings, a cowgirl, whose specialty is the dangerous "bulldozing." Below, Mrs. Nell Halderman, who tames the poisonous Gila monsters of the wastelands.



lates. "I keep them caged for a time at first and let them get accustomed to their surroundings. After a little time, I begin stroking their heads, and a few weeks later, I let them out of their cages. Eventually, they come to love me and act much like puppies. When I go into the backyard to rest, several of them always come waddling over on their human-like feet to climb upon me and put their 'paws' around my neck. At meal time, they scratch at the back door. If they like you, they are perfectly harmless. It's only when they are afraid that they are dangerous."

Pioneers? There are thousands of them yet in the West. Born of a virile stock, whose forebears only a generation ago defended their homes from warring Indians, they face dangerous and lonesome work with the same courage and self denial of other wives and mothers on these same trails.

Modern Women Uphold Traditions of Old Western Days With Unusual Jobs

In Desert Wastelands, Daughters of the Pioneers Brave Daily Perils as They Collect Rattlesnakes, Guard Ancient Ruins and Prove They're as Rugged as Their Forebears

By George Max

ALTHOUGH the last of the prairie schooners are in museums and airplanes and "iron horses" have supplanted the stage coaches, women are still pioneering on the last frontiers of the West.

In a thousand nooks of the deserts and mountains, where life is much the same today as it was when other wives on these trails wore picture dresses, hardy, brave women are struggling to bring civilization to outposts many miles from any town.

They keep airways beacons flashing on lonely deserts; fight cattle rustlers and "ornery" top-hands on isolated ranches; watch over the ghostly ruins of Indian pueblos, where the laughter and cry of babies have not been heard for long centuries, and match wits with the wild creatures of the wastelands.

Typical among these pioneers of 1936 is chestnut-haired, blue-eyed Sally Brewer, who watches over the ancient ruins of Wupatki in a land of desolate volcanic ash and lava some 70 miles from Flagstaff, Arizona. She lives in one of the pent-houses of Wupatki, which was built about the time of the Crusades, some 900 years ago, by a people who wore bright clothing and gay adornments and were clever at tilling fields.

From a room on the third story of Wupatki's "Tall House," which, except for whitewashing, is just the same as when it was deserted many centuries ago, she watches to see that curiosity seekers don't damage the historic ruins.

Life is rather lonely for her. Sometimes tourists drive by, but often for days, especially in the winter, she will see no one except a wandering Navajo or Hopi, who may come in to warm his hands in silence over the cheery fire of the white squaw.

SALLY BREWER is only one of a legion of women archaeologists who are charting prehistoric cities through the West, penetrating into mountain wildernesses and scorching deserts to unearth the history of the West before the coming of the white man.

Following even a more dangerous profession is Fox Hastings, one of the few women bulldozers in the world. She thinks no more of jumping from the back of a horse, running at top speed, on to the horns of a charging steer than she does of sweeping the floor. In fact, she would much rather tackle a steer than a broom.

She follows the rodeo circuit from coast to coast. For 20 years she has been tossed from horse to horse, suffering broken legs, crushed ribs, fractured arms, and once a concussion of the brain.

"But I wouldn't give this up for any other life," she said. "I like the thrill when I match my 135 pounds against a half ton of brute force. I like the feeling of triumph which surges through me when the animal falls to the ground."

The tribe of Fox Hastings is many. On almost every ranch in the West, some cowgirl is keeping alive the tradition of strength and intrepidity

which characterized the women of the covered wagon days.

MRS. ALTA BONNER is holding one frontier. When she and her husband and children moved into their desolate home in the Escalante desert of southern Utah, their hopes were high. They would work hard to make a fruitful oasis blossom from the hot sands. Then came tragedy; Bonner died.

That was five years ago. Left alone to support her nine children, Mrs. Bonner carried on.

Today, 100 miles from civilization, in the midst of a vast wasteland, a friendly beacon winks reassuringly every night, winter and summer, to a great transcontinental passenger plane. She walks from her home five miles distant every day of the year to care for the emergency landing field.

In the six years of its existence, it has never been used; yet it furnishes an ever-ready refuge for ships in trouble.

Those who teach schools in snowbound settlements or in "sky cities" on some Indian mesa, where the mail comes only once every month or two, also are many. Mrs. Nancy Thele, a pretty brunet in her early twenties, is school superintendent for Mohave county, Arizona, a county which covers more territory than Rhode Island.

It is a wild land of blazing wastelands and treacherous canyons. In places, it is a no-man's-land, and to reach some of her schools, Mrs. Thele has to travel more than 400 miles, circling through Nevada and Utah. She travels by automobile, by cart, and on horseback to visit one-room schools in the "back country," where the tide of civilization has barely washed. She often goes alone.

A DIFFERENT type of pioneering is that of Catherine Reidy of Tucson, Arizona. A young college graduate, she found herself a few years ago on a lonely homestead. A student of botany and zoology, she became interested in the life about her. She found that eastern collectors also were interested in the plants and animals of the desert.

In her experiments, she discovered that the vertebrae of the rattlesnake looked much like carved ivory when scraped and dried. She strung them into strands of beads.

Today she sets out almost every morning, armed only with a long pole which has a heavy wire fork on one end.

Locating a rattler, she waits until it coils with its head out ready to strike. Then with a swift, accurate thrust, she pins its head down with the fork. One more deft movement with a sharp hoe and the snake is lifeless. Or if she wants to take it alive, she merely uses a loop, and "lassos" the reptile. Dangerous? Yes, she has had a few narrow escapes, but it's all in a day's work.

MRS. NELL HALDERMAN also finds a living in capturing the deadly creatures of the mesquite stretches, only instead of killing them, she tames them for household pets. She traps Gila monsters in nets, then begins the long, tedious work of making them her friends.

"I often work with them for months," she re-

Novel Hoop-Cycle Built By Coast Actor-Inventor

Odd Vehicle Defies Laws of Gravity; Small Motor Drives It at 70 Miles an Hour

By Bob Decker

WANT to go for a ride in a hoop? It's not impossible—Walter Nilsson, coast inventor and vaudeville performer, recently completed his first hoop-cycle, and it rolls along merrily under the power of its one-cylinder motorcycle motor.

The principle of the unicycle, a wheel within a wheel, is the same as the gyroscope. The faster the wheel turns, the steadier it travels. Unicycles have been built before that would travel in a straight line, but could not turn. Nilsson's inven-



Inventor Walter Nilsson driving his odd hoop-cycle.

tion has a secret steering device. The outer wheel turns at an angle and the driver's seat remains in an upright position.

The wheel is five feet, six inches in diameter and 16½ feet in circumference. The tire is pneumatic and is cast from a special mold. The one-cylinder motor propels the present unicycle at a speed from three to 70 miles an hour. There are three forward speeds. To back up, he puts his gears in neutral and pushes back with his feet. From 75 to 80 miles on a gallon is normal fuel consumption.

NILSSON experimented eight years before he finally was successful. The public first got a look at his contraption in 1934 when he successfully drove his machine in and out of heavy downtown traffic in Los Angeles.

The unicycle is driven by wheels, resembling pulleys, connecting the inside and outside rims. The motor turns the wheels, forcing the outside wheel to turn.