

PSYCHOLOGY

Worm Learns to Turn

Worms can be taught to take right direction through a maze, but appear to tire of going through it. Paramecium also can be trained, scientist finds.

► **WORMS CAN** be taught to turn, John S. Robinson of Cornell University told the American Psychological Association meeting in Washington.

He taught five earthworms to go through a T-shaped maze. At first the worm was allowed to follow its own preference, but the favorite direction of turning was noted. Then the worm was required to turn in the opposite direction. If it turned into the preferred arm, it received a mild electric shock, but if it went into the opposite arm of the T, it was rewarded by reaching a nice box of moist earth.

After about 150 times through the maze, the worm learned to turn in the right direction more frequently, but after only 50 trips the worm slowed down, apparently not liking the maze at all.

Even the tiny one-celled creature that lives in a drop of stagnant water can be trained, and its capacity for learning is related to its heredity, the Association learned.

Mrs. Beatrice Gelber of Indiana University, Bloomington, told the meeting how she taught the *Paramecium aurelia* to go to a platinum wire to get food.

She started with two mated pairs of these little animals that are so tiny they can be seen only under a microscope. These four individuals were trained and their success in finding the food-laden wire was measured. Then they were permitted to go through 20 cell divisions until they reached the stage of self-fertilization and produced the next generation. Again four individuals, one for each hereditary line, were

trained. And so on, through six generations. Offspring of one mating type showed a change in teachability over the six generations, but those from the other did not.

A salt water fish, the mullet, was taught to associate the punishment of a mild electric shock with either a light or with sounds of certain frequencies, but it became very worried in the process, Dr. W. N. Kellogg of Florida State University, Tallahassee, reported to the same meeting.

All the 24 fish trained by Dr. Kellogg developed a conditioned reflex within 70 trials. But, during the training, they developed a powerful anxiety state, as shown by the rate of their respiration, gill and mouth movements. The respiration dropped back to normal after they were no longer shocked.

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PSYCHOLOGY

Balloon in Stomach Relieves Hunger Pangs

► **AN AIR-FILLED** balloon in the stomach can fool even a ravenous rat into thinking it is not hungry, although it has not had a morsel of food in its mouth.

This was shown by experiments conducted by Dr. Neal E. Miller and Mrs. Marion L. Kessen of Yale University, New Haven, Conn., and reported to the American Psychological Association meeting.

Hungry rats were trained to press a bar to get a drop of enriched milk. Later, a balloon, previously placed in the rat's stomach, was inflated with 14 cubic centimeters of air. The animal's rate of work in pressing the bar fell off. But it fell off even more when 14 cc. of milk was injected directly into the stomach.

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PSYCHOLOGY

Clerical Job Not for Professor's Daughter

► **HIRING A** clerk?

If so, beware of: the girl whose father is a professor; the girl who took a college preparatory course in high school; the girl who thinks the type of work she is doing is important; the girl who has a good vocabulary and tosses off arithmetic problems.

Such applicants may look good when you pick them but within three months they will leave to go to college or to take a "more important" job. Dr. Philip H. Krieder and Miss Marguerite S. Gadel of the Pru-

dential Insurance Company, Newark, N. J., gave this warning to the American Psychological Association as a result of a study they made of clerical turnover.

It is better to hire for clerical work girls whose family and personal background have given them ambitions and interests that can be satisfied by the job you are offering, they told the meeting.

Do not be worried if she has a limited vocabulary and is no shining light in arithmetic reasoning. But pick the girl who has a high score on a clerical speed test and so displays an aptitude that can be used on the job.

Then you may get a girl who will stick to the job and be happy in it.

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PSYCHOLOGY

Seeing Influences Judgment of Feeling

► **THE SIZE** of an object you are looking at can influence your judgment of the size of another you are feeling in your hand. This interference of perception between two different senses, vision and touch, was reported to the American Psychological Association meeting in Washington.

Dr. Robert Jaffe of New York University College of Medicine asked 20 persons to run one hand along an aluminum strip and, without looking, to find an equal width on a scale held in the other hand.

