

## PUBLIC SAFETY

## Swim Suit Can Be Shark Bait, Expert Says

► THE ATTENTION-GETTING swim suit is shark bait, but it is the color, not the cut, that attracts these vicious killers.

Marked contrast between the color of the swim suit and the swimmer's skin is dangerous for ocean bathing, shark attack statistics compiled by Dr. Leonard P. Schultz, curator of fishes at the Smithsonian Institution, show. Light-skinned persons wearing black or dark suits have been attacked most frequently, Dr. Schultz reported to the American Society of Ichthyologists and Herpetologists meeting in Austin, Texas.

Dr. Schultz's records of nearly 800 shark attacks, dating as far back as the 1600's, indicate that most attacks occur between 8:00 a.m. and 7:00 p.m. in water warmer than 65 degrees Fahrenheit, within 150 feet of shore, and in the upper five feet of surface waters. This merely reflects the time and place in which most swimmers do their swimming.

Nearly 70% of the attacks take place when the swimmer actually is swimming, and nearly 20% occur when the victim is spear-fishing.

Swimming alone is more dangerous than staying with a group, and the person who goes to the rescue of an attack victim runs a one-in-five risk of being attacked himself. Still, fewer persons have been attacked while rescuing than while floating unsuspectingly in the water.

All factors combined, the person who is attacked by a shark has a 50-50 chance of living to tell about it.

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## DENTISTRY

## Fluoridated Water Both Safe and Beneficial

► OPPOSITION to artificially fluoridated water is not justified. Water fluoridation is both safe and beneficial, Dr. W. D. Armstrong, head of the department of physiological chemistry of the University of Minnesota Medical School, told a Congressional committee.

The safety and benefits of fluoridated water have been established by the use of radiofluoride in the human and in experimental animals, he said. Dr. Armstrong blamed public apprehension to fluoridation on poor public relations by the scientific community.

"We have not been vocal enough," he declared.

Studies have shown that neither nutritional nor metabolic alterations are able to increase or decrease calcium or phosphate content of mature teeth.

"Only in the case of fluoride do we have confirmed evidence for the enrichment of a tooth constituent after tooth formation."

Dr. Armstrong's defense of fluoride was part of his report to the Joint Congressional Committee on Atomic Energy on applications of radioisotopes and radiation in the life sciences.

Radiofluoride studies in man and experimental animals have shown that a safety valve protecting against excessive fluoridation is provided by rapid renal excretion of the chemical.

Radioisotopes have made it easy to compare the effectiveness of various kinds of dental restorations (fillings or crowns). Studies show that all of the fillings now in use leak. It is hoped, Dr. Armstrong said, that further use of radioisotopes will lead to the development of leakproof materials for dental repair.

The commonly used silver nitrate, phenol and alcohol for cavity sterilization actually appear to increase the permeability of the tooth. The radioactive elements used in research have shown that zinc phosphate and mixtures containing calcium hydroxides, which are less caustic, provide better sealing protection for the cavity.

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## ANIMAL PSYCHOLOGY

## Pups Isolated Too Long Always Fear Humans

► A PUPPY must be handled before it is 14 weeks old or it will never wag its tail at the sight of a human, scientists working at the Roscoe B. Jackson Memorial Laboratory in Bar Harbor, Maine, have found.

If puppies are left alone too long, they become afraid and unwilling to socialize with or take commands from humans.

A critical learning period had previously been shown to exist in birds, but this has now been demonstrated in a mammal.

When the scientists noticed that some of the cocker spaniel pups kept at the Laboratory could not be tamed, they tested their critical learning period theory by isolating litters of cockers and beagles, with their mothers, in outdoor pens for various periods of time.

Pups from each litter were taken from the field for a week of socialization at two weeks of age, three weeks, five weeks, seven weeks and nine weeks, and then returned to the field. The two-week-old puppies were too young to do much but sleep, but the three-week-old ones immediately began romping with the handler.

Pups first handled at five weeks of age were wary at first but were quite happy with humans before the first 10-minute play period was over. By seven weeks of age, pups were frightened and wary for the first two days of human contact, and by nine weeks, it took three days for them to lose their fear.

The wariness increased as the pups got older, but after 14 weeks in isolation, none of the pups could accept humans, even after they had been petted and handled every day for three months.

The research was reported in *Science*, 133: 1016, 1961, publication of the American Association for the Advancement of Science, by Dr. Daniel G. Freedman, now of the Langley Porter Neuropsychiatric Institute in San Francisco, Dr. Orville Elliot, now at Harvard University in Cambridge, Mass., and Dr. John A. King.

