

BIOCHEMISTRY

Anti-Germ Body Chemical

Histamine fights germs invading the body by activating the cells that eat the disease-makers. This protein has decisive role in germ battles.

► THE "DECISIVE" part in some of man's battles against disease germs is played by a body chemical called histamine. Studies leading to this conclusion are reported by Dr. Miklos Jancso, of the University of Szeged, Hungary, in *Nature*.

In the war against germs, certain cells of the body do their job by swallowing or eating the invading disease germs. These germ-eaters are called phagocytes.

Histamine, Dr. Jancso finds, transforms certain cells of the body from their resting state into active phagocytes or germ-eaters.

The phagocytes swallow or engulf other things besides disease germs. Among such things is India ink. Dr. Jancso used this in his studies. He painted a solution of histamine on the skins of rats and then injected India ink into their veins. The histamine-smear areas showed gray spots.

"One can indeed 'write' with histamine on the skin," he describes it.

The histamine transformed the resting cells into phagocytes which then ate up the India ink just as they would eat up disease germs.

If mice and rats are given daily injections of histamine in gradually increasing doses, their bodies develop tolerance for the chemical. Then it no longer activates phagocytes. The histamine-activating effect can also be checked by preliminary treatment with an anti-histamine chemical. Dr. Jancso used one called antistine. There are many of these and some have been used in treatment of hay fever and other allergic disorders, on the theory that allergies are due in part to overproduction of histamine by the body.

As the activator of the phagocytes, histamine, Dr. Jancso contends, "takes a central role in the defensive and recuperative" reactions of the body.

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INVENTION

Rocket for Life-Saving

► A FORWARD step in coastal life saving has been taken with war-born equipment used to shoot telephone wires across wide rivers. It is a method in which steel cables, by use of rockets, are thrown from shore to stranded vessels, or from the vessel to shore, to serve as life-lines.

The equipment for this purpose, while basically similar to that used in the war, contains important improvements. One is its reel from which the cable is "cleanly" played out; another is a line-carrying projectile which can anchor the end of the line when it hits its objective.

Standard reels carry either 500 or 1,250 feet of cable, one-eighth inch in diameter, which has a breaking strength of 2,000 pounds. Cables from several reels can be connected so that when the line on the first is played out the line on the next follows.

Cables of other sizes and strengths

may be used. In one test, in which Navy rocket motors were used, a quarter-inch cable was stretch a distance of 1,171 feet. This cable had a breaking strength of 7,000 pounds.

The projectile to which the line is attached is called a "stake ground anchor." Its pointed end permits it to penetrate deep into the earth where it is held firmly embedded by two backward-projecting spurs on its side.

This new equipment has many advantages over the well-known and long-used method of shooting rope from cannon on the shore over a wrecked vessel. Its aim is more accurate. The speed and the light weight of projectile and line make it less affected by wind. The steel cable used need be only one-third as heavy as a rope of equivalent strength. With it, there is no need of throwing first a light line by means of which the supporting rope is pulled out to the ship.



LIFE - SAVING EQUIPMENT — The backward projecting points on the line-carrying projectile anchor it in the ground when it strikes, giving a firm hold to the cable which has been unwound from the large reel shown.

The rocket-firing equipment can be carried as standard equipment aboard ship. This would make it possible for a wrecked vessel to throw its own line to shore and save its own passengers and crew without waiting for shore aid.

The same ship-borne equipment can be used at high sea to cast a life-line to a neighboring vessel, or to get a tow-line to a disabled ship. The equipment can assist bridge builders in spanning deep chasms and rivers. There is a special job for it in fire rescue work. The reels are made by Intertype Corporation, Brooklyn, N. Y. The inventor is Wadsworth W. Mount, Summit, New Jersey.

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BIOLOGY

Nine Kinds of Mold Work Toward Ruin of Soft Corn

► MUCH CORN that succeeded in running the gantlet of early floods and later drought will have to face a third hazard after harvesting. Because early frosts may catch it still "soft," that is, with high moisture content, it is apt to spoil through molding in the storage bins.

What happens when molds attack corn has been the subject of research by Dr. C. M. Nagel and Dr. George Sem-