

PHYSIOLOGY-BIOCHEMISTRY

# Work on Nerve Chemistry Is Honored With Nobel Prize

## Discovery of Chemical Which Acts as Messenger From Nerve to Muscle Was Foundation for Honored Research

**T**HIS YEAR'S Nobel prize in medicine and physiology has been awarded jointly to Sir Henry Hallet Dale, director of the National Institute of Medical Research in Hampstead, London, and to Dr. Otto Loewi, professor of pharmacology at the University of Graz, Austria, for their discoveries related to the chemical transmission of nervous activity.

Prof. Loewi's work is declared fundamental and original. Much of it would have been impossible without Sir Henry Dale's work on the chemical called acetylcholine, which Sir Henry found to act as messenger between nerves and muscles. Prof. Loewi's research in turn stimulated Sir Henry's later researches on this chemical.

There is thus an intimate connection between the work of these two investi-

gators which justified a joint award. While their work is closely related, the two scientists have not collaborated directly.

The chemical and physiological phenomenon, the discovery of which won this high honor, occurs hundreds of times a second in the body of an active person. Every time a thought commands certain nerves in the body to move a muscle, there is an almost infinitesimal spurt of a chemical, called acetylcholine. This release of chemical acts as a chemical messenger, giving orders to the muscle from the nerve.

It is hard to imagine the small amount of this chemical that is needed to act as a chemical postman. And it is difficult to visualize the effect of the speed and complexity of the happening.

Sir Henry Dale on his most recent

visit to America in 1934 estimated that each outpouring spurt of acetylcholine consists of three million molecules, a very small quantity. To express this weight in grams, the scientific unit of weight that is one-thirtieth of an ounce, it is necessary to write fourteen naughts to the right of a decimal point before a figure is reached.

Acetylcholine is thus recognized as one of the most important substances in the living body. Its potential usefulness in medicine is foreseen.

Sir Henry Dale is well known in America and he has lectured before universities and scientific societies here. He is considered one of the leaders in British science. He is now 61.

Dr. Otto Loewi is a man in middle life and he is recognized in America as well as Europe for his researches on nervous function, particularly on the transmission of impulses in the vagus nerve, a cranial nerve exercising important control over heart, lungs, stomach and other vital organs. He has been in the United States several times, most recently in 1930.

*Science News Letter, November 7, 1936*

ARCHAEOLOGY

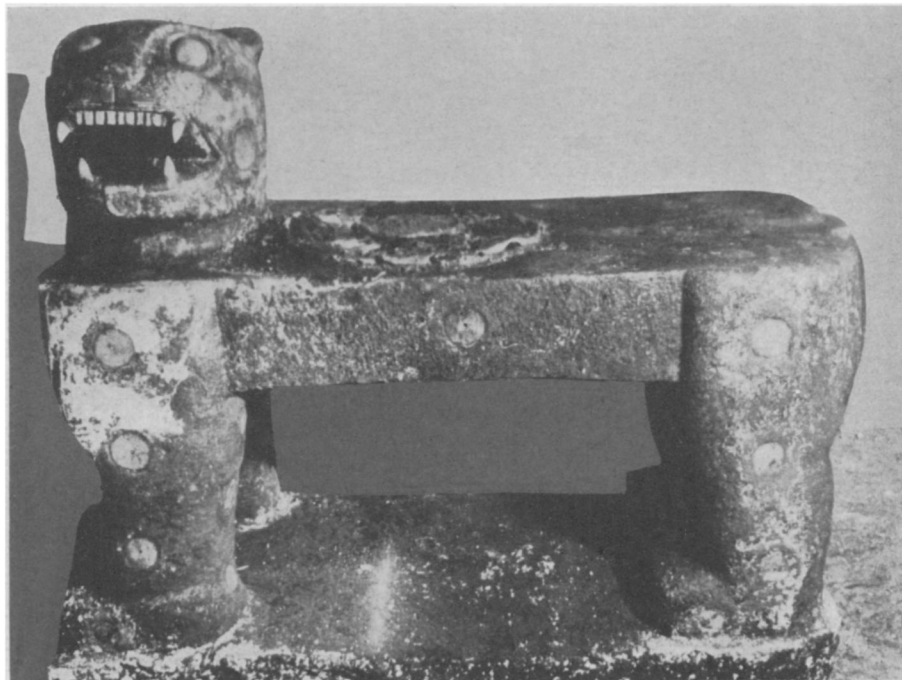
## Jaguar Altar in Red Latest Mexican Find

**A** BIG stone jaguar painted brightest red, with eyes of fine apple-green jade, and with large body-spots of jade as well, has been discovered in a ruined Mayan temple in Chichen Itza, ancient Indian capital of Yucatan.

On the flat of the creature's back, which was evidently used as an altar-table, lay a tell-tale souvenir left by the hand of the last priest officiating forgotten centuries ago. This was a big round turquoise mosaic plate on which had been put a precious jade-and-shell necklace with a jade figurine. As an offering to the gods, the whole was burned with copal gum, the tropic Indian incense of Mexico.

But archaeologists who came centuries late found the damage was not great. The mosaic design was left in place, and this has now been repaired with shellac. The whole relic has been encased in glass by Mexican government archaeologists, so that visitors may always see just how the ancient offering had been left.

