PSYCHOLOGY

Anxieties Hinder Accomplishments

➤ SETTING YOUR goals too high, sometimes called "hitching your wagon to a star" or "shooting at the moon," may cause anxieties that hinder normal accomplishments, state Dr. Joseph Sheehan and Seymour Zellin of the University of California at Los Angeles psychology department.

Employing a special pinball machine devised by Dr. Julian Rotter of Ohio State University, each subject was asked to predict his score before each of 21 five-shot series. The machine was rigged so that performance depended largely on chance. Psychological scoring of subjects was based upon discrepancies between estimated and actual performance scores.

These were some of the results:

1. In many cases high goals were followed by poor performances, and better performances frequently followed more cautious predictions.

2. High psychological scores generally indicated over-confidence and putting pressure on one's self, while low ones suggested inferiority feelings.

3. In general, American students tended to overrate their abilities, while foreign students were more cautious in their estimates.

4. Stutterers were found to resemble physically handicapped persons in having lower than normal psychological scores.

Science News Letter, April 4, 1953

DENTISTRY

Gland Chemicals Make Teeth Erupt and Grow

➤ TWO GLAND chemicals are responsible for tooth growth and eruption. This discovery apparently answers for the first time the question of what makes teeth erupt and grow.

It was announced by Drs. Louis J. Baume, Herbert M. Evans and Hermann Becks of the University of California at the meeting of the International Association for Dental Research in Philadelphia.

The gland chemicals are the growth hormone from the pituitary gland in the head and thyroxin from the thyroid gland in the neck. Growth hormone makes teeth grow but thyroxin is needed to make them erupt.

One 18-year-old youth has already benefited from the discovery. He was seen in the California dental clinic because he still had his baby teeth. A mild and previously undetected thyroid deficiency was found. Thyroid hormone treatment caused his permanent teeth to erupt.

In their animal experiments, the scientists found that the best combination for the development of the teeth was a combination of growth and thyroid hormones. At present growth hormone is not used in man.

The experiments were done in rats without pituitary glands or thyroids. In a group of dwarf rats, which had been deprived of their pituitaries and hence of growth hormone for most of their lives, the scientists showed the remarkable power of the two hormones.

The little tooth growth which had occurred in these animals was folded and malformed. Growth and thyroid hormones made the teeth grow to normal size and almost completely repaired the malformation.

The scientists said the thyroid hormone makes the embryonic tooth buds develop, and later puts enamel on. Growth hormone is responsible for growth of pulp, bone, dentine and other tooth structures.

Science News Letter, April 4, 1953

HORTICULTURE

Azaleas Now Bloom In Southern States

See Front Cover

➤ SURE PROOF that winter has fought a losing battle and that spring is really here, the azaleas have burst into flower throughout the southern states. As the spring sun climbs higher in the sky, new areas farther north will see these handsome flowering shrubs come into bloom.

The most popular azalea varieties in the United States come from Asiatic stock. These oriental varieties have a wide range of bright colors—white, purple, red, orange, yellow and many shades of pink.

The Omurasaki azalea blossom, pictured on the cover of this week's SCIENCE NEWS LETTER, is a deep lavender, almost purple. This variety, with its large flowers, is one of the Japanese types that have flourished in the warm climate of the East Coast.

Because azaleas occur in so many different varieties with blossoms that no catalogue can possibly describe adequately, prospective buyers should visit their nurserymen in the spring, when the plants are in bloom, to choose azaleas for their gardens.

Science News Letter, April 4, 1953

VETERINARY MEDICINE

Cows Now Younger Than Their Teeth Tell

➤ HERE IS one female who can knock two years off her age without lying about it: Bossie, the cow.

The "dental timetable" often published and generally accepted for determining a cow's age may have been correct many years ago, for slow developing breeds, but it is "misleading" now, declares the American Veterinary Medical Association in Chicago.

A cow with a full mouth of incisor teeth, states the association, is more likely to be just over three years old rather than five as the old schedule would have it.

