

Scientists Show Way in Which Radiation Kills

New York (Science Service) — One way in which radiation kills has been demonstrated by two New York University scientists.

Such an understanding of the manner in which radiation kills suggests that means may be found to increase or decrease the lethality of the rays and perhaps of undoing the damage they inflict. This knowledge could then lead to future defenses against radiation in fallout or atomic bombing.

The scientists are Dr. Evelyn Slobodan, Martin Fleisher and Dr. Sidney Rubinfeld, of the department of radiology at the University's Bellevue Medical center.

They have demonstrated that radiation knocks a hydrogen atom off a water molecule and that the remaining hydroxyl radical then reacts with a key enzyme to make it inactive and functionally useless.

Giant Molecules

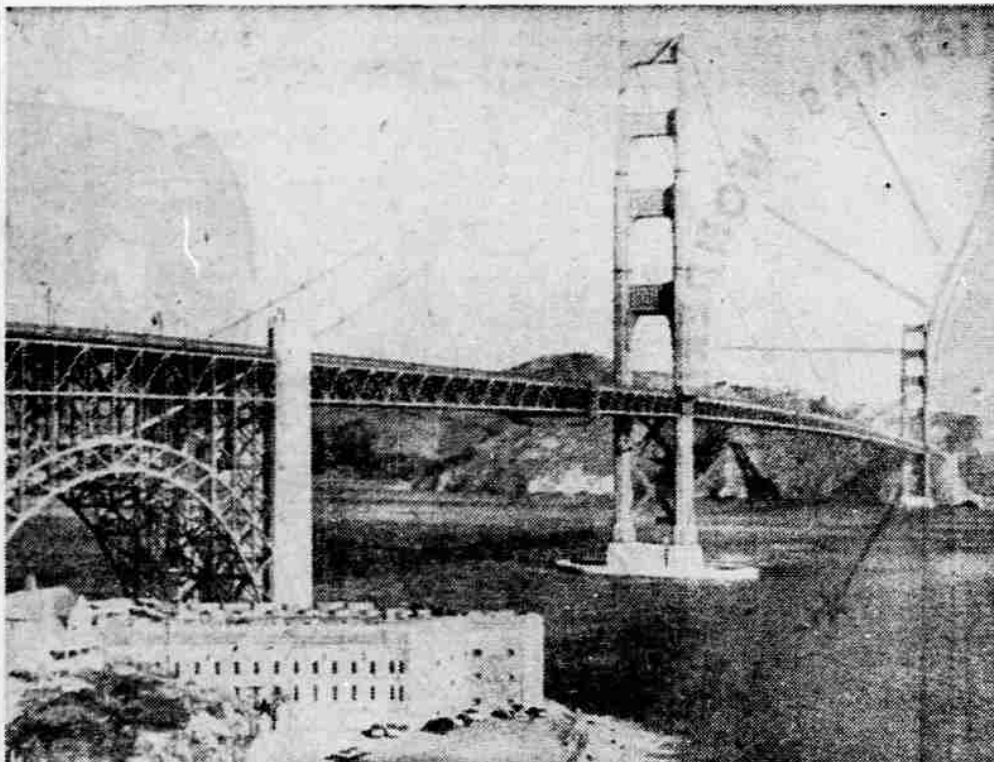
The enzyme which proved vulnerable to the rays is ribonuclease, or RNase. This enzyme acts on what are believed to be the cell's protein-producing factories — giant molecules called ribonucleic acids. When RNase ceases to function, these molecules can no longer be broken down, and the delicate balance between thousands of reactions which comprise life chemistry may be altered.

This discovery might also explain a major mystery of life, the problem of mutation or gene changes and the role played by radiation in the cause and treatment of cancer. The team's work was reported by the American Cancer society.

SMALL CAR CLUB

Philadelphia (UPI) — Owners of automobiles with a wheelbase of 110 inches or less can now join a nationwide organization formed here to look out for the interests of the small-car set. Richard S. Ross, founder and president of the Small Auto Club, whose headquarters are at 1717 Walnut st., Philadelphia, said the group would exchange information on performance and repairs of small cars, campaign for safe driving and work for legislation that does not discriminate against small-car owners.

