

'Hearing' Electrically

The deaf may be able to hear and identify sound stimuli created by direct electrical stimulation of the auditory nerve

➤ A DEAF PERSON has been able to "hear" as a result of direct electrical excitation of auditory nerve fibers. But what he can hear may not make much sense.

An editorial in the *Journal of the American Medical Association*, 197:138, 1966, is more optimistic about the possibility of an artificial sense organ, however, than the investigator himself.

There have been many encouraging reports that the deaf can hear through the use of electric wires, but they "heard" only buzzes, noises or ratchet-like sounds in most cases.

A 53-page report in the *Archives of Otolaryngology*, 84:2, 1966, by Dr. F. Blair Simmons of Stanford University School of Medicine, Palo Alto, Calif., concerns a 60-year-old, totally deaf volunteer who had six small electrodes permanently placed in the auditory nerve.

The man's descriptions of acoustic sensations, caused by electrical stimuli as small as one microampere, were studied for 18 months. Although

speech-modulated stimuli were not understood, they were unerringly recognized as speech, mainly by rhythm and volume cues.

Sometimes these inadequate cues allowed the deaf man to make surprisingly close guesses about what was actually being said, unless nonsense material was deliberately used. Pitch, loudness and rhythm allowed the man to recognize a few simple tunes with practice.

"Technically," the AMA editorial stated, "the experiment was successful in demonstrating that it is possible to place electrodes in primary sensory fibers without subsequent degeneration."

Dr. Simmons adds a number of "ifs" that must be hurdled before an artificial organ can be possible.

Not only are a number of technical problems unsolved, but the potential patient will still be faced with the problem of learning a new and imperfect "language."

Whether the mature brain has sufficient plasticity to "learn" the "foreign

language" likely to be produced in an electric wire process is a major question, Dr. Simmons believes. So far the answer has been no. Anyone naive enough to assume that communication, as opposed to the simple production of sounds, can be approached solely electrically is wasting his time.

Even so, the editorial maintains, "optimism about the possibility of an artificial sense organ is now slightly more justifiable."

• *Science News*, 90:53 July 23, 1966

PUBLIC HEALTH

Schools, Parents Included In Anti-Smoking Program

➤ MILLIONS of mothers, fathers and teachers in schools all across the country will be included in a program to keep 7th and 8th grade children from smoking next fall.

The new program adopted this spring as a major effort of the National Congress of Parents and Teachers will be supported in its first year by \$87,000 in funds from the U. S. Public Health Service.

Details of the program were announced by Dr. William H. Stewart, Surgeon General, and Mrs. Jennelle Moorhead, national PTA president.

During its first year the program will be operating in 18 states. This number will be increased annually until by 1969 every state will be participating.

Key persons in the new program will be "room mothers," who are PTA representatives for individual classrooms. Through these mothers, school and home activities will be developed to involve other parents, teachers and the children themselves. Emphasis will be on teaching youngsters the health benefits of not smoking and the hazards of cigarette smoking.

In announcing the new joint program, Dr. Stewart said, "We are faced with the stark fact that more than 4,000 young people each day try smoking for the first time, and that half of the nation's teen-agers are regular smokers by the age of 18. The earlier the child begins smoking, the greater will be his risk of premature death in later years."

Mrs. Moorhead, a professor of health education at the University of Oregon, hailed the action of the PTA Board in adopting the program as potentially one of the most important contributions to better health which parents and teachers can undertake.

"The habit of smoking—or the determination not to start smoking—can be developed at a very early age," Mrs. Moorhead said.

"The program which the PTA is now beginning can prevent many unnecessary death and much suffering in a future generation. It has a particular poignancy in that many of those most critically affected by cigarette smoking are parents of children in these age groups."

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'HEARING THRESHOLD'—Children whose problems include making a delayed or confused choice of the right or left hand in writing or visual and audio perceptual deviations may be helped by medical research being pursued at the University of Vermont, with technical assistance from International Business Machines Corporation. Among screening procedures at the university's Center for Disorders of Communication is a "hearing threshold" test conducted by audiologist Martha Hilton.