

MEDICINE

**New "Cold Light" Aids
In Cancer Diagnosis**

A NEW aid for diagnosing cancer and other diseased conditions of the breast is a powerful "cold light" which enables physicians to see through the tissues and observe directly the tumors or other abnormalities.

Clinical trial of the lamp has been made at the tumor clinic of the Michael Reese Hospital, Chicago, under the direction of Dr. Max Cutler, who terms it "a simple, safe and valuable aid."

Transillumination, seeing through body tissues with the aid of a strong light, is not a new procedure in itself, but this new lamp, powered by a 750-watt bulb, is said to provide much more intense light than other lamps hitherto used. A wall of circulating water cools this lamp so that it can be applied directly to the skin with safety and comfort for the patient. This enables the physician to bring the light close to the tissues he wants to see.

Technical and mechanical problems in the construction of the lamp were worked out in the laboratories of the General Electric X-Ray Corporation.

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PUBLIC HEALTH

**Amebic Dysentery Germs
May Be Filtered From Water**

THE CYSTS which transmit amebic dysentery can be filtered out of water by the usual filtration methods used to purify water supplies, tests conducted at the Chicago Experimental Filtration Plant showed.

Chlorination is not a practical method of freezing the water from these organisms, Dr. Bertha Kaplan Spector of the U. S. Public Health Service and John R. Baylis and Oscar Gullins, chemists of the Chicago Department of Public Works, found.

Chlorine and chloramine kill the cysts, but the amount necessary is more than could be used in a public water supply. Chlorine is more effective than chloramine in killing the cysts, the tests showed.

The outbreak of amebic dysentery in a Chicago hotel last fall and the possibility that it was caused by contamination of the hotel water from an unknown source emphasized the importance of knowing more about *Endamoeba histolytica*, the organism

that causes the disease. It is particularly important to know more about this germ's life outside the human body, how it is transmitted and means of safeguarding the public from the infection, the scientists pointed out in the report of their tests issued by the U. S. Public Health Service.

Cysts were used for tests of water purification methods because they are generally considered the transmittable stage of the organism. Waste material containing these cysts was added to samples of water which were then treated with aluminum sulphate to coagulate the solid matter and filtered through rapid sand filters of a size and type found in many filtration plants throughout the country. All cysts were removed from the water by the treatment.

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ICHTHYOLOGY

**Sea-Bottom Valley May Be
Fish Migration Highway**

VALLEYS in the ocean floor may serve as migration routes for fish, as valleys on land similarly serve man and other animals in their journeys. There seems to be evidence that a deep submarine valley in the extreme North Atlantic is thus used by codfish, which have long been known to wander between West Greenland and Iceland.

Dr. A. Vedel Taning, of the Marine Biological Laboratory, Copenhagen, who has been investigating sea-life in northern waters with the Danish Research Ship *Dana*, states that a submarine ridge seems to follow the East Greenland coast. In the trough formed by the ridge along the coast flows the ice-cold East Greenland current; outside, or over the ridge, is the warm Atlantic water with temperatures up to eight degrees Centigrade.

Dr. Taning, in a communication to the scientific periodical *Nature*, suggests that the cod migrating from West Greenland to Iceland, follow the ridge, where the temperature of the water is such as they like best.

The submarine ridge is about 230 meters deep and about twenty to thirty miles from the coast-line. The soundings so far made indicate a continuous ridge from about 64 degrees latitude North to Cape Farewell.

This new discovery of the relief of the sea bottom was made with the echosounding apparatus which is now in general use.

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IN SCIEN

CHEMISTRY

**Chicken Feathers Make
Pens, Buttons, Insulators**

CHICKEN feathers may come into the market disguised as fountain pens, buttons, and various novelties now made from other plastic materials if the research carried on at Iowa State College becomes commercialized.

Immense quantities of chicken feathers are produced every year. Many of these are utilized in such well-known articles as pillows and feather beds but large quantities go to waste.

Research work in the Chemical Engineering Department of Iowa State College, at Ames, has shown that these feathers may dissolve in caustic soda and then be thrown out of solution in a new form by acids. This new material may be molded to any shape and hardened by formaldehyde.

The finished material is said to be fairly hard, very elastic, an excellent electrical insulator, and resistant to water, heat, dilute acids, and alkalis. Somewhat similar plastics are being made commercially from milk casein.

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PALEONTOLOGY

**Fossil Finds Will Show
Age of Fiji Islands**

A STUDY of fossil discoveries in the Lau Islands of eastern Fiji will undoubtedly disclose the geological ages of these South Sea isles and relate them to other land areas of the Pacific region.

This is the progress report in the current issue of *Science* of Dr. J. Edward Hoffmeister, professor of geology of the University of Rochester, and Dr. Harry S. Ladd, of the U. S. National Museum, regarding the expedition of the University of Rochester to the Fijis. The exploration party has been in the South Seas since February and will stay until September.

