

ZOOLOGY

Quiet Gray Whale 'Clicks' Only Rarely

► THE CALIFORNIA gray whale has been known to "click" or even to make "croaker-like sounds" or rumble with a noise that sounds like large amounts of air being released underwater.

But the huge sea mammal makes these sounds only rarely, report Drs. R. A. Rasmussen and N. E. Head, University of California and the Scripps Institute of Oceanography, both in San Diego.

For 10 weeks this year, the scientists watched and listened to about 200 gray whales as they migrated 20 miles southward from Point La Jolla to the Coronado Islands off the California coast.

During this time, no subsurface sounds made by the whales were detected. Sea creatures usually emit a series of such noises as clicks, whistles and pops that bounce off nearby objects and send echoes back to aid the animals' navigation. The scientists concluded that the gray whale does not need to transmit signals in shallow water during the day and can determine its location visually by landmarks.

Sometimes the whales would swim as close as 200 yards to the two vessels, which were equipped with monitoring and recording instruments, the scientists reported in *Deep-Sea Research*, 12:999, 1965.

• Science News Letter, 22:344 November 27, 1965

PUBLIC HEALTH

Thyroid Cancer Removed In Marshall Islands

► ONE OF THE SIX Marshall Islanders who recently underwent surgery for thyroid nodules traced to fallout in the Pacific 11 years ago had a cancerous tumor. The patient was 40 years old. The other five were biopsied and their tumors were found to be benign. Five more nodules have been discovered since then.

This could be the prospect Utah and Arizona children face after three thyroid experts follow up the preliminary study that revealed 95 cases of thyroid nodules among children under the age of 18. The percentage may be small but the possibility of cancer cannot be ruled out without surgery, however slight, to get tissue for biopsy examination.

Dr. Joseph E. Rall of the Institute of Arthritis and Metabolic Diseases, Bethesda, Md., is one of the three experts who will study the cases in the West. He also was on the medical team headed by Dr. Robert Conard of Brookhaven National Laboratory, which discovered the Marshall Island cases.

The Marshalls are a part of the Trust Territory of the Pacific Islands administered by the United States. They were subjected accidentally to radioactive fallout from the American H-bomb test in the Pacific some 11 years ago.

The medical team will make another trip to the area in February 1966, to see how the patients are progressing, Dr. Conard told *SCIENCE SERVICE*.

Between March and October of 1965 the team found 10 new cases of thyroid abnormalities among 82 Rongelap natives who have thyroid ailments as a result of the fallout.

A control group that escaped the 1954 fallout showed no evidence of thyroid disease. Dr. Conard is hopeful that synthetic thyroid hormone being used as treatment on the exposed natives will prevent additional nodules from appearing. The hormone is radioiodine which gets into the body and picks out the thyroid gland for its concentration.

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CONSERVATION

Military Aids Peace With Earthen Dams

► THE U.S. ARMY is fighting for conservation of livestock, fishing and wildlife by building earthen dams on military reservations, members of the American Society of Agronomy were told in Columbus, Ohio.

The use of a multipurpose dam on military lands is very important to the conservation of our national resources, Mr. LaMar Price of the Post Engineers, Fort Ord, Calif., pointed out.

Such a dam will help prevent erosion, provide water for fire fighting, supply water for livestock and wildlife, and provide fishing spots and other recreational areas for the military service and the public.

"With the present and future population explosion," he said, "the military service is obligated, commensurate with the military mission, to develop earthen dams that have a multipurpose use."

In developing these dams, however, certain pitfalls should be avoided, such as poor design, insufficient runoff, lack of fences and poor management, he reported before scientists meeting for six days to discuss crops, soils, land and water resources and other related subjects.

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PUBLIC HEALTH

Tests Indicate Halothane Is Harmless Anesthetic

► SUSPICION that halothane and methoxyflurane, two surgical anesthetics, cause liver damage has been dispelled by University of Michigan scientists.

The doctors determined the concentration of the drugs which would occur in the liver during surgical anesthesia.

Human liver cells, kept alive in a special laboratory culture medium, were exposed to the drugs, and evidence was accumulated to show that although deep chloroform anesthesia harms liver cells, the two suspected anesthetics did not reveal any significant effects.

Motion pictures recorded the cells behavior and the films were studied in detail.

