

## ZOOLOGY

**Suggest Reservoir Of Proteins in Fetus**

► THERE MAY be a reservoir of "ready-made" proteins in the rapidly-growing fetus.

This has been suggested in research with rabbits by K. C. Abraham and Dr. A. M. Schechtman, University of California at Los Angeles zoologists.

Human and cow proteins were injected into pregnant rabbits. They were detectable in the blood of the rabbit fetus as early as one hour after injection. The proteins were apparently little modified during their passage from mother rabbit to fetus through several membranes surrounding the fetus.

It has been generally thought that proteins furnished by the mother had to be digested into amino acids and then manufactured by the fetus into big protein molecules. It has been known, however, that the mother furnishes the fetus antibodies—proteins that protect it against disease.

Apparently vessels of the yolk sac and area forming the fetal abdominal cavity serve as a primary reservoir for storage of "prefabricated" proteins from the mother, the scientists suggest.

Science News Letter, September 14, 1957

## PSYCHOLOGY

**Thorazine Ups IQ Score Of Schizophrenic Patient**

► THE TRANQUILIZING drug thorazine caused an average gain of 11.50 IQ points in intelligence test scores for 22 adult schizophrenic patients.

This striking effect of 30 days' treatment with the tranquilizing drug was reported to the American Psychological Association meeting in New York by Dr. Curtis A. Gilgash of American University, Washington.

The gain in test scores should not be considered an actual gain in basic intelligence, Dr. Gilgash warned. What the drug does is to remove emotional blocks which have kept the patient from doing his best on such a test.

A control group, whose "dose" for the 30-day period was an inactive "placebo," lost an average of 1.64 IQ points in that time.

Greatest gains of the mental patients taking thorazine were on a subtest measuring ability to size up a social situation and on another requiring synthesizing ability and visual motor coordination.

The drug would be useful, Dr. Gilgash commented, in determining which catatonic, or stuporous, schizophrenic patients are actually mentally retarded and which only appear to be stupid because their psychosis interferes with their mental functioning.

Thus the doctor can learn which of his patients might be more accessible to psychotherapy.

Similar improvement on test scores after treatment with thorazine and another tranquilizer, chlorpromazine, were reported by psychologists from the Veterans Administration Hospital in Albany, N. Y., and Albany Medical College, and by another group from Baylor University College of Medicine, the

University of Houston, and Topeka State Hospital at Topeka, Kans.

Opposite effects were found by Dr. Conan Kornetsky of the National Institute of Mental Health, Bethesda, Md., when he administered chlorpromazine to 12 normal persons.

The tranquilizer caused impairment of performance. On most tests measuring motor coordination, the chlorpromazine caused greater impairment of performance than double the dose of a sedative, secobarbital. On a test of intellectual function the sedative caused more impairment than the tranquilizer, but both caused more impairment than the blank capsule, or placebo.

Science News Letter, September 14, 1957

## PSYCHOLOGY

**Handled Baby Rats Are Well-Adjusted Adults**

► RATS THAT are handled once a day grow up more resistant to the stresses of life than those that are left alone, Dr. Seymour Levine, Ohio State University Health Center, Columbus, reports in *Science* (Aug. 30).

A group of baby albino rats were removed from their nest for three minutes every day for their first 20 days. A similar group remained in the nest.

Seven weeks after the early handling, the first group weighed significantly more than the non-handled group and were better able to withstand body stress.

Early handling is thought to be a stressful situation in itself for infant animals. When they get this early experience with stress, they grow up better able to handle both mental and physical stresses later in adulthood.

Science News Letter, September 14, 1957

## GEOPHYSICS

**Mountain Range Rises 5,000 Feet in Ocean**

► A MOUNTAIN range rising 5,000 feet from the Arctic Ocean floor has been discovered by scientists stationed on an Arctic ice pack drifting toward the North Pole.

They found the undersea mountain ridge at 83 degrees, 51.5 minutes north and 168 degrees, 43 minutes west. News of its discovery was received in Syracuse, N. Y., by "ham" radio operator, Dr. Charles R. Bentley, who reported his conversation with Maurice J. Davidson in the Arctic was "clear."

Mr. Davidson, a geophysicist at Columbia University's Lamont Geological Observatory, said the major submarine range seemed to run parallel to the great Lomonosov ridge in the central Arctic, which extends from Greenland across the Arctic Ocean.

