



TABLETS OF XERXES

Just unearthed, they tell history and geography of famous Persian empire.

PHYSICS-BIOLOGY

"Uncertainty Principle" Extended to Include Biology

**You Cannot Tell All About the Atoms in Living Cell
Without Destroying the Object You Wish to Analyze**

THE FAMOUS "uncertainty principle" of physics was extended to the sciences of biology and psychology by Prof. Niels Bohr, Copenhagen Nobelist, in a lecture at the Warburg Institute, London.

According to the uncertainty principle as it applies in physics, it is impossible to tell simultaneously just where a subatomic particle is, and how fast it is going. If you know one of the two facts, the conditions of experiment prevent you from exactly knowing the other. This principle has powerfully shaken the hold of mechanistic determinism, or what has been styled "scientific predestination" on the thinking of physicists.

Prof. Bohr called attention to an analogous situation in biology. It has been contended that if you knew all about every atom in a cell you would know all about the cell. But, Prof. Bohr pointed out, you cannot determine any facts about the atoms that make up the cell without tearing the cell to bits, thereby destroying the very makeup you

wanted to find out about. You cannot completely analyze life without destroying life.

An analogous "uncertainty principle" also obtains in psychology, the noted Danish scientist continued. Analysis in this science is infinitely more complex than it is in physics. The things in psychology which you may wish to examine are changed by the very act of examination; a picture of a mental situation becomes a different situation when attention is fixed on some part of it.

Racial differences also introduce an uncertainty element into psychology, Prof. Bohr claimed. If a Dane or an Englishman gets sufficiently close to the mental culture of a Chinese or a Japanese, he ceases to be really a Dane or an Englishman, so the situation is changed and the attempted analysis is baffled.

Prof. Bohr made a strong plea for mutual aid among scientists, regardless of nationality, in winning the common fruits of science, and especially in the conquering of racial prejudices.

Science News Letter, February 29, 1936

ARCHAEOLOGY

Tablet Reveals Extent Of Famous Xerxes' Empire

SCHOOL children may now have to bound the famous Persian empire of King Xerxes. A stone tablet unearthed in Iran (Persia) lists for the first time for modern historians the lands that the Persian conqueror welded into the greatest empire the ancients had ever seen.

Discovery of this tablet, and six others of importance, is announced by the Oriental Institute of the University of Chicago. The tablets were found stored in a room of King Xerxes' army garrison at his palace in Persepolis. It is believed the stone inscriptions were intended as "cornerstone" foundation deposits.

Provinces of King Xerxes just prior to 480 B.C. included such proud lands as Babylonia, Assyria, Egypt, Punt, Media, part of Greece—"the Ionians that dwell in the Sea and those that dwell beyond the Sea." The tablet indicates an empire extending northeast beyond modern Afghanistan, southwest to borders of modern Ethiopia, southeast to the Indus river in India, and northwest through most of Asia Minor.

The new texts are of special significance to religious history, says Dr. John A. Wilson, acting director of the Oriental Institute. One tablet tells of Xerxes' success in putting down enemies of the religion of Zoroaster, who staged an uprising that has not heretofore been known. Teachings of Zoroaster, who upheld a faith in one god, were apparently influential in the reign of Xerxes' father, Darius the Great, and it now is shown that priests and worshippers of the old gods tried a useless religious rebellion to restore their deities when Xerxes came to the throne.

Linked With Esther

Xerxes is sometimes identified as the King Ahasuerus of the Bible, Persian King who made the Jewish maid Esther his Queen.

The Oriental Institute expedition has also unearthed solid plaques of gold and silver used as foundation deposits in the great audience hall of the palace at Persepolis, probably dating from Darius' time, about 515 B.C.

Science News Letter, February 29, 1936

A science "hobby" laboratory for the whole neighborhood, with charge made for materials only, has been opened at Milburn, New Jersey.