ASTRONOMY

40-Inch Telescope To Rival 200-Inch

➤ ASTRONOMERS ARE going back to smaller telescopes to get clearer pictures of the heavens. New techniques make this possible. There will not be a rush to change old telescopes, however, since the cost of converting them is more than that of building a new small one.

Plans to build such a microtelescope, a baby compared to such giants as the 100- and 200-inch telescopes, were announced by Dr. A. B. Meinel of Yerkes Observatory, Williams Bay, Wis., at the American Optical Society meeting in Rochester, N. Y. The observatory has filed an application with the National Science Foundation for the funds needed to build a seven-inch telescope with a 28-inch focal length.

Dr. Meinel believes that his microtelescope, if built with a 40-inch mirror, would equal in its ability to photograph stars any telescope now in existence.

"Exceptionally tiny stellar images" can be consistently obtained using the new Meinel-Pearson flat-field camera, he said.

Secret of the new technique is to pinpoint the light from the star on a single grain clump in the emulsion by using a small opening for the light and by having a short focal length. The diameter of the tiny star image is thus about one-fifth that from conventional telescopes.

A microtelescope with an eight-inch mirror that is the equal of telescopes up to three times as large has already been made by modification at Yerkes.

Science News Letter, May 15, 1954

ORNITHOLOGY

Parakeets Require Lots Of Vitamin B-2 to Breed

➤ PARAKEET FANCIERS who want to breed their birds should add lots of vitamin B-2, riboflavin, to the bird seed diet to insure good, hatchable eggs.

Helen T. Parsons and Martha McMillan at the University of Wisconsin have found that breeding is most successful when twice the recommended amount of riboflavin is fed the birds. Parakeets need more of this vitamin than chickens.

One possible explanation for this is that parakeets waste a large amount of the fine-sized feed materials given them. It may also be that the birds have an unusually high requirement for riboflavin.

Another parakeet problem that can be attacked with improved diet is the poorly-feathered young bird. Such birds are called "runners," because they cannot fly to their perches.

Using experience in feeding other birds, the scientists added the vitamins, pantothenic acid and niacin, and several amino acids to the diet, adjusted the mineral content and used good quality proteins.

With this improved diet, no case of poor feathering was observed. The parakeet all-seed ration has to be supplemented with such fine material, the researchers state.

The food has to have enough of the necessary diet factors to keep the birds healthy even with the high waste. It is also important to keep the special nutrients in the ration throughout the bird's life. With an adequately supplemented food in the cage at all times, breeders do not have to switch to special nesting foods or other special diets at critical times.

Science News Letter, May 15, 1954

TECHNOLOGY

Device Detects Ozone Traces in Air

➤ AN EXTREMELY sensitive device to detect traces of ozone in air is being used by scientists to improve rubber products for home and industry.

The machine, called an ozonometer, can spot less than a tablespoon of ozone in the air in a 12-by-15-foot room, or a concentration of one part of ozone to 100,000,000 parts of air.

Ozone is an extraordinarily active form of oxygen, with a peculiarly pungent odor often noticed during thunderstorms. It is sometimes erroneously used as a synonym of fresh air.

Scientists at B. F. Goodrich's research center, Brecksville, Ohio, invented the ozonometer because ozone is a deadly enemy of rubber. It causes cracking and deterioration when rubber products are stored. Serious damage occurs in urban areas where smog causes the formation of ozone in air, the scientists said.

The machine uses a stretched rubber thread as the basis of measurement. The thread's tension is directly affected by the amount of ozone in the air. The ozonometer makes it possible to measure the exact effectiveness of experimental anti-ozone chemicals in rubber, an aid in the development of new compounds that will not be affected by ozone.

Science News Letter, May 15, 1954

MEDICINE

20 Rusty Needles in Body But No Symptoms

➤ THE CASE of a man who harbored 20 needles in his body but who never had any symptoms traced to them is reported by Dr. Clarence Lee Miller of Washington, D. C., in the *Journal of the American Medical Association* (May 1).

The man died of a heart condition at the age of 73 in the U. S. Soldiers Home Hospital. The needles, covered with rust and dense fibrous tissue and with the eyes all rusted out, were found scattered through his body when a routine autopsy was done. Apparently, the man had swallowed them during the years he worked as an upholsterer and furniture maker.

