

GENETICS

X-Rays Can Speed Up And Reverse Evolution

First Bombardment of Fruit Flies Changes Unborn Insects While Second Treatment Restores Original Traits

X-RAYS can speed up the processes of evolution, and they can also reverse its direction, undoing changes which they themselves have caused. This was announced at the meeting of the Sixth International Congress of Genetics at Ithaca, N. Y., by Dr. N. W. Timoféeff-Ressovsky.

The discovery of the evolution-reversing power of X-rays was made as the result of researches conducted at the Kaiser-Wilhelm Institute for Brain Research in Berlin. It agrees with similar results obtained by other workers in the same field.

Dr. Timoféeff-Ressovsky worked with fruit flies, classic experimental animals in genetics, using the X-ray technique for producing hereditary changes developed by Prof. H. J. Muller of the University of Texas. Bombardment of their reproductive cells with X-rays caused marked changes in color, shape, size, etc., of eyes, bristles and other body parts in their offspring. Dr. Timoféeff-Ressovsky discovered that a second bombardment inflicted on these same offspring would often reverse the changes, causing the third generation to have a normal appearance again.

From his results he argued that the effects of an X-ray bombardment are not merely destructive of the genes, as has frequently been stated. He pointed out that while the production of an abnormality might look like a destructive effect, the return to normalcy by a second X-ray bombardment makes this conclusion absurd.

Fern Spores X-Rayed

Other strange effects of X-ray bombardment were demonstrated by Dr. Lewis Knudson of Cornell University, with a series of cultures of ferns in their earliest stages of growth. The spores from which they sprouted were treated with X-rays at varying intensities and lengths of exposure. Doses of 2,500 and 5,000 roentgens increased the rate and quantity of growth. But doses from 7,000 to 30,000 roentgens stopped growth altogether. These heavier X-ray-

ings, however, did not kill the sporeling ferns, for examination with the microscope has shown that they produced one or two massive cells that continue to live but do not grow, although they have been kept for over six months.

These cells of arrested growth possess chlorophyll, and presumably manufacture carbohydrate foods for themselves. No theory has yet been advanced regarding the mechanism of this growth stoppage caused by X-rays.

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ARCHAEOLOGY

Treasure Unearthed From Maya Pyramid

UNDER the main stairway of the imposing El Castillo, chief of the temple-topped pyramids of the ancient Maya city of Chichen Itza, Mexican archaeologists found a treasure cache hidden centuries ago. A jade necklace with carved pendants, one representing a Maya god and others bearing hieroglyphs, which is pictured here, is one of the most important finds.

A pottery vessel containing small bones, as yet unidentified and perhaps human, was in the cache. Necklaces of

coral, jade and turquoise were mingled with the head of a dried lizard, a magic jade ball used for healing and divining, and other objects.

Lino Bravo, of the Mexico City National Museum, has gone to Yucatan to restore a jade and turquoise plaque seven inches in diameter, which was found in a jar along with 2,000 small turquoise. A jade object with a bit of ancient cloth stuck to it is also being studied. Four flint spearheads, from twelve to sixteen inches long, were also in the cache.

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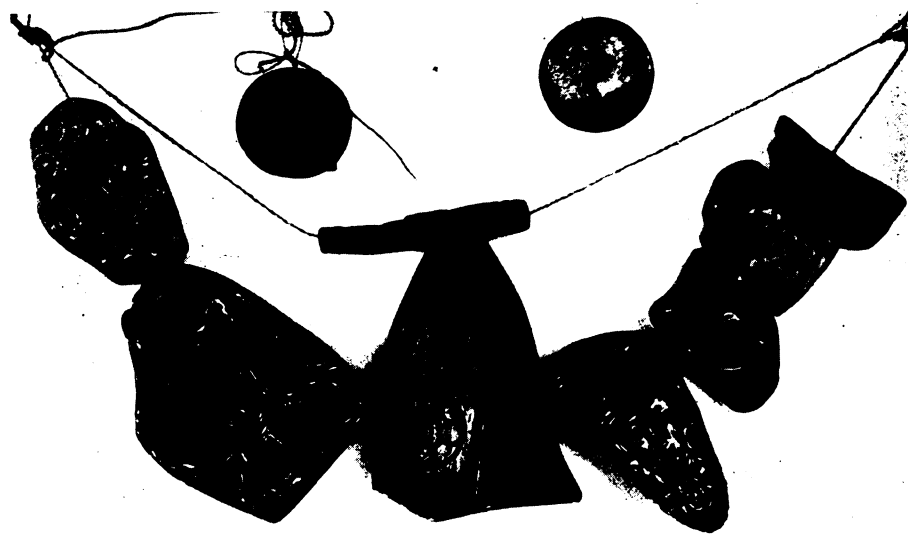
ELECTRICITY

Low Resistance in Cold Intrigues Engineers

ELECTRICAL ENGINEERS who know the cost of ordinary transmission of electrical current along wires look with longing eyes upon experiments performed within the confines of extremely frigid liquid helium.

At temperatures far below those common here on earth, some 268 degrees Centigrade below the freezing point of water, a current set up by induction in a lead coil will continue to flow for hours with little falling off of intensity.

Members of the Royal Institution in London had this experiment performed for them by Prof. J. C. McLennan, the University of Toronto physicist who has recently retired to England. The phenomenon of superconductivity was discovered over twenty years ago by the Dutch scientist Heike Kamerlingh Onnes and his co-workers, who made Leyden a center of low temperature research. It was a most surprising discov-



FROM ANCIENT TREASURE CACHE