After one minute of feeling the aluminum strip, they were asked to make another judgment of the width. In the meantime, 10 of the persons had been allowed to look at a strip of paper shown on a dark screen. The other 10 remained blindfolded.

When the paper strip was one-inch wide, the aluminum strip, actually two-inches wide, was judged to be wider than that. When the paper strip was four-inches wide, judgment of the width of the aluminum strip erred in the other direction: the strip seemed narrower than it actually was. Blindfolded individuals made the same size judgment after the one-minute time interval as before.

Psychologists, who have in the past explained visual or touch after-effects as due to changes in limited areas of the brain, such as the visual cortex or the touch cortex, will now have to develop a new theory, Dr. Jaffe told the meeting.

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PSYCHOLOGY

Dreams Are Different for Dictator Personalities

► **STALIN PROBABLY** has different experiences in his dreams than do more democratic rulers.

The way in which the dreams of people with authoritarian attitudes differ from those of more democratic individuals was described to the American Psychological Association meeting in Washington by

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Dr. Samuel J. Meer of Western Reserve University, Cleveland.

The authoritarian individual, Dr. Meer explained, thinks in terms of blacks and whites with no middle ground. He cannot stand mixed emotions toward his parents. Like Hitler, he believes that "those who are not with me are against me." Aggression in dreams is mostly directed toward strangers and other peoples, not to family, friends, and acquaintances. Friendliness is only for the individual's own set.

The dictator personality is likely to over-idealize the virtues of his own group and over-emphasize the wickedness of all others.

Persons with a democratic viewpoint do not make such a distinction between "our gang" and outsiders. Aggression and friendliness in dreams is handed out impartially to both.

Dr. Meer based his conclusions on a study of the dreams of a group of college students who had been rated on their authoritarian attitudes.

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ENGINEERING

Rubberized Material May Stretch Road Life

➤ RUBBERIZED ROAD materials being developed at the University of Kentucky, Lexington, Ky., may be the engineers' answer to stretching the life of heavily traveled highways that become quickly worn under the normal load of cars, trucks and buses.

Research engineers believe that adding rubber to the ordinary bituminous road-surfacing material should make the pavement more rugged. The scientists are testing their theory in the University's highway laboratory where a "fatigue" machine treats samples of rubberized road-surfacing materials just as trailer trucks would.

Other machines and tests "age" the samples and subject them to the simulated heat of a blazing summer sun and of frigid winter temperatures.

Administered by the Kentucky Research Foundation under a grant from the Firestone Tire & Rubber Company, the project currently is being carried on by the University's Engineering Experiment Station.

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TRANSISTOR RECEIVER—Experimental model of a transistor receiver is demonstrated by Dorman D. Israel, executive vice-president of Emerson Radio and Phonograph Corporation, who predicts that in less than three years mass production of "shirt-pocket" radios will make this prototype a "grand-daddy." Transistors, made with a tiny disk of germanium, can replace vacuum tubes for many purposes.

MARINE BIOLOGY

Claim Long Proboscis an Elephant Seal Advantage

➤ IT IS an advantage to an elephant seal to be a Jimmy Durante of the species, because a long proboscis gives a better station in seal society.

Elephant seals, once almost extinct, are being sighted in increasing numbers on certain islands off the coast of southern and Baja California.

The place of the male elephant seal in his society is determined by his ability to dominate other males. This is particularly true during the breeding season. His position is often won and maintained largely by the amount of noise he can make. Thus his "bark," actually more of a loud snort, is often as important as his bite.

The amount of noise a seal can make depends upon the length of his snout, Dr. George A. Bartholomew, assistant professor of zoology at the University of California at Los Angeles, has found. The longer the snout, which is often a foot or more, the louder the snort. Apparently the elongated proboscis has no other use.

The elephant seal also snores to amuse himself, Dr. Bartholomew has found. While partly submerged in an isolated tide pool, he may snore in a manner that suggests singing in a bathtub. He apparently enjoys the resonant effect of his "natural bathtub" just as a human being does that of his tub or shower.

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