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# IN SCIEN

## PHYSIOLOGY

## Role of Adrenal Cortex as Disease Cause Disputed

► THE ROLE of the adrenal cortex in such diseases as diabetes, hypertension, arteriosclerosis, ulcers and nephritis is being disputed by two physiologists.

Dr. Dwight Ingle, department of physiology, University of Chicago, who discovered the biological activity of the hormones—cortisone, 11-dehydrocorticosterone and hydrocortisone, says the adrenal cortex does not cause these diseases.

In Canada, at the University of Montreal, Dr. Hans Selye says it does. He believes the increased secretory activity of the adrenal cortex during stress, or an imbalance in the secretion of cortical hormones during stress, can cause disease.

The adrenal cortex is the outer part of the small ductless gland at the upper end of each kidney. It produces the hormone corticosterone from which, among other compounds, cortisone is made.

Dr. Selye has administered artificial steroid hormones to laboratory animals in large doses to produce diseases, but Dr. Ingle argues that these artificial hormones have a more lethal effect than hormones naturally produced in the body.

Dr. Ingle believes that adrenal cortical hormones, as well as other hormones, support the disease processes just as they support normal processes, rather than cause disease directly.

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## ICHTHYOLOGY

## Antarctic Fish Show Cold Weather Growth

► ONE ANTARCTIC FISH, at least, grows in such a manner that its scales show annual growth rings, just as those of other fish do. This is accomplished, however, without the benefit of a much warmer period in summer, during which other fishes do almost all of their growing.

The fish, studied by Dr. Donald E. Wohlschlag near McMurdo Sound, is known as *Trematomus bernacchii*. It spends its life scavenging in the Antarctic mud, at temperatures that stay close to 1.9 degrees below zero centigrade the year round. This is barely above the freezing point of sea water.

Apparently this Antarctic fish does most of its growing during the summer months, when the water temperature goes up all of two degrees. This compares with Arctic fish who have a heat wave, by comparison, for two or three months of the year. There the water temperature goes up to 10 degrees centigrade, Dr. Wohlschlag reports in *Copeia*, No. 1, 1961.

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# CE FIELDS

## PUBLIC HEALTH

### Staph Infections Not Due To Hospital Bedding

► HOSPITAL BLANKETS and mattresses, believed by some to be responsible for transmission of staphylococcal infections, are not guilty, at least in one hospital.

Four researchers who studied bedding used in a 47-patient surgical ward at Massachusetts Memorial Hospitals, Boston, reported that the contamination found did not appear heavy enough to cause cross-infection between patients and personnel.

Cultures from bedding were taken by sweeping a blood agar plate for 18 inches across the surface 12 times. In the case of mattresses, the cultures were taken from both the top and bottom and from the outer surface of the plastic cover.

Only two of the 512 cultures from mattresses showed *Staphylococcus aureus* organisms. These were from mattresses themselves and not from plastic covers.

Blankets did not fare so well. Forty-six percent of all blanket cultures taken showed *Staph. aureus* organisms, but no blankets showed a dangerous degree of contamination.

None of the bedding was sterile, however.

Laundering processes that will not shrink or mat woolen blankets include using bactericidal chemicals or ethylene oxide sterilization.

Replacement of woolen blankets with materials that can stand sterilization or high-temperature laundering, or using pre-shrunk woolen blankets, were also recommended.

Drs. Chester W. Howe, Thomas F. Silva, Jr., and Alice T. Marston, with David D. B. Woo, report the study in *The New England Journal of Medicine*, 264: 625, 1961.

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## SOCIOLOGY

### Disaster Victims Do Not Turn to Looting

► THE WIDELY HELD idea that a community disaster, whether caused by nature (earthquake, flood, hurricane or fire) or by enemy action would so demoralize its victims that they would turn to violence, hysteria, panic, looting or mental illness has been denied by a sociologist.

Far from being a demoralizing influence, Dr. Charles E. Fritz of the University of Florida told members of the Southern Sociological Society meeting in Miami, such a great disaster actually has a therapeutic effect on its victims.

There is formed a "community of sufferers" having the attitude of "we are all in this together." The resulting feeling of solidarity serves to strengthen social relationships and family ties. Many personal

conflicts also become resolved. Pre-existing neurotic and psychosomatic symptoms have a tendency to lessen. Illness rates generally fall. Dramatic improvement is noted among persons having a variety of apparent physical ailments. Racial and minority group barriers break down.