The sanctuary of the jeweled jaguar is the back room of a temple that once stood on a flat-topped pyramid. The front room, dug out just last year, has a huge reclining human form carved from stone, brightly (*Turn to page 301*)



**WHERE MAYAS WORSHIPPED**

*Centuries ago original Americans, the Mayas, worshipped at this strange altar just discovered. Note the precious turquoise plate on the red jaguar's back. Eyes and spots are represented by inlaid apple-green jade.*

were forced to leave the place entirely, and in some sequences of the city's history debris piled over the abandoned ruins before settlers came to rebuild.

After the Harappa culture, as the oldest civilization at this site is named, there followed a people of about 2000 B.C. who lived in matting houses, and had only rough paving under their feet. These people made great quantities of pottery which the archaeologists hope will shed more light on the migrations and trade relations of their era.

Chanhu-daro seems to have had its greatest importance early. The later settlements shrank. Last on the site were a few primitive folk who made dark gray pottery and marked it with geometric designs. This curious ware is unfamiliar even to archaeologists well acquainted with the clay styles of the past. Wandering gypsy-like tribes, Mr. Mackay believes, may have been the last industrialists in the once-flourishing trade city.

*Science News Letter, November 7, 1936*

## From Page 291

painted too, but with eyes and toe- and finger-nails of mother-of-pearl.

At some ancient time, however, the last incense was burned, and then the rooms were packed with earth and rock. The temple together with the pyramid on which it stood were covered over, and made into the solid core of what is now known to the Indians as the Pyramid of Kukulcan, the "Bird-Snake," great god or king who ruled in Yucatan a few centuries before Columbus came. The Spaniards always called it "El Castillo," The Castle, because there they fortified themselves in their first tragic effort to conquer the peninsula of Yucatan, when the Aztec mainland of Mexico had already been overcome by Cortes.

*Science News Letter, November 7, 1936*

## SCIENTIFIC GLASSBLOWING

### EXPERIMENTAL MACHINE WORK

DESIGN, MANUFACTURE AND  
REPAIR OF LABORATORY  
APPARATUS

MATERIAL AND WORKMANSHIP  
GUARANTEED

## WASHINGTON INSTRUMENT CO.

233 S St. N.E. Washington, D. C.

Phone—Potomac 1516

### PALEONTOLOGY

# Dinosaurs Will Have Place Among Mountain Sculptures

## New Project Provides for Showing Ancient Beasts in Stone Right Where They Have Laid for Untold Ages Past

STATESMEN and soldiers will not have a monopoly on mountainside sculpture when a new joint project of the U. S. National Park Service, the State of Utah, and the American Museum of Natural History is completed. Much earlier inhabitants of America than any Revolutionary or Civil War notable will also have their carven places in the rock strata of the West.

This new project will have the added distinction of presenting not merely lineaments in stone, of originals who lie buried elsewhere, but will show the originals themselves, in stone, in the place where they have lain buried for almost unimaginable ages. The subjects of the new mountain-sculpture are the mighty dinosaurs that ruled the American West during Jurassic times, 140,000,000 years ago. Their fossil remains cram the rocks of Dinosaur National Monument in Utah, like raisins in a pudding.

Already the project is well advanced into the roughing-out stage. Under the direction of scientists of the American Museum of Natural History, various groups of emergency workers have carved a great cut into some of the most promising strata. The excavating work has now been taken over by the National Park Service, and will be pushed to conclusion as rapidly as possible.

When the rock layers containing the dinosaur bones have been suitably exposed, museum specialists of the American Museum, using air chisels, will carry on the critical job of carving away the stone matrix in which the fossils are embedded, leaving them exposed in bold relief. This is an especially touchy job, in some ways more difficult than that of the conventional sculptor, for the museum chiselmens must follow the lines of a model unknown to them until they actually uncover it, millimeter by millimeter.

Finally, when the great job of carving a stretch of artificial cliff 190 feet long and 30 feet high has been polished off, the National Park Service will erect a great building over the whole thing, to protect the exposed fossils from the

weather. The rock wall itself will form the north wall of the building, and on the opposite wall will be a great mural painting showing how the creatures looked in life.

The State of Utah will develop a road to enable people to reach this unique educational exhibit, and the National Park Service will provide the necessary water system, maintenance buildings, parking grounds, and general facilities for handling the great crowds of people who will certainly go out into the desert, there to behold and wonder over this vivid presentation of the story of the giants who were once in our earth.

*Science News Letter, November 7, 1936*

### TECHNOLOGY

## Paper Makers in China Making Use of Grass

CHINA, the world's first paper making country, is now so short on wood pulp that swamp reeds and grasses are being tried as paper materials.

Despite political disturbances, experiments with these materials are going forward at Nankai University. One paper mill has obtained a patent on making paper from reeds.

*Science News Letter, November 7, 1936*

**PSYCHOLOGY OF SEX**  
by HAVELOCK ELLIS

ONE VOLUME  
UNABRIDGED

CARL VAN DOREN says:  
"The best one-volume treatment of sex in the English language"

"...the best of all available books on this subject."  
—HYGEIA

AUTHORIZED EDITION

—PARTIAL CONTENTS—

The Art of Love	Sexual Variations and Abnormalities
Sex Life of Unmarried Adults	Substitutes for Sex
Sex in Marriage	Age and the Sexual Impulse
Sexual Adjustments	

Price \$3.00 (Postage 15c extra) 389 Pages  
5-DAY MONEY-BACK GUARANTEE  
Emerson Books, Inc., Dept. 666-S, 333 Sixth Ave., New York City