Three University physicians, Drs. Guenter Corsson, Robert B. Sweet and Maynard C. Chenoweth, reported the findings to the American Society of Anesthesiologists meeting, Denver, Colo.

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IN SCIENCE

PUBLIC SAFETY

Army Driving Test Would Sideline 23 Million

► IF THE TOUGH DRIVING TESTS given to Army personnel and truck drivers were applied to average citizens, 23 million drivers would be taken off the road, the Highway Research Board said in Washington, D. C.

The public licensing process is geared to eliminate only the most obvious misfits, charges the HRB in Research Record No. 84, a book on driver characteristics.

For example, in a large sample of open road driving, it was found that a quarter of the drivers ignored the beginning of no-passing zones; half ignored the end.

But chances of eliminating 25% of the driving public are pretty slim, thinks the HRB. The "screams of rejected applicants would be heard in every state capital."

Consequently the Board is reexamining accidents with an eye to developing new principles for engineering traffic, vehicles and roads.

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ICHTHYOLOGY

'Tassels' on Male Fish Help Produce Offspring

► THE LIVES of certain fish in the vast ocean may hang by a single thread—literally.

The thread in this case is part of a fringe that grows from a male Tilapia fish at the time of courtship and spawning, when sperm from the male are ejected to unite with the eggs shed by the female.

This strange, highly conspicuous appendage, which is either fringed or festooned with colorful blobs of tissue, develops on the male genital area and attracts the female's attention just before the sperm are ejected, stated Dr. W. Wickler of the Max-Planck-Institut für Verhaltensphysiologie, Seewiesen u Starnberg, Germany.

Since the female is lured close to the male by the tassels, the sperm have a better chance of uniting with the eggs and not becoming lost in the watery depths, the scientist reported in *Nature*, 208:595, 1965.

Careful observations of these Tilapia fish, called mouth-brooders because they "brood" or carry their fertilized eggs in the mouth until hatched, have revealed interesting details about their behavior.

When the female is ready to spawn she enters a shallow nest or pit scooped out by the male on the sand or mud. The male soon starts to drag his tassel over the bottom of the nest and up the side. He then swims tail first back over the female and ejects a sperm-thread. The female takes this thread in her mouth to bring it into contact with her eggs which she immediately gathers in her mouth.

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E FIELDS

SPACE

Padding Saves Egg After 11-Story Drop

► THE PADDING that protects astronauts from painful collisions with walls during zero-gravity tests safely cushioned an egg dropped on it from the top of an 11-story building.

In order to experience zero gravity without actually going into space, astronauts fly specially equipped KC-135 and C-131 aircraft over the top of a parabolic arc, producing about 30 seconds of weightlessness. The same thing happens, though for a much shorter time, when a roller coaster flashes over a hill and starts down the other side.

During the 30 weightless seconds on the test flights, the astronauts could do themselves considerable damage by sudden, unplanned motions, which could send them crashing into walls, floor and ceiling.

So, the test aircraft are converted into flying "padded cells," with cargo holds where the tests are conducted lined with the protective padding on the deck and ceiling and fiber glass mats on the walls.

The actual egg test, now called Operation Eggdrop, took place in May 1957, when the U.S. Rubber Company, makers of the padding, dropped an egg from the rotunda of the Colorado state capital building in Denver. On the ground was a three-inch-thick mat of Ensolite, which looked about like a postage stamp from 115 feet in the air, but saved the egg.

The aircraft, normally used as military transport aircraft, have enough room to take even something as big as a Gemini spacecraft. The National Aeronautics and Space Administration, therefore, has mounted full-size Gemini mock-ups in the planes for zero-gravity tests of both men and equipment.

What color is Ensolite, which looks and feels like a gymnasium mat? "Eggshell white," says the manufacturer.

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BIOTECHNOLOGY

Balloon Massages Heart In Open Chest Surgery

► DOCTORS confronted by cases of heart failure often open the chest cavity and massage the heart by hand until the organ resumes its normal beat. A novel method devised by Israeli scientists introduces the use of a balloon to replace the surgeon's hand.

A balloon is placed in the heart cavity by means of a catheter. The arterial system is then inflated and the expanding and contracting balloon replaces the surgeon's hand in massaging the heart. In this manner adequate quantities of blood are forced into the area where the failure is occurring.

