



### Tellurium

**S**ELENIUM, "moon-element," chemical relative of sulphur, has been convicted of serious harm to animals that have eaten plants grown on soil containing it, and at least the suspicion of causing like harm to human beings has been lodged against it.

Tellurium, another member of the same chemical cousinship, is known to occur in soils in some parts of the United States, so the question naturally arose, whether this element also had in it selenium-like potentialities of harm.

Report of comparative experiments on plants and animals with salts of selenium and tellurium is made by Alan L. Martin, of the botany department of Columbia University, in the current issue of the *American Journal of Botany*.

Mr. Martin grew series of plants in jars of water containing various concentrations of salts of both elements. Both proved injurious above certain threshold levels, but selenium caused far greater injury than tellurium at any given solution concentration. Sulphur, known to be able to inhibit the absorption of selenium by plants, seemed to have no such antagonism for tel-

lurium. On the contrary, plants in tellurium solutions suffered more when sulphur was added.

The critical test came when plant food grown on soils to which 32 parts per million of tellurium and selenium, respectively, had been added were fed to rats. Food from the selenized soil sickened the rats very soon, and killed

them within two weeks. Rats fed on food from the artificially tellurized soil, on the contrary, showed no particular ill effects. They did not grow quite so rapidly as "control" rats fed on a diet free from both selenium and tellurium, but their health remained apparently normal.

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### PSYCHOLOGY

## Fail to Recognize Voices After 5-Month Period

### German Accent Does Not Help; Two Electric Circuits In Brain Described to Midwestern Psychology Meeting

**T**HE chances are only 13 out of a hundred that a person would recognize an unfamiliar voice after an interval of five months, psychologists learned from a report of experiments conducted at Johns Hopkins University by Dr. Frances McGehee and presented to the Midwestern Psychological Association at Urbana, Ill.

Ability to identify voices positively, a controverted issue in many court cases and emphasized particularly by the evidence in the trial of Hauptmann for kidnapping the little Lindbergh baby, was tested by Dr. McGehee.

The persons tested, including a group of law students, listened to a voice behind a screen reading a selection of 56 words. Later they were required to pick out that voice from a group of five reading the same selection under the same circumstances. The time interval between the readings varied from one day to five months.

An unfamiliar voice was recognized by 83 per cent. of the listeners after two days. When two weeks had elapsed, memory for the voice decreased. After three months only 35 per cent. could pick it out; after five months only 13 per cent. could identify it correctly.

A foreign accent (German) did not aid the listeners in identifying the voice. In one of the experiments, a German student who had been in the United States only six months was used as the first speaker. After the time interval this voice was again heard with other voices, respectively Chinese, Greek, another German, and a Russian. The voice most frequently confused with the German voice was not the other German, but the Chinese.

The German accent was not always recognized as that; it was also called Japanese, Norwegian, Dutch, Jewish, Assyrian, Polish-Russian, Swedish, Russian with French influence, and Spanish.

"The reliability of court procedure in accepting testimony of positive identification of a defendant by his voice, in consideration of the length of time interval and the common fallibility of memory, would seem to be relatively low in the light of the present experiments," Dr. McGehee concluded.

### Two Circuits in Brain

The brain has two more or less independent circuits of electrical activity. One deals with the rush of messages that flow from the senses to the brain and out again to the muscles. The other—undisturbed by this contact with the world of the senses—is the background which, with other parts of the nervous system, provides the stuff of consciousness itself.

This is the theory proposed by Drs. S. H. Bartley and Peter Heinbecker of the Washington University School of Medicine, St. Louis, as a result of their experiments with brain waves, those electrical impulses that can be led off direct from the brain.

Because it is impossible to isolate for study any single cell or nervous element in the live working brain, a new technique was devised by these investigators for observing their action indirectly.

Tiny needle electrodes, insulated except at the very tip, were placed in pairs at various depths of the brain's cortex. This outer shell of the brain, which contains a number of layers of cells and their tree-like connections, is of special

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In the Science Service series of radio discussions led by Watson Davis, Director, over the Columbia Broadcasting System.

interest to psychologists, for it is there that nerve activity attains its highest complexity.

