

MEDICINE

Cancer Death Rate Shows Downward Trend

► THE WAR against cancer is being won on some fronts.

This good news was brought by Evelyn A. Potter, biometrician of the Massachusetts Department of Public Health, to the cancer symposium at the meeting of the American Public Health Association.

Deaths from cancers of the stomach, uterus, mouth, skin, liver and breast have shown a downward trend during the past 10 years. Marked upward trends in deaths from cancers of the lung, pharynx and bronchus have occurred during the same period.

Efforts to control cancer by teaching the life-saving importance of early diagnosis and treatment have played a part in turning the death rate down for some kinds of cancers. In Massachusetts, first state to develop an integrated cancer program, the downward trend in cancer deaths among women began in 1933, six years before a similar drop for continental United States.

The later drop in the female cancer death rate for the whole nation reflects the increased cancer control activity that occurred as the result of the inauguration of the cancer program of the U. S. Public Health Service, that of several states, and the educational activities of the American Cancer Society.

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ENGINEERING

Sturdy Sectional Trucks Can Be Carried by Plane

► FULL-SIZED, full-powered trucks that can be unbolted into sections and carried by plane to jobs far beyond any road-end or railhead are the newest contribution to air-minded industry and engineering. Their design, developed by R. D. Bagley of Indiana, Pa., and J. E. Berman of Suffolk, Va., is covered by U. S. patent 2,409,181.

During the recent war, the biggest motor vehicle that could be made airborne was a jeep or a very light truck. But the new truck is a solid, sturdy, six-by-six job, with tandem dual rear wheels and power applied to all three axles.

It comes apart into three sections. The first, consisting of the cab, engine and front wheels, can climb a ramp into a cargo plane under its own power, with some help in keeping balanced. The

body can be unbolted into two sections, each with its pair of dual wheels. For medium-sized cargo planes each section would constitute a fair load.

Bolts for holding the sections together are strongly designed, and arranged for quick manipulation.

While the inventors had military uses primarily in mind when they applied for their patent, it is obvious that a truck of this kind should be able to pay its way in lumbering, mining or construction camps all the way from far northern tundras to tropical jungle plateaus.

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DENTISTRY

Glands Play Part In Tooth Eruption

► A PARTIAL SOLUTION to one of the fundamental mysteries of physiology, the eruption of teeth through the gums, has been provided by the University of California Medical School scientists.

The researchers found in experiments with rats that the growth and thyroid hormones are factors in this eruption.

In their experiments the scientists removed the pituitary glands from young rats, halting eruption of teeth. Enamel and dentine continued to build up, folding under the gums and causing a distortion of the root ends which is sometimes seen in man. Enamel formation eventually stopped entirely.

Surviving rats were injected with thyroxin and the growth hormone after a year without their pituitaries. Even though the animals were old and mature, the hormones started vigorous eruption once again.

The research was done by Dr. Herman Becks, professor of dental medicine; Dr. Daniel A. Collins, research assistant; Dr. Miriam E. Simpson, professor of anatomy; and Prof. Herbert M. Evans, director of the Institute of Experimental Biology.

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ZYMOMOLOGY

Brewer's Yeast Grown With More Vitamins

► INCREASE by at least 50% in the vitamin contents of brewer's yeast by keeping it on a limited food supply and at relatively low temperature for a week or more is claimed by Ben Maizel of Chicago in patent 2,411,445, which he assigned to the Vico Products Company.

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IN SCIENCE

HORTICULTURE

Ladies May Receive Orchids to Eat in Future

► ORCHIDS that you can eat are a possibility of future American gardens. These strange plants are among the 11,000 specimens of flowering plants and ferns brought back to the New York Botanical Garden by an expedition into mountainous Nyasaland, in the most inaccessible part of East Africa, under the leadership of Arthur S. Vernay.

These orchids, unlike the highly ornamental species that perch on the limbs of trees, grow in the ground like ordinary plants. The natives dig up their tubers, cook them elaborately, and eat them with cornmeal. They will be grown in the Botanical Garden's greenhouses along with 60 other kinds of orchids.

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PUBLIC HEALTH

UNESCO Proposes Center For Community Planning

► AN INTERNATIONAL center for home and community planning will be considered by the United Nations Educational, Scientific and Cultural Organization.

Proposed to provide a rallying point for the many experiments in town and country planning and in the building and making of homes, the center would emphasize means of stimulating the latent creative talents of people otherwise liable to lead stunted lives. The center would include a library, a small repertory theater, a lecture and concert hall, a local museum and a place for amateur painters to exhibit their work.

In building the center, UNESCO would work in collaboration with other United Nations groups, including the Food and Agriculture Organization, the International Labor Organization, the section of creative arts.

The center is proposed to provide a defense for the home and community against the tendency toward industrialism and urbanization, particularly in countries where industrialization on a large scale is only now being introduced.

