



*UNDERWATER TELEVISION—Being lowered into the test tank at the Siebe, Gorman works, Tolworth, Surrey, England, is the new underwater television camera, with pressure casing and viewing dome for the periscopic lens that can be swiveled without turning the camera.*

## TECHNOLOGY

## Swivel Lens for TV "Eye"

► A SWIVEL lens has been designed in Chelmsford, Eng., that permits a television camera's "eye" to look around underwater while the camera itself stands still.

The new lens somewhat resembles a periscope. It consists of a tubular member that rotates about its axis through a complete circle. The "eye," or lens, on the end of the tube, can swivel through a 90-degree arc. The combined motion of the two elements thus permits the camera to view objects lying in a hemisphere about it.

Such a set-up has many advantages. It permits shipboard scientists to examine a large swath of underwater scenery without having to jiggle the camera into a new position for each scene. The lens is adjusted by remote switches to pick up the scene wanted.

The Marconi lens also helps the scientist keep the object on the ship's video screen when rough water causes the camera to swing to and fro.

The underwater television camera is housed in a watertight case. Its lens is protected by a clear, plastic-like dome that does not distort the picture. Scratches on the dome do not appear on the monitoring video screen.

Underwater television is becoming a useful tool of scientists and salvage companies. With it, the scientist can see the marine life

for himself. He does not have to depend upon the verbal reports of a diver. Salvage companies have used it to spot sunken ships.

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## ZOOLOGY

## Biologist Defends Most Coyotes in Damage Cases

► MOST COYOTES, foxes and bobcats do not do damage to poultry and livestock, but destroy rodents and other harmful animals.

All the animals get the blame for damage done by only a small minority of wrongdoers, Frank Sampson, biologist of the Missouri Conservation Commission, has found in a survey of farm damage caused by predatory animals.

He discovered that 711 coyotes averaged \$3.02 damage each, but all of the damage was caused by 29% of these coyotes. With red foxes, 886 had an average damage of \$1.06 each, but only 20% of the foxes were involved. Seven percent of gray foxes and five percent of bobcats observed in the survey were responsible for all the farm damage credited to these animals. Trap the specific vandal, he advises.

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## PHYSIOLOGY

## Large Animals Require Less Food Per Pound

► POUND FOR pound of body weight, large animals use less food than small ones.

Dr. Robert E. Smith, physiologist at the University of California at Los Angeles Medical Center, is seeking the reason for this on a research grant from the U. S. Public Health Service.

"It is generally believed that a cellular mechanism which may be a basis of tissue activity may be an important factor in the phenomenon," he points out. "This mechanism in some manner apparently exercises control over the activity not only of cells but of animal tissues and the animal as a whole. Its operation appears to be related to the animal's total size."

Derangement of such cellular mechanisms may be involved in a number of clinical conditions generally classed under the heading of metabolic and degenerative diseases, such as rheumatic fever and gout.

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## ASTRONOMY

## Astronomers See First Telescope of New Design

► THE FIRST completed telescope of a new wide-eyed design was shown to astronomers at the dedication of the Arthur J. Dyer Observatory of Vanderbilt University, Nashville, Tenn.

The design ideas, developed by Dr. James G. Baker of Harvard Observatory, can be used to make wide-angle cameras out of many existing telescopes that normally cover very small fields. The new telescope is called a Baker reflector-corrector, and is similar to the wide-angle Schmidt telescopes.

Photographs taken with a Schmidt, however, have to be on special, curved plates, since the Schmidt has a spherical mirror. With the new telescope, the optics are so arranged that photographs can be taken on flat plates. The Vanderbilt telescope can also be converted into a conventional instrument by swinging the reflector-corrector lens out of the way and substituting another.

"The convertible feature, and the advantages of wide field, flat focal plane and short tube length, make the new Dyer Observatory telescope a unique and extremely versatile instrument," Dr. Carl K. Seyfert, director of the observatory, told astronomers attending the dedication ceremonies at the opening session of the American Astronomical Society meeting in Nashville.

Located about ten miles south of Nashville, the observatory was made possible through contributions of time, materials and money by 80 citizens and organizations of Nashville and vicinity. Special grants for the project, valued at \$250,000, were received from the Research Corporation and the National Science Foundation.

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