

MEDICINE

More Effective "Shots"

New method with radioactive chemicals may increase the effectiveness of medicines given by hypodermic injections, according to results just revealed.

► **BETTER RESULTS** from medicines given by hypodermic injection may be had in the future as a result of studies with radioactive chemicals.

The studies, by Drs. Myron Prinzmetal, Eliot Corday, H. C. Bergman, Lois Schwartz and Ramon J. Spritzler of the Institute for Medical Research, Cedars of Lebanon Hospital, Los Angeles, are reported in the journal, *SCIENCE* (Sept. 24).

When they gave a "shot" of radioactive sodium into the muscles, half of it was absorbed in 30 minutes and almost 90% in one hour, they found. This period of time required for the chemical to be absorbed was much longer than would be expected from impressions gained in giving hypodermic injections to patients.

In the low blood pressure that follows shock from hemorrhage, absorption of radiosodium was slowed so that only about one-tenth as much of the chemical was absorbed in half an hour as was the case when blood pressure was normal.

The passage of radioactive chemicals through the chambers of the heart itself can also now be graphically recorded with

a specially constructed ink-writing Geiger-Muller counter, the scientists announce. It is this counter which gave the information about absorption times of hypodermically injected radiosodium.

In the heart studies, the radiosodium is injected into one of the veins of the fore-

PSYCHOLOGY

Pups Get "Mental" Tests

► **THE MOST IMPRESSIONABLE** time of a puppy's life is when he is from four to ten weeks old—just after he gets his eyes open and before he is weaned. It is then that his later relationship to humans is determined, Dr. J. P. Scott, of the Roscoe B. Jackson Memorial Laboratory, told the meeting of the American Psychological Association in Boston.

A schedule for puppy care and development like that worked out by baby doctors for human infants is now being perfected at the Jackson Memorial Laboratory.

The puppies are given regular "mental"

arm and the radiocardiogram is made with a carefully shielded Geiger-Muller tube placed over the chest above the heart.

Since radioactive sodium has a short half-life of 14.8 hours and is rapidly eliminated by the kidneys, tiny amounts may safely be injected into the blood stream and allowed to flow through the heart. The amount of radiation with the dose given is much less than that which patients receive during various diagnostic X-ray examinations. More than 250 persons have been given injections without any bad results during the last year and a half.

"Blue baby" hearts, enlarged and failing hearts and blood circulation time have been studied with the new method.

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tests of their activity and development and the way they behave toward their human associates. There are daily observations, weekly physical examinations, a standard system of feeding and veterinary care. Altogether 57 puppies have been studied intensively up to the age of 16 weeks and less intensively afterwards. The puppies belonged to 14 litters from seven pure breeds.

The Jackson Memorial scientists found five stages in the life of a dog, instead of the seven that Shakespeare credits to man.

1. The newborn—lasting from birth until the eyes open. This stage is two weeks and is spent in nursing.

2. From the opening of the eyes until leaving of the nest. It is then that the teeth erupt and the pups learn to walk. Special sense organs are used. Solid food is eaten and fighting play begins. This stage lasts from the second week until the fourth.

3. Leaving the nest until weaning—from the fourth week until the tenth. Now physical skill and activity increase. They indulge in playful fighting. There are great changes in relationships with human beings. Before and after this stage neither accident nor social training seems to have as much effect on how the dog turns out.

4. Weaning until sex maturity. This lasts from the age of ten weeks until eight to ten months. There may be gang attacks on one individual in play fights. The young dog is submissive to older dogs. They go hunting.

5. Maturity.

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MEDICINE

One Kind of TB Is Helped To Grow by Streptomycin

► **STREPTOMYCIN**, hailed as the best known drug for fighting tuberculosis, helps one kind of TB spread, instead of checking its growth.

Not only does one strain of the disease



ALL-WEATHER FIGHTER PLANE—This is the first flight photo of the Northrop XF-89, successor to the Black Widow F-61 night fighter. It has two jet engines, swept-up tail and wafer-thin wings and is capable of high speed. Radar-equipped, this glossy-black plane is capable of penetrating darkness, storm or fog. It is approximately 50 feet long and 15 feet high with a gross weight of over 30,000 pounds. It is manned by a pilot and radar observer.

thrive on the famed antibiotic, but it also may have a "partial dependency" on streptomycin for growth.

This startling effect is believed to have been discovered for the first time in human TB at the Veterans Administration Hospital (Lawson) at Atlanta, Ga. The case is reported in the PUBLIC HEALTH REPORTS (Sept. 3) of the U. S. Public Health Service by Drs. George A. Spendlove and Martin M. Cummings of the Public Health Service Tuberculosis Evaluation Laboratory; and Drs. William B. Fackler, Jr., and Max

Michael, Jr., of the hospital and the Emory University School of Medicine.

A patient was treated with penicillin for tuberculosis of the lungs at the VA hospital. He improved, but his saliva was still positive for TB germs. Streptomycin treatment was begun. After four months, the physicians described his course as "downhill."

They made laboratory tests with the strain of TB which the patient had. This kind of TB germs had its growth "markedly enhanced" by the antibiotic.

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Letters To The Editor

Molds Development

Subscribing to SNL has been an important formative force in molding the development of my son now in high school and helping him direct and find himself.

Congratulations on this multiplied, I hope, one hundred thousand times throughout the youth of our great and scientific-hungry country.—M. M. Boston, Mass.

Besides Science News Letter and the other two personal subscription services, CHEMISTRY (monthly) and THINGS of science (monthly), Science Service offers every science teacher free affiliation of her science club or group with Science Clubs of America. This brings all the material necessary for a successful hobby study of sciences in or out of the classroom. We hope readers will encourage teachers, particularly in the high schools, to take advantage of this cooperation.

Cain and Abel Version

I read your interpretation of the Cain and Abel incident (SNL, July 31). I have heard a somewhat different version and thought you might be interested in it.

Cain was the farmer. He had just broken the soil and found that agriculture on soil

that had not been tilled before was rather difficult. As a result, his crops were small; and his sacrifice was also small.

His brother, on the other hand, remained a shepherd and made a rather comfortable living from the good grazing lands. His large sacrifice was acceptable.

We can perhaps imagine Abel taunting his brother about his failure to please the Lord. Cain, who had worked harder and given more in proportion to his income than his brother, became angry and slew his brother.

Perhaps a moral for this day can well be drawn from the story. "Abel, where is thy brother, Cain?" has more meaning for us today than perhaps the traditional phraseology.—Bill Jackson, Madison, Wis.

There seem to be a number of such amplifications of the rather scanty account in Genesis. Another, from a California correspondent, is that Abel drove a flock of his sheep across Cain's field, ruining his crop—and the fight was on. Whether this actually happened long ago, somewhere just west of Eden, there is no doubt it has happened often enough elsewhere—with results as originally described in Genesis.

Well Balanced in Sciences

Science News Letter is an excellent publication and one that I would like to save. The content is well balanced with respect to various sciences and there is always something of interest to me. The Books of the Week section has become indispensable.—Robert Misch, Whiting, Ind.

Good Reference Source

Science News Letter is a timely, well prepared magazine, which any man of science, layman or amateur, would be pleased to read and keep permanently for a reference source.—Capt. Walter White, Jr., 351 Infantry Communication Officer.

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