Couchant is a term in heraldry to describe an animal lying down, with its head upraised.



OLD FORT CRUMBLING—Near the south tower of Golden Gate bridge at San Francisco is Old Fort Point, lower left, once the nation's strongest bastion west of the Mississippi. Nearly a century old, the deserted

Once Strongest Bastion in U.S. Crumbling at San Francisco

San Francisco (UPI) — Crouched next to the south tower of the mighty Golden Gate Bridge is a crumbling relic of the age of sails and wooden ships. It is Old Fort Point, once the nation's strongest bastion west of the Mississippi.

Nearly 100 years old, the deserted brick and granite structure is still a symbol of the era of "Manifest Destiny" when the United States flung its western borders to the Pacific Ocean.

But it never fired a shot in anger.

Monument Suggested
Gen. Mark Clark recommended 11 years ago that the fort be made a national or state monument. But no concerted civic drive has been launched, partly because the Army will not give up forever the strategic basic location.

The original fort was built by the Spanish in 1794. It had a battery of eight guns manned by a corporal and six men. When Lt. Col. John C. Fremont, Kit Carson and a party of 30 Americans crossed San Francisco Bay in 1846 to scale the crumbling adobe walls, they found no resistance.

Seven years later the U.S. War Department ordered construction of a new fort on the site as part of a general program to strengthen coast defense.

Work began on it in 1854. The old Spanish fort was razed, the cliff cut down to

solid rock and Fort Point, built on a plan similar to Fort Sumpter, was erected on a granite-topped seaway 16 feet above the foaming surf of the Golden Gate.

Once Had Moat
The fort, once surrounded by a moat, was completed in 1861 at a cost of \$2,940,000. It was designed so its store-rooms could supply a fighting garrison of 600 men under siege for 120 days.

The reddish-brick walls of the fort present a nearly-unbroken face in all directions except for the three tiers of gunports and narrow rifle slits. With its flanking tower it somewhat resembles a ship cast up on shore. Only on the south side are there tall, narrow windows.

The sole entrance is the sally port on the south, landward side. There, two pair of heavy wooden doors close in the tunnel-like entrance which is guarded on both sides by rifle slits.

Research Shows Stress a Factor In Our Methods

Los Angeles (Science Service) — Under stress, we may revert to earlier learned ways of doing things—momentarily forgetting some of our most recent lessons.

This is the implication of research by psychologists Dr. Richard Barthol of the University of California, Los Angeles, and Miss Nani D. Ku of Pennsylvania State university.

Two groups of college students were taught to tie a bowline knot by two different methods. Method A involves a simple straight-forward way made easier by a story accompanying the instruction; method B is finer and faster but harder to learn.

Tests Under Stress
Group I learned method A first and Group II method B. Stress was applied in the following manner. Group I was asked to take an intelligence test at 1 o'clock Sunday morning following a Saturday night dance. Group II was asked to do the same following a weekly 9 p.m. final examination. The tests were quite long and more difficult than the students had expected. Subjects were not allowed to smoke, talk, or leave the room.

Following the intelligence tests, which observations indicated were quite stressful, subjects were suddenly required to tie a bowline. All members of Group I tied the bowline by method A, which they learned first. Group II members, with two exceptions, tied by their first learned B method.

The Town Moor Racecourse at Doncaster in Yorkshire, England dates from 1703.

The outer door is bound with heavy, now rusting, metal reinforcements and studded with heavy broad-faced iron bolts that were fabricated on the scene.

Inside the courtyard, the vaulted gun galleries rise steeply above the smoothly laid granite paving. Beneath this paving were the cisterns used to catch rain water — the garrison's only fresh water supply in event of siege.

