

RADIOLOGY

Cancerous Diseases Treated By Continuous Irradiation

CANCEROUS diseases are now being fought with continuous low-voltage doses of X-rays over the entire body as well as with 700,000 volt dosages for short periods. The comparatively new method of continuous irradiation was reported by Drs. Lloyd F. Craver and William S. MacComb of Memorial Hospital, New York City, to the American Congress of Radiology.

Patients being treated by this new method, called the Heublein method because it was first put into operation at Memorial Hospital by the late Arthur C. Heublein, lie in one of four beds in a specially constructed ward. For as long as 20 hours out of every 24, X-rays are sent into their bodies from a low voltage machine near the ceiling of the room. This is continued for a period varying from several days to three weeks.

"Experience with this method in 134 cases over a period of two years indicates that it is a valuable addition to the treatment of several radio-sensitive tumor processes, such as the leukemias, lymphosarcoma, Hodgkin's disease and multiple myeloma," reported Dr. Craver, who has been in active supervision of the work from the beginning.

"The results of the treatment in chronic lymphatic leukemia and pseudo-leukemia are, in our experience, superior to those obtained by local irradiation. It appears to be of only slight value in the treatment of radio-resistant tumors," he concluded.

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CHEMISTRY

Strong Rubber Compound Improves Telephones

A NEW RUBBER compound which will withstand moisture for many years under the most adverse weather conditions has been developed by research chemists working in the Bell Telephone Laboratories. The rubber is to be used to prevent the ready entrance of moisture into telephone transmitters installed in exposed locations and will improve reception in markets, taxi stations, police boxes and on harbor craft.

To keep moisture away from the thin aluminum diaphragm of the transmitter, a rubber membrane is interposed between the diaphragm and the mouth-

piece. Such a membrane must be extremely thin and supple and it has been found cannot be thicker than about three thousandths of an inch. Rubber as thin as this has been commercially used for a long time, but its life at best has been from one to two years. The new rubber compound, tests have shown, does not deteriorate when placed for varying periods of time in a vessel of pure oxygen at a pressure of 300 pounds per square inch and a temperature of 158 degrees Fahrenheit.

When subjected to this test, poorly compounded rubber usually loses shape and deteriorates in less than one day.

Following the development of the rubber, engineers were called to invent a method of molding the compound in the necessary thinness and shape. A quantity of the plastic compound is inserted in the mold cavity, which is subjected to a pressure of several tons per square inch by a hydraulic press. Steam at 20 pounds per square inch is circulated about the mold. Under the pressure and heat the compound takes shape and becomes ready for assembly.

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ARCHAEOLOGY

Spaniards Nailed Corpses To Prevent Wandering

RECENT excavations in a medieval burying ground in Aguilar de Anguita, Spain, have produced new examples of one of the strangest burial customs ever practised by civilized men—that of driving long nails through arms, legs and other fleshy parts of corpses before burial. The graves have yielded ornaments and other objects that show beyond question that many of the dead were Christians, and in one part of the area, known traditionally as "Jews' Hill" finger rings with Hebrew inscriptions have been found, so that the custom was not confined to one religion.

The skeletons averaged a couple of dozen nails apiece, often with an especially long one driven through the skull.

Although the new-found nailed burials are of undoubted medieval age, earlier similar finds have shown the custom to be of ancient, probably prehistoric origin. It seems to go back to the old superstition that the dead can leave their graves to work evil upon the living, and was apparently an effort toward discouraging this unpleasant practice on the part of the departed.

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IN SCIENCE

ICHTHYOLOGY

Florida's Tarpon May Be Native Born

FLORIDA'S famous game fish, the tarpon, may be a hundred-per-cent native Floridian, and not an immigrant from West Indian waters, as commonly supposed. Evidence for the existence of a tarpon spawning ground in certain brackish water areas around Sanibel Island, Lee County, on the Gulf coast of Florida, has been sent to *Science* by two Florida women naturalists, Margaret Storey and Louise M. Perry.

They have found young tarpon in the Sanibel Island waters, and they add that fishermen of the locality state they can net tarpon in early stages of development in a certain brackish water pool on the island. They tried seining this pool, and captured infant fish whose scales indicated an age of one year.

Miss Storey and Miss Perry are now trying to find tarpon in earlier stages of development in the same locality.

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ASTRONOMY

Variable Star Flashes Sixteen Times a Day

CHANGING in brightness with a rapidity suggesting that of a flashing sign, a faint star in the cluster known as omega Centauri has just been discovered to be the shortest-period variable star yet found. Many stars change periodically in brightness, but generally the period of variation is measured in days or weeks. But this star, according to Dr. Van Gent of the Johannesburg station of the Yale University Observatory, varies about sixteen times a day.

Dr. Van Gent has found that it increases in brilliance more rapidly than it decreases. This is one of the characteristics of the important class of Cepheid variable stars, whose average brightness is less, the longer their period. When at maximum, Dr. Van Gent's star is a little more than twice as bright as when faintest.

