MEDICINE

Bald Bronchial Tubes Fatal

Hair-like projections normally present in the tube lining can easily remove secretions but change in lining allows suffocating accumulations.

➤ CAUSE of death in asthma and some kinds of pneumonia is a metamorphosis of the lining of the bronchial tubes which makes them bald instead of hairy. This discovery was announced by Dr. A. C. Hilding, of Duluth, Minn., at the meeting of the American Academy of Ophthalmology and Otolaryngology, in Chicago.

The hair-like projections, called cilia, normally present in the lining of the bronchial tubes, can readily and easily remove mucous secretions. But in the cases Dr. Hilding studied, the lining of the tubes had changed into another kind of tissue which had no cilia. Consequently the thick mucous substance accumulated in the tubes and the patients died of asphyxiation.

Aggravating the difficulty is the fact that the changed and bald cells themselves produce a secretion which they only partly extrude. This fuses with the general mass of secretion but remains anchored to the cells lining the bronchial tubes, thus aggravating the difficulty of emptying the bronchial tract.

"The ciliary mechanism," Dr. Hilding reported, "is also more or less completely incapacitated in bronchopneumonia, bronchiectasis, and influenzal pneumonia. In 12 fatal cases of the latter which were reviewed, almost every vestige of ciliated epithelium (bronchial tube lining) had been destroyed. Loss of function is doubtless an important factor in the progress of these diseases."

Science News Letter, October 24, 1942

"Smoker's Cough" Is Real

➤ THE PHRASE "smoker's cough" is no idle expression but a real disturbance of certain body functions, Dr. Marvin F. Jones of New York declared at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago.

Best remedy for the condition, Dr. Jones indicated, is six weeks without tobacco.

Smoker's cough is a result of the effect of nicotine on the autonomic nervous system.

"Vital functions are controlled by this largely known and little understood inter-related network of nerves," Dr. Jones said.

Besides digestion, circulation of the blood and the body's heat regulating apparatus, the secretions of the nose, pharynx, trachea and bronchi are under the influence of this set of nerves. The nerves in turn are influenced by drugs, disease, glandular dysfunction, debilitation, injury, physical changes and emotional unbalance. Such influences on the nerves may cause stimulation, depression or paralysis of function.

Cigarette smoking was cited by Dr. Jones as an example of drug action. Cigarettes have a greater effect than cigars or pipes because inhaling increases the contact with the mucous surface through which the nicotine is absorbed.

"The phrase 'smoker's cough' is no idle expression," Dr. Jones declared. "The dry reflex cough and the thick tenacious post-nasal morning collection can definitely be improved by an elimination of tobacco for six weeks. This does not mean sinus treatments and local medications may not give similar relief, but the patients are more apt to stay cured. There are also other causes for the same symptoms so, here, as in all medicine, the cure is only effective if the diagnosis is correct."

Science News Letter, October 24, 1942

Helmets Protect Ears

➤ DEEP HELMETS, which shield the outer opening to the ear are probably the best means of protecting the ears of the infantryman from explosion damage, Dr. H. G. Perlman, of Chicago, stated at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago.

The new style U. S. Army helmets and also those worn by Nazi soldiers are of this type.

Damage to the ear, including deafness, rupture of the ear drum and bleeding from the ear, results from the shock pulse started by an explosion from gunfire or bombs. Dr. Perlman defined a shock pulse as "a sound wave of great condensation and great initial velocity.

"War is literally fought with these shock pulses," he declared.

The ear may be protected from the shock pulse by closing it with the finger or by an ear plug as well as by a covering helmet. In the excitement of battle, men are apt to forget to close their ears with their fingers, and ear plugs may shut out commands or other ordinary sounds on which protection of the soldier's life may depend.

"There are many ways of shielding the head as well as the body from the shock pulse," Dr. Perlman said. "Any wall or partition will act as a shield. A mobile steel plate braced against the ground can shield a man from enormous explosions. Lying in a depression in the ground or even lying flat on the ground is effective because when a shock pulse originates from a bomb or shell striking or entering the ground the greatest energy of the pulse travels upwards and not along the surface of the ground.

"Putting a shield on a field piece or a turret around a naval gun protects the men from the shock pulse originating at the muzzle."

By way of giving greater realism to his report of the effects or explosions on the ear, Dr. Perlman told what would happen if a 200-pound bomb exploded in busy State Street outside the hotel where he was speaking.

