



SEA-URCHIN CHEMISTRY—Dr. Daniel Mazia of the University of California, is studying the enzyme chemistry of chromosomes to try to find out the role of the nucleus in cell chemistry. Here he is holding a sea-urchin, the animal he uses in his project, over a beaker that will receive the eggs, the cells of which he studies.

ENTOMOLOGY

Use Bubble for Gill

► CAN AN adult insect breathe under water? It could if it had the equivalent of a fish's gill, so that it could pick up oxygen from the water.

At least one beetle, a species from Africa, does seem to have what amounts to a physical gill, allowing it to stay under water almost constantly, reports Dr. George O. Stride of the University College of the Gold Coast, Achimota, Gold Coast, Africa.

The beetle, *Potamodytes tuberosus*, inhabits swift-flowing streams and, like many other water-dwelling insects, envelopes itself in an air bubble from which it gets a supply of oxygen while under water.

However, the unique thing noted by Dr. Stride in a report to *Nature* (May 16) is that there appears to be a constant replacement of oxygen from the water, through the surface of the bubble, into the bubble itself—at least with this beetle. Fishes' gills similarly remove oxygen from water.

It is commonly believed by entomologists

that when the oxygen of a bubble is exhausted, an aquatic insect would have to come to the surface to pick up a new oxygen filled bubble.

Dr. Stride said fast-flowing water was necessary for the oxygen exchange to take place through the respiratory bubble. When a beetle was kept in still water thoroughly saturated with oxygen, the respiratory bubble gradually disappeared and died.

But when a current was set up in the water, the respiratory bubble kept its full size, and in one case increased considerably in size.

Adult insects possess neither gills as fishes do, nor lungs as many other land animals do. Instead they breathe through a series of fine, complicated tubes, called tracheae, that run to all parts of the body, much like our blood capillaries. Air enters the tracheae through a series of openings that lie along the insects' body wall.

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● RADIO

Saturday, June 20, 1953, 3:15-3:30 p.m. EDT
"Adventures in Science" with Watson Davis, director of Science Service, over the CBS Radio Network. Check your local CBS station.

Dr. Dan Gordon, assistant professor of ophthalmology of the Cornell University Medical College and assistant attending surgeon at the New York Hospital, will discuss "More Health for Your Eyes."

ENDOCRINOLOGY

Cortisone Counters Blood Albumin Effect

► WHEN SERUM albumin from blood is injected into a vein, its bone and tissue building effect is blocked by giving cortisone.

This albumin blocking effect of cortisone was reported by Drs. Philip H. Henneman and Fuller Albright and Miss Eleanor F. Dempsey of Massachusetts General Hospital, Boston, at the meeting of The Endocrine Society in New York.

Albumin injected into the veins, the scientists explained, has "three possible fates:" to be "burned," to be "converted" into body tissues including bones, and to remain "unchanged."

In their studies, cortisone "almost totally blocked" the conversion when albumin was given at the same time, and "burning" was decreased.

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MEDICINE

Do Not Fear Work, Not Cause of Heart Failure

► AMERICAN BUSINESS executives are "afraid to live for fear of dying," Dr. Theodore G. Klumpp, president of Winthrop-Sterns, Inc., New York, pharmaceutical manufacturer, charged at the meeting of the American Association of Cereal Chemists in Buffalo, N. Y.

They are victims of the "false" notion that hard work is the cause of heart failure. Consequently, Dr. Klumpp said, they "work with mental brakes set against their work and in mortal terror of a heart attack."

He gave lack of physical exercise and overeating, not hard work, as the major causes of heart attacks among business executives in the United States. Heart attacks, he said, are the climax of a gradual process of hardening of the arteries and are not brought on by violent physical activity on a golf course or by intense mental strain. He cited studies showing that half such deaths occur during sleep and only two percent of heart attacks during severe exertion.

"Throughout the world where sustained physical activity during a lifetime is the rule and food is not abundant, coronary heart disease does not appear to be a problem," Dr. Klumpp reported.

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