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CE FIELDS

PUBLIC HEALTH

50,000 Mexican Indians Blinded by Red Fly Bite

THE BITE of a little red simuliid fly has brought blindness to some 45,000 Indians in Chiapas and 5,000 in Oaxaca, according to the Mexican Health Department.

The life history of the parasite which the fly deposits in the blood of man is now known, but no good remedy to combat it has been worked out.

Because the Oaxaca region is small, Health Department brigades have chosen it as a field of experiment. The larvae of the flies are found among dead leaves along creek and river banks, and by cleaning these and burning the debris some impression has been made on the blindness epidemic.

Tumors appear on the heads of those affected, and these are being operated on by the wholesale by the sanitary brigades. This eventually cures the individual if the disease has not gone too far. The tumors are filled with long, thin, coiling organisms that can be seen under the microscope. Being phototropic, or light-loving, these make their way to the eyes. Indians with affected eyes are almost blind in the sun, but see better at night.

Science News Letter, October 7, 1933

RADIOLOGY

X-Rays Determine Lung Ventilating Efficiency

A METHOD of using X-rays to find just how efficiently a person's lungs are being ventilated was described by Dr. Walter W. Fray of Strong Memorial Hospital, Rochester, N. Y., at the American Congress of Radiology.

Apparently some patients suffering with tuberculosis and other lung diseases have more difficulty with breathing than would be expected from the amount of lung tissues that is seen in X-ray pictures to be affected, while in other cases the patients are able to breathe with little or no difficulty, in spite of a large diseased area. Lack of a standard of the ventilating efficiency

of normal lungs has handicapped physicians in determining the extent of disability along these lines.

Dr. Strong and associates worked out a method of determining the normal pulmonary ventilation and then used the method in over 100 cases of various kinds of lung diseases. It proved to be useful in the following ways: in following the progress of chronic forms of pulmonary disease such as pulmonary emphysema, asthma, chronic bronchitis and bronchiectasis; in assaying the degree of disability in industrial disease such as silicosis for purposes of compensation; in identifying suitable cases of tuberculosis for treatment by collapsing part of the lungs; in determining the presence or extent of disturbed ventilation in cases of a certain kind of heart trouble; and, finally, in establishing both the diagnosis and progress of chronic pulmonary disease.

Science News Letter, October 7, 1933

SEISMOLOGY

Both Americas Get Quakes Monday Morning, Oct. 2

NOT FOR some days will the seismologists at Pasadena, Calif. be able to locate the exact center of the earthquake that aroused southern Californians early Monday morning, Oct. 2.

This shock was, however, capable of minor damage only and it compared in intensity with the largest aftershocks of the March 10 earthquake. It came from the same general direction as the March quake and the epicenter is estimated to be 20 miles or more from the Pasadena seismological station. Records are now being gathered from the automatic seismographs in various California localities that were set in action by the earth shock. The records will allow the precise epicenter determination.

The motion was felt in Los Angeles and vicinity for about five seconds, although the large amplitudes on the Pasadena records lasted several times as long.

Practically everyone near felt the quake because a bed is an excellent instrument for the purpose. Incidentally, it is also about the safest place on such occasions.

While the Los Angeles region was getting over its mild early Monday morning earthquake, a quake of greater severity shook the bottom of the Pacific off the coast near the Ecuador-Peru boundary.

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ENGINEERING

Old Ship to Make Ice From Temperature Differences

TAKING advantage of the fact that dismantled warships can be obtained for practically nothing, M. Georges Claude, well-known French chemist and inventor, has decided to try at his own expense a new and unusual method of obtaining power to run an ice-making plant, using for the purpose the temperature difference between surface and deep sea-water.

Using the Claude-Roucherot process, which was given a trial some years ago in Cuba, it should be possible to utilize economically a temperature difference of only 10 degrees Centigrade (18 degrees Fahrenheit).

A 10,000 ton ship, the "Tunisie," is now being reconditioned at Dunkerque, and transformed into a floating ice-manufacturing plant. It is expected that the work will be completed in ten months.

In an interview with a Science Service correspondent, M. Claude expressed his confidence in the success of this large scale experiment.

Introduction of large supplies of readily obtained refrigerating material by this method may lead to important changes in the life of large cities on the shores of tropical seas.

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ENTOMOLOGY

Bee Tows Drowning Comrade Ashore

RESCUE of a drowning bee by another bee is the unique tale told in the current issue of *Science* by Prof. H. R. Phalen of St. Stephen's College.

Prof. Phalen states that he was pulling weeds in his yard, near a bird bath, when he saw a bee floundering in the water, near the center of the bowl.

"In order to save himself he got over on his back and floated," Prof. Phalen continues, "but he could not make any headway toward shore and there was no wind to move him in any direction. Presently one of the several bees drinking around the shallow rim flew out over the center, came down close to the drowning bee, and, after the two had successfully locked their feet in some way, flew vigorously toward the shore and landed his hapless mate safely."

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