

ASTRONOMY

**New Telescope Has
Only One Eyepiece**

► FROM THE Netherlands, where Galileo got his idea for that first revolutionary telescope of his, comes something radical in telescope design. It was developed by Albert Bouwers of Eindhoven, who has been granted patent 2,409,186.

Most large telescopes are accompanied by instruments of much smaller power, used as finders. When the observer has spotted his star, he shifts from the eyepiece of the finder to that of the main instrument—sometimes an inconvenient process.

To permit the same eyepiece to be used for both objectives, the Bouwers design interposes a small, movable mirror at a slight angle, about midway of the tube. This throws the small objective out of action, and catches light sent from the big lens through a train of mirrors in the other tube, including one large, concave mirror at its base, in which most of the light-focussing is accomplished.

Because this patent was processed while the Netherlands lay in the hands of the Nazis, rights in it are vested in the Alien Property Custodian.

Science News Letter, November 16, 1946

ICHTHYOLOGY

**Male Fish Incubates Eggs
By Carrying in His Mouth**

► A MALE FISH that incubates the eggs by carrying them in his mouth is one of the latest oddities in the 28,600 specimens brought to the U. S. National Museum collections by American scientists surveying the fish and game resources of the Central American Republic of Guatemala.

Dr. Robert R. Miller of the Smithsonian Institution, who directed the fish survey, reports the egg-hatching male, a curious fresh-water catfish, not only incubates the young in his mouth but probably occasionally cradles the young there. From time to time baby fish return to the father's mouth for shelter after they are hatched, Dr. Miller believes.

During all this time, the male "mother" does not eat.

Other odd species from lowland Lake Yzabal include a fresh-water shark and a fresh-water sawfish, both groups generally being found in salt water. These

may prove to be hitherto unknown.

Another fish-story specimen discovered in the Guatemalan lake is a night-prowling "bare-eyed" fish, the gymnotus. It's an eel-like creature with hardly any eyes which hides by day and ventures forth only at night.

The introduction of good game fish in the upland lakes of the country is a major aim of the survey, conducted jointly by the Smithsonian Institution, the U. S. Fish and Wildlife Service and the State Department.

Science News Letter, November 16, 1946

NUCLEAR PHYSICS

**Energy Must Be Used,
Not Outlawed to Waste**

► ATOMIC BOMBS can not be outlawed, the Society of Automotive Engineers was told by Dr. H. B. Hass of Purdue University, Indiana. At the same time, he urged nations to use the new atomic energy constructively for peacetime purposes.

Military history shows no example of the successful outlawry of any such really effective weapon, he declared. Never before was it more effectively demonstrated that science is power: power to do good or evil. The problem now is to develop peacetime uses for the new energy, and persuade people to want to use it for good.

Whether atomic energy can be harnessed for constructive peacetime use is only a matter of time. The whole history of science shows that every new form of energy discovered has been successfully harnessed.

While the United States may keep the secret of the atomic bomb's manufacture for a few years, this scientist of the Manhattan District project added, in the near future any nation which wants to spend the necessary research can have atomic bombs.

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CHEMISTRY

**Sugar Fermentation
By Yeast Yields Glycerin**

► GLYCERIN is produced from sugar by fermentation with ordinary yeasts by Dr. Carl A. Neuberg, New York City, and Irene S. Roberts of Fieldston, N. Y., for patent 2,410,518. Secret is two-fold: very heavy inoculation with yeast culture, and maintenance of relatively high acidity during fermentation.

Science News Letter, November 16, 1946

IN SCIENCE

CHEMISTRY

**Unique Plastic Makes
Excellent Insulator**

► A UNIQUE plastic with unusual electrical properties was described at the meeting of the Society of the Plastic Industry by E. B. Yelton of the Du Pont Company. Its trade name is "Teflon." It is unharmed by temperatures up to 575 degrees Fahrenheit, he said, and withstands every known solvent.

It is an excellent insulating material for the ultra-high frequencies required by radar and television, having extremely low dielectric loss even at frequencies up to 3,000 megacycles. It does not dissipate the electric power as do most organic insulators when subjected to high-frequency currents. It is an excellent material at extreme low temperatures, and may be flexed without cracking at 150 degrees below zero Fahrenheit.

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MEDICINE

**Benadryl Sleepiness
May Cause Accidents**

► BENADRYL, new hayfever drug, makes some patients so sleepy that they may have accidents when driving automobiles or operating moving equipment and machinery, Drs. Benjamin J. Slater and Nathan Francis of the Eastman Kodak Company warn in the *Journal of the American Medical Association* (Sept. 28).

An accident in which benadryl sleepiness may have played a part is reported by them. The patient was told to take the benadryl at 4 a. m. because that was the time when his hayfever bothered him most. However, he did not take it until 7 a. m. on the day of the accident. He started work at 8 a. m., feeling drowsy. An hour later, he lost control of an electric platform cargo truck he was driving. Fortunately, he jumped off in time and was not hurt. The vehicle went off the platform and was wrecked. While there is no specific evidence that the sleepiness from the benadryl caused the accident, the doctors suggest it may have played a part.

