

PSYCHIATRY

Low Income Mentally Ill Want Specific, Fast Aid

► LOWER INCOME persons in need of psychiatric care expect immediate solutions to specific problems, not long-range therapy.

This conclusion was advanced by Dr. Joe Yamamoto, University of California at Los Angeles School of Medicine, and Dr. Marcia Craft Goin, Los Angeles County General Hospital, to the 121st meeting of the American Psychiatric Association in New York.

They stated that lower income patients were concerned about drinking too much, taking narcotics, beating their children and feeling nervous all the time. And they expected to have their troubles cleaned up in less than 10 visits.

Records at the hospital's psychiatric out-clinic show that the average patient will be seen six times, the doctors said. This makes the psychiatrist "focus not on the past or the future, but on the present," they added.

• Science News Letter, 87:392 June 19, 1965

AERONAUTICS

Short-Use Engine Gives Five Times Normal Thrust

► AN EXPERIMENTAL jet engine, designed to help vertical takeoff (VTOL) aircraft get off the ground, packs the punch of conventional engines five times its size.

The turbojet engine, being tested for the U.S. Air Force, has to work harder to do its job than is customary in "current design practice," so it is used only for short surges of power.

Although its most immediate use appears to be providing the initial upward thrust for VTOL planes, the jet uses many special small, lightweight parts that may save size and weight in future conventional engines. Smaller than an oil drum, the engine runs on standard jet fuel.

So far only the moving parts are built of lightweight materials, but engineers are considering the possibility of cutting down weight even more, if tests show that there is a margin of structural strength.

Continental Aviation and Engineering Corporation, Detroit, is designing and testing the jet, under contract to the USAF.

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GENERAL SCIENCE

Arctic Proposed to Be Nuclear-Free Zone

► TWO SCIENTISTS, one Russian and one American, have proposed that the icy regions of the North Pole be declared a nuclear-free zone, free from nuclear weapons and delivery systems.

At present, the Antarctic is the only sizable part of the world where international treaty forbids militarization and provides for inspection procedures, Dr. Terence Armstrong, Scott Polar Research Institute, Cambridge, England, pointed out.

The Arctic is a good choice as second control area because it has less military value

than most other regions and at first would involve the two nations closest to it, the United States and Russia, reported Dr. Armstrong in *Nature*, 206:866, 1965.

In order to promote the growth of mutual trust between these two countries, a series of expanding agreement stages have been proposed by the scientists, Prof. Alexander Rich of the Massachusetts Institute of Technology and Academician A. P. Vinogradov, director of the V. I. Vernadskiy Institute of Geochemistry and Analytical Chemistry in Moscow. The proposal, written in a private capacity and published in the *Bulletin of Atomic Scientists*, is the first example of such joint authorship in this field.

The proposal calls first for an inspecting agreement in Alaska and an equivalent area of northeast Siberia. Later, Greenland might be added by agreement with Denmark, together with more of Siberia. Finally the rest of the Arctic area might be brought in, involving the participation of Canada, Norway and Sweden.

Several debatable criticisms of the plan might include the facts that a risk is involved by letting a potential enemy know the site of nuclear weapons, that the Arctic is a good place for storing such weapons, and that the "snowball" process of applying peaceful procedures into more important areas of the world is considered implausible by some people.

"The initiative taken by Prof. Rich and Academician Vinogradov is to be warmly welcomed," concluded Dr. Armstrong. "Their proposal should be elaborated and developed by anyone who can."

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AGRICULTURE

Farms Gain More Income From Raising Game

► FARMERS and landowners throughout the United States are supplementing their income by caring for the wildlife roaming their land.

Rabbits, quail and pheasants make good hunting and better eating. But in order to have them around, a few things need to be done, or rather, a few things like ditches and fences need to be left alone, point out members of the Remington Arms Company, offering a few hints to farmers stymied in knowing how to mix big farming with game.

In order to provide the brush and tall grass needed as protection and cover for these small game animals, today's farmer should let these plants grow wild along the ditches, fences, access roads, drainage-ways and field borders that are part of any large or small farm or property.

Mowing, cutting or setting fire to these areas costs time and money and drives away the animals, point out the Remington members. A brushy fence line is of no liability to farming, and cutting it will not add a nickel to farm revenue. Few weeds are controlled by regular cutting. But by letting these so-called idle acres alone, farmers can provide the necessary cover for the game animals.

