

PSYCHOLOGY

Turn on the Light Brightly; Then You Can Hear Better

Tests Prove Eyes Are Real Help to Ears; Sensitivity of Fingertips to High Pitched Vibrations Found High

DO YOU sometimes feel that you cannot distinguish sounds very well when you are out on a very dark night?

You may be right. Your eyes are a real help to your ears in distinguishing the pitch of two notes or the intensity of different sounds, it appears from tests reported to the American Psychological Association meeting in Chicago by Dr. George W. Hartmann of Pennsylvania State College.

The tests were given at night in a room which was alternately dark and then flooded with brilliant illumination from a total of 510 watts in electric lights. In another series, each test in the dark was followed by one with a lighted 100-watt bulb dangling directly before the listener's eyes.

The listeners were consistently better able to distinguish both pitches and intensities when in the light.

Hearing Through Fingers

The fingertips are sensitive to vibrations much higher than what has been considered the upper limit for them, Dr. Robert H. Gault, of Northwestern University, told scientists gathered for the meeting.

This sensitivity of the fingertips to the higher ranges of vibrations is important because of the possibility that the deaf may be able to supplement their lip reading with "finger hearing."

Previously the upper limit has been set at 2,700 double vibrations per second or less. In Dr. Gault's laboratory, subjects were able to detect rates as high as 8,192 per second. This, he believes, is due to the instrument used for transmitting the vibrations.

The ear is 100 times as sensitive as touch at 64 double vibrations per second, but at 4,096 per second the ear is 500,000 times as sensitive. Correct amplification might correct for these variations in sensitivity, Dr. Gault said.

If you have difficulty in hearing a conversation conducted in a noisy place, or if you cannot understand a speaker who seems to be talking loudly enough, your

difficulty is quite likely not with your ears at all.

Some persons have outstanding lack of ability to perceive speech, Dr. Thomas H. Howells, of the University of Colorado, told members of the American Psychological Association.

A novel test prepared by Dr. Howells revealed this defect. It was prepared by dictating common words and recording them, along with different conflicting sounds, in a sort of jumble of sound on phonograph records. The records were then played quite loudly.

Strangely enough, it was found that there is practically no relation between scores on speech perception under these circumstances and scores on tests of hearing ability.

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MEDICINE

Medicine Advanced By Crystal Pure Secretions

PURIFYING gland secretions until they will form crystals, an accomplishment of modern chemistry, is one of the greatest aids that the medical art has received in recent years. It enables the physician to gauge his dose exactly instead of estimating it, it makes possible the introduction of drugs directly into the blood stream for practically instantaneous effect, and in many cases it eventually leads to the synthetic production of the same or even better principles at lower cost.

Progress in medicine made possible by the identification and purification of the hormones or ductless gland secretions was outlined in an address in Chicago by Prof. Julius Stieglitz of the department of chemistry, the University of Chicago.

Prof. Stieglitz related one dramatic incident that came under his own observation: "A mother lay ready for childbirth in the Chicago Lying-In Hospital but with a heart too weak for the strain. Her heart had actually stopped beating and the eminent obstetrician

faced the necessity of sacrificing the mother to save the child by a Caesarian section, but he allowed one minute more for an injection of epinephrine. The heart responded, the mother revived, and with the support of epinephrine passed through her ordeal. Today both mother and child are alive and well."

Epinephrine, used in this case, was the first of the hormones to be isolated in crystalline form; this was the work of Prof. John J. Abel, veteran scientist of the Johns Hopkins University. One of the latest hormone isolations is the work of a very young chemist, Prof. Edward A. Doisy of St. Louis University. The gland extract which he has succeeded in purifying to crystalline form is theelin, the female sex hormone. It has been used by physicians not only for the correction of deranged sex-physiological conditions, but for the successful treatment of mental disorders and other secondary disturbances.

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INVENTION

New Device May Enable Blind to Read Printing

AN INVENTION which promises to allow the blind to read and which may thus become a boon to those without sight has been made by Georg Schutkowski, a Berlin engineer. It is based on what the inventor calls "optical congruency" and applies photoelectric cells, now used for the detection of differing intensities of light, to the detection of differing forms and figures.

From a letter, or figure, two corresponding pictures are produced by photography. Projected on top of each other, the two pictures are completely covering.

In the device of Schutkowski a negative film of a common printed alphabet is put into a revolving drum, which has windows at regular intervals. An optical lens combination projects the original black print alphabet onto the windows of the drum, in which the negative picture is located in reverse position. When the projected black print letter falls on the proper negative of the drum, complete darkness is produced behind the film for the fraction of a second. A photoelectric cell, which is placed behind the drum, consequently is in darkness for this time. Attached to the photoelectric cell is an arresting magnet, which for the fraction of the second stops the motion of the drum and connects the current of an electric phono-