Existing data indicate, Dr. Fritz reported, that virtually all forms of self-aggressive and anti-social behavior fail to manifest themselves, or actually decline, in disaster. Suicide rates decline during times of war and national revolution.

Homicide and other crimes against the person tend to decrease and predictions of significant increases in looting, stealing, profiteering, mob violence and crimes have rarely, if ever, been fulfilled during a disaster. Such behavior is quantitatively insignificant when compared with actions aimed at mutual aid, restoration and reintegration.

"Even where cities were virtually destroyed—as in Cassino, Italy, Hiroshima and Nagasaki, Japan—they have been rebuilt on the same site and they have usually developed a degree of vitality and growth unparalleled in the pre-disaster period and unequalled by comparable non-disaster-struck cities and societies."

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## MEDICINE

### What Doctors Read In A.M.A. Journal

► PHYSICIANS of the nation can learn of the following medical advances reported in the *Journal of the American Medical Association*, April 1, 1961.

Salk killed-virus vaccine could virtually eliminate polio if the population were adequately inoculated.—Drs. Joseph L. Melnick, Matilda Benyesh Melnick, and Martha Yow, with Ramiro Pena, Baylor University College of Medicine, Houston, Texas.

Deaths from legalized abortion in Eastern Europe have been exceedingly low and criminal abortions have declined under liberalized laws.—Drs. Christopher Tietze, National Committee on Maternal Health, Inc., and Hans Lehfeldt, Bellevue Hospital, New York.

Estrogen, the female sex hormone, is a disease preventive among older women, and hardening of the arteries and osteoporosis, a loss of bone mass affecting the spine most severely, may be delayed or prevented by treatment with estrogen.—Dr. Joseph Rogers, Tufts University School of Medicine, Boston.

Ninety percent of 219 physicians interviewed or queried said they preferred not to tell patients they have cancer, but reasons cannot be documented.—Dr. Donald Oken, Michael Reese Hospital and Medical Center, Chicago.

A stinging caterpillar has become a public health problem in Texas, Missouri, Maryland, Virginia, North and South Carolina, Georgia, Florida, Alabama, Mississippi and Louisiana.—Drs. John P. McGovern, Gilbert D. Barkin and Thomas R. McElhenney with Reubin Wende, Baylor University College of Medicine, Houston, Texas

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## PUBLIC HEALTH

### Hospital Faucet Aerators Hold Deadly Bacteria

► A WARNING to hospitals on the danger of faucet aerators as a newly discovered source of the deadly bacteria *Pseudomonas aeruginosa* was sounded in the *Journal of the American Medical Association*, 175: 1146, 1961.

A special study in an unnamed hospital nursery revealed that four of the ten sinks were heavily contaminated with *Pseudomonas* which, like *Staphylococcus aureus*, is a dire threat to very young infants.

Cultures from four of the faucet aerators in the nursery and from one aerator outside the nursery revealed *Pseudomonas aeruginosa*.

One premature infant may have become infected through water contaminated by the *Pseudomonas* in the faucet aerators.

Aerators had been removed from the faucets for once a year cleaning, but since this was obviously inadequate the aerators have now been removed. Sponges used to clean sinks also have been discarded. Faucets are now wiped only with clean cloths moistened with an antiseptic, and these cloths are used exclusively for faucet cleaning.

The study was reported by Drs. Miriam G. Wilson, Roger C. Nelson, Ruth A. Boak, working with Laura H. Phillips at the School of Medicine, University of California, Los Angeles. It was supported by a grant from the National Institutes of Health.

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## PUBLIC HEALTH

### College Graduates Smoke Fewer Cigarettes

► THE LOWEST PERCENTAGE of current regular male cigarette smokers was found in the college graduate group.

Males who had attended but not graduated from high school showed the highest percentage of current regular cigarette smokers.

Fewer women by far were found among those who inhale and who are heavy smokers of cigarettes. Cigar and pipe smokers tend to inhale the smoke to a far lesser degree than do cigarette smokers.

The proportion of cigarette smokers is less in farmers, teachers, members of the legal profession, clergymen, doctors, dentists and veterinarians than in the general population.

The study was based on a sample of 43,068 persons who answered a questionnaire including questions on smoking habits of men and women. Volunteer researchers of the American Cancer Society enrolled approximately 1,085,000 persons in a prospective study planned for a six-year period of follow-up.

Dr. E. Cuyler Hammond and Lawrence Garfinkel of the American Cancer Society's statistical research section made the study, which they reported at the Society's science writers' seminar in St. Petersburg, Fla.

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