Science News Letter, April 4, 1953

IN SCIEN

TECHNOLOGY

White Stripe for Roads Can Be Made of Plastic

➤ LONG-WEARING, heat-resisting plastic stripes soon may mark traffic lanes and parking spots on the nation's roads and streets if the findings of the Texas A. & M. Engineering Experiment Station, College Station, are adopted.

The plastic stripe, either white or yellow in color, works on both asphaltic and concrete pavements. Made of a resinous binder, pigments, fillers and sand, the plastic material is applied in melted form from an oil bath kettle heated to 276 degrees Fahrenheit. The stripe "sets" in less than five minutes, and should last from three to five years on roads of relatively light traffic.

Science News Letter, April 4, 1953

PSYCHOLOGY

Silence Worse Than Scolding

➤ SOME PARENTS make a great virtue of the fact that they never shout at their children or spank them when they misbehave. Instead, they give the naughty child the silent treatment, refusing to talk to him for a while.

Such treatment is actually a form of intimidation, a report from the National Hospital for Speech Disorders points out. It can be much more harmful, especially to a sensitive child, than a spanking.

What many parents seem to forget is that the object of discipline is not to punish the child but to prepare him for becoming an adult, to guide him so that in later years he will avoid the mistakes that might hinder a healthy, happy adjustment to life. The hospital's report points out further that, if discipline is necessary, one of the best ways of administering it is to withdraw some privilege from the child for a stated period.

"In this way he learns, without being unduly intimidated, that life is a matter of give and take—that to enjoy its good things he has to conform to certain rules of acceptable behavior. One unusually effective means of discipline is available in homes with television sets, a recent survey of school children having shown that 20% prefer a spanking to losing television privileges, and that 21% would sacrifice their allowance rather than the right to watch their favorite television programs.

"Whatever privilege is withdrawn from the child, parents should administer the discipline with sympathy and understanding, being careful to let the child know that they are rejecting his behavior and not him."

Science News Letter, April 4, 1953

CE FIELDS

CYTOLOGY

Research Points Way to Interchange of Organs

➤ TISSUE "SPECIFICITY," the factor that has heretofore prevented interchange of tissues and organs between human beings, is an acquired factor, say a team of doctors of the University of California at Los Angeles School of Medicine.

Cross-grafting of skin, or replacing of diseased organs with healthy ones, may be possible at some future date. It cannot be done successfully at present.

The doctors' research has demonstrated that permanently successful "takes" of cross-grafted skin are possible in chicks less than four days old. But as the chicks grow older successful "takes" are no longer possible.

This indicates that the process by which tissue becomes specific to an individual and "dies" when transplanted to another may be due to certain changes that are gradually acquired by the tissue as the individual matures.

If the nature of the process can be determined, it may be possible to reverse it temporarily. This would open the way to the establishment of "banks" where healthy skin and organs could be preserved by special culture methods for future emergencies.

The research was performed by Drs. William P. Longmire, Jack Canon, Willard S. Smith and Robert Weber.

Science News Letter, April 4, 1953

AERONAUTICS

Urge Crash Protection For Private Airplanes

➤ AIRCRAFT MANUFACTURERS have been urged to make future business and personal type airplanes adaptable to the use of shoulder harnesses.

In a resolution aimed at the manufacturers, a Cornell University Committee for Transportation Safety Research also recommended that cabins of light airplanes be constructed so they would not collapse during a crash at minimum flying speeds.

The resolution, which does not apply to commercial transport planes, was based upon research conducted by the Air Force, Navy and Civil Aeronautics Administration.

A report on crash injuries issued late in 1952 by the Cornell University Medical College revealed that shoulder harnesses effectively reduce probability of dangerous head injury in severe accidents, provided the cockpit or cabin remains substantially intact during the crash.

The report also pointed out that many civilian pilots do not use shoulder harnesses when they are available. One series of planes studied revealed that the shoulder harness had been removed in two out of three planes.

The possible reasons listed for this were: insufficient understanding of the value of shoulder harnesses, a willingness of the pilot to take chances, discomfort or inconvenience of the harness originally installed in the planes, or to keep the harness straps from "flopping around" in the cockpit.