The exploration was under the auspices of the Bishop Museum, Honolulu.

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CE FIELDS

AERONAUTICS

Airship May Be Stalled, But Fall Does Not Result

GIANT airships can be "stalled," W. B. Klemperer, engineer of the Goodyear-Zeppelin Corporation revealed in a report published in the current issue of the *Journal of Aeronautical Sciences*.

"Stalling" an airship is a term derived from airplane parlance. An airship "stall" is a strange flight condition in which the efficiency of the ship as a load carrier is greatly reduced and often the controls act differently from their normal response. It does not fall, however, as would an airplane.

The airship "stall" may be either temporary or permanent. As a passing incident in flight the stall will lead, says Mr. Klemperer, either to a return to normal flight or to a catastrophic loss of control and, perhaps, a crash.

Stalled flight in an airship, however, may be a stable form of motion maintained either permanently or deliberately. The elevator controls, which make the airship climb or dive, act as though reversed when this form of flight is going on.

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ARCHAEOLOGY

Identity of City's People Found in Debris

BURIED under debris at the foot of the famed seven-story pyramid at El Tajin, in the Vera Cruz jungle, beautiful stone carvings have been discovered which shed a new light on the city's ancient history.

Mexican government archaeologists, directed by Enrique Jaun Palacios, found over twenty of these large stone blocks beautifully decorated with bas reliefs. The stones may have tumbled down from the top of the pyramid, if they once adorned a temple there, as is thought likely.

The discovery convinces Sr. Palacios that the Totonac Indians now living in the region are a later, cruder immigrant race whose ancestors did not build the

ancient city. The artistry of the carvings points to handiwork of Toltec or Mayan Indians who had very high aboriginal civilizations in tropical America. The art work of the two civilizations was similar in many ways.

Among the bas reliefs are many representations of the Toltec feathered serpent god, Quetzalcoatl. One large slab carved with a mythical "tree of life" is much like that found at the remarkable "Temple of the Cross" at the early Mayan city of Palenque.

A seven-foot stone idol at the bottom of the great stairs once stood apparently in an important place on the pyramid. This stone figure has features of the rain god, but also the snake's eyebrows and feathers which belong to the feathered serpent, god of the wind.

A ball court is another important discovery at El Tajin. The court is the third found in the city's ruins, and by its old-fashioned construction dates back to Mexican early times.

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ENTOMOLOGY

Insects Are Electrocuted In New Research Traps

ELECTROCUTION is the latest method of controlling orchard insect pests at Massachusetts State College. Prof. A. I. Bourne, Stewart D. Edmond and Prof. C. I. Guinness are studying the effectiveness of five electric insect traps in a local apple orchard to determine the practicability of the method on a wide scale.

Each trap consists of a double wire screen enclosing a 75-watt frosted bulb. The light attracts insects at night but as they fly toward it they come in contact with the electrified screen wire. Current at 110 volts cremates them.

Some are only killed, however, and fall to a tray beneath the trap. The present installation of five traps is already known to have killed 1,300 insects in a single night, not counting those so completely destroyed that identification was impossible.

The many potential uses of such traps, Dr. Bourne declares, are only now becoming known. Besides destroying many insects the traps are useful in determining spraying schedules, as an examination of the catch each morning will show when the various insects pests are beginning to appear and their relative prevalence and distribution.

Science News Letter, August 4, 1934

METEOROLOGY

Hot, But Healthy, Sums Up Climate of Boulder Dam

BOULDER DAM, with a recorded highest temperature of 128 degrees Fahrenheit, takes second place only to the famous "hot spot" of Greenland Ranch, in Death Valley, Calif., which once reached 134 degrees. In the winter the temperature at Boulder Dam has dropped as low as 22 degrees, making a range between recorded extremes of 106 degrees. July maximum temperatures average 113 degrees, and minimum temperatures 89 degrees.

Yet in spite of the heat, the region around Boulder Dam is going to be a good place for the development of great industries, and it will even be suitable for resort purposes in autumn, winter and spring. So declared George V. Sager, of the U. S. Weather Bureau, before the meeting of the American Meteorological Society.

The heat, he explained, is not noticed as much as it might be, since the air is always dry. In a well-ventilated building it is possible to do a good day's work, and there are few nights when sound sleep is not possible. Furthermore, within two hours' run by automobile there are mountain heights ideal for the development of summer residences and resorts.

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ENGINEERING

Study of Porous Materials Helps Air-Conditioning

SMALL quantities of air, on the order of the amount that passes through the walls of a cigarette while it is being smoked, can now be measured with great accuracy.

Of particular use in air-conditioning of houses is a small machine which has been invented that can determine in a very short time if a sheathing paper meets requirements as to the amount of air that can leak in or out through it.

S. T. Carson of the National Bureau of Standards, who developed the instrument, has found that it has a range about a thousand times greater than most similar devices for measuring permeability. It can be used on leather and insulating materials as well as such thin membranes as a cigarette paper.

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