

PSYCHOLOGY

Criminals Are Aggressive Because They're "Sissies"

CRIMINALS, "in an astonishingly larger number of cases, act aggressively because they are, in the slang phrase, "sissies." Their aggressiveness is a reaction against themselves, an effort to overcome their own feeling of insecurity and their secret tendency to effeminacy.

This conclusion was reached by Drs. Sylvan Keiser and Paul Schilder of Bellevue Hospital, New York City, after a psychological study of criminals in the prison ward of the psychiatric division of Bellevue Hospital. The psychiatrists reported their study to the American Psychiatric Association recently.

Their information was obtained from a questionnaire concerning the problem of aggressiveness given to fifty male prisoners. Some of the 36 questions were as follows:

What is courage? Should one fight with a stronger man? How would you defend yourself against a stronger man? Are you a success?

From the answers to the questions and other evidence presented the psychiatrists believe that "aggressive behavior in many criminals is an attempt to overcome those features considered feminine; and that in order to overcome latent homosexuality they assume what is commonly accepted as the attribute of virile masculinity."

Science News Letter, May 18, 1935

PHYSICS

No Need Now to Carry Liquid Oxygen in Rockets

A NEW method for the propulsion of rockets in stratospheric flight has been developed at Clark University by Dr. Albert C. Erickson, working under the direction of Prof. Robert Goddard, long known for his contributions to the science of rocketry.

The new development, it is believed, will relieve inventors of putting liquid oxygen in their rockets so that the fuel can burn. The system is intended for rockets in stratosphere flights when the air density may be low; but not for interplanetary flights as some of the more ambitious rocket enthusiasts plan. In interplanetary space there is no air and hence oxygen must be carried.

When applied to rocket propulsion, Dr. Erickson's system works by the propulsion of exhaust gases after the fashion

of the motion of a skyrocket which gets its "kick" from its stream of fire.

Unlike previous systems, however, the new development does not release the exhaust flames in a continuous stream but only intermittently. And the nose of the rocket is open to catch a stream of stratospheric air.

Explaining the operation of the system in the *Journal of Aeronautical Sciences*, Dr. Erickson indicates the incoming air through the nose is compressed as it enters, by the high speed of the rocket. The temperature of the air rises (like the air in a bicycle pump under pressure) and it mixes with fuel issuing from the reservoir aboard the rocket. The exhaust gas from the combustion passes out the back end of the rocket through openings in a rotating disk so that jets of flame shoot out at intervals which, in practice, are as rapid as 600 a second. During each interval, as the holes are closed, more incoming air and fuel combine to create a new explosion.

Dr. Erickson has proved by experiment that such intermittent discharges are more effective in propulsion than is the continuous type previously used.

The system overcomes the obvious problem of how to get sufficient air at the low densities and pressures encountered high in the stratosphere by acting as its own "supercharger." Air pressure, of course, decreases with altitude and above 20,000 feet it is necessary to compress the rarefied gas to densities sufficient to burn the fuel.

The saving factor for Dr. Erickson's system of intermittent exhaust propulsion is that air pressure increases enormously with speed, as the designers of streamlined automobiles and airplanes are well aware.

If the air speed doubles, for example, the air resistance and pressure increases four times or more.

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PHYSICS

New Methods For Making Heavy Water Are Perfected

See Front Cover

NEW and low cost methods of manufacturing heavy water have been perfected at Pennsylvania State College.

In the illustration on the front cover of this week's SCIENCE NEWS LETTER, Prof. Harold C. Urey, Columbia University chemist, who received the Nobel Prize for discovering deuterium or double weight hydrogen, is shown inspecting the new apparatus.

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IN SCIENCE

BOTANY

Ancient Indians Wanted Color, Not Taste, in Corn

COLOR, rather than sweetness of "roastin' ears," was prized by American Indians in olden times, Dr. A. T. Erwin of the Iowa Agricultural Experiment Station, believes.

Among all collections of prehistoric corn in museums, Dr. Erwin finds only one undoubted example of true sweet corn. But the ancient color scheme of corn is varied, including blue, red, and yellow grains.

Modern natives of Mexico, land thought to be the "cradle" of corn, raise many types of corn, but not one specimen of sweet corn was detected by Dr. Erwin in an investigation there.

Sweet corn is thought to have been cultivated in the United States in the first half of the 19th century. It is apparently an offshoot of field corn, whose accidentally sweet grains the Indians did not trouble to propagate. Only the white man noticed the delicate difference.

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MEDICINE

"Bacteriophage" Saves Blood-Poisoning Victims

A LIFE-saving method of treating blood-poisoning cases by injecting "bacteriophage" prepared from the patient's own blood will soon be announced through the American Association of Pathologists and Bacteriologists.

This use of "bacteriophage," or the "germ-eater" as it is popularly known, was developed by Drs. Ward J. MacNeal and Frances C. Frisbie of New York City. Twenty-five out of one hundred patients suffering from blood-poisoning were saved by this treatment, the local physicians report. All of the cases had been considered hopeless when the "bacteriophage" was given.

Drs. MacNeal and Frisbie are using a new technic in the "bacteriophage" treatment, giving much larger doses than they formerly dared to use. They find the larger doses to be safe and more efficient.