Open To Sky
The gun galleries all open to the central court. The fourth level is open to the sky and grass grows in the chinks of its granite flooring. Concrete pedestals were placed here to mount 10-inch breech-loading rifles on disappearing carriages, mortars and dynamite guns. Only the pedestals and remnants of rusting iron track remain.

On the south side of the inner court, fluted wrought-iron columns support the gallery of the second tier. The offices, quarters and hospital were once located here. Separate coal-burning fireplaces provided the only heat in each compartmented area.

An intricate wrought-iron railing, like those in the old New Orleans, gave protection on all four sides of the open casemate (gun chamber) and barbettes (gun platforms). This ancient railing has nearly rusted away, the victim of fog, rain and the salt air of the battering Pacific.

Two Furnaces
Once there were stables and shops on the ground floor. Two furnaces were located diagonally across the court where cannon balls were heated red-hot to be fired at any sailing vessel that might attack. The hot — shot, which could set a wooden vessel afire, was hoisted by winches to the upper gun tiers.

The remnants of the rusting winches still remain. The furnaces are gone.

One of the architecturally unique features of the old fortress are the three octagonal towers which rise from the inner court to protect spiral granite staircases over which powder monkeys of another age rushed up and down to serve the guns from the magazines tunneled in the rock below. The superb masonry of this stonework remains as perfect as the day it was laid.

Obsolete in 1905
Fort Point was declared obsolete in 1905 because of advancing military science and steel-clad ships, and abandoned for military purposes in 1914. During brief periods in World War I and World War II, it was used for temporary billeting, training of soldiers and at one point was converted into a makeshift military prison.

Now, its once-powerful guns gone, Fort Point is a haunted shell of masonry. It is silent except for the distant roar of traffic on the Golden Gate Bridge overhead, the shrill cries of sea birds and the pounding surf. It is a sentinel against only one enemy—time.

—(UPI Telephoto)

Scientists From Russia, U.S. Differ On Ocean Question

Monaco (Science Service) — American and Russian scientists have made contradictory statements about the length of time which is required for water particles to rise from the depths of the ocean to the surface.

While the American scientists have conducted experiments which determine this time span to 400 to 600 years for the Atlantic and to 1,500 to 2,300 years for the Pacific, Soviet scientists insist that the total displacement of surface water by deep water takes only 40 to 60 years.

Rate of Disintegration

American scientists have based their calculations upon measurements of the rate of disintegration of radioactive carbon 14 and radium. The Russians arrived at their figure by measuring the biochemical consumption of oxygen. Both sides agreed at the conference in Monaco that further research into the subject by direct observation of currents at great ocean depths with perfected apparatus is necessary.

The argument arose during a discussion on the safety of dumping and releasing radioactive wastes into the oceans. In regard to present releases of liquid radioactive waste from the British atomic site Sellafield, it was mentioned that the total amount of radio-

activity going into the sea water is 10,000 curies per month. Most of this radioactive material, however, is short-lived and will thus not contribute to permanent contamination of the oceans.

Strontium-90 Released

Dr. E. Glueckhauf of the Atomic Energy Research Establishment, Harwell, England, mentioned that at Windscale Works in Sellafield only 1,000 curies of strontium-90, one of the radioactive wastes most dangerous to man and his environment, is being released to the sea annually as compared to 200,000 curies of strontium-90 which enter the oceans as fallout of atomic bomb tests of the past. Even when Britain has its nuclear power program fully realized, no more than 1,000 curies of

FOR COOLER COOLERS

Fort Worth, Tex. — (UPI) — County Judge Marvin Simpson wants an air-conditioned addition built to the Tarrant County jail, but not to make the prisoners more comfortable. He points out that the windows could be omitted from an air-conditioned jail, making it harder for prisoners to escape.

Muskox, now confined to the Arctic, in early centuries had a wide range, including ancient Britain.

strontium-90 will be released into the sea per year because of improved methods in chemical processing of radioactive waste products.

