PSYCHOLOGY

Movies "Good Medicine" For Disturbed Adolescent

➤ A YEAR'S experiment with a group of boys in Texas has indicated that movies may be "good medicine" in the treatment of emotionally disturbed adolescents.

Dr. Ira Iscoe, visiting assistant professor of psychology at the University of California at Los Angeles, has reported that movies dealing with problems common to those who have constant difficulties at school and home were shown to the group several nights a week. Themes typical of the pictures involved parental rejection, social misfits and sex problems.

Members of the group were encouraged to comment during the films, and voluntary "bull sessions" about the picture followed. Recordings were made of the entire period.

"Comments by participants often furnished better insight into individual problems than traditional interview techniques," Dr. Iscoe said. "Discussions stimulated by the pictures proved to be an excellent form of group therapy.

"This familiar medium seems to be one of the best means of 'breaking the ice' with a new group," he said. "Even the most withdrawn participated more readily than usual.

"There is a need for more 'up-to-date' pictures for this work," he added. "The films we are using, though appropriate in theme, would be more effective if the dialogue were in a language more typical of today's youth."

Science News Letter, July 24, 1954

AERONAUTICS

Jetliner Tested Against Explosions

➤ EXTENSIVE PRESSURE tests have been run on Boeing Airplane Company's jetliner as a routine approach toward preventing disasters such as have been afflicting the British jetliner, the Comet.

The prototype Model 707 Stratoliner already has been severely pressure tested for weaknesses in its frame. Sensitive strain gauges were spotted at critical points and the plane was "inflated" to many times its normal pressure.

The first few planes of a new make are always pressure tested as they come off the production line. Even after engineers are convinced that manufacture is perfect, pressure tests are made on a spot check basis.

During these pressure tests, the strain gauges will show whether the metal is yielding more than it should. This is a key to whether the metal is likely to fail in service.

Recent British tests at the Farnborough Experimental Station revealed that the three Comet explosions, which killed 99 persons, apparently were due to "tired metal," technically called metal fatigue.

Upon learning further details of the British findings, Boeing engineers plan to check back to see that nothing has been overlooked on the Stratoliner.

The military jet bomber, the B-52, which is larger than both the new American jetliner and the British Comet, has performed without mishap.

The plane could be flying commercially by 1957, if military requirements do not take priority. As yet the company has not tried to sell it to commercial airlines.

The Stratoliner has a wingspan of 130 feet. It is 127 feet, 10 inches long, weighs 190,000 pounds, is powered by four J-57 Pratt and Whitney engines, can climb 40,000 feet and cruise 500 miles an hour.

In contrast, the bigger B-52, now used by the U. S. Air Force, has a wingspan of 185 feet, a length of 153 feet, a gross weight of 300,000 pounds and a cruising speed of more than 600 miles an hour. The B-52 is powered by eight J-57 engines and presumably can climb more than 40,000 feet.

Science News Letter, July 24, 1954

GENETICS

Predicts Fantastic Number of Genes

➤ DISCOVERY OF what will seem a "fantastic" number of genes, or heredity units, in the mouse has been predicted by Miss Margaret M. Dickie of the Jackson Laboratory, Bar Harbor, Me.

At present a total of 215 named genes have been discovered in the mouse. Of these, 115 have been located on 15 chromosome groups. Before the laboratory's founding, in the period 1903-1925, various scientists had named 19 genes and alleles and had located four of them on Chromosome I.

"Perhaps the most outstanding event of this decade has been the identification and linkage of several of the sex-linked genes," Miss Dickie stated. These, she said, are "brindled, mottled, tabby, jimpy, tortoise shell and a sex-linked lethal and bent tail.

"With the rapid accumulation of data that seems to be forthcoming almost daily, it appears that very soon all 20 linkage groups will be marked and the number of genes described will seem fantastic."

Science News Letter, July 24, 1954

SURGERY

Ordinary Vest Used To Treat Rib Fractures

➤ AN ORDINARY man's vest has been found to be a useful medical aid in treating fractures of the ribs and similar chest conditions.