Science News Letter, May 15, 1954

IN SCIEN

PSYCHIATRY

Psychoanalysis Can Help in Growing Old

➤ BECAUSE THE U. S. represents the New World and idealizes "the young, the healthy and the beautiful," old people feel they have to remain young, "even if it kills them," Dr. Martin Grotjahn of Beverly Hills, Calif., declared at the meeting of the American Psychiatric Association in St. Louis.

Growing old is such an unexpected blow to a person's self-regard and so shattering to his unconscious illusion of eternal youth that it may drive him into a depressive kind of insanity, Dr. Grotjahn declared. This outcome occurs more often than the less serious neurotic illness.

Contrary to expectations, however, growing old may make it easier for the person to be helped by psychiatric treatment and even psychoanalysis.

Looking back to the past, as many old people do, can be turned to looking into oneself to find and settle unconscious conflicts of feeling and to accept oneself as one really is.

Depression and guilt, Dr. Grotjahn said, can be relieved through correcting such false notions as that old people are beyond sin and sex, like little children.

The psychoanalyst, Dr. Grotjahn warned, must be able to accept the older person without idealizing or patronizing him, and without avenging his childhood hate of having to submit to older persons, such as parents, grandparents and teachers.

Science News Letter, May 15, 1954

METEOROLOGY

Balloon Travels Record Distance

➤ A "FLYING saucer" balloon has traveled from Vernalis, Calif., across the United States and also across the Atlantic to land in Spain, a record of 6,250 miles in 52½ hours, at a speedy 120 miles per hour.

Air Force scientists who launch these weather probes call them "Moby Dick" balloons, because they look like giant white whales when inflated and let loose to rise 50,000 to 100,000 feet high and spy on winds.

Seen from the ground, the weather balloons "appear circular in shape and have a silver color in the sunlight." They are the source of many flying saucer reports. Beginning in May, launchings of such balloons will be made from Manchester, N. H., as well as from West Coast sites. There will be a rash of flying saucer reports in the East this summer.

Science News Letter, May 15, 1954

CE FIELDS

NUTRITION

Vitamin in Rice Urged To Help Orient's Health

➤ MORE PROTEIN must be put in the diets of the teeming millions of the Orient for their health's sake, Prof. George R. Cowgill, professor of nutrition at Yale University, declared at the centennial of Hamline University, St. Paul, Minn.

Since more rice is eaten in the Orient than any other cereal, Prof. Cowgill urged that it should be enriched with the animal protein factor, vitamin B-12, by a process similar to enriching wheat flour with vitamins and minerals.

"A very large part of the human family throughout the world lives primarily on plant food," Prof. Cowgill explained. "The majority of the people of India live on practically a vegetarian diet for religious reasons."

Many more things need to be known about diet, he said, including why a simple mixture of protein, fat, carbohydrate and mineral nutrients fails to meet the demands of maintenance in the health of the adult and the growth of the young.

Science News Letter, May 15, 1954

MEDICINE

Slower Brain Waves With Age Not Sign of Disease

➤ BRAIN WAVES slow down with age, but this is a natural process and not a sign of any physical or mental disorder. Nor is the slow brain wave rhythm by itself any reason for retiring executives, scientists or government workers at age 65.

This new theory of brain wave rhythm was presented by two Chicago scientists, Drs. James E. P. Toman of Michael Reese Hospital and Louis D. Boshes of Northwestern University School of Medicine, at the meeting of the American Academy of Neurology in Washington.

Methuselah, at 900 years of age, would have had the brain wave rhythm of a two-year-old, they calculated. They have studied some 1,200 brain wave records of persons ranging in age from five months to 82 years, and they have calculated the brain wave rhythms up to 900 years.

The brain may have different electrical rhythms, they believe, according to whether it is learning rapidly or has stopped the learning process to a large extent and, instead, is filled with memories and past experiences.

This is the first time that the theory of accumulated experience in the brain has been used to explain the fact that brain waves are fastest in young adults and slow down in the presence of aging.

Although the 900-year-old Methuselah would have had the same brain wave rhythm as a two-year-old, his brain wave pattern would be different, Drs. Toman and Boshes said, and he would have had all the advantages of accumulated wisdom to compensate for the slow down in rhythm.

