

TECHNOLOGY

Measuring Instruments Displayed in England

► INSTRUMENTS that can measure with an accuracy of one hundred-thousandth of an inch, count at a rate of 30,000 units a second, and detect an escape of gas leaking at the rate of a fiftieth of an ounce a year are on display in London, England.

Many kinds of electronic computers, including one by which a beekeeper can predict the swarming of a hive several days before it happens, are also operating at the first Instruments, Electronics and Automation Exhibition.

Scales that can weigh the ink in a comma and ultra-sensitive clinical thermometers for use in the surgical technique of "freezing" a patient to slow down metabolism before certain kinds of operations are also being shown.

The exhibition covers the complete field of laboratory and industrial instrumentation and the application of electronics in industry. It ends May 17th.

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PSYCHOLOGY

Pavlov, a Trojan Horse In the Soviet System

► IN ESTABLISHING Pavlov as a national scientific hero, Stalin unwittingly introduced a Trojan horse into the Soviet ideological and political system. This may already be on the road to destroying the system, Dr. Gregory Razran of Queens College, Flushing, N. Y., told his colleagues at the meeting of the Eastern Psychological Association in New York.

Pavlov was chosen as the model for Russian psychology only for the reason that he was an eminent Russian. Had Freud been a Russian he would undoubtedly have been the one picked.

In selecting Pavlov, the Stalinists committed the most serious ideological error of their career, Dr. Razran, a Russian-born American psychologist, declared.

There is nothing in either the works or views of Pavlov that is not wholly within the spirit and framework of the best traditions of Western science and democracy. There is nothing in the remotest degree related to Marxism or Leninism, who are not even once mentioned in Pavlov's voluminous writings. There is not even an iota of anything specifically Russian. Pavlov was a follower of the British associationists: Francis Bacon, John Locke, David Hume and John Stuart Mill, and later of the Americans, biologist Jacques Loeb and psychologist Edward L. Thorndike.

From their own standpoint, the Stalinists would have been better off embracing psychoanalysis or even Gestalt psychology.

Pavlov was unqualifiedly and unalterably opposed to any curtailment of free inquiry and interpretation.

And this interpretation of the work of

Pavlov is not unknown or unappreciated in Soviet Russia, Dr. Razran said.

"As millions of Soviet intellectuals read the writings of Pavlov," he said, "they cannot but be imbued with the spirit of empiricism and free inquiry and interpretation that is slowly corroding—undermining—the dialectical materialism and thought control of Leninism and Stalinism."

The behind-the-curtain political fermentation in the last two years is not unrelated, Dr. Razran believes, to the philosophical-ideological fermentation produced by the penetration of Pavlovian empirical psychology.

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MEDICINE

Swallow Capsule Radio To Diagnose Stomach Ills

► THE WORLD'S SMALLEST FM radio broadcasting station has been put inside a capsule. It can be swallowed to help diagnose stomach troubles, the Rockefeller Institute has reported.

Only one and one-eighth inches long, the "radio pill" contains its own power supply. A transistor transmitter signals the activity of the stomach and intestinal tract as it passes through them. The signals can be picked up from a distance of several feet by an FM radio receiver.

One end of the plastic capsule contains a pressure-sensitive rubber diaphragm that responds to changes in pressure within the stomach and intestines. As the diaphragm vibrates, it modulates the tiny transmitter by causing the frequency of the transmitter, approximately one megacycle, to fluctuate slightly.

In addition to measuring pressure changes, the radio pill offers possibilities for transmitting information about temperature and acidity within the gastrointestinal tract.

The pill was developed by the Radio Corporation of America, Camden, N. J., and designed by Dr. Vladimir K. Zworykin and associates of the medical electronics center, Rockefeller Institute, New York. It was proposed by Dr. John T. Farrar, assistant professor of clinical medicine at Cornell University College of Medicine, who is performing the clinical tests on the pill.

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NUTRITION

Adding Lysine to Bread Boosts Protein Quality

► BREAD containing milk solids as a "protein booster" can be further improved in protein quality by adding the essential amino acid lysine.

This is the conclusion of Prof. Cecilia Schuck and former graduate student Jane K. Jahnke of the department of foods and nutrition of Purdue University, Lafayette, Ind.

Milk solids are ordinarily used in breads to help offset their deficiency in lysine.

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ENDOCRINOLOGY

Thyroid Hormones Speed Nervous System Growth

► INJECTIONS of thyroid hormones soon after birth shorten the time needed for the nervous system to fully develop, Drs. Max Hamburg and Emily Vicari of the Albert Einstein College of Medicine, New York City, reported to the American Association of Anatomists meeting in Baltimore, Md.

The "acceleration" effects were noted in mice even if the hormone was given as late as six days after birth and indicate the hormone might act as a "trigger" which activates parts of the central nervous system, they said.

Mice given injections of triiodothyronine opened their eyes, unfolded their ears and developed a characteristic swimming reflex before their litter mates who received none of the drug.

The research was supported by the National Multiple Sclerosis Society.

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MARINE BIOLOGY

Tagged Tuna Hints at New Swimming Patterns

► HINT of a previously unknown "vertical migration pattern" for the mysterious fish of the Pacific Ocean, the tuna, has been found by research biologists of the U. S. Fish and Wildlife Service.

In one instance a yellowfin tuna, normally found near the surface, has taken to deep-water swimming in the open sea. This is the first time a "surface-schooling" yellowfin has been taken as a deep-swimming fish in the open sea.

Finding this one yellowfin as a deep swimmer is not a conclusive fact, fish biologists said, but it does indicate a "vertical pattern of migration" not previously known.

Late in 1955, a Fish and Wildlife Service research vessel tagged and released a troll-caught yellowfin tuna near Christmas Island in the mid-Pacific. Thirteen months later the same fish was recaptured by a Japanese fishing boat some 700 miles to the east and deep down in the ocean.

By tagging, usually with a "spaghetti tag" (a plastic cord with information printed with India ink), biologists are beginning to unravel the mysteries of this valuable food fish.

Last year, an albacore was taken, 15 months after tagging, 2,670 miles away. It had gained 40 pounds in weight. Another one traveled more than 2,000 miles. Big-eyed tuna have been known to migrate as much as 800 miles.

Still another variety, the skipjack, has a much less pretentious travel record, one being caught only 30 miles away after 252 days, while another went 40 miles in six days. Others just "hung around" and were taken weeks later near the point of tagging.

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