

PHYSIOLOGY—CHEMISTRY

New Red Pigment of Liver is Giant of Body's Chemicals

New Heavy-Weight Was Discovered as a By-Product of Research Seeking Enzymes in Liver of the Horse

A NEW, and yet unidentified, red pigment, which is a super heavy-weight among the body chemicals of the higher animals, has just been isolated at Yale University, it was disclosed at the meeting of the New York Section of the American Chemical Society.

The red pigment, having a molecular weight more than 50 times as great as familiar hemoglobin in the blood, was found in a research seeking enzymes in horse liver. Dr. Kurt G. Stern, who reported the discovery, and Dr. R. W. G. Wyckoff, both of Yale, collaborated in the studies.

"As far as we can tell," Dr. Stern said, "this red pigment is different from any other substance, from liver or from other sources, yet described." Chemically speaking, the new red pigment—having the enormous molecular weight of 3,000,000 to 4,000,000—has not yet revealed features which would permit its classification among any known class of chemical compounds.

The new super giant of the animal body was found as a "by-product" of research seeking a pure solution of cata-

lase, an important body enzyme. An air-driven ultra-speed centrifuge, whirling rapidly, was used to separate the liver red pigment from the brown catalase.

The pigment is far larger in its molecular size, than anything previously encountered in the bodies of higher animals. Only the copper-containing blood pigment of invertebrates, known as hemocyanine, may reach similar proportions, Dr. Stern indicated.

The biological function of the red liver pigment is yet obscure, he added. But it is assumed that it is connected with the use of oxygen by the animal body because it can be reduced to a clear, colorless form. The red color, however, appears to be a property of the large molecule itself and not of an impurity.

The molecular weight of catalase, the enzyme sought in the original research, was determined by the Yale scientists to be between 250,000 and 300,000, or four times larger than hemoglobin, the respiratory pigment of red blood corpuscles.

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ASTRONOMY

New Star May Be Nearest or Next Nearest to the Earth

A STAR that is either the nearest or the second nearest star to the earth has been discovered at Yerkes Observatory of the University of Chicago.

It is named Wolf 424 and it has a visual magnitude of 12, which means that, close as it is, it can be viewed only with a powerful telescope.

Prof. G. P. Kuiper in recent months has obtained spectra of many faint stars of large proper motion, that is, they change their positions considerably in relation to other stars. He used a fast one-prism spectrograph attached to the 40-inch Yerkes telescope.

Star Wolf 424 was found to have what astronomers call a very late M type spectrum which is duplicated in the heavens only by Wolf 359 star. This is the intrinsically faintest star known. The distance of Wolf 359 is eight light years (two and a half parsecs), that is, it takes light traveling 186,000 miles per second only eight years to travel from that star to the earth.

But the Wolf 424 star newly observed is found to be 1.17 magnitudes brighter. Computations show that its probable distance would therefore be about 3.7 light years.

This is closer than famous Alpha Centauri, 4.1 light years away. If Wolf 424 is an unresolved binary star, however, its computed distance from earth might be somewhat larger than that of Alpha Centauri, which is known to be connected with Proxima Centauri, considered usually a part of the same star system.

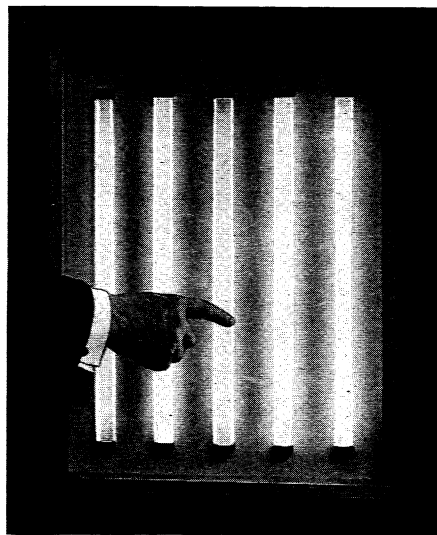
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ENGINEERING

Lamp Companies Announce New Fluorescent Lamps

A NEW type of electric lamp, that uses ultraviolet light and fluorescent chemical-coated walls to produce white or colored light with an efficiency ranging up to 200 times that of present-day filament lamps, was announced simultaneously by the Westinghouse Electrical and Manufacturing Company and the General Electric Company. The new lamp was demonstrated before members of the New York Electrical Society, the American Institute of Electrical Engineers, and the Illuminating Engineering Societies.

Differing entirely in principle from existing types of lamps in general use, the new lamps convert invisible ultraviolet light into white or colored light through the phenomenon of fluorescence. The efficiency of the new bulbs is far



COOL LIGHT

Fluorescent lamps, as much as 200 times as efficient as today's hot incandescent lights, have just been made available by two of America's largest lamp manufacturers. Invisible ultraviolet light generated inside the tubes bombards chemical-coated walls, which fluoresce, giving out light but practically no heat.