The brain waves led off from each of these various layers of the cortex were then compared with others and also with records on the same layer when a very small amount of strychnine was applied to the surface of the cortex just over the needles.

Strychnine changes the nervous activity in the brain so that the brain wave patterns are something like those from the outside of the head of humans in an epileptic seizure. This is unlike the normal rhythm, and has been likened to static of a nervous thunderstorm.

The strychnine does not affect the other "circuit" of the brain which has another pattern of electric impulses known to scientists as the "beta rhythm." This rhythm flows on undisturbed except by very deep anesthesia.

By recording in this way the effect on the brain rhythms of strychnine applied locally, the activity of different groups of cell masses has been deduced, Dr. Bartley told his colleagues.

### Group Judgment Best

Scientific support for the old saying that "two heads are better than one" was presented by Dr. Herbert Gurnee, of Western Reserve University.

Individual judgments were obtained by Dr. Gurnee on the truth or falsity of various statements and also a group judgment as represented by a majority vote.

The group judgment, in terms of correct answers, was not only better than that of the average member, it was equal to the judgment of the best member of the group.

### Family Discord

A give and take spirit between the parents is essential to the family happiness of the children, Dr. Edmund S. Conklin, of Indiana University, told the meeting.

Among those persons living in a family where one or the other parent "rules the roost," discordance in the family

group is twice as great as it is where neither one is dominant. And this holds true regardless of whether the father or mother runs things.

Family discord seems to run in families, Dr. Conklin found. Those whose parents had much trouble with their relatives reported more unhappiness than those whose parents did not have family troubles.

### Marital Agreement

Do husbands and wives agree in their attitudes toward political, economic, religious and other questions? This question was raised at the meeting by Dr. Ross Stagner, of the University of Akron, who has made an attempt to test the traditional assumption that married couples are similar or grow to be alike psychologically.

The extent to which husband and wife agree depends upon the particular question involved, Dr. Stagner found, although it is difficult to figure out any system to account for the degree of agreement. If the issues are particularly controversial, that may lead either to greater disagreement or more unanimity.

Particular questions on which there is greatest marital agreement in either joint approval or disapproval are represented by these terms: Republican, Methodist, Big Navy and Nazi. Those on which there is least agreement are: censorship, child labor and spiritualist.

Some couples do agree "in general" on most matters, Dr. Stagner found. He added the suggestion that this might be caused by the fact that one of the pair dominates the other, an interesting subject for "case-study" investigation.

### Vocabulary Large

Aiguillette, dyad, Geez, kainite, pratique, villanella, whitrack. These are just

a few words picked at random from an abridged dictionary in common use. But such a dictionary does not contain enough words to indicate all those that can be recognized and used by the modern 1937 model college student, Drs. Robert H. Seashore and Lois Eckerson, of the University of Southern California, told the meeting.

To make an adequate test for these verbally fluent students, these investigators found it necessary to make a generous sampling of the Funk and Wagnalls' 1936 unabridged dictionary which holds more than 450,000 words.

"The data indicate that the average size of English vocabulary is far larger than most previous estimates," they concluded.

Those adopting a baby should not place too much importance on the intelligence of the infant's parents, Dr. Donald Snygg, of the University of Toronto, reported.

Intelligence test scores of 300 children in supervised foster homes were compared by Dr. Snygg with the IQ's of their true mothers. Some relation was found, but it was very slight. Eliminating those who had been cared for by their own mothers during early childhood reduced even more the relation between mother's score and the baby's rating.

A surprising finding was that the children of mothers who were borderline in intelligence turned out actually slightly superior to the children of mothers with average normal mentality. Those of definitely subnormal parents, however, averaged slightly lower.

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Forsythia bushes, with their long branches loaded with yellow blossoms, were first introduced to European gardens from China, in 1844.

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