"Eighty-five per cent of the middle ear injuries would be due to the shock pulse itself," he stated, "and only 15% would be due to bomb fragments. Excluding other injuries everyone on the street within a radius of 50 feet from the bomb would likely have ruptured ear drums with bleeding from the ear.

"Outside of this radius hemorrhage into the ear drum and myringitis (inflammation of the ear drum) may occur. Among those in the stores facing the street within this radius but shielded from the shock pulse by a wall, door or partition, only 0.5% would have ear injuries."

Science News Letter, October 24, 1942

No Help for Colds

➤ TYROTHRICIN, potent germ-killing substance obtained from bacilli that live in the soil, has been tried with "discouraging" results in sinus disease and infections of the nose and throat of the kind most laymen refer to as colds.

Use of the substance in these conditions and its apparent failure in general to benefit the patients was reported

by Dr. J. R. Lindsay of Chicago at the meeting of the American Academy of Ophthalmology and Otolaryngology.

Tyrothricin is the crude substance isolated by Dr. Rene Dubos, at the Rockefeller Institute, and contains two crystalline substances, gramicidin and tyrocidine. Gramicidin has been hailed as an important new chemical remedy for diseases caused by germs of the gram negative group. Dr. Lindsay's experience with the parent substance, tyrothricin, shows one group of infections for which it is ineffective. Tyrothricin cannot be given by injection, because it must be kept out of the blood stream since it separates hemoglobin from the red blood cells. So Dr. Lindsay used it in the nose, throat and sinuses by spraying, swabbing and dropping.

Science News Letter, October 24, 1942

See Ear Drum Movements

➤ THE ACOUSTIC movements of the human ear drum have been seen and photographed for the first time. Moving pictures showing these movements of normal ears and also of ears of patients suffering from deafness were shown by Dr. H. G. Kobrak, of Gary, Ind., and Dr. J. R. Lindsay and Dr. H. B. Perlman, of Chicago, at the meeting of the American Academy of Ophthalmology and Otolaryngology in Chicago.

Fresh specimens from human cadavers were used. The various parts of the sound conduction apparatus were exposed and the vibrations during the conduction of sound were photographed.

"On stroboscopic illumination," the doctors pointed out, "one sees the acoustic vibrations of the ear as distinct and slow movements."

Science News Letter, October 24, 1942

SUBMARINE VICTIM—This California Murre died while crawling away from the breakers. You can see blobs of thick grease on the bird as well as on the sand.

MEDICINE

Try Immune Serum

In case an influenza epidemic comes this winter, the blood of persons who have just had the 'flu should "be considered" for protection.

➤ IF AN influenza epidemic strikes this winter, the use of immune serum from the blood of the first patients attacked "should be considered" for treatment and prevention and for further studies of influenza prevention, Dr. Joseph Stokes, Jr., of the University of Pennsylvania School of Medicine, declared at the meeting of the Medical Society of the District of Columbia.

Dr. Stokes' cautiously worded advice to his fellow physicians was based on extensive experiments with mice in which relatively small amounts of immune serum protected mice against influenza virus when the protective serum was inhaled by the mice. Somewhat larger amounts of the immune serum were required when the serum was injected. In treatment of the mice, the immune serum had to be given within six hours after infection with influenza virus.

Immune serum, from the blood of persons who have just had influenza, contains substances called antibodies which are defensive forces of the body for fighting off the 'flu virus. Instead of borrowing these defensive forces from someone who has already had the disease, it is possible to build them up in a person's own blood by vaccination with influenza virus. Such a vaccine, Dr. Stokes recently reported, protected 43 out of 44 boys who were directly exposed to influenza virus in an experimental study.

Third method of protection against influenza epidemics described by Dr. Stokes consists in sterilizing the air of hospital wards, school rooms, barracks or similar places where large numbers of people congregate. This sterilization may be done by ultraviolet rays or by spraying propylene glycol vapor into the room. In the studies Dr. Stokes reported, the propylene glycol vapor seemed somewhat more effective than the ultraviolet rays.

Neither of these air sterilization methods, however, can be entirely relied on to stop an influenza pandemic such as swept the world in 1918. The reason, Dr. Stokes explained, is that in pandemics, the travel of the virus through the air may not be the chief manner in which the disease is spread. In pandemics, the disease breaks out suddenly in many widely separated places at the same time. Virus spread through the air is more a factor in epidemics such as those of recent years which travelled across this country in a few weeks.