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E FIELDS

CHEMISTRY

Copper, Rubber Become Friends with New Process

► A WAR-BORN invention, designed to meet a Government demand for copper wire coated with natural rubber that would not deteriorate quickly, won for D. J. Miller of Akron patent 2,411,284, rights in which he has assigned to American Anode, Inc.

Though often found together, copper and rubber are really not good friends. The copper rots the rubber, and sulfur in the rubber attacks the copper. So in the past the wire has been pre-tinned, paper-wrapped, or otherwise treated to separate it from the rubber.

In Mr. Miller's invention, the wire is first coated with a powder consisting of zinc nitrate, calcium nitrate and a wetting agent. Then it is run into a latex bath and the rubber deposited directly on the wire. After vulcanization, the rubber surface is treated with chlorine to give a smooth, non-sticky finish.

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ASTRONOMY

Expedition to Study Total Eclipse of Sun

► AN EXPEDITION of American scientists will observe the next total eclipse of the sun from a site about 400 miles north of Rio de Janeiro. An open field on a cattle ranch near the town of Bocayuva has been selected as headquarters for those going under the auspices of the National Geographic Society and the Army Air Force.

On May 20, 1947, the sun will be hidden behind the moon for fortunate observers along the path of totality which crosses South America, the Atlantic Ocean and Africa. Partial phases of the eclipse will be visible over all of South America except parts of Ecuador, Colombia and Venezuela. People at sea, on the Atlantic Ocean between South America and Africa, may also see the sun partially hidden. Partial phases will also be visible from all of Africa except the northern tip of Tunisia, the Red Sea, the southern and western part of Arabia, and the western half of Madagascar.

Bocayuva, situated on a plateau almost a half mile above sea level and close to the center of the zone of totality, was chosen as grandstand for the celestial show after AAF observers made aerial photographs and studied weather conditions over a large area along the path of the eclipse. They will live in a tent community. Meteorological information supplied by Brazilian authorities indicates a better than even chance for clear skies during May.

Simultaneous observations of the total eclipse of the sun, made from Brazil and the Gold Coast of Africa, are expected to add not only to our knowledge of the sun and moon, but to give us more exact information about the earth itself.

Expeditions will be sent to the two coasts under the auspices of the Geodetic Survey of Sweden, states Dr. Bertil Lindblad, director of the Stockholm Observatory and now visiting at Harvard College Observatory. Observations made on the coasts of these two continents will be exactly timed and synchronized, he reports.

The first appearance of the flash spectrum, caused by light from the sun's outer envelope and visible only at the very beginning or end of a total eclipse, will be accurately clocked. More exact calculations than previously possible of the longitude of the two observation points will be made from these data.

The moon's parallax and polarization of the light of the sun's corona will be studied. The topography of the moon, as outlined against the sun's bright disk, will also be recorded.

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ENGINEERING

Inflatable Bags to Help Raise War-Sunken Ships

► AFTER EVERY modern war there are hundreds of sunken ships waiting to be raised and salvaged. One way of getting them to the surface has been to sink great steel cylinders called "camels" alongside, pass cables under the sunken vessel, and inflate the camels to make them float.

To obviate the cost and clumsiness of the camels, E. A. Brizay, an Australian inventor, proposes to have divers fill the interior of the sunken vessel with inflatable bags, strung on lines between decks, like a week's washing, and then pump air into them. This idea has won him patent 2,411,649.

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OPTICS

Device Takes Guesswork Out of Color-Matching

► COLOR-MATCHING, important in a thousand industries all the way from hosiery to house-paint, has the guesswork taken out of it by a device on which U. S. patent 2,411,741 has been granted to J. L. Michaelson of Schenectady, a General Electric Company engineer. With it you do not attempt to match the colors directly, but fit two curves that are the electrical expressions of the color standard and the sample.

A beam of light is turned on standard and sample in rapid alternation, by means of a moving mirror. Light reflected from the two surfaces is caught by a train of mirrors and passed through an analyzing prism into a photocell. Current from the photocell, suitably amplified, is passed into a cathode-ray tube, tracing the curves on its viewing surface for comparison.

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ASTRONOMY

Harvard Observatory To Celebrate Centennial

► HARVARD College Observatory, well known as the clearing house for astronomical information in the Western Hemisphere, will celebrate its hundredth birthday in December.

To mark the centennial, the observatory will play host Dec. 27 through Dec. 30 to hundreds of astronomers who will be in Boston for the annual conventions of the American Astronomical Society and the American Association for the Advancement of Science.

Completed in 1846, the observatory was the first planetarium in the world to photograph the stellar activities of the sky. Since 1880 large regions of the sky have been systematically photographed each night at the observatory. The more than 500,000 photographic plates enable astronomers to check stellar activities during any clear night of the past 66 years.

Throughout the past quarter-decade the observatory has been under the directorship of Dr. Harlow Shapley. Growth of the observatory and increased demands upon the staff recently resulted in the appointment of Dr. Bart J. Bok as the observatory's associate director under Dr. Shapley, and Dr. Donald H. Menzel as director for solar research.

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