Dr. Philip Lewin, professor emeritus of orthopedic surgery, Northwestern University Medical School, Chicago, reports in the *Journal of the American Medical Association* (July 17) that use of a vest and six or eight large safety pins inserted at the back to regulate its size has advantages over traditional strapping up with bandages and adhesive tape.

Science News Letter, July 24, 1954

IN SCIEN

INVENTION

Metal Continuously Cast With Mold Technique

➤ INGOTS OF aluminum and magnesium can be continuously drawn from a bottomless water-cooled mold that has been especially designed for no-interruption casting.

The new molding technique permits many ingots to be cast at once, then slowly withdrawn as the metal hardens. Molten metal is siphoned from a master reservoir into individual molds in proportion to the speed at which the hot ingots are emerging. The siphons can be instantly stopped and started if "semi-continuous" casting is preferred to continuous casting.

Invented by William T. Ennor of Oakmont, Pa., and Arthur C. Heath Jr., of Massena, N. Y., who assigned patent No. 2,683,294 to the Aluminum Company of America, the gentle action of the siphons eliminates faulty ingots that often are produced when metal is squirted into molds. The siphons permit the molten metal to flow into the molds smoothly without carrying air which can oxidize the metal.

Science News Letter, July 24, 1954

PSYCHOLOGY

Pencil Use May Guide the Interview

➤ THE FREQUENCY with which an interviewer, whether psychologist or reporter, uses his pencil to take notes may unconsciously guide the response of the person being questioned.

In studies conducted by Dr. Eugene Talbot of the University of California at Los Angeles, subjects were asked to recite unconnected words for 30 minutes. These were tape recorded.

In one group, Dr. Talbot, who was visible to all subjects, jotted down every plural noun uttered. Subjects were not told what he wrote down. In a second group, no notes were taken.

The first group uttered significantly more plural nouns than the second group. Apparently the note-taking furnished cues that unconsciously increased the number of plural nouns uttered.

This finding may be especially significant to psychiatrists and psychologists who use non-directive therapy. In this technique, the interviewer merely listens, taking occasional notes and commenting or nodding only enough to keep the subject talking.

The studies suggest that note-taking and other slight responses of the interviewer stimulate the subject to talk more about the topic being covered when such responses are made.

Science News Letter, July 24, 1954

CE FIELDS

ENTOMOLOGY

Collect Bedbugs to Tell Origin of Atoll People

➤ BEDBUGS ARE being collected on a Pacific atoll in the hope that the origins of the people there can be determined.

The island of Kapingamarangi in the southern Carolines has a Polynesian culture. Yet the island is located about half way between Micronesia, to the north, and Melanesia, to the south, and about 2,000 miles west of Polynesia.

The Polynesians, Micronesians and Melanesians have many cultural differences, one of them being their bedbugs. The Kapingamarangians are believed to have Polynesian bedbugs. Certainty on this point may help to establish their origins.

The bedbug collections are being made by Dr. Cadet H. Hand, Jr., marine biologist of the University of California. He will bring them to Berkeley for analysis by another California scientist, Dr. Robert L. Usinger, professor of entomology.

Dr. Hand is a member of a six-man team sent to the Carolines to continue the five-year Coral Atoll Research program for the Pacific Science Board of the National Academy of Sciences-National Research Council. His primary interest is in the lower forms of sea animals, corals, jellyfish, sea anemones and starfish.

The anthropological record of Kapingamarangi is now fairly complete, but the biology of the atoll is sketchy. The study is expected to be especially rewarding because the reef appears to have had little dependence on contacts with outside islands over a long period of time.

Science News Letter, July 24, 1954

VETERINARY MEDICINE

Vaccine to Combat Blue Tongue Disease

➤ A VACCINE to combat the mysterious killer of sheep, African blue tongue disease, is now available. Extensive field tests have proved it effective.

Blue tongue, until it was discovered in California flocks recently, was hardly known outside of Africa. Prompt action by scientists from the U.S. Department of Agriculture, the University of California and Lederle Laboratories in Pearl River, N. Y., resulted in development of the vaccine.

It is the first vaccine to be developed in this country. A vaccine against blue tongue is in use in South Africa, but experts feared its importation here might lead to the introduction of a new strain of the disease.

Blue tongue is a virus disease spread principally by gnats. The season runs from midsummer to the first frost, when the insects are abundant.

Symptoms of the disease show up three to six days after infection when the sheep become feverish and dull. The tongue, throat and parts of the head swell, and diarrhea and cloudy eyes may occur.

The disease is fatal in about one out of five infected sheep, but secondary effects include poor wool condition, loss of weight and screw worm infestation, resulting in severe economic loss.

Blue tongue disease struck flocks totaling 325,000 head in 1952 in California, causing 15,000 deaths.

Science News Letter, July 24, 1954

TECHNOLOGY

Paper Strips Guide Cars Around Road Repairs

➤ PAPER STRIPS glued to the road have successfully routed traffic around highway construction in California.

The strips can be taken up easily. They leave no marks to confuse motorists when traffic is shifted to other lanes to avoid advancing construction, the Highway Research Board in Washington reports.

The strips were cut from heavy roofing paper, painted with white traffic lacquer and sprinkled with glass beads. Asphaltic emulsion was used to stick them to the road. They could be pried loose with a point shovel.

Science News Letter, July 24, 1954

PHYSIOLOGY

Radiation Sickness Slows Stomach Action

➤ EARLY MANIFESTATIONS of radiation sickness, such as loss of appetite and nausea, may be related to a temporary impairment of the stomach's functions.

Research with experimental animals by Dr. Marta S. Billings, Dr. Leslie Bennett and L. M. Burlingame of the University of California at Los Angeles Atomic Energy Project has shown that the emptying of food from the stomach is consistently retarded soon after exposure to radiation.

Barium was mixed with the animals' food, and progress of the food through the stomach and intestines of normal and irradiated animals was followed by X-ray studies.

Approximately all of the food eaten by normal animals was found to have been passed on to the intestines during the first three hours. In animals previously exposed to radiation, however, about 50% of the food was still in the stomach six hours after the meal. Abnormal food retention lasted up to seven days after radiation exposure.

This impaired function of the stomach may also contribute to the lack of appetite and nausea of patients undergoing radiation therapy.

Science News Letter, July 24, 1954

PHYSIOLOGY

Finger Tip Control Key to Hand Function

➤ SENSES IN our finger tips may furnish most of the cues that help control the skilled movements of our hands, John Lyman and Tom Sheridan of the University of California at Los Angeles have found.

Their research, related to glove design, is supported by the Army Quartermaster Corps. Gloves, even thin surgeon's gloves, restrict manual skill by reducing finger tip sensitivity.

Thumbs, as well as the index and middle fingers, are essential for fine manipulation. The third and little fingers seem to be relatively unimportant.

Future glove design for service forces and industry may be based upon the principle of the cat's claw, the engineers suggest.

For protection against cold, heavy material may be used on the back of the hand. The palms and front of the fingers would be covered with thin material. Warmth could be achieved merely by making a fist.

Gloves for protection from heat may be mitten-like affairs with only the thumb and first two fingers separated. The less surface available for heat transfer, the cooler the inside of the glove.

Science News Letter, July 24, 1954

MEDICINE

Treat Heart Disease in Girls Before Marriage

➤ YOUNG WOMEN with heart disease who want to have children should get necessary treatment for their heart condition before marriage.

This is the "logical" time for such treatment, Dr. Burton E. Hamilton, consultant in cardiology to the Boston Lying-in Hospital, reports in *Circulation* (June).

Since successful pregnancy for women with heart disease "depends in part on planned living and cooperation from the patient's family, timely education for all concerned is needed," Dr. Hamilton says.

If surgery is indicated, for example, to repair damage to the heart valves caused by rheumatic fever or to correct congenital heart defects, it should preferably be undertaken in advance of pregnancy. Dr. Hamilton states that the "need for surgery during pregnancy should be avoidable, except in rare circumstances, if cardiacs receive timely education."

The majority of young women with heart disease are not seriously handicapped by their condition and can expect to bear children successfully, Dr. Hamilton says. For such patients, who he describes as "favorable" cases, the mortality rate goes up only slightly as a result of becoming pregnant.

He emphasizes that this is true "only if the pregnant patient seeks and receives proper care." If not, she runs nearly as great a risk as if she were among the few heart patients in poor condition.

Science News Letter, July 24, 1954