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E FIELDS

CHEMISTRY

Plastic Industry Faces Shortage of Chemicals

► PLASTICS may be made of raw materials abundant in nature, the popular belief, but plastics making requires vast quantities of basic chemicals some of which are now in short supply. The plastics industry is dependent on these chemicals.

The shortage is already reflected in the output of the plastics industry, Frank H. Carman, of the Plastics Materials Manufacturers Association, told the Society of the Plastics Industry. He cited strikes in the coal, steel and chemical industries as one cause of a severe curtailment in the supply of many basic materials.

Among the chemicals now short, or facing an early shortage, are phenol, which is now exceedingly tight, cresols and cresylic acids, phthalic anhydride, urea, formaldehyde and glycerine. The shortage of glycerine is due primarily to the international shortage of fats and oils and the absence of a normally large supply of copra from the South Pacific.

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INVENTION

"George" Can Sleep, Too, In New Pullman Car

► AT LONG LAST, poor "George" gets a break. The Pullman porter is to be given a place of his own to sleep in.

For decades, the porter has had to take his sleep where he could find it. Usually, after putting all the sleepy passengers to bed, shining their shoes, and waiting for the bull session in the men's smoking compartment to break up, he has stretched his weary frame on the not-too-soft long seat in that room and snoozed as well as he could for a few hours.

A new design for a sleeping-car, on which U. S. patent 2,410,173 has been issued to L. A. Lutherman and E. L. Thompson of Chicago, changes all this. The car is of the newer type, compartmented like European railway coaches, with three-decker berths crosswise instead of parallel to the sides.

The porter's sleeping space is the up-

per berth in the compartment next to the washroom. It is, however, solidly partitioned off from the rest of the compartment, giving its occupant complete privacy, and it is entered by means of a couple of ladderlike steps on the washroom side of the bulkhead. It has exactly the same kind of mattress and bedding as the passengers' berths, and is fitted with its own private ventilator.

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PSYCHIATRY

Overwork Is Symptom Of Mental Sickness

► OVERWORK is often a symptom of mental sickness, Dr. Thomas A. C. Rennie, Cornell Medical College psychiatrist, warned at the meeting of the Nation Committee for Mental Hygiene.

Contrary to popular ideas, overwork rarely causes the kind of mental sickness called neurosis.

The patient with overwork for a symptom probably goes to his doctor because he has indigestion or headaches or his heart bothers him. The doctor needs to do more than examine his heart and digestive system. He should take a careful history of the patient, seeking particularly for signs of dissatisfaction, conflict or anxiety in daily life.

From 40% to 60% of all patients need sympathetic understanding of their emotional problems for their cure. Once the doctor has satisfied himself that the patient's physical symptoms are due to emotional disturbance, he can tell the patient with authority that giving up emotional symptoms will effect a physical cure.

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INVENTION

New Bullet Starts Slowly, Speeds Up

► A BULLET or shell that starts slowly and then speeds up is the unique invention of J. D. Evans, Jr., of Washington, D. C., formerly a major in the Army. From the base of the missile a shank projects backward through a gas-tight collar. This permits the powder pressure to act only on the end of the shank until the projectile has moved forward enough to clear the collar and give the powder gases access to its full base, thus speeding it up. Rights in this patent, No. 2,410,435, are granted royalty-free to the government.

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PHYSICS

Calorimeter Measures Power of Microwaves

► THE TEMPERATURE rise of water through which high frequency radio waves are passed measures the power of microwaves in a new accurate instrument.

It is an important invention with the increasing use of very high frequency radiation in airplane approach-control, television, radar, and frequency modulation (FM) broadcasting. The instrument is called a water calorimeter. It is a development of the Polytechnic Institute of Brooklyn.

The research preceding the development was a government-sponsored project at electronic laboratories. Several instruments were invented but only this one proved accurate enough for the exacting demands of design engineers.

This will enable engineers to improve the design of high frequency equipment for specific distances because it accurately measures the power of the radiation. The heat rise in the water depends directly upon the power of the waves. The instrument also will insure the safety of equipment used in radar.

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ENTOMOLOGY

Pests Threaten Ban On Incoming Flowers

► INSECT PESTS riding as stowaways on orchids, gardenias and tropical fruits entering the United States by air may necessitate new and stringent regulations of this traffic, with an embargo on some of the most glamorous and desirable items. Hearings to determine what measures shall be taken have been scheduled by the U. S. Department of Agriculture for Dec. 5 and 6.

One of the most feared pests, that may find its way into the country in a fragrant and innocent-looking box of gardenias from south of the Rio Grande, is the citrus black fly. Other feared insects that might travel by air include various species of aphids, thrips, scale insects and seed-pod weevils.

Sweeping exclusion of all foreign flowers will not be necessary, in the view of Department officials. Cut tulips and other bulb flowers from the Netherlands, for example, have no known potentialities of harm.

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