

PSYCHIATRY

Psychiatrist Develops Child's Test for Parents

► A PSYCHIATRIST at the University of Washington has developed a technique for children to rate their parents.

Using two different tests, information on parental love, rejection and authoritarianism may be obtained in order to help treat disturbed children.

One of the tests consists of cartoons illustrating basic physical and emotional needs as food, sleep, affection, aggression and independence. One such cartoon shows a child refusing to eat. The test child must circle one of four named courses of action he would expect his mother or father to take. The courses of action represent varying combinations of love and authority.

The second test contains 32 personality traits appropriate to fathers and mothers. The child marks each trait "Like" or "Not Like" each parent.

An exploratory study with two groups of children (averaging 11½ years old), one considered normal and the other hostile and aggressive, showed a significant difference of parental rating. Among the normal children, 49 of 50 rated their parents as loving, while only 36 of 50 in the hostile group did the same.

The new technique, reported in the *Journal of Consulting Psychology* (Dec. 1958), was developed by Dr. Walter C. Williams of the University's School of Medicine.

Dr. Williams says such a technique is needed in the treatment of disturbed children since it is often difficult or impossible to get information from the parents. Working fathers often do not have the time to consult with the psychiatrist or psychologist and the one-sided story the mother tells may not be accurate enough.

Science News Letter, January 31, 1959

PUBLIC HEALTH

Pauling Disputes Report That Fallout Is Harmless

► ONE OF THE CENTRAL figures in the scientific radioactive fallout controversy issued a vigorous rebuttal to a recent report that present contamination with strontium-90 is "extremely unlikely to induce even one bone tumor or one case of leukemia."

Dr. Linus Pauling of the California Institute of Technology, Nobel Prize winner in Chemistry, declares that the conclusion of the report is "completely unjustified."

The disputed account, based on mouse studies by Dr. Miriam P. Finkel of the Argonne National Laboratory, appeared in *Science* (Sept. 19, 1958).

Dr. Finkel concludes that there is a threshold value for the ingestion of strontium-90 below which man does not suffer any ill effects. Since the present level of fallout is far below the threshold value, she indicates that there is no cause for alarm.

Dr. Pauling, with an Institute colleague Dr. Barclay Kamb, made his views known in the *Proceedings of the National Academy of Sciences* (Jan.).

"We have made an analysis of Dr.

Finkel's data that shows she had no justification whatever for her concluding statement," they say. "All of her data are compatible with a zero threshold for strontium-90."

A zero threshold indicates there is no amount of the radioactive material so small that it will not have some biological effect.

"Moreover," Drs. Pauling and Kamb explain, ". . . in order for Dr. Finkel to have been justified with 90% confidence . . . she would have to have used over 1,000,000,000,000 mice in each of her groups, instead of the 150 or less that were used."

They claim that a fallacy in Dr. Finkel's statistical argument is that she failed to control for a type of error. The error, they point out, is her acceptance of a hypothesis that there is no difference in response between control mice and mice dosed with strontium-90.

Science News Letter, January 31, 1959

PSYCHIATRY

Fear of Death May Be Core of Man's Anxieties

► THE FEAR of death may be at the core of all of man's anxieties, a team of investigators reported.

The fear of death is not merely a smoke-screen for deeper personality defects. Rather, it appears to be a direct cause of the apprehension exhibited by anxiety-ridden persons, Dr. Lewis H. Loeser, professor of psychiatry, and Mrs. Thea Bry, consulting psychologist, at New York Medical College, postulated at a meeting of the American Group Psychotherapy Association in New York.

It has become increasingly clear that the focal point in the development of feelings of panic and uncertainty is deep-seated in the fear of death. A person can be so aware of his fear of death that he dwells upon it continually, or recalls it frequently with little or no effort, or he may be completely unaware of it, the team explained.

They based their conclusions on studies of groups of anxiety-laden persons and individuals under psychotherapy.

They found that among these patients, symptoms of extreme apprehension and panic were coupled with unsolved conflicts that arose in childhood. These conflicts arose in what psychiatrists call the "oedipal phase" of development. This is the period in life, between the ages of three and five, when each individual is wholly attached to the parent of the opposite sex. The child faces conflict if he does not "mature" and adjust this attachment as he ages.

The child who is unable to resolve this conflict then begins to see death stalking his footsteps. Practically all patients studied described to the investigators a feeling of panic at that period in their lives.