Ocean depths near the range were measured as about 10,000 feet, Mr. Davidson reported. The scientist is in charge of floating ice pack "Station A," one of the outposts from which Arctic observations for the International Geophysical Year are being made.

Science News Letter, September 14, 1957

**IN SCIEN**

## EDUCATION

**Children Do Better In School If Not Too Young**

► CHILDREN who enter kindergarten very young do not do as well later in school as those who enter at the usual age, Drs. Edward Rogalin and J. Harry Craig of Fairfield Public Schools, Fairfield, Conn., reported to the American Psychological Association meeting in New York.

For four years the Fairfield schools have been admitting children under five years old to kindergarten. Youngsters only four years and seven months old could start if they scored among the top 20% of their age group on entrance examinations.

Now, however, it is found that when the achievement and adjustment of these early entering children is compared with their older classmates at the end of grades 1, 2 and 3, the older children do better significantly than half of the younger ones.

Fairfield plans to change the entrance procedure.

Science News Letter, September 14, 1957

## ENGINEERING

**Radioactive Clouds Pinpointed From Ground**

► FINDING OUT whether high-flying clouds are radioactive can be done right on the ground, without even using a radioactivity detector, it was reported to the American Institute of Electrical Engineers meeting in Pasco, Wash.

The method takes advantage of the fact that nuclear radiation tends to increase the number of electrically charged atoms or ions in clouds by literally tearing molecules in clouds to pieces. This increase in electrical charge causes a corresponding change in the air's electrical condition near the ground even when the cloud is at an altitude of tens of thousands of feet. The change in electrical condition is manifested as measurable "pulses," increases in electrical charge, that can be recorded as peaks or "humps" on the graphs from continuous-recording instruments.

John C. Beckett of Wesix Electric Heater Company, San Francisco, who developed the detection method, reported that "positive ion pulses were observed at San Francisco during the week following nuclear tests conducted in Nevada . . . These pulses are easily distinguishable from air pollution and natural ion variation."

The test method provides an easier way to check up on the types of atmospheric radioactivity that arise from detonation of nuclear devices, since previous tests involved tedious collection and radioactive assay of particles from the air by filters, sticky plates and similar mechanical devices.

Science News Letter, September 14, 1957

# CE FIELDS

## BIOLOGY

### Mating Calls of Frogs Help Evolution Study

► THE HI-FI of frog and toad mating calls has shed some light on the origin and evolution of mechanisms that prevent one species from breeding with another species.

Evidence to show this was reported to the American Institute of Biological Sciences meeting in Palo Alto, Calif. by Dr. W. Frank Blair of the University of Texas.

"Sound pictures" of the voices of frogs and toads have shown that differences in their calls is probably a result of natural selection acting against those individuals that make the mistake of mating with the "wrong" species and producing disadapted hybrids.

The differences which prevent interbreeding are known as "isolation mechanisms." The studies by Dr. Blair were directed at finding the differences in voices in groups that were isolated from one another geographically and those that overlapped.

In some instances, Dr. Blair found, the evidence indicates that voices became strongly differentiated, probably by chance, while the populations were geographically separated. When these same populations met up again, they already had marked differences in their mating calls.

In other instances, call differences appear to have been reinforced where the populations came to have overlapping ranges.

Dr. Blair pointed out that some considerations in studying the mating calls of frogs and toads involve temperature, which when higher, tends to increase the pitch and repetition of the mating call. Size also influences the call. Larger toads have lower frequencies and slower pulse rates than do smaller ones.

The squirrel treefrog, *Hyla squirella*, gives one call when it is in the tree and another when it is at water's edge and ready to breed.

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## SOCIOLOGY

### Analyze Childhood Of Criminal Adult

► THE CHILD whose behavior problems cause him to be taken to a child guidance clinic is more likely to grow up to be a criminal 30 years later than those who are not problem children.

A follow-up study of 524 adults seen at a child guidance clinic 30 years ago was reported by Drs. Lee N. Robins and Patricia O'Neal of Washington University School of Medicine, St. Louis, to the American Sociological Society meeting in Washington.

When compared with 100 normal controls, these "behavior problems" were found to be more likely to move away from their childhood home, more likely to die a violent

death and more likely to be arrested for crime as adults.

