

freezing will crack the rock. Prof. Scholer, by his testing method, imitates this condition to see how much of that type of strain a given material can stand.

### Beautiful Highways

America's 15,000,000 pleasure-bound drivers, and the 9,000,000 others who make their living on the road, deserve and need highways that are safe and relaxing, it was stated generally at the session of the Joint Committee on Roadside Development.

Telephone poles, unsightly ditches, narrow shoulders, bare slopes attacked by erosion that endangers the road itself were all thoroughly criticized by leading highway engineers from every part of the United States.

Pointing to a photographic exhibition of the type of work that has been done and to what can be further done, H.

J. Neale, chairman of the Joint Committee, asserted that these modern streamlined highways will prove cheaper in the long run.

"I don't know whether they will be 20 per cent. or 80 per cent. cheaper because we haven't got suitable figures yet," he declared, "but highways whose sides and shoulders are properly designed cost considerably less for maintenance once the road is built."

Wide shoulders—to allow cars to park well off the road and to remove the hazard represented by the ditch; wayside rests,—to allow the fatigued driver a chance to relax; slopes planted with grass and shrubs,—to prevent erosion from carrying earth and rocks down on to a road cut through a hillock or to prevent erosion from under-cutting the bed of a road raised above the countryside, were among the things urged on the Board by speakers.

*Science News Letter, December 11, 1937*

### ACOUSTICS

## Easier To Talk to Driver Than for Him to Talk Back

THE OLD quips about backseat driving have a strong basis of scientific reality, it was disclosed at the meeting of the Acoustical Society of America.

Studies of the relation between automobile noise and speech intelligibility show that it takes ten times the intensity of speech sounds to carry intelligible conversation back to the backseat occupant than it does for the latter to talk to the hapless driver in front.

Dr. J. C. Steinberg and W. A. Munson of the Bell Telephone Laboratories, New York City, disclosed the studies. Scientists of Electrical Research Products, Inc., made the measurements from which the conclusions were drawn.

Three positions of two occupants in a car were investigated. When seated side by side in front intelligible conversation could be carried on at all speeds up to 60 miles an hour with little trouble. An increase of sound intensity of only two decibels was needed and this can be obtained by raising the voice.

In the test of conversation from backseat driver to the driver, no shouting was needed until 50 miles an hour was reached. Then a two decibel increase was required. At 60 miles an hour a six decibel rise was needed.

However, for the same position of car occupants but for conversation from the front seat to the back it was necessary to raise the voice to 18 decibels to obtain intelligible conversation at 60-mile-an-hour speeds.

Thus the backseat driver has a 12 decibel sound advantage in swift-flying conversations.

Actually what happens (as most people know without knowing why) is that the driver in front soon gives up attempts to carry on this conversation. The point is that a sound intensity of 16 decibels is almost at the limit of human ability to maintain intelligible conversation. Twenty decibels is the limit.

A single word can be shouted, said Dr. Steinberg, with an intensity of 30 decibels and some opera singers can attain an intensity of 40 decibels for a sustained note. But for intelligible conversation 20 decibels is the maximum.

*Science News Letter, December 11, 1937*

Developing a Longfellow-Evangeline State Park, in Louisiana, historians have delved into customs and home life of the Acadians, who were immortalized in the poem of Evangeline.

### EXPLORATION

## Expedition Ready to Secure Specimens From "Lost World"

### Unscaled 8,000-Foot Peak Is On Eroded Plateau Of Which Mt. Roraima, Famed by Doyle, Is Also Part

ALMOST ready to poise their airplane for the takeoff, members of the Phelps Venezuelan Expedition at Ciudad Bolivar are whipping equipment into shape for a journey to a "Lost World" not yet on any map, it was reported by the American Museum of Natural History.

Dr. George H. H. Tate and his colleagues will leave from Ciudad Bolivar shortly to scale Mt. Auyantepuy, a "Lost World" discovered only a short while ago by an air-minded prospector flying over the country. The expedition is financed by William H. Phelps of Caracas and sponsored by the American Museum of Natural History.

Situated deep in the Orinoco jungle, one of the least explored regions of the world, Mt. Auyantepuy is a large remnant left when the table-land of which it was once a part was eroded away. The mountain is 8,000 feet high and 300 square miles in area. Two similar mountains, Mt. Duida to the west and Mt. Roraima to the east, were also parts of the same plateau. They were visited by Museum expeditions in 1928 and 1929.

Dr. Tate and his colleagues will bring

back specimens of bird and mammal life as well as map the region they are visiting. They plan to reach the base of Mt. Auyantepuy by airplane. The air journey will take two hours as against the two months a similar journey through the jungle would require.

Dr. Tate was a member of the two previous expeditions to the region. Accompanying him this time are William F. Coultas, for years in charge of the Whitney Expedition in the South Pacific; and E. Thomas Gilliard and James A. Dillon of the Museum staff. Mr. Phelps will also accompany the party.

Many new species of bird life were found on Mts. Duida and Roraima and similar forms are expected to be found on the newly found table-land. Mt. Roraima is famous as the original of the late Sir Arthur Conan Doyle's "Lost World."

The table-land is situated near the point at which Venezuela, Brazil and British Guiana come together, in a particularly inaccessible part of South America, much of which still remains to be explored.

*Science News Letter, December 11, 1937*