If the child suppresses, rather than solves, his muddle of affairs, this phantasy of immortality then sweeps him further into the whirlpool of developing apprehensions.

If, later in life, the adult develops anxieties, these may be considered outward signs of his death-fear that, in childhood, was coupled with the "oedipal phase" struggle.

Science News Letter, January 31, 1959

IN SCIENCE

PSYCHIATRY

"Quest for Certainty" Suggested for Mental Ills

► TWO NEW YORK psychoanalysts suggest the "quest for certainty" as a new approach to the treatment of emotional illness.

Many emotional illnesses are at least partly the result of a person's "quest for certainty." Neurotic behavior represents a means of obtaining this certainty, Dr. Emanuel K. Schwartz of the Post-graduate Center for Psychotherapy and Dr. Alexander Wolf of New York Medical College report.

Most neurotics repeat their behavior over and over; they are certain of its outcome and refuse to risk trying a new approach to their problems, the psychoanalysts state in the *Archives of Neurology and Psychiatry* (Jan.)

For example, the schizophrenic person withdraws from the threatening world to the security of his own internally remade world. The depressed person feels that if he withholds all criticism, anger and aggression, he will be certain not to provoke or incur the dangers of the hostile and destructive forces around him.

Likewise, the perfectionist seeks perfection as safety from punishment. Even the hypochondriac finds certainty in pills. He can get through the day if he takes his medicine, the doctors explain.

By approaching such patients through the concept of the search for certainty, psychotherapists may be able to help some patients toward a more healthy mental state, the authors suggest.

Such a search is tied up with an individual's ability to assess the probabilities of success or failure and safety and danger in a situation and his willingness to take risks, they conclude.

Science News Letter, January 31, 1959

ENGINEERING

Wall Panel Lights And Heats Room**See Front Cover**

► A WALL PANEL for lighting while at the same time heating or cooling the home of the future has been publicly demonstrated for the first time by the Westinghouse Electric Corporation.

The photograph on the cover of this week's SCIENCE NEWS LETTER shows how a panel could be used to decorative advantage.

Thermoelectric cooling and heating and electroluminescent lighting are used in the panel. Aluminum patterns or "mobiles" superimposed on the electroluminescent screen provide the needed surface for heating or cooling.

Science News Letter, January 31, 1959

E FIELDS

PSYCHOLOGY

Study Long-Term Effects Of Brain Surgery

► **PSYCHOSURGERY** on mental patients impairs intellectual ability, results of a long-term study show.

Previous tests indicated that within 120 days after surgery the patients suffered no permanent loss in "intellectual function."

The new study was carried on with patients eight years after they underwent surgery and took the original tests.

In the psychosurgery, a portion of the brain's frontal lobes, about the size of a half-dollar, is removed in order to calm highly disturbed patients. In this study, all were schizophrenics.

The study, as reported in *Science* (Jan. 16), was conducted by Drs. Aaron Smith and Elaine F. Kinder, psychologists at Rockland State Hospital, Orangeburg, N. Y.

Dr. Smith says that these findings also contradict a widely held belief that as far as intellectual impairment is concerned it does not matter which part of the frontal lobes is removed. In the Smith-Kinder study, the impairment was more pronounced in cases where the removal took place in the rear of the lobes as compared to the front.

There is some evidence, Dr. Smith says, to indicate that more nerve passageways exist in the rear portion. Cutting them is like severing a busy telephone trunk line and causing heavy communications damage.

In the study, Drs. Smith and Kinder tested 28 schizophrenics who had operations and psychological tests eight years before. As controls, they worked with 24 of the same type of patients who had not undergone psychosurgery but who had also been tested eight years previously.

The abilities scored in the tests make up what Dr. Smith calls the "large concept of intelligence." Some of the abilities are vocabulary, arithmetic, comprehension, picture and block arrangement and multiple word meanings.

In the last named test, which Dr. Smith believes is the most significant, the patient may be asked for the meanings of the word "bill." Before the operation, or immediately after, he may answer: a legal document, paper money, a statement of debt and a man's name. Eight years later, he may only be able to think of a man's name.

Science News Letter, January 31, 1959

NATURAL RESOURCES

Water Research Stressed In Committee Proposals

► **WATER AND** how to "manage" it best has come in for some intensive study.

Meeting in closed sessions, an advisory committee of top men in the fields of soils, water and fertilizers has proposed that U.S.