Children who showed neurotic behavior were not as likely to grow up to be criminals, it was found.

Another study reported by Dr. Norman S. Hayner of the University of Washington summarized evidence presented to parole boards that shows that certain crimes are linked with certain personality patterns.

Thus, the "con forger" who has a skilled technique and previous records of the same or a similar offense is likely to have been spoiled as a child. In prison he plays the role of a politician.

The man who writes "bum checks" while he is drunk is often dependent upon others.

The sex offender who is not violent but who "takes liberties" with children does not get along with his wife. He has more interest in religion than other prisoners.

The "heavy," the burglar or armed robber, classes himself with other criminals and tries to be a "right guy" in prison.

The "graduates" who are "promoted" to prison from one or more training schools have the kind of personality known to doctors as "psychopathic."

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## PSYCHOLOGY

### Write, Rather Than Fight, Psychologist Suggests

► FEEL LIKE punching someone in the nose?

Don't, he may punch you back. A safer and more profitable outlet for your aggressive desires is to write a book about your personal grievances.

This write-rather-than-fight technique seems to be the formula for many successful mystery writers, concludes Dr. James Howard, University of California at Los Angeles psychologist, himself an author of several best selling mysteries.

Dr. Howard made a study of the relationship of aggressive tendencies among mystery authors and the degree of violence in their books. The research was carried out with the cooperation of the Mystery Writers of America, Inc.

Dr. Howard devised a scale, comparable to a centigrade thermometer, with which he rated the "temperature of violence" in a book. For example, "spitting in the eye" rated 17 on the 1 to 100 scale, whereas firing of multiple shots with intent to kill was 64. Writer's tendencies to personal violence were assessed through standard psychological tests.

A definite correlation was found between personal aggressiveness and the intensity of violence in mystery fiction. The least aggressive persons tended to write the most consistently intense violence, while the aggressive ones were much more variable. Thus the "quiet" writers seemed to use their fiction as an outlet for "pent-up" aggressiveness.

Writers also tended to write of more intense violence under stress from financial or other personal problems. Violence also tended to be more intense in books written in the first person than in those written in third person.

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## ENTOMOLOGY

### Hungry Birds Deceived By Look-Alike Butterflies

► A HUNGRY bird will not even touch a nice juicy butterfly if it looks like a bad tasting relative, Jane Van Zandt Brower of Yale University, reports.

Experiments with caged birds and three groups of butterflies, described as models, mimics and non-mimics, showed that mimicry is effective in saving a butterfly's life from a predator bird.

The viceroy butterfly is an example of a mimic. Its orange-brown and black markings make it look very much like its model, the larger monarch butterfly. This similarity apparently protects it. Birds steer clear of the monarch because of its bitter taste, the result of its feeding on milkweed leaves and sap. The bitter taste characterizes both larvae and adult.

The experimental group of four birds refused to eat any of the viceroy butterflies offered when they had first been given monarchs to sample.

In contrast, four control birds, which had no laboratory experience with monarchs, ate the mimics, or viceroys, in 60 out of 100 trials.

The scientist concluded in her report, appearing in *Nature* (Aug. 31), that the significant difference in treatment is due to the fact that the experimental birds had learned to associate color pattern with unpalatability. They apparently were unable to discriminate between the mimic and the model.

Science News Letter, September 14, 1957

## TECHNOLOGY

### Airborne Tape Recorder "Remembers" Data

► THE ELECTRONIC equivalent of "nerves and memory" for experimental aircraft may be the promise of an improved system for gathering flight information from airplane instruments, it was reported to the American Institute of Electrical Engineers meeting in Pasco, Wash.

The heart of the system is a magnetic tape recorder that can "remember" up to 14 different information channels on a one-inch-wide magnetic tape. The recorder reel is 10 inches in diameter and holds 2,500 feet of tape for 32 minutes of recording, reported Alvin I. Morrison of the Electronic Engineering Company of California, which designed the system under a U. S. Air Force contract.

Tiny transistors of silicon, a non-metallic element found in common sand, are used to replace vacuum tubes throughout the data-gathering system to make it rugged and compact.

It can operate in temperatures of minus 67 degrees to 212 degrees Fahrenheit, the temperature of boiling water. Operating at such extremes of temperature is necessary for high speed planes which can become quite hot as a result of air friction at sonic speeds, or which must operate in cold climates.

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