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IN SCIEN

TECHNOLOGY

'Live' Wire Performs Like Nerve Fiber

► A TINY WIRE that acts like a nerve fiber may give more and more "live" qualities to machines.

The live wire, called a neuristor, is the first step toward making a complete artificial nerve cell, a basic requirement in attempts to develop successful pattern recognition systems. In addition, networks of neuristors may eliminate the need for transistors, resistors and capacitors in digital computers and some electronic systems.

An electrical impulse can move along one inch of neuristor in less than one millionth of a second, or about 10,000 times faster than a similar impulse moves along the axon "wires" of biological nerve cells.

The neuristor was developed by A. J. Cote Jr., Naval Ordnance Laboratory, White Oak, Md., and reported in the Proceedings of the Institute of Electrical and Electronics Engineers.

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GENERAL SCIENCE

'Very Favorable' Outlook For Women in Research

► WOMEN LOOKING for jobs in research laboratories have a rosy future, thanks to expanding opportunities and consistent, high-quality work of the fair sex already employed.

Women now comprise 22% of the professional personnel in 65 chemical and pharmaceutical laboratories, according to a questionnaire survey and report of Dr. John B. Parrish, University of Illinois, Urbana.

Most of these women are working in large laboratories involved in long-range research, rather than in laboratories geared for immediate marketing, Dr. Parrish reported in *Science*, 148:657, 1965.

Women seemed to fit in best in very large laboratories that had a lot of fairly routine jobs involving large-scale screening and testing work, Dr. Parrish found. The girls here encompassed 36% of the personnel. Directors of these laboratories reported that women are often better than men for routine tasks requiring very careful attention to detail.

As the director of one laboratory put it, "We don't see many good men with B.S. degrees—they all go on for M.S. or Ph.D. If they do come in, their stay is short. We get better quality in women at this level and hence prefer them."

Women are often accused of causing high turnover problems by quitting because they are inhibited by the "3M's"—marriage, maternity and moving. One of the persistent needs reported by women chemists is for part-time employment.

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CE FIELDS

TECHNOLOGY

Magnetic Highway Seen For High-Speed Transit

► HIGH-SPEED commuter service using magnetic suspension is in the laboratory stage.

Magnetic suspension would float a vehicle in the air and drive it more than 150 miles an hour with an electric motor that has no rotating parts.

Thus, the magnetic highway would take over the two basic functions of the wheel, supporting the vehicle and moving it.

This concept takes its place with those of jet-propelled cars zipping through tubes and Vertical/Short Take-Off and Landing aircraft as a potential answer to the problem of rapid mass transit over relatively short distances.

Developed by the Westinghouse Electric Corporation, magnetic suspension has already passed a laboratory test. In the test, magnets were placed underneath the vehicle, but in a full scale operation, the magnets would be overhead.

The laboratory model is supported by strong, ceramic-type permanent magnets placed lengthwise along the underside of the vehicle. Similar magnets, of the same polarity, form a double track beneath it.

Since magnets of like polarity repel each other, the car floats about one-fourth of an inch above the track. There is no contact and no friction, and the car merely rides on a layer of air.

Ray H. Fields, manager of the Westinghouse transportation systems department, says that "data from our laboratory model show that freight and passenger loads comparable to those transported by present methods of transit can be supported by magnetic suspension."

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PHARMACOLOGY

Cancer Folk Medicine Effective in Test Tube

► NEWLY DISCOVERED extracts of milkweed and dogbane, plants used for thousands of years in folk medicine, have been found effective in test-tube experiments against human cancer cells.

The next step will be to test them on animal tumors, Dr. S. Morris Kupchan of the University of Wisconsin's department of pharmaceutical chemistry at Madison, said. Dr. Kupchan heads the Wisconsin group, which for the past six years has been testing several thousand plants for activity against cancer.

Both the milkweed and dogbane compound structures are similar, belonging to a chemical group called the cardiac glycosides, which are stimulating to the heart.

The milkweed is known scientifically as

Asclepias curassavica, and is popularly called "cancerillo" in some parts of the world. It has been used against growths in Costa Rica, Mexico, India and in other places.

Indian dogbane, also called American Indian hemp, has the scientific name *Apocynum cannabinum*. In folk medicine this plant's juices were used against warts and growths called condylomas, which are on or near the genital organs.

