

BACTERIOLOGY

Animal Ailments Due to Same Type of Bacteria?

► SUCH ANIMAL maladies as fowl cholera, swine plague, rabbit snuffles, certain respiratory diseases in cattle, sheep, goats and buffaloes, and even certain rare cases of human meningitis, may all stem from a common source.

This has been suggested in research by Drs. David Rifkind and Samuel Pickett of the University of California at Los Angeles bacteriology department.

The source is a bacterium that has been carried under the general classification of the "animal" group of *Pasteurella*.

Strains of *Pasteurella* were collected from animals all over the world. Detailed biological and chemical studies indicated there were only two types of bacteria in the group. One type was so rare as to suggest that only the other was a major offender.

"Practical significance of this is that it may simplify treatment of such diseases among animals," the scientists reported. "For example, if penicillin is found to be effective against fowl cholera, there would be good reason to hope it would be equally effective against the other diseases. Previously, each of the diseases has been treated as if caused by a different organism."

The study is considered more significant in relation to veterinary medicine than to human medicine, as cases of human meningitis caused by *Pasteurella* are very rare.

Science News Letter, October 10, 1953

PUBLIC HEALTH

Cancer Chief Disease Killer of Teen-Agers

► CHIEF DISEASE that kills boys and girls in their teens is cancer. Ranking next is the group of diseases of the heart, including rheumatic fever.

Nevertheless, the teens are "the healthiest years of life," statisticians of the Metropolitan Life Insurance Company in New York report.

"The major threat to teen-age life" are deaths from violence, chiefly accidents, the statisticians find from study of the company's white industrial policyholders.

The chance of accidental death rises steadily through the teen-age period, but the hazard is much greater for boys than for girls. Thus in 1950-1952, the death rate from accidents for girls doubled from ages 13-14 to 18-19 years, when it reached 14.7 per 100,000; the death rate for boys almost tripled over the same age range, reaching a level of 85.7 per 100,000 at 18-19.

Motor vehicle accidents are the leading cause of accidental death among teen-agers, and increase rapidly in relative importance during this period of life. At ages 18-19, motor vehicle fatalities accounted for almost two-thirds of all accidental deaths

among boys, and for about four-fifths of those among girls.

Among teen-age boys, drowning ranked second as a cause of accidental death, with firearms third and occupational accidents fourth. Violent deaths are primarily responsible for the large excess of male over female mortality during the teen-age years, the statisticians found.

Almost six percent of deaths among girls of 18 and 19 were due to pregnancy and childbirth. This apparently reflects the recent tendency to early marriage and parenthood.

Mental and emotional problems "loom larger than ever before."

A high proportion of teen-agers have poor teeth and defective vision and many, particularly girls, show the effects of poor dietary habits.

Science News Letter, October 10, 1953

ENGINEERING

"Aluminum Skyscraper" Breaks Steel Skyline

► AN ALUMINUM intruder has thrust itself into the skyline in the city of iron and steel—Pittsburgh.

It is a skyscraper 410 feet tall which, except for its basic steel framework, is essentially aluminum. It is the lightest building of its size in the world.

It is more than that: the building is the world's first "aluminum skyscraper." Its 30 floors of offices are warmed and cooled by aluminum panels in the ceilings. Its lights are hooked to aluminum wires. Water gushes through aluminum pipes.

The building belongs to the Aluminum Company of America. Designed before the Korean War, the building's main purpose is to dramatize the role aluminum can play in heavy construction.

One of the building's most outstanding features is its skin-like outer wall. Made of aluminum paneling, the wall was easily fastened to the framework from inside.

The interior wall literally was sprayed into place from a pneumatic nozzle. Made of perlite, a special lightweight concrete, it was built up on aluminum lath and metal reinforcing bars in a series of four one-inch layers. Four-man spraying crews were able to complete these back-up walls of the building at about four floors a week.

The building's windows also are unusual in design. Built into the tops of the aluminum outer-wall panels, the windows pivot 360 degrees about a vertical axis. This permits window washers to scrub the outside of the window while working inside the building.

The building sports 310,000 square feet of rentable floor space above the first floor. To support this office area, only 6,500 tons of structural steel were required. In comparison, an older building in Pittsburgh 24 stories high with 317,000 square feet of rentable area required 10,000 tons of structural steel in its framework.

