



Ground Pine

► IT LOVES to grow in the rich, mossy places, this curious little plant with its tiny, sharp-pointed green leaves, looking for all the world like an odd fairy pine tree. It is only a few inches tall, yet it has inordinately large cone-like fruit.

But the ground pine is not really pine. It is not even closely related to the common evergreen trees. It is more in the nature of a surviving great-great-granduncle, a black sheep in the family tree which gave rise to the conifers in dim ages long ago.

Ground pine is really a member of the fern family, belonging to that peculiar

branch of the ferns known as the club-mosses. Its air of being a plant from another world is not entirely out of place, for it belongs by rights to the remote age when the world's coal was being made. Then its ancestors were proud giants, standing yards high where ground pine now stands inches, with trunks several feet around and leaves a foot long. The kinds of trees we know today did not exist then, and these were the stuff of primal forests.

But times changed, new climates came in, and the tribe of seed-bearing plants arose. The early aristocrats, these dinosaurs of the plant world, could not hold on. Only the dwarfs and the fingerlings of the ground pine family escaped, surviving by hugging the forest floor.

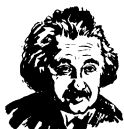
With its taller neighbors in the winter woods, however, ground pine now shares the honors of Christmas pageantry and decoration. Christmas wreaths in the shop windows are built pretty largely on a foundation of this fine green stuff with its needle-like leaves.

Like the holly it often accompanies, ground pine has suffered because of man's holiday spirit. It has long been over-used, and wide areas that once produced it in quantity have been stripped bare for the Christmas markets. Only mountain tops and reaches of country remote from the roads still have it in quantity.

For ground pine is extremely difficult to transplant and cultivate. It was a king of the forests once; now it struggles to survive. It is almost as if it looks back to its days of glory, refusing to be tampered with by man, a recent and puny force compared to the great changes in weather which made it what it is.

Science News Letter, December 2, 1950

## EINSTEIN'S



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### RADIO

## Predict Short Wave To Stop Traffic Jams

► SHORT wave radio in automobiles may eliminate traffic jams of the future. Combine the radios with loudspeakers posted at intersections to provide audible signals, such as those that now guide airplane pilots, and traffic jams will be a thing of the past.

This is the prediction made by Dr. Theodore W. Forbes, associate professor of psychology and engineering at the University of California at Los Angeles.

Research to find ways to relieve the over-taxed eyes of airplane pilots, performed by Dr. Forbes at Harvard University, led him to this conclusion.

Beginning with the work done by Admiral Luis de Florez in 1936, in which it was shown that a pilot could fly a plane blindfolded with only two instrument indications given through his earphones, Dr. Forbes and collaborators studied the possibilities of converting the visual needle-ball airspeed system into an audio system.

They experimented with tones, pitch and

"chopped" signals—discovering that as many as four audio indications can be followed without interfering with ordinary radio and interphone communication.

The most successful signal was a three-in-one indication for turn, bank and air-speed which gave (1) a repetitive, sweeping type of motion of the signal from left to right, (2) apparent "tilt" produced by pitch variations and (3) a "putt" sound that could be associated with the sound of the plane's engine.

"Similar early warnings and information could be given motorists in complex traffic situations through their auditory sense," pointed out Dr. Forbes. "In addition to bigger signs, very short wave radio or loud speakers at highway junctions—such as have already been used by traffic police in some cities—could be used."

Whether or not the audio-signal system for motorists would eliminate the back seat driver, Dr. Forbes would not venture a guess.

Science News Letter, December 2, 1950

### AERONAUTICS

## Radio Contact Important In Safe Flying of Planes

► ALMOST constant radio contact between pilots in flight and government ground control stations is a prime factor in safe airplane transportation, it is indicated by figures released by the U. S. Civil Aeronautics Administration.

During the first eight months of the present year, over 4,000,000 radiotelephone contacts were made by CAA ground stations with pilots in the air. This is over three times the number of such contacts for the first eight months of 1949.

Another major service given by CAA communicators to pilots flying the 60,000 miles of airways is pre-flight briefing. This includes weather information, airport conditions, radio aids, terrain and minimum safe altitudes along the route. Some 1,225,000 such briefings were given pilots during the first eight months of this year, nearly twice as many as during the same period of the past year.

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### CHEMISTRY

## Perfection Not Needed For Crystal Growth

► PERFECTION does not lead to growth, at least in crystals, the Royal Society in London was told.

Slight imperfections, in the form of at least one dislocation per growing face, are needed for a chemical crystal to increase in size in supersaturated vapor, it is shown by researches reported by Drs. W. K. Burton, N. Cabrera and F. C. Frank to the British top science body.

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