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E FIELDS

PHYSIOLOGY

Interrupted Loud Sound Is Greater Strain on Ear

A LOUD high-pitched sound produces more ear strain and a greater loss of hearing if it is interrupted every second instead of being continuous, Dr. Elmer Culler and Glen Finch reported to the Midwestern Psychological Association.

Thus the well known engineering rule that oscillating stresses are more destructive than a dead load of the same magnitude is found to hold for the cochlea of the ear just as it does for a bridge.

Long exposure to a note of 1,000 cycles frequency, which is near the upper limit reached by the soprano voice, will be followed by a loss of hearing for notes of all frequencies down even lower than middle C at 256 vibrations a second.

When a sound at the upper limit of the musical scale, 4,000 cycles in frequency, was continued over ten hours, the loss of hearing increased from a 55 decibel loss for sounds at 125 cycles to 104 decibels at 4,000 cycles. A noise of 55 decibels corresponds to the sounds of an average city street, while a 104 decibel sound is equivalent to the noise in a boiler shop.

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ANIMAL PSYCHOLOGY

Canaries Learn to Sing Without Any "Teaching"

THE beautiful and varied song of the roller canary can be developed by the young bird who has never been "trained" by an adult male songster. The generally accepted idea that young birds must be taught to sing by listening to the notes of a singer is proved false by an experiment just completed in the psychology laboratory of the University of Southern California, by Dr. Milton Metfessel, (*Science*, May 11).

Twelve young roller canaries were hatched and raised in soundproof cages completely isolated from the song of any other bird except the unmusical modest chirps of the mother. Six of the eight males heard no rolls or tours of any kind

until they produced them themselves. Two heard only the song of the other isolated young birds as they developed adult song.

Students of bird song know that the song of the roller is a complicated one with many varied musical effects. The basic song consists of a sequence of effects known as hollow roll, hollow bell, schockel, flutes and water roll. These are added to or embellished by individual birds by the following effects: the bass roll, glucke, glucke roll, water glucke, schockel, deep bubbling water tour, bell roll, bell tour and bell glucke.

Experts say that the number of effects in the repertoire of any single bird generally varies from five to ten. It is very rare indeed that any single bird has all the effects in his song.

Four of the isolated birds had from four to six effects when breaking from their baby song into the mature roller song for the first time. The baby song is described as a nonsense melody of choppy notes covering a wide pitch range. All of the effects of the roller song were represented in the song of one or another of the isolated birds.

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GASTRONOMY

Salt Spoils the Food More Often Than Pepper

BELIEVE it or not, but you probably object more to an over-amount of salt than pepper in your food.

More than 1,000 Department of Commerce employees who have been buying fish "specials" in the new building's cafeteria are responsible for that conclusion, reached by W. T. Conn, Bureau of Fisheries technologist.

Recipes for the low-priced fish dishes they have been eating have been prepared by the Bureau of Fisheries laboratory in the basement of the building. Here a group of technicians aim to discover more and better fish recipes for the housewife.

Cafeteria patrons received questionnaires with their fish purchases, in which they were asked how they liked the dish, what was wrong with it, and so forth. By a response of two to one, more objected to excesses or shortages in salting than did to wrong peppering.

Another fact uncovered by Mr. Conn is that the greatest fish eaters per capita in the United States are not Catholics but Jews. Catholics eat less fish, despite its presence on their Friday menus, than do Jews or Protestants.

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MEDICINE

The Virus of Influenza Identified by Serum Tests

SERUM tests that identify "quite definitely" the virus causing human influenza and show the same virus is the cause of the disease in different parts of the world were reported by Drs. Thomas Francis, Jr., and T. P. Magill of the Rockefeller Institute for Medical Research, to the American Society for Clinical Investigation.

The virus was obtained from throats of influenza patients in Puerto Rico, New York and Philadelphia. The virus can be transmitted to both ferrets and mice, and in both species of animals causes consolidation of the lungs. Most of the mice die of the disease, but the ferrets usually recover.

The blood serum of ferrets that have recovered can check the ability of the virus to infect mice and to produce the lung consolidation. So does the blood serum of convalescent influenza patients, but the serum taken from patients during their acute illness does not protect the mice against the disease. This latter finding, Drs. Francis and Magill state, seems to "show quite definitely that the virus is the causative agent of the human disease."

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MARINE ZOOLOGY

Tiny Coral-Housed Crabs Collected for Smithsonian

SPECIMENS of a tiny crab, only a quarter-inch across, that forces growing coral animals to build a house for it, have been brought back to the Smithsonian Institution by Dr. Waldo L. Schmitt, who has recently returned from an expedition along the northwestern coast of South America and to the Galapagos Islands. The gall-crab, as it is called, was known in the western Pacific, but had never been found east of the Hawaiian Islands before.

When very young, the crab attaches itself to the end of a coral branch, just as it is starting to branch again. The presence of the crab probably acts as an irritation to the coral, increasing its rate of growth. At the same time currents are set up in water which determine the direction of this growth. The result is that the two branches fold over and come together, completely surrounding the crab in a limestone cell.

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