Science News Letter, October 10, 1953

IN SCIEN

BIOCHEMISTRY

Two Chemical Teams Report New Antibiotic

► A POTENT, new antibiotic, made by baring the basic chemical skeleton of the drugs terramycin and aureomycin, has been discovered.

The chemical, which has proved active against a wide variety of disease-causing bacteria in laboratory tests, is described by Drs. Lloyd H. Conover, Walter T. Moreland, Charles R. Stephens, Frederick J. Pilgrim and Arthur R. English of Chas. Pfizer & Co., Inc., Brooklyn.

The new antibiotic, called tetracycline, was shown in test tube studies to parallel the activity of Terramycin against germs associated with such ailments as typhoid fever, boils and urinary tract infections.

Tetracycline also was active in the tests against microorganisms linked with such diseases as bronchial pneumonia and "strep" sore throat, the Pfizer scientists say. No trials on animals or humans are reported.

The antibiotic activity of tetracycline is simultaneously described by a team of researchers of the American Cyanamid Company's Lederle Laboratories Division, Pearl River, N. Y., in the *Journal of the American Chemical Society*.

Participating in the Lederle work, conducted independently of the Pfizer studies, were Dr. J. H. Williams, Dr. James H. Boothe, J. Morton II, J. P. Petisi and R. G. Wilkinson.

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PSYCHOLOGY

Lasting Love Not Blind When Mates Rate Mates

► LASTING LOVE is not blind.

This was shown when Dr. Rosalind Dymond, a University of Chicago psychologist, studied 15 couples who had been married for an average time of over ten years.

Husbands and wives were asked to fill out a questionnaire twice, first as they would answer the questions themselves, and second as they thought their mates would reply to the same queries. Eight of the couples reported that they were happy together. The other seven were unhappy in their marriage.

The happy group were significantly more accurate in predicting what their mates would answer than the unhappy couples.

This shows, Dr. Dymond concludes, that husbands and wives who love each other most dearly also understand each other best. It also explodes another adage: Ignorance is not bliss.

Science News Letter, October 10, 1953

CE FIELDS

VETERINARY MEDICINE

"Mystery" Disease Is Attacking Cattle in West

► A WINTER "mystery" disease of young cattle has struck western cornbelt states, the American Veterinary Medical Association has learned.

The disease causes death in most cases. Outbreaks so far have fortunately been limited. It has been studied in about 50 herds by Drs. F. K. Ramsey and W. H. Chivers of the veterinary division of Iowa State College.

The disease, they said, usually affects only a few young cattle in each herd and has some of the characteristics of a former mystery condition, hyperkeratosis, once called X-disease.

Symptoms of the disease listed in the report included ulcers on the nostrils, muzzle, lips and mouth. Ulcers also were found in the stomach and intestines of most cases. The disease was marked by drooling, scours, emaciation and depression.

This disease is not contagious but the cause has not yet been found.

Science News Letter, October 10, 1953

TECHNOLOGY

Sonar Set Finds Fish And Aids Navigation

► A SONAR set to replace the "educated guesses" of fishermen has been developed.

The set not only pictures schools of fish on a television-like screen, but reveals the size of the school, where it is, which way it is going and how fast it is traveling.

Called the Sea Scanar, the Minneapolis-Honeywell device embodies the same sonar principle used successfully during World War II. However, the advantage of the Sea Scanar is said to be in its flexibility. It can "look" from side to side of the ship, and up and down as well.

The electronic device also aids navigation through tricky waters by showing every obstruction from seaweed to sand bars. Like conventional sonar, it also will measure the water depth beneath the boat.

Tiny bursts of sound too shrill to be heard by the human ear are beamed into the water from the scanning device. When the sound waves strike an object of density different from that of water, they are reflected to the ship.

The reflected waves are amplified and pictured on a cathode-ray tube. At the same time an audible signal calls attention to the echo. Objects such as ships and concrete walls produce a sharp "ping," but sand bars make scratchy loudspeaker noises.

