machines, Prof. Albert G. Hill of Massachusetts Institute of Technology's Research Laboratory of Electronics stated.

The machine uses radio circuits exclusively and presents its answers on an oscilloscope. An oscilloscope has a screen that looks rather like a television screen, except that the background usually resembles graph paper and the pictures are a series of wavy lines.

These lines are the answers to the problems that are fed into the machine. To keep the picture bright and clear, the machine repeats its solution to every problem 60 times per second. It continues to repeat this information until new instructions are given.

The bantam-sized brain occupies no more space than an ordinary office desk. Even though it is less accurate than the larger machines, it can be used to find preliminary solutions and to indicate the kind of answer to be expected. This saves a considerable amount of time and money, since the larger machines are expensive to operate.

Science News Letter, March 4, 1950

NUCLEAR PHYSICS

Simple Radiation Counter

➤ AN ACCURATE, pocket-sized radiation indicator, so simple that the man-in-the-street can interpret it after a few minutes instruction, has been developed at the University of California Atomic Energy Project, Los Angeles, Calif.

It measures radiation by a color change of chemical solutions in small vials. These chemicals are inexpensive and it is estimated that the device could be produced very cheaply.

The handy instrument was developed by Dr. George V. Taplin and Clayton Douglas of the U.C.L.A. Medical School's atomic energy medical research staff.

The small vials are contained in a plastic case about the size of a pack of paper matches which may be worn around the neck like "G.I. dog tags." They may also be adapted to a pencil-like container for pocket wear.

The new radiation indicator was specifically designed to measure large doses of gamma and X-rays. It lends itself to the development of important peacetime applications, Dr. Taplin says.

For example, it could be useful in calibration of radiation equipment, such as fluoroscopes and X-ray machines. In the treatment of hyperthyroidism by radio-iodine, the amount of radiation in the thyroid gland could be measured by wearing the device around the neck. It might also be adapted to a small capsule for use in measuring radiation received internally in treatment of abdominal tumors.

The principle of the device was developed from a fact long known to science. This fact is that chloroform, when irradiated, releases small amounts of acid. The amount of acid produced is directly related to the quantity of radiation received. In the small vials of the devices are chloroform and a purple dye which turns yellow in the presence of a certain amount of acid.

The chemicals in each vial are adjusted to react to a prescribed level of radiation. Thus the amount of radiation is immediately evident upon noting this color change in a particular vial.

Existing measuring devices are somewhat complex, Dr. Taplin points out. They require either electronic equipment or photographic facilities and special training to read and interpret them. Also they are highly susceptible to the effects of jarring and temperature changes.

Advantages of the new device lie in its simplicity and the fact that its chemicals ordinarily are not affected by these factors.

Further investigations are being carried out to evaluate the accuracy of the device and to study its stability under the most adverse field conditions.

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Question Box

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MEDICINE

What kind of blood plasma may prove to be a weapon against arthritis? p. 139.

Which of the wonder drugs cures scrub typhus? p. 130.

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Why would the H-bomb not end life on earth as we know it? p. 133.

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Why do the stomachs of the baby mice burst? p. 131.

POPULATION

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PSYCHOLOGY

What type of personality shows less race prejudice? p. 140.

Photographs: Cover, U. S. Fish and Wildlife Service; p. 133, Piasecki Helicopter Corporation; p. 135, USAF Air Materiel Command; p. 138, 139, Harvard College Observatory; p. 144, Tennessee Eastman Corporation.

● RADIO

Saturday, March 11, 3:15-3:30 p. m. EST

"Adventures in Science" with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Dr. R. G. Breckenridge of the United States Bureau of Standards will talk on "Electrical Compounds of the Future."

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