

RADIO

# New Device Takes Advertising Out of Radio Programs

**Talk Eliminator, Similar to Automatic Volume Control, Depends for Operation on Pauses in Human Speech**

**A** DEVICE that automatically takes the talk, including advertising, out of radio programs has been developed by Prof. Gleason W. Kenrick, of Tufts College, Mass., who demonstrated this radio talk eliminator to the American Association for the Advancement of Science.

Seemingly endowed with intelligence and discrimination, this robot radio censor looks like a supplementary radio set that is hooked up with a conventional radio broadcast receiver. Actually, the talk eliminator works automatically and utilizes a combination of electrical devices which result in the impartial suppression of all talk and announcements, along with advertising "plugging," that some radio listeners find objectionable.

The radio talk eliminator hook-up is such that whenever there is a quarter of a second silence in the program, the radio set is silent for ten seconds. When a speaker stops for breath, his momentary silence, detected by the talk eliminator, in turn silences the radio to his message for ten seconds. The detecting "brain" in the talk eliminator is a detector amplifier similar to the automatic volume control devices now commercially incorporated in radio sets. Whenever the current in the "brain" tube drops to zero for the predetermined fraction of a second, a selective relay comes into action that silences the radio for a predetermined length of time.

## Ten-Second Omissions

Prof. Kenrick has found that setting the talk-hating robot for ten seconds of silence is an effective antidote for most radio chatter. A very fast talker, like Floyd Gibbons, can beat the eliminator which can not silence him until he stops for breath. Music, which is usually continuous, passes inspection by the censor robot except in the rare instances when there are dramatic pauses as there often are in symphonic compositions.

Radio broadcasting stations will be able to counteract the use of the talk

eliminator, if many listeners equip their sets with them, by supplying a musical background to all announcements and advertising speeches. But if the talk eliminator is thus thwarted, Prof. Kenrick promises to improve it by adding some sound filters which will have the ability to differentiate between musical sounds and the sound of the human voice.

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PHYSIOLOGY

## Blood, Not Nerves, Carries Tetanus Poison to Brain

**"L**OCKJAW" poison is carried to the brain and spinal cord by the blood, members of the American Association were told by the retiring president of the Association, Dr. John Jacob Abel, emeritus professor of pharmacology at the Johns Hopkins Medical School and now director of the laboratory of endocrine research at the same institution.

This conclusion, which is contrary to the now widely held belief that this poison is carried to the brain by the nerves themselves, was reached as a result of studies carried out during the past year by Dr. Abel and his associates.

"A boy with 'lockjaw' is as truly poisoned as if he had been bitten by a rattlesnake," Dr. Abel said in describing this frightful disease.

The disease occurs as a result of infection with a germ called the bacillus tetani. It is fortunately one of the rarer diseases of man, Dr. Abel pointed out, but it appears more frequently during time of war and on such occasions as Fourth of July celebrations.

The tetanus toxin or poison, which is the true cause of the disease, appears during the growth of the bacilli in an infected wound or cut. Nothing whatever is known of the chemical nature of the poison. When it reaches certain cells of the brain and spinal cord it induces generalized convulsions of the most violent nature. Only the poison of the botulinus organism is stronger than tetanus poison.

Dr. Abel described briefly the scientific experiments which led to his conclusion that this extremely potent poison is carried to the brain and spinal cord by the blood rather than by the nerves.

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PLANT PATHOLOGY

## Copper Cures Sickness of Florida Orange Trees

**C**OPPER, used with success in the treatment of certain types of anemia in animals and men, has been used to cure a lack of the green coloring matter, chlorophyll, in plants. At the meeting of the Botanical Society of America, Prof. W. E. Burge of the University of Illinois told of experiments with copper sulphate on "frenched" orange trees, whose leaves were spotted yellow.

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Four months after the trees had had a dose of copper sulphate scattered on the soil around their bases, they were thrifty, healthy and actively growing, their leaves glossy green. Similar "frenched" trees left without a ration of copper were still "frenched" and unhealthy-looking. The leaves of the copper-treated trees, upon examination, proved to have 4.6 times more chlorophyll in them than did the leaves of the untreated trees.

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## RADIO

## Diagram Classifies Radio Tubes

**S**O MANY vacuum tubes are now manufactured for radio and other electrical uses that a complex graphical diagram for listing and selecting them must be used by engineers, Dr. Harry Rowe Mimno of Harvard University told the Institute of Radio Engineers meeting in Boston.

"During the past two years the number of available types of tubes has increased so rapidly that some radio journals have started 'Tubes of the Month' departments," Dr. Mimno explained.

A method of charting kinds of tubes, devised by a Russian, S. J. Zilitinkevitch, has been adapted to American conditions. Dr. Mimno has classified 125 tubes ranging from the tiny "peanut" tube used in the smallest battery-operated receivers to the larger water-cooled multi-electrode transmitting tubes. Any technician can plot a new tube upon the diagram and then compare its properties with the tubes that he has been using.

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## ETHNOLOGY

# West African Negroes Have Thirteen Kinds of Marriage

**I**F YOU think American marriage and divorce are complicated, consider the natives of West Africa.

Thirteen forms of marriage are recognized, Dr. Melville Herskovits of Northwestern University said, reporting what he has learned about marriage and divorce among Negroes of Dahomey. The report was made before the American Anthropological Association in session in Columbus, Ohio.

In some forms of West African marriage, the arrangements call for the husband to assume certain obligations and to have control of the children, if any. In other marriage forms, the wife controls the children, and the husband has no obligation to maintain the family.

If a Dahomean princess marries a commoner, the husband must renounce all claim to the children, for descendants of the royal household must belong to the royal side of the house.

To add to the complications of 13 possible ways of getting married, polygamy is recognized in Dahomey.

Marriage is always proposed by a girl's father, and divorce must always be initiated by her family.

"For a man in Dahomean society to refuse a woman who has been offered to him is boorish," explained Dr. Herskovits, "and should he feel compelled not to accept the offer he must resort to subterfuge."

If he wants a divorce, likewise, he manages it by subtle means. He makes his wife unhappy enough so that she starts the divorce machinery, by asking her family to take her away from her husband.

If a serious quarrel arises among the branches of a family, there may be wholesale divorce affecting many matches, and causing much trouble.

"The multiplicity of marriage types which may obtain in a single culture has not been recognized to the extent that is desirable," said Dr. Herskovits, discussing theoretical significance of his study. "It is possible that such diversity of types may be discovered in other cultures where a single marriage-form has been assumed."

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## PLANT PHYSIOLOGY

## Roots Grown Free From Tops of Plants

**T**HOUSANDS of growing root tips have been kept alive and increasing rapidly for over a year, without any attachment to their parent plants, and fed only from an artificial liquid medium, at the Rockefeller Institute for Medical Research, New York. The experiment was described by Dr. P. R. White, before the American Society of Plant Physiologists.

The roots used were those of tomato plants. The growing tips were cut off and placed in the nutrient liquid, where they continued to increase and multiply in a manner reminiscent of the famous chicken-heart tissue culture started at the same institution many years ago. One of these tomato-root isolations, Dr. White reported, has produced approximately 20,000 growing points, from an initial fragment less than half an inch long. The ratio of the original bit of material to the resultant growth is expressed by the fraction written as 1 over 10 followed by nineteen zeros, so that there is no doubt that the new growth was made by the roots out of the material present in the liquid medium.

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