

Research Shifts to Inner Ear

by Faye Marley

The secrets of the silent ear have a good chance of being unravelled, if enough people with bad ears will leave the bones of their inner ears to temporal bone banks for research. No good ears are wanted.

Temporal bone banks are not like corneal banks, for example. The cornea of the eye must be rushed to the hospital for implant or refrigeration immediately after the death of the donor. Then it can be used at once for the person who needs it.

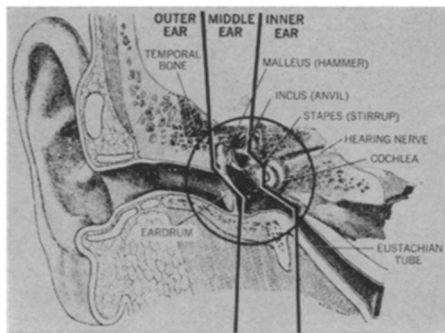
The ear parts, on the other hand, are used strictly for research.

Perceptive or nerve deafness caused by malfunction of the inner ear still generally defies cure. Encased in the temporal bone, the hardest in the human body, the inner ear remains largely a mystery.

The full benefit of the bequests (there have been 4,000 so far) may not be felt for another 20 years, Dr. Gordon D. Hoople, medical advisor to the Deafness Research Foundation, says. But with an estimated 18 million persons in this country with some degree of hearing impairment, and 250,000 who are profoundly deaf, it should not be difficult to get enough bequests to insure success in unravelling the secrets of the silent ear.

Bequeathed bones are removed at no cost to the survivors. The surgical procedure does not disfigure the donor's body, Dr. Hoople reports.

To date, most of the progress made in conquering hearing problems has been in the middle ear, the tiny cham-



ber that lies immediately behind the eardrum. Conductive losses caused by disorders in this part of the ear yield to surgery of various kinds.

Middle Ear

"Stapedial" surgery is performed to restore middle ear hearing loss due to the common hereditary form of deafness called otosclerosis. Otosclerosis is immobilization of a middle ear bone, and usually occurs in the teens or in early adulthood.

The three little bones of hearing (called ossicles) are the malleus, or hammer; the incus, or anvil; and the stapes, or stirrup. The stapedectomy is usually successful in freeing the stapes from adhesions.

Not every child of otosclerotic parents inherits the condition, and if he does, he can be helped by modern microsurgery. Microsurgery can magnify the tiny middle ear bones 40 times, although usually a magnification of 16 times is sufficient for the operation.

At the recent convention of the American College of Surgeons, Science Service interviewed Dr. Shirley Harold Baron, otolaryngologist of San Francisco, who took part in a panel discussion on another operation known as tympanoplasty.

The object of tympanoplasty is to remove diseased tissue from the middle ear as well as to re-form it so that sound may be conducted to the inner ear. The term "tympano" refers to the entire middle ear.

"You have to play it by ear," Dr. Baron punned. "No two cases are exactly alike. We make a transformer and it carries sound waves to the foot of the stapes when we reconstruct the middle ear mechanism. The eardrum membrane has been destroyed and we have to provide new membrane as well as new sound-conducting mechanism. This involves the use of a band or sheet of tissue in connecting muscles. We graft skin, use steel wire, and the

patient's own cartilage. We also use some Teflon. This is very difficult work, but with the aid of the microscope under which we do the surgery you can get almost normal hearing."

The mastoid is not operated upon in the modern days of antibiotics as much as in the past.

A recent example of research progress was reported from Johns Hopkins University Hospital laboratory by the Deafness Research Foundation. Two sets of temporal bones were received with a condition known as congenital aural atresia, a malformation of the outer ear, ear canal and middle ear. As a result of the studies made on these specimens, a surgical technique was perfected that now gives serviceable hearing to children and young people who have this defect.

The procedure involves building an outer ear canal, creating an eardrum where there was none, and constructing a functional sound-conducting system to replace the deformed hammer, anvil and stirrup.

GRAPHIC VISUAL CONTROL



You Get Things Done Better And Faster

The **BOARDMASTER** saves time, cuts costs and prevents errors. You see what is happening. Shows facts at eye level. For Production, Scheduling, Inventory, Sales, Traffic, Etc.

Simple to operate. Write on cards, post on board. Fully flexible. Million in use. Price \$49.50 with cards.

FREE 24 Page **BOOKLET** No. V-10
Mailed Without Obligation

GRAPHIC SYSTEMS, Box 398, Yanceyville, N.C.

WIDE ANGLE DOOR VIEWER



\$2.98
pdd

People inside can see out—get full-length view of anyone outside door. Easy to install in any door up to 2" thick. Tiny 3/4" brass cylinder provides vital protection and security against opening door to unwanted strangers. **ORDER NOW!** SHIPMENTS PREPAID IN U.S. SEND \$2.98 TO:

GIL-MAR ENTERPRISES, INC. Dept. SN-12
P.O. Box 395, Miami Shores, Fla. 33153

EQUIPMENT-SUPPLIES-SERVICES
AND OTHER USEFUL INFORMATION

for

Explorers • Mariners • Divers • Spelunkers
Mountaineers • Naturalists
Amateur Archaeologists & Paleontologists
Hunters • Fishermen • Rockhounds
Outdoor Photographers • Adventurers



The Explorers Trade Mart
Leg 1 — Djorka Bungalow
Post Office Box 247
Silver Spring, Md. 20907

For further information write

SEE MIRACLE OF BIRTH

\$4.98 POST PAID WITH
SIX QUAIL EGGS
(\$3.25 Without Eggs.)

You get the new clear plastic dome **CHICK-BATOR** with 6 Bobwhite Quail Eggs (available year-round) and Egg Hatcher's Guide Book. Complete — nothing else to buy. Send check or Money Order today.

G.Q.F. MFG. CO., DEPT. CL, BOX 152, SAVANNAH, GA.

T I R E D ?

Get an immediate lift in seconds. Relieve your tensions. **MINUTE-A-DAY** is based on Max-Planck Institute research. Improve your energy, stamina, strength, feeling of well-being and trim appearance.

Write for free illustrated information
MINUTE-A-DAY®
Dept. D, 37 Centueck Station, Yonkers, N.Y. 10710