The Sea Scanar can probe 1,600 feet

ahead of the boat to reveal channel hazards for the navigator to avoid, or to indicate schools of fish. Its working range also can be adjusted to 800- and 400-foot distances. If desired, it can be made to cover only a 90- or 45-degree area instead of a 180 degree sweep from side to side. When a switch is flipped, the device automatically tracks schools of fish.

From the picture on the screen, fishermen can tell where to set their nets and when to pull them in for a maximum catch.

The Canadian whaling vessel, the Nahmint, captured three whales during the first week the device was in operation.

Science News Letter, October 10, 1953

ENGINEERING

British Detector Finds Reinforcing Rods

► BRITISH ENGINEERS have developed a machine that locates reinforcing rods in set concrete.

Design engineers at Kolectric Ltd., London, report that construction engineers using the device can double check on reinforcing rod positions after the concrete has been poured. This reveals whether the rods worked out of position while the concrete was filling the forms.

Called the "Covermeter," the device operates on an electromagnetic principle. Alternating current is fed into a probe held over the concrete. The current acts upon one leg of a U-shaped core of metal, making an electromagnet of it. A coil is wound around the other leg and indicates the nearness of reinforcing rods by the amount of current induced in it.

Science News Letter, October 10, 1953

ANTHROPOLOGY

Vanishing Wilderness Tribes to Be Studied

► TO GET a good look at honest-to-goodness wilderness tribes before western civilization gets to them is the purpose of a two-man expedition into Thailand, once known as Siam.

Detached cultures such as exist in the wilds of Thailand are disappearing because of spreading outside influences, the American Museum of Natural History, which is sponsoring the trip, finds. Robert W. Weaver, ethnologist, and Thomas L. Goodman, geographer, will record on film and tape as many as possible of the little-studied cultures of native peoples in Thailand's wilderness areas, and also collect artifacts.

Special feature of the expedition will be a study of the natives during the rain-drenching monsoon period from May to September. The scientists will be in fringe areas during this period where the rain, though still heavy, will not interfere with their work. The scientists will be the first to observe how the natives there adjust their lives to the torrential rains.

Science News Letter, October 10, 1953

MARINE BIOLOGY

Fossil Fish Missing Link in Man's Evolution

► THE "LIVING fossil" fish caught off Madagascar, third coelacanth ever found, should yield more secrets as "missing link" in man's evolution from sea creatures.

The two previous dawn-age fish were not very fresh when they were studied by scientists.

This rare fish has the longest lineage of any vertebrate animal. The new fish, as an actual survivor of a long-gone geologic age, should allow us to test our deductions concerning man's evolution, which heretofore have had to be made from dry bones alone, Dr. David Dunkle, associate curator of paleontology at the Smithsonian Institution, told SCIENCE SERVICE.

The coelacanth is a rather big fish, dark blue in color, with a metallic luster and big, goggle eyes. It has two back fins, the forward one having two sections, or lobes, which in a sense resemble crude limbs.

The family of lobe-finned fishes are believed to have given rise to amphibians, the first true, four-legged, partly land animals, of which frogs and newts are examples.

The ancient group of lobe-finned fishes is known as the crossopterygians. Because they were thought extinct, there is no common name for the family. These fishes originated in the Devonian age, about 300,000,000 years ago. Their nearest relatives among fish still abundant are the sturgeons and the bowfish, or dogfish, of the Great Lakes and other freshwater bodies.

The coelacanth (pronounced seal-kanth) is believed to have remained relatively unchanged in the formation of its brain and other soft parts of its head. These soft parts were missing in the other two specimens, one of which was caught in 1938 and the other in Dec., 1952. (See SNL, Jan. 17, p. 38.)

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INVENTION

Helmet-Mounted Pistol Is Fired by Blowing

► ALBERT B. De Salardi, now deceased, of Wilkinsburg, Pa., applied for a patent in 1949 to protect his helmet-mounted pistol designed to permit soldiers to shoot at an enemy while cutting barbed wire, carrying equipment or digging foxholes at the same time.

Easily detached from the helmet, the pistol is fired when the soldier blows into a tube running to his mouth. The recoil of the weapon is absorbed and evenly distributed to the head by sponge-rubber lining inside the helmet. The pistol is aimed when the wearer moves his head so that the cross-hair optical sighting system falls upon the enemy. The invention received patent No. 2,651,872.

Science News Letter, October 10, 1953