When an older person's brain waves are both slow and abnormal or irregular in pattern, this may mean a tumor, artery hardening or other disease is present. However, the slow rhythm by itself does not mean there is any concealed disease process affecting the brain.

Science News Letter, May 15, 1954

MARINE BIOLOGY

Giant Starfish Feared More Than Sharks

➤ A GIANT starfish is the most feared creature in the Pacific Ocean around Ifaluk Atoll in the Caroline Islands, though the waters are infested with deadly sharks.

Needle-like spines nearly an inch long cover the back of the starfish. Blending perfectly with the reddish sand and reef colors, the starfish is a constant threat to natives wading in the water. Even the leather-tough feet of an islander cannot resist the spines, and the resulting wound is excruciatingly painful.

The natives believe the spines contain a poison and this is quite possible in the opinion of Frederick M. Bayer, associate curator of marine invertebrates, U. S. National Museum, Washington. Mr. Bayer has made an extensive study of the coral life around the atoll.

When a native steps on a starfish, his first act is to turn the animal on its back and put his injured foot against its mouth. The stomach and powerful suction-cup feet of the starfish, *Acanthaster planci*, draw out any poison or broken spines so the wounds heal quickly. The starfish may be as much as two feet in diameter and has 13 to 15 arms. Most other starfish are harmless to man.

Science News Letter, May 15, 1954

MEDICINE

Heart Is Meant to Work, Specialist Says

➤ "THE HEART is meant to work. Work does not cause heart disease. There is no substance to the fiction that work can lead to any type of heart disease," declared Dr. Louis N. Katz of Michael Reese Hospital, Chicago, at the meeting of the Industrial Medical Association in that city.

Dr. Katz emphasized that work to which one is accustomed is not detrimental.

"I cannot understand," he said, "why any employee who develops a heart attack at work should be considered to have developed it because of work, any more than one would blame sleep when a heart attack occurs during sleep."

Science News Letter, May 15, 1954

BACTERIOLOGY

Fingerprint Test for Gauging Disinfectants

➤ A FINGERPRINT test for telling the effectiveness of a skin disinfectant was announced by Drs. Myron W. Fisher and William C. Alegnani of Parke, Davis and Co., Detroit, at the meeting of the Society of American Bacteriologists in Pittsburgh.

Its advantages over other tests are reported to be simplicity, reliability, and the fact that it is done directly on human skin where the disinfectants are intended to do their job of getting rid of germs.

The test is made as follows:

The fingertips of one hand are touched to filter paper that has been moistened with a suspension of test germs. After a short drying period, four fingertips are simultaneously covered with the disinfectant under test. At four pre-selected time intervals, each finger is touched to the surface of a plate of agar medium on which the test germs will grow. The last finger printed on the agar plate is a control finger that has not had disinfectant on it.

After 24 to 72 hours in the incubator, the fingerprinted plate is examined to see whether the disinfectant killed the germs and how long it took. This is determined by the record of which fingerprint was made first, second, third and fourth at the timed intervals.

Science News Letter, May 15, 1954

MEDICINE

Skin Graft Stops Hemophilia Bleeding

➤ SUCCESSFUL USE of a skin graft as an emergency measure to stop uncontrollable bleeding is announced by Drs. Herbert Conway and Richard B. Stark of the New York Hospital-Cornell Medical Center, New York.

The patient suffered from hemophilia, the hereditary bleeder's disease. He came to the hospital for treatment after catching his right forearm in the door of a car. Even with transfusions of fresh blood and plasma, he continued to bleed from the wound for four days. On the fourth day he needed almost three pints of blood in a 12-hour period.

Drs. Conway and Stark then transplanted skin from the young man's father onto the open wound. They knew the graft, coming from another person, would not take permanently. But they also knew that the reason it would not take was because it would probably cause clots of the blood vessels in the tissue bed underlying the graft.

This characteristic of skin grafts from a donor might, the doctors thought, be an asset for the bleeding hemophiliac.

The success of the method, in what is believed the first case of the kind on record, is announced in a new medical publication, *Transplantation Bulletin* (April).

Science News Letter, May 15, 1954