PSYCHOLOGY

Body Learns Without Brain

Learning goes on in spinal cord, psychologists maintain. A kitten that walked, although its spinal cord was separated from its brain, is part of the evidence.

➤ SOME parts of the body can learn to do things without benefit of the brain, it appears from research reported by Dr. Phil S. Shurrager and R. A. Dykman of the Illinois Institute of Technology, Chicago, at the meetings of the American Association for the Advancement of Science.

The learning goes on in the spinal cord, these psychologists maintain. This is contrary to the "traditional" viewpoint of other psychologists, neurologists and physiologists that learning is restricted to the brain alone.

Moving pictures of a kitten that walked, although its spinal cord was separated from its brain at the age of four weeks, were shown as part of the evidence for learning ability in the spinal cord.

This kitten's spinal cord was cut at the level of the first lumbar vertebra, or a little below the middle of the back. The animal was kept in excellent physical condition and was exercised daily by massage and manual and electrical manipulation.

Thirteen weeks after the spinal cord had been cut, the kitten could stand and walk for 10 minutes at a time, crouch and jump as much as a foot, run for three or four feet and turn corners without support, depending upon balancing movements in the hind part of the body.

Step reflexes from the spinal cord are not enough to account for the walking the cat finally did, in Dr. Shurrager's opinion. He pointed out that the development of coordination did not follow a stereotyped pattern or proceed smoothly. Instead, there were plateaus and then slips back to less good performance. Improvement was gradual and seemed to vary with the amount of training.

Conditioned reflex tests on cats immediately after the spinal cord was cut and some weeks later showed, Mr. Dykman reported, that the conditioning, or experimental learning, over a period of days resulted in gradual improvement in learning efficiency. Experimental forgetting, or extinction of the conditioned reflex, resulted in a gradual loss of the learning to the point of disappearance of the learned response.

"The spinal cord," Mr. Dykman declared, "can no longer be regarded as a reflex and communication center. It has the property of modifiability as shown by its capacity to learn independent of the rest of the spinal cord and brain.

"Learning is possible in all the gray matter of the brain and spinal cord."

Science News Letter, December 31, 1949

ORNITHOLOGY

The Huias Go Pffht, End Up in Yale Museum

➤ MARITAL cooperation just didn't work out for Mr. and Mrs. Huia (pronounced who-ya). In fact their whole family has gone pffht, despite the fact that their way of life was one of the most beautiful examples of married partnership nature had to offer.

The Huias once were rather common birds who lived in New Zealand. Yale University's Peabody Museum has just acquired a pair of Huias, in good condition except for the fact that they're stuffed and have been dead since before 1907, when the last live Huia was seen.

Mr. and Mrs. Huia had to get along well together in order to eat. He had a short, stout and straight beak, while hers was long, slender and curved. With his beak, he cut through the heavy bark of trees and then she probed underneath for palatable insects for both of them.

Science News Letter, December 31, 1949

Question Box

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