Dr. Glueckhauf also mentioned that natural radioactive potassium-40, diluted in the oceans since ancient times, contributes 100,000,000 curies

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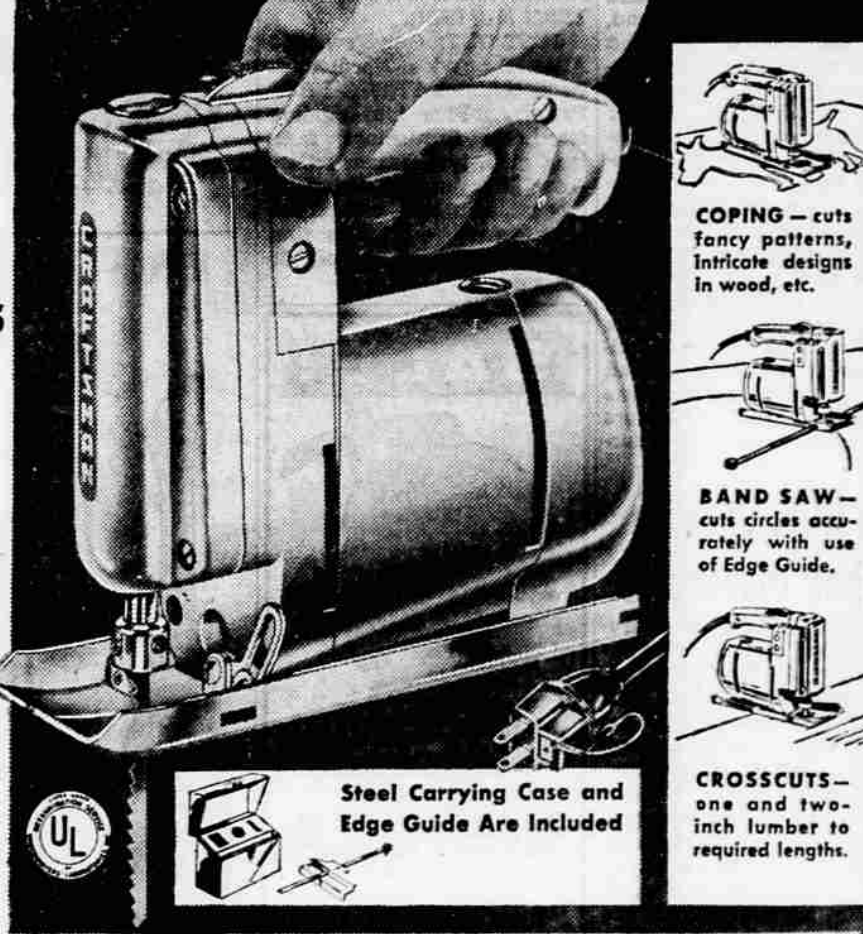
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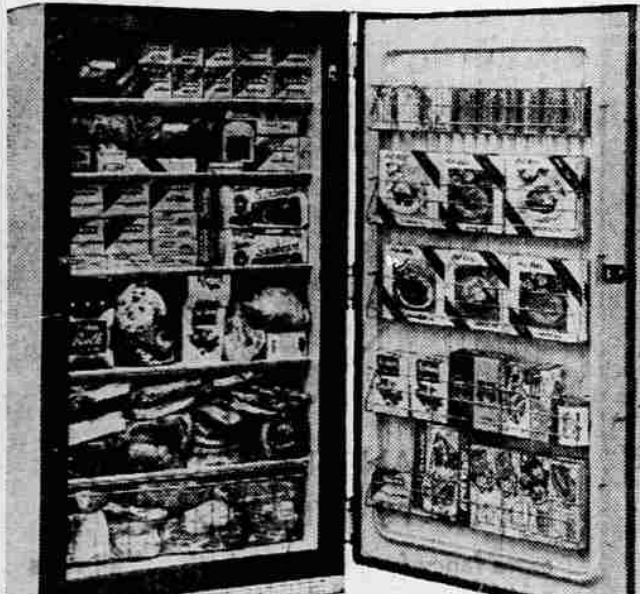
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