The American Cancer Society reported that Dr. Kupchan was assisted in his work on milkweed by Dr. John R. Knox and John E. Kelsey of his department, and by Dr. J. A. Saenz Renaud of the department of biology, University of Costa Rica, San Jose.

Assisting Dr. Kupchan in the study on dogbane, or hemp, were Drs. Richard J. Hemingway and Raymond W. Doskotch.

Although cancer specialists believe that no one compound will be found useful as a universal cancer drug, different compounds may be discovered that will treat various types of malignancy. New approaches to cancer treatment could come from clarifying the structures of "plant-derived" tumor inhibitors.

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SPACE

Interplanetary Balloons Could Hover Over Venus

► A BALLOON made of steel thread has been suggested as one-half of a two-stage space mission to probe the planet Venus.

Loaded with instruments, the balloon would be released from a Voyager space probe riding in a 1,000-mile-high orbit around the planet. The balloon would float down to a preset altitude and hover while it took temperature readings, atmospheric measurements and perhaps even television pictures of the surface.

Venus is too hot at ground level for electronic equipment to operate reliably, so the balloon would be designed to stay in the cooler layers of the atmosphere. A material called Rene 41 has been studied as a material for the balloon, because of its high heat resistance.

Rene 41 is a flexible fabric made of finely woven stainless steel wires. For the balloon, the steel fabric would be coated with an air-tight layer of silicone, impregnated with powdered glass. The coated fabric is already being used by Goodyear Aerospace Corporation, Akron, Ohio, for "ballutes"—combination parachute/balloons that could be useful for recovering the lower stages of rockets. First stage boosters today are lost at sea, an expensive item when space traffic gets heavy.

On the Venus balloon an instrument package hanging down below was found to stay cooler than a similar package riding inside. The higher the balloon in the atmosphere, the larger the instrument package could be.

The balloon was the idea of a Goodyear engineer, Frank R. Gross, who referred to it as an "expandable drag body." He said the idea came from a study of the abilities of Saturn rockets to put a Voyager probe into an orbit around Venus.

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PSYCHIATRY

Hysteria a 'Myth' British Doctor Claims

► HYSTERIA is "a myth, a disguise for ignorance, a source of clinical error," and should be abandoned by psychiatrists as a diagnosis, a British physician warned.

"It is not only a delusion but also a snare," cautions Dr. Eliot Slater, director of the Psychiatric Genetics Research Unit, Maudsley Hospital, in London.

The diagnosis "hysteria" is not a common one. In a survey covering over a million persons only 5.5% of the cases examined by psychiatrists were called "hysterics." Four times as many patients were diagnosed for "anxiety state."

In a follow-up study of a group of patients who had been diagnosed as "hysterics," Dr. Slater found that the majority turned out to be suffering from brain lesions, epilepsy, or some psychiatric condition such as anxiety, depression or schizophrenia.

Another follow-up study convinced Dr. Slater that "as a syndrome or disease entity 'hysteria' does not exist."

Although this conclusion is "striking and provocative," an editorial in the *British Medical Journal*, May 29, 1965, states that most psychiatrists will accept Dr. Slater's conclusion.

"Today hardly anybody will fight for the independence of a psychiatric syndrome, especially a neurotic one. The doctrine that there are no neuroses, only neurotics, has long been familiar to psychiatrists," the editorial points out.

However, despite the fact that hysteria is not an illness "in the accepted sense," the editors emphasize that it is still the physicians' concern.

Dr. Slater notes that patients with hysterical symptoms, attention-seeking and histrionic behavior, emotional instability and overdependence, have one thing in common: "they are all patients."

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TECHNOLOGY

Satellite Navigator Ready for Small Ships

► A COMPACT, light unit that will make it possible for small vessels, as well as large, to navigate by satellite signal is being developed.

The equipment, AN/SRN-9, weighs 300 pounds and is about the same size as an office desk.

Designers say it is comparable in complexity to a color television set.

The set picks up signals from orbiting navigational satellites and converts them into digital data to make the necessary computations. As the satellite passes overhead, the operator tunes the receiver to the proper frequency at which time the receiver locks on and the operation is automatic.

The unit was developed by the Applied Physics Laboratory of the Johns Hopkins University, Silver Spring, Md.

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