

RADIO-AVIATION

Flying to Be Made Safer Through New Radio Device

AVIATORS may receive weather reports without interruption to the radio signals which keep them to their course, now that the U. S. Bureau of Standards has perfected apparatus for the simultaneous transmission of radio beacon direction signals with voice communication.

At present, when a ground station wishes to give pilots information, it must discontinue the beam transmission it uses to direct airplanes. This may mean that aircraft will wander off course and become lost, especially in bad weather when it is necessary to issue information about flying conditions.

For more than a year the Bureau of Standards has experimented with the "visual-range beacon signal" transmitter, which forms the basis of the new beacon system. A pilot has before him a small indicator containing two vibrating reeds. When he is on course the reeds vibrate so rapidly that their ends seem to be two narrow white bands, side by side and of the same height. If the plane gets off course on either side, the amplitude of vibration of the reed increases on the side to which the plane is veering, and therefore the white band on that side becomes wider, while the width of the band on the opposite side decreases. This happens because the reeds are actuated by radio signals sent out on either side of the ground station to which the aviator is flying, and thus he has a visual indication when he wanders too far to either side.

The new apparatus, developed by F. G. Kear and G. H. Wintermute of the bureau, permits the sending of voice by another transmitter on the same frequency. The same aircraft receiver catches both, but a small filter separates the voice from the reed signals and sends the voice to the pilot's headphones. Thus the pilot may listen and guide the plane simultaneously.

All commercial aircraft beacon signals used in the United States today are still different, being of the "aural" type. The pilot must steer his plane by ear. Wandering to one side, he catches the code letter "N," or to the other side the code letter "A." When he is in the middle, and on course, he hears both, which then combine to form a long

dash. Obviously, while listening to code signals he cannot receive voice transmission, but with the visual range beacon system he steers by sight and may at the same time listen to radio messages.

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BOTANY

Wounded Maple Tree Eating Own Heart

THERE stands on the Mall, the great axial park area of Washington, D. C., a most peculiar soft maple. Years ago, a storm tore off one of its main limbs, leaving a gaping wound, open into the heart of the tree, which was already rotted and hollow. The edges of the wound formed callus and healed up as best they could, and from the upper side of the scar a number of branches sprung, as often occurs on injured trees.

But the wound callus also threw out some adventitious roots, which is not



SLOW SUICIDE

That what's happening to this storm-torn maple.

quite so usual a performance. These struck down into the hollow center of the tree, sending their fibers deep into the rotted wood, which has now decayed, at least on the surface, into a rich, moist black humus. The tree is literally eating its own heart out.

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ETHNOLOGY

Earth-Eating Custom Still Practised by Many Tribes

EARTH-EATING, usually thought to have been a custom of antiquity, is practised by many peoples today.

Reports received at the U. S. National Museum, especially one from Dr. Berthold Laufer, Chicago anthropologist, prove conclusively that this strange habit is still widely practised in India and Persia, and comparatively so in many other countries.

Geophagy, as the custom of eating earth and clay is called, has been characterized by early scientists as an evil and a vice. However, there is in reality nothing unusual about it. Man naturally tastes and tests everything offered him by nature. Therefore, earth-eating is no more unnatural than eating salt, pepper, vegetables and animals; or chewing gum or tobacco. Earth may recommend itself to taste through color, odor, flavor,

softness and plasticity. Other foods do no more.

As a rule, not every kind of earth is eaten. The most important, from a standpoint of edibility, is what is called diatomaceous earth, or kieselguhr, popularly known as "mountain meal," or "fossil meal." It is a very light, porous earth, resembling chalk or clay, and consisting of siliceous remains of very minute aquatic organisms. It varies in color from white to different shades of gray and black.

While geophagy is not a universal phenomenon, it may occur sporadically anywhere. It has nothing to do with climate, race, creed, or degree of culture. It is found in the most civilized nations, even in our own midst, as well as among primitive tribes.

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