

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 aeriols, 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.

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Traffic Problems in France

Engineering

EARNEST ELMO CALKINS in *If Big Business Came to France* (Atlantic Monthly, April, 1929):

In the course of a recent vacation in France I amused myself by imagining the effect on that country and its people of the introduction of our big business methods: huge manufacturing plants making goods distributed by advertisement to every town, village, and hamlet; the pleasant land of France mapped out in red-headed tacks on the glasstopped desks of sales managers; salesmen primed with sales psychology from instruction books; brief cases stuffed with portfolios of advertising campaigns; sales conventions, drives, "Eat - more - tripe-à-la-mode-de-Caen weeks," chain stores, the Rotary Club holding its weekly luncheon at the Grand Hôtel de l'Europe et de l'Epée; the sky line of Paris broken by steel-skeletoned skyscrapers dwarfing the towers of Notre Dame; the picturesque individuality of the *rues nationales* punctuated by the standardized store fronts of chain stores, and everywhere houses built of the same materials on the same plan, filled with the same furniture and inhabited by people wearing the same clothes. France would lose her great national industry, tourism, but worse, she would lose her point of view, her philosophy, her individualism; and that would be a catastrophe. The world would be poorer with France other than she is.

The open road is not a bad place from which to study a people. One soon gets away from the sophisticated spots where contact with outsiders has blurred individuality and produced a sort of hybrid civilization which, like all hybrids, retains the worst features of each. The motor car gives us a cross section; cities, villages, open country; farms, olive orchards, vineyards; mountain, seacoast, river; and the changeful life that is lived in all of them. I have the deaf man's facility in using his eyes, and my conclusions are based on observation, on what I see as I go about. All I have to contribute to an important controversy are the habits and character of the French people as seen by a man who has few means of contact, but who long ago learned that what people are speaks louder than what they say.

In cities the problem of motor-congested streets affords us an index to national temperaments, for we

Americans too have a traffic problem. Compare the three great capital cities, New York, London, and Paris.

The New York traffic cop is an autocrat. He likes to disregard the red and green signals to show you, as Don Marquis says, "who is king." The supreme sin of the motorist, in his eyes, is *lèse-majesté*. And he is often quite violent about it.

The London bobby is an opportunist. His only concern is clearing the traffic. He winks at violations of the rules if they are intelligent and successful. He is less assertive, and yet obeyed more implicitly, than his New York counterpart. But he is dealing with a more law-abiding populace.

The Paris *gendarme* is not concerned with the motor traffic at all. His care is the pedestrian. At regular intervals he cleaves a swath through the moving stream of vehicles, like Moses dividing the Red Sea, and the swarms of *piétons* cross over. Then he waves his white baton and the cars resume their struggle for gangway without interference from him. And yet it is easier to go about in a car in Paris than in London or New York. In the country there is no speed limit, but drivers are held strictly accountable—a more intelligent regulation than our own.

Another comparison shows the different applications of a similar idea.

Feverish activity on the New York Stock Exchange recently caused the market to outstrip the ticker, and our inventive ingenuity is being directed toward producing a recording device to register sales and quote prices as fast as they are made.

In France they are installing at race courses near Paris a calculating machine which will work out the odds on the *pari mutuel* system in less time than the old hand-and-head method. In one country a machine to measure business; in the other a machine to measure pleasure.

In France one is never at a loss to identify a road. The companionable white kilometre stones accompany one everywhere, recording on the hither side the next two communes and their distances, on the front the number and class of the road, tying up perfectly with the map. The name of each village is displayed in its civic centre, white letters on a blue plaque—a device so obviously useful one wonders why it has not obtained here. Have you never tried in vain to learn the name of the town you were passing through? Nor is all this a development of motoring; it preceded the gasoline era by many years. For the French realize that roads are civilizers. The motorist merely inherits them, but they make France a motorist's paradise.

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Static and Storms—Continued

many others the sources of atmospheric were apparently low-pressure areas where thunderstorms may have occurred, though none was observed at Weather Bureau stations. We are inclined to believe from these results as well as from the work of others, that most atmospheric are due to lightning discharges, although, of course, the evidence is too incomplete to permit us to draw positive conclusions.

"A low-pressure area seems to produce more atmospheric when it is moving rapidly. When it is more or less stationary and quiescent it produces few atmospheric. In the summer, lows produce many more atmospheric when over land than after they pass out to sea, but in cool weather the reverse is sometimes true. In the winter, sources as far away as Texas, the West Indies, South America, and Africa can be observed, but in the summer the effects of nearby disturbances usually overshadow these

distant sources. On days when there is nearly a complete absence of thunderstorms in the United States, the atmospheric are generally light, unless there is a source due to a low not far out in the Atlantic."

Mr. Dean suggested that this method could be used to a special advantage in tracing storms out at sea or in regions where there are no weather stations.

"It would seem that as few as three stations, one on the north Atlantic coast, one on the south Atlantic coast, and one in the middle west, would cover the eastern part of North America and the western part of the Atlantic Ocean fairly well," he said. "Our experience indicates that such a system might be helpful in the location of storms in northern Canada, the Atlantic, the Gulf of Mexico, and the West Indies, as well as those in the eastern half of the United States."

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