News of Science

NBS Jerkmeter

■ The National Bureau of Standards has devised a barium titanate jerkmeter for studying the action of the human heart. The instrument is essentially a piezoelectric accelerometer with an output that is electrically differentiated. Unlike most instruments used in ballistocardiography, the jerkmeter does not require a fixed reference point. Thus, it is inherently isolated from extraneous motions such as building or operating-table vibrations. The device was designed and constructed by T. A. Perls and C. W. Kissinger under a program of basic instrumentation sponsored at the NBS by the Department of Defense and the Atomic Energy Commission.

In general, a jerkmeter is a transducer that gives an electrical output proportional to jerk, the time derivative of acceleration. Jerk has been measured in connection with elevator and vehicle riding comfort as well as in various physiological studies. The present development was undertaken to obtain measurements of the third time-derivative of the displacement of a reclining patient. The motion of interest is caused by the inertial forces generated by the flow of blood and is therefore intimately related to the function (and malfunction) of the heart. Developed as a research tool, the jerkmeter is being used by the Civil Aeronautics Administration to study the correlation of jerk measurements with proper diagnosis of heart conditions.

Creation of Rare Minerals

Rare minerals seldom found near the earth's surface have been created at the University of California, Los Angeles, by subjecting common minerals to extreme pressures and temperatures. Using a laboratory device called the "simple squeezer," George Kennedy and David Griggs of U.C.L.A.'s Institute of Geophysics have duplicated conditions that form minerals at extreme depths in the earth's crust.

From common quartz they have created coesite, a dense mineral that can exist in nature only at a depth of 40 miles or more in the earth. They have made jade from feldspar, and aragonite from limestone.

The research team also has been able to make various dense aluminous minerals from ordinary clay. From data on temperatures and pressures required to make these minerals, the depths at which similar minerals are formed in the earth's crust can be determined.

Anthropometric Map of Poland

Polish scientists are completing preliminary work on the first anthropometric map of Poland. Measurements have already been taken of more than 40,000 people in various Polish cities. The data collected will make it possible to determine the prevalent average types of body structure characterstic of both sexes and of different age groups. The research is being supervised by a committee headed by Jan Mydlarski, chief of the Anthropology Institute of the Polish Academy of Sciences.

The information gathered thus far forms the basis for further measurements of 300,000 individuals. Next year teams of anthropologists will begin measuring Poland's rural population as well as its students.

AAAS-Rosenthal Cancer Prize

Lloyd W. Law, physiologist and head of the leukemia studies section of the Laboratory of Biology, National Cancer Institute, is the first recipient of the newly established AAAS-Anne Frankel Rosenthal memorial award for cancer research. The $1000 prize, which is supported by the Richard and Hinda Rosenthal Foundation, was presented during the recent meeting of the AAAS in Atlanta, Ga.

Law's research has been concerned with the factors affecting the development of leukemia and breast tumors; the genetics of the mouse and of *Drosophila*; and the chemotherapy of neoplasms. The award committee felt that knowledge of leukemia has been materially increased by Law's admirably conceived and carefully controlled studies.

AEC Division of International Affairs

The Atomic Energy Commission has announced the establishment of a Division of International Affairs and the appointment of John A. Hall as the division's first director. Hall has been with the AEC since 1948; he has headed the Office of International Affairs, which is being absorbed in the new division. He served as director of liaison and protocol for the U.S. Delegation to the International Conference on Peaceful Uses of Atomic Energy at Geneva last August.

Working in close cooperation with the State Department and other Government agencies, the new unit is charged with the commission's functions in connection with (i) the bilateral agreements for cooperation relating to the peaceful applications of atomic energy; (ii) the proposed International Atomic Energy Agency; (iii) other matters of interest to the AEC before the United Nations such as proposals relating to disarmament; and (iv) maintaining liaison with the State Department and foreign officials in connection with atomic energy matters.

Radioactive Pharmaceuticals

"Developments in radioactive pharmaceuticals" were discussed at the annual meeting of the AAAS by Marshall Brucer, chairman of the medical division at the Oak Ridge Institute of Nuclear Studies. At the conclusion of his talk, Brucer pointed out that during the past 10 years the use of radioiodine has increased from a few millicuries to almost 50,000 millicuries per month; further, the use of radiophosphorus has increased to almost 13,000 millicuries per month, and radiogold, which was almost unknown in 1950, is now being distributed at the rate of more than 50,000 millicuries each month.

Brucer commented that "For a drug to change within 10 years from an almost unknown item to the point where its hundred millionth millicurie approaches use is a remarkable development. One hundred million of anything is a lot, and it indicates that there already is a radioactive pharmaceutical business even though there may not be a radioactive pharmaceutical industry."

Flint Ridge Cave System

■ Exploration by members of the National Speleological Society's Flint Ridge Project has disclosed that Floyd Collins' Crystal Cave in Kentucky is actually the nucleus of a cave system larger than any