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-smeared 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 phagocytees. 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.

Science News Letter, August 30, 1947

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.

Science News Letter, August 30, 1947

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-

eniuk working at Iowa State College.

They began by finding out what kinds of molds were at work on corn spoiling naturally. They were able to isolate nine distinct kinds: four of Penicillium (though none of the species that produces penicillin), four of the closely related Aspergillus, and one black bread-mold, or Mucor.

After culturing each kind separately, they inoculated flasks of sterilized corn of 32% moisture content with spores of each mold. Four of the molds—two Penicillia and two Aspergilli—prove most destructive to the corn solids. Any one of them would devour between 40% and 45% of the organic matter in corn in a four-week period. At the same time, the water content of the spoiled corn increased.

Another effect of mold spoilage is an increase in the amount of fatty acids present. These are the acids characteristic of rancidity in spoiled fats and oils. Some of this increase in fatty-acid content in moldy corn is due to the breakdown of the natural corn oil, but part may be due to direct production of fatty acids by the molds themselves.

Science News Letter, August 30, 1947

VETERINARY MEDICINE

Guard Public Health

Veterinaries discuss some of the dangers, including the Salmonella that cause food infection. Alert meat and milk inspection can avert community ills.

➤ SAFEGUARDING the public health makes demands on veterinarians as well as on public health officials and medical practitioners who serve human patients. At the meeting in Cincinnati of the American Veterinary Medical Association, various problems involved in the health interrelationships between man and his animals came up for discussion.

Among the threats to human health from diseased animals, some of the worst come from the small but hard-to-defeat group of germs known as Salmonella. Dr. Arthur H. Wolff of Lansing, Mich., told of these. Salmonella can cause food infection, producing typhoid-like diseases. Such infections are especially likely to occur in meat from sick animals; alert veterinary inspection can head them off.

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Practitioners Can Help

➤ PUBLIC HEALTH can be served not only by the veterinarian on the public payroll; it can and should be the concern of the private practitioner making his rounds, urged Dr. C. S. Bryan of Michigan State College. He is in especially good position, the speaker asserted, to promote rural public health, particularly in his recommendations regarding disposal of sick animals.

Above all, Dr. Bryan declared, the practicing veterinarian should safeguard the sources of milk: "In my opinion, the sanitary production of milk is just as important to the veterinarian as is the control and treatment of animal disease, and experience has demonstrated that the dairyman and the community appreciate and are willing to pay for this service."

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Chickens Germ Smugglers

➤ ANOTHER PLACE where the veterinary must maintain close watch, stated Dr. P. J. Brandly of the U. S. Department of Agriculture, is the poultry market. Chickens and other birds that man eats almost seem to be especially designed to smuggle germs into him. Dr. Brandly listed by name an even dozen causes of disease in man that can be carried by poultry, to which he added "and 43 paratyphoid organisms which have been isolated from both man and birds."

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Where Does Vet Fit In?

➤ SELECTING the proper niche for the veterinarian in a well-rounded public-health setup will have much to do with his effectiveness afterwards, Dr. Martin D. Baum of Los Angeles pointed out. The U. S. Public Health Service has established a special branch for him, the Veterinary Public Health Section; the speaker expressed the hope that this pattern might be followed at state and municipal levels.

He recommended also that diseases of animals transmitted to man be made reportable, with special effort to indoctrinate both veterinarians and public health officers in the importance of such reporting.

Science News Letter, August 30, 1947

NUTRITION

Best Buys in Vegetables

➤ THEY MAY NOT taste best to you, but the best buys in vegetables these days are carrots and Hubbard squash.

They are inexpensive and each furnishes eight nutrients. That is more for your money than other vegetables, according to home economists at Cornell University.

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