

PSYCHOLOGY

Monkey Can Communicate

ALTHOUGH monkeys cannot talk, one monkey is able to communicate useful information to another monkey.

The monkey does not use speech to share his secrets and just how he accomplishes it has not yet been studied. But results of the experiment showing that information is conveyed are reported in *Science* (Sept. 18) by Dr. William A. Mason, psychologist, who was at the University of Wisconsin when the study was made. Dr. Mason is now at the Yerkes Laboratories of Primate Biology, Orange Park, Fla. There he plans to repeat the experiment with chimpanzees.

In Dr. Mason's experiment, 18-month-old rhesus monkeys worked in pairs. Food was placed in one of a number of food carts mounted on fixed runways on a table between the cages of the two monkeys. One animal of each pair, called by Dr. Mason the "operator" had to pull in the loaded cart and then both animals were rewarded by the tasty morsels. During the trial, the food containers were so arranged that the operator could not see the food but his partner, the "informant," could. If the informant did not pass on this information to the operator, success in pulling in the right cart was reduced to the level of chance.

Then neither animal could eat much.

The informant did not give the information to his partner in any spoken language, Dr. Mason told *SCIENCE SERVICE*. Gestures were observed but were not recorded in this preliminary experiment. Barks and calls were also observed. One way the informant got across the information to his partner was by positioning his body opposite the food-loaded cart. The informant's position gave the operator the clue he needed and he pulled in the right cart. Then both animals ate.

To make sure that the operator was not acting on some cue other than those given him by his partner, each operator was given 48 control trials when the informant was not present. For every operator, without the help of the informant, performance dropped to chance levels.

After 480 trials, the operator and informant roles were reversed and the operator became the informant, the informant became operator. Although performance at the start of this second phase of the experiment was somewhat better than it had been at the beginning of the first phase of the experiment, the improvement was not statistically significant.

Science News Letter, October 3, 1959

OCEANOGRAPHY

Measure Gulf Heat

HOW MUCH heat the Gulf Stream gives off to Norway each year has been measured by a Norwegian scientist.

It is equal to the heat that would be produced by burning the amount of oil that could fill a 100,000-ton super-tanker every other minute for a full year.

This northernmost country in Europe is greatly benefited by the Gulf Stream, whose warm waters sweep along the western coast and keep harbors ice-free all winter long.

Dr. Hakon Mosby of the University of Bergen's Geophysical Institute made this approximation of Norway's indebtedness to the Gulf Stream largely from data collected at a weather station in the Norwegian Sea at 66 degrees north latitude and 2 degrees east longitude.

These data indicated that of the total heat loss from the surrounding waters, 34 kilocalories per square centimeter were given off to the atmosphere each year. (A kilocalorie is the amount of heat required to raise the temperature of one kilogram, or 2.2 pounds, of water one degree centigrade.)

This, Dr. Mosby said, was roughly equivalent to the heat combustion of a layer of oil a little more than one inch (three centimeters) thick over the whole area of the Norwegian Sea, about 390,000 square miles.

This is as much oil as could be contained in a 100,000-ton super-tanker if it

were loaded every other minute for a full year.

Comparable studies, he said, indicate that the Gulf Stream gives off in the Arctic Ocean only about one-fourth the heat it gives off in the Norwegian Sea.

In another study, Dr. Mosby, who is also president of the International Association of Physical Oceanography, the only international oceanographic organization, determined that it would take almost 100 years for a complete renewal of the water masses of the Norwegian Sea just through the rise of bottom water.

Science News Letter, October 3, 1959

CHEMISTRY

Well-Fed Microbes Make Important Enzyme

ELASTASE, an enzyme that may help control hardening of the arteries, can now be produced in quantity. The material has previously been available only in minute amounts, it was stated.

Feeding microbes on a diet of liver treated with a meat tenderizer produces the important enzyme, or body chemical regulator, in ample supply, Dr. Ines Mandl of the Columbia University College of Physicians and Surgeons reported to the American Chemical Society in Atlantic City. Until now elastase has been obtained from

hog and beef pancreas and from the glands of certain rare fish.

A more adequate supply should enable researchers to evaluate elastase for possible use in treating atherosclerosis, the biochemist pointed out.

Elastase is produced naturally in the human pancreas, but is occasionally found in short supply in the blood of older persons, Dr. Mandl said. Some biochemists think this enzyme shortage signals the approach of atherosclerosis or other diseases in which connective tissues harden.

Science News Letter, October 3, 1959

CHEMISTRY

ACS Grady Award to Science Service Head

WATSON DAVIS, director of *SCIENCE SERVICE* and editor of the *SCIENCE NEWS LETTER*, has won the American Chemical Society's James T. Grady Medal for 1960 to be presented in April at the Cleveland meeting.

The Society cited Mr. Davis' "outstanding contributions to public knowledge and understanding of chemistry and related fields" through his work as an editor, writer and broadcaster.

The Society also cited his "important role in promoting the recognition and encouragement of scientific talent among the nation's youth," as founder of Science Clubs of America, having a present membership of about 500,000, and as director of the National Science Fair and the Westinghouse Science Talent Search.

Science News Letter, October 3, 1959



CONGO ART—Scientists attending the Panafrikan Congress of Prehistoric Times, in Leopoldville, the Belgian Congo, saw items dating from the 15th and 16th centuries. Vanden Bossche, Museum of Native Life, points to some exhibits.