An illustration in the report pictured a crashed plane, the front half of which was a tangled mess of steel. The picture caption said: "Severe accident. No shoulder harness available. Pilot sustained dangerous head injuries which resulted in death."

Science News Letter, April 4, 1953

HEMATOLOGY

More Plasma Possible When Red Cells Returned

➤ PROVIDED YOU maintain a diet high in proteins and calories, you may be able to give plasma without ill effects much more frequently and in greater amounts than current practices permit.

This is the opinion of a group of doctors at the University of California at Los Angeles and the West Los Angeles Veterans Administration who have developed new blood separation techniques.

The technique consists of taking blood from the donor, separating red blood corpuscles from the plasma and returning the vital red cells to the subject, using a single bottle that is not opened during the procedure.

Small, carefully selected groups of donors capable of providing large amounts of plasma would perhaps be a better source of the substance than current stockpiles, which are taken from large masses, the doctors say.

This method would also reduce the chances of transmission of such diseases as viral hepatitis, frequently a problem in present methods.

Doctors performing the research were Drs. John S. Lawrence, William S. Adams, S. H. Bassett, W. H. Blahd and W. G. Figueroa.

Science News Letter, April 4, 1953

MEDICINE

Keep Ulcer Type Out of Worry Jobs

➤ BEFORE A man is promoted to a job with worries that may "explode in peptic ulceration," his doctor and the plant doctor should have a conference to learn whether he has had ulcers or is the type who may get them.

This suggestion for protecting the patient from a "quasi-occupational" disease was given the American Academy of General Practice meeting in St. Louis by Dr. C. D. Selby of the University of Michigan Medical School at Ann Arbor.

Science News Letter, April 4, 1953

GEOPHYSICS

Bounce Radio Waves From Trails of Meteors

➤ LONG DISTANCE radio signals can be bounced off the ionized trails left by tiny meteors high in the atmosphere.

Discovery of this radio-wave-reflecting layer may double or triple the channels available for radio communications over thousand-mile distances, Dr. O. G. Villard, Jr., of Stanford University, California, reported to the Institute of Radio Engineers meeting in New York.

The ionosphere, a radio-reflecting "roof" composed of layers of ionized air in the upper atmosphere, is now used to get radio signals beyond the horizon. If it were not for this "roof," the radio waves, which travel in straight lines, would escape into outer space.

Radio links now require two or three channel assignments instead of one because the ability of the layers to reflect signals at any given time depends upon the sun's position, so frequent shifts are necessary for continuous communication.

Using frequencies of 10 to 25 megacycles, relatively low power of only 1,000 watts and simple antennas, hand-keyed telegraphic signals have been sent up to 1,000 miles by reflection from the so-called meteor layers at times when regular ionospheric layers were not able to reflect at all.

Dr. Villard's explanation is that the thousands of tiny meteors ionize the earth's outer air when they smash into it. Although these tiny dust particles from outer space are mostly far too small to be seen with the naked eye, their total effect is sufficient to bounce back a weak signal.

Meteor echoes last longer at lower frequencies, in the vicinity of 15 megacycles, Dr. Villard reported, than at the higher frequencies.

Science News Letter, April 4, 1953

MAMMALOGY

Male Shrew Finds Female Justifies Name

➤ PITY THE poor shrew—the male shrew, that is.

For experiments show that the female shrew squeaks shrewishly at the male when he crosses her and otherwise browbeats him till he scampers away in a fright.

The hen-pecked shrew, however, takes it out on smaller males, scaring them off with similar tactics, reports Dr. Robert L. Rudd of the Museum of Vertebrate Zoology, Berkeley, Calif., in the *Journal of Mammalogy* (Feb.)

About the only shrews that manage to get along together, Dr. Rudd said, are immature specimens. Several of them, two months old at capture, lived amicably together for six weeks.

But this happy unity ended abruptly when food ran out—the two weakest were killed and eaten by the others.

Science News Letter, April 4, 1953