

Static Comes Long Distance

Radio

When your enjoyment of a radio program is interfered with by crashes of static, you may be listening to the broadcasting from a storm area in Africa. Static is not a local disturbance, but may travel a large part of the distance around the world, A. E. Harper, of the department of development and research of the American Telephone and Telegraph Company, told the Institute of Radio Engineers.

Mr. Harper has been in charge of researches in the direction of static made at Houlton, Maine, in connection with the trans-Atlantic telephone service. Telephony from Europe is received at Houlton, and carried over telephone lines to all parts of the United States.

"It is sometimes assumed that static is of relatively local origin and is rapidly attenuated along its path," said Mr. Harper. "This theory seemed to us rather untenable, since simultaneous records have been made of static crashes at Hawaii, New York, and Germany.

"We believe that for receiving in Maine the most important source of static is thunderstorms in the United States and Canada, after which we put thunderstorms in other portions of the globe. In addition to actual thunderstorms we find static accompanying weather disturbances such as electrified clouds, etc., which have not reached the point of producing audible thunder.

"As a working hypothesis it may be assumed that such static is produced on the southeast edge of an advancing low-pressure area, especially if precipitation occurs. This condition when accompanied by up-rushing winds, according to Dr. W. J. Humphreys of the U. S. Weather Bureau, tends to produce a thunderstorm. Therefore in the absence of other data, thunderstorm charts would be the most logical index of the location of static sources. This theory seems to be strengthened by our Houlton measurements."

The instrument for measuring static consists of two loop aeri-als, connected to radio sets of the same power. The two loops are at right angles, so that one picks up the static from east or west and the other from north or south. These two sets are connected with a cathode ray oscillograph tube so that every crash of static appears as a bright green line on a dark screen. The length of the

line depends on the intensity of the static, and its direction on the actual direction of the disturbance.

Three times a day a five-minute run was made, with one man watching the screen and another recording the data. From these records Mr. Harper has found that places as remote from Maine as Florida, Africa, a position at sea off Argentine, southern Mexico, Ecuador and Brazil are all responsible for some of the static that interferes with the telephone service. All these are recognized as great thunderstorm centers.

Troublesome as static is to the radio listener, it may be of use in predicting weather by giving warnings of approaching storms, S. W. Dean, of the Department of Development and Research of the American Telephone and Telegraph Company, told the engineers.

Experiments which they made at Houlton show that a storm could be located several days before it arrived.

Mr. Dean told of the case of a storm which first gave evidence of its existence on September 7, 1928, when it was somewhere northwest of the Great Lakes, at a bearing of 320 degrees from Houlton. Each day thereafter they broadcast its progress in the form of static. Every time measurements were made at Houlton, this center of static was indicated in the direction of the storm. On September 13, it passed in the vicinity of Houlton and was accompanied by unusually frequent lightning. On that day the observation showed static from all directions as if the storm completely surrounded the town. The next day, the disturbance went out to sea to the southeast and evidence of the storm at sea persisted for several days afterwards.

Though these experiments only located the storm along a line a certain direction from Houlton, observations from two distant points would have permitted an exact location of it where the line crossed.

"It has been possible to correlate the observations with weather conditions in the vast majority of cases, excepting, of course, those occasions, when the sources of atmospheric were in regions not covered by available weather data," said Mr. Dean. "In many cases the directions from which atmospheric came coincided with the bearings from Houlton of places where thunderstorms were reported. In (Turn to next page)

NATURE RAMBLINGS

By FRANK THONE

Natural History



Mountain Laurel

When a botanist wants to pay a high compliment to a friend, he names a plant after him. Naturally, the more beautiful the flower the higher the compliment. Peter Kalm, contemporary and co-worker of the great Linnaeus, has received perhaps the most flowery botanical compliment that has even fallen to the lot of a scholarly collector of plants, for Linnaeus gave to one of the handsome shrubs his friend sent back from America the name of *Kalmia*.

Kalmia, or mountain laurel, is a most attractive plant at any time, for its dark shining leaves are evergreen, relieving even the white bareness of the winter woods. But when spring brings it leave to bloom, the laurel simply outdoes itself. Its clusters of closed star-flowers, pink but by sheer miracle of vegetative good taste not too pink, are things for poets to write sonnets about. Only the newer generation of poets, who affect to be realistic and hard-boiled, do not write verses about flowers any more, which is a great pity.

Most of our fine flowers are in greatest danger from vandalistic gatherers when they are in bloom, which is what one might expect. But the mountain laurel is less troubled than it is in late autumn and early winter. Its evergreen leaves have found altogether too good a market in Eastern cities, and the more accessible areas where it grows are rapidly being depleted by the market-hunters. Fortunately for future generations of American flower-lovers, mountain laurel is true to its name and the higher slopes of the Appalachians still give it refuge. And since two large portions of this chain are being established as U. S. National Parks, at least some laurel will survive to gladden the eyes of our great-grandchildren and to keep green the memory of Linnaeus' friend, Peter Kalm.

Science News-Letter, May 25, 1929