The first recorded use of a catheter took place in 1929, when Dr. Werner Forssman opened a vein in his own arm, inserted the tip of a two and a half foot long catheter and passed it up his arm vein until it reached the chamber of the heart, which was the target. Since then the catheter method of reaching the heart by way of the veins has been used to carry drugs directly to the heart, to explore narrow passages and abnormal communication between heart chambers, to diagnose congenital heart disease and to carry out research on what is happening within the heart.

The balloon method has not yet been tested on human beings, but demonstrations on dogs have indicated that it is feasible for humans as well.

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OCEANOGRAPHY

Phosphate May Lie Under Continental Shelf

► EVIDENCE that deposits of phosphate may lie beneath the continental shelf off the coast of Georgia and northern Florida has been discovered by U.S. scientists in drilling operations in the Atlantic Ocean.

Two holes drilled in the shelf yielded several zones of phosphate pebbles in the same stratigraphic position of phosphate beds on adjoining land. Phosphate deposits in the same stratigraphic plane in the Georgia and Florida land area have been worked commercially in the manufacture of fertilizers for many years.

The pebbles, which usually mark the boundary between geologic formations, were discovered in phosphatic clay laid down in the Miocene Epoch, some 30 million years ago.

Discovery of the phosphate pebbles was but one of many major scientific achievements of the drilling operation reported in Science 150:709, 1965.

Artesian fresh water aquifers were also discovered in the shelf spouting water through the drill string to a height of about 30 feet above the surface of the sea.

The expedition was conducted by four of the nation's largest oceanographic institutions—Columbia University's Lamont Geological Observatory at Palisades, N.Y.; Woods Hole Oceanographic Institution of Woods Hole, Mass.; the Institute of Marine Science of the University of Miami, and the Scripps Institution of Oceanography of the University of California at La Jolla. Support was provided by the National Science Foundation through a grant of \$250,000 to Columbia, and the project was called "JOIDES"—Joint Oceanographic Institutions' Deep Earth Sampling.

Scientists of the four institutions, with Lamont Geological Observatory as the operating unit and Robert D. Gerard, research associate at Lamont as chief scientist, drilled six core holes in the continental shelf, slope and the Blake Plateau, an undersea plain extending beyond the continental shelf off the coast of Florida, Georgia and the Carolinas.

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MEDICINE

New Legislation Needed For Birth Control Coils

► THE NEW PLASTIC contraceptive rings being sold by physicians for insertion into the womb should be studied more carefully before they are marketed, the White House Conference on Health was told in Washington, D.C. New legislation should be drafted to cover their use, an associate professor of medicine and pharmacology said.

Dr. Louis Lasagna of Johns Hopkins University School of Medicine, Baltimore, was outspoken in his advice on both drugs and devices such as the coil.

"Where devices relate to health, consumers, be they patients or physicians, need to have protection similar to that which they receive in regard to prescription drugs," he stated.

Dr. Lasagna pointed out that "the freedom of the physician to prescribe as he thinks best is predicated on the physician's being not only responsible but knowledgeable; there is a price exacted for such freedom."

He said that it is important that drug firms not be strangled, but the search for new drugs cannot be left solely up to the industry. The remedy for the present situation, he advised, is to "upgrade" clinical pharmacology throughout the country.

"It is a sad fact that as of this date there are only a handful of clinical pharmacology programs in universities. . . . Clinical pharmacology units devoted to first-class, imaginative, creative research on drugs and to the education of medical students and physicians in regard to drug usage should be established in every medical school in the country within the next decade.

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PSYCHOLOGY

Shared Household Duties Uplift Couples' Morale

► HUSBANDS can do themselves and their wives a favor by washing the dishes.

A study of 135 retired men and their spouses reveals that high morale is associated with husbands helping around the house.

Several measures of conjugal happiness were used, including previous occupation and retirement income, by Dr. A. C. Kerckhoff, sociologist, of Duke University, Durham, N.C. But only one measure was consistently associated with high morale—the husband's participation in household tasks.

Dr. Kerckhoff presented his findings before the American Gerontological Society in Los Angeles. The research also found high morale in couples who were economically independent of their children and who made few demands regarding affection and proximity.

"This will require funds, space, people and the proper attitude among deans, professors of medicine and professors of pharmacology."

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