Department of Agriculture scientists undertake several new research projects in the field of water management as well as give priority to similar, already established projects.

New research aimed at solving the problem of how to use the nation's water supplies more efficiently include studies of how to dispose of waste water from food processing plants and ways to increase water yields by forest management.

Tightened legal restrictions, plus pressures from wildlife conservationists, have made it necessary for food processors to find other means besides streams and municipal water systems for their waste disposal. One suggested way that needs further study, the committee reported, is by dispersion over land areas. "Adoption of land disposal methods not only would aid the processors but would be of considerable significance to public health and wildlife," the members said.

Other proposals presented include studies of: avalanche control; waterways and gully control; agricultural watershed runoff; recharging underground water reservoirs; efficiency of irrigation water management; and controlled woodland drainage.

In the field of soils research, the committee gave priority to research on soil organic matter and nitrogen transformation. Research here, they said, should be strengthened to provide basic studies on the processes by which decomposing organic matter is made available to plants as nutrients.

Control of nutrient release from mixed fertilizers—some 15,000,000 tons are used in one year—was first among fertilizer research proposals. Often, the committee pointed out, farmers do not get the most value from their fertilizer because scientists lack basic information on a specific plant's nutrient requirements.

Science News Letter, January 31, 1959

OCEANOGRAPHY

Sea Voice May Warn Reds of Coming Storms

► **BY LISTENING** to the sea's voice, Russian scientists say they may be able to detect approaching storms.

A Scientific Information Report circulated by the Central Intelligence Agency carries an abstract from an "unevaluated" paper prepared by Ya. Petrov, a Russian scientist. Mr. Petrov says Soviet Academician V. V. Shuleykin has studied the vortex air flow behind sea waves which creates an "infrasonic wave" called "sea voice."

Mr. Shuleykin suggests detection of these waves could serve as forwarning of approaching storms. The work is being done at Russia's L'vov Polytechnic Institute, which boasts a special magnetic sound recorder for capturing and reproducing sound waves too low in frequency to be heard.

"Previous efforts of other scientists in this particular field have failed consistently," he says. The device converts the sub-audio "sea voice" into higher frequencies which are fed to a picture tube for visual display and study.

Science News Letter, January 31, 1959

ARCHAEOLOGY

Old Mexican Culture Secrets Being Probed

► **A TEAM** of eight archaeologists from the University of California at Los Angeles is exploring an area in Mexico one mile square, believed to hold secrets of a little-known, long-extinct Indian culture.

First reports indicate several thousand people could have lived in this pyramid-studded ceremonial center on the banks of the Rio Grande de Santiago in western Mexico.

It is thought the dead culture could be related to the advanced civilization which flourished in central Mexico, reaching a peak under the Aztecs.

Laid in a semi-tropical region having rich agricultural soil, the site is spotted with large mounds, believed of religious ceremonial origin, and has the only cut-stone pyramids reported from western Mexico.

The team of archaeologists and 50 native "diggers" is headed by Dr. Clement Meighan. The work will continue through April, Dr. Meighan said.

Science News Letter, January 31, 1959

GENETICS

Computer Imitates Gene Selection in Fruit Flies

► **AN AUTOMATIC** digital computer is behaving like a fruit fly, at least as far as imitating the selection between two different genetic characteristics.

Australian scientists have succeeded in using an electronic "brain" to show what happens when two different groups of fruit flies mate. The results show how emergence of inherited characteristics, transmitted by genes, can be predicted.

This can mean that mathematics will speed up some biological experiments in the future. It may be that computers can be substituted in inheritance experiments for some living plants and animals. Thus many long and expensive experiments might be compressed into a few hours of electronic computations.

The program simulates selection between two alleles at a sex-linked spot on chromosomes in fruit flies. (Alleles are contrasting pairs of characteristics or genes such as tallness and shortness.)

Using two fictitious, or simulated populations of the insects, Dr. J. S. F. Barker of the University of Sydney's department of animal husbandry reported obtaining results similar to those in actual experimental studies. He studied competition between the characteristic "yellow" and its "wild type" allele.

Computers are expected to be especially useful in investigating the effects of various matings in insect populations, such as how many generations will elapse before a given characteristic dies out. The computer program is being used in further studies of selection between two alleles at a sex-linked locus, the scientist said.

The research is being published by the Commonwealth Scientific and Industrial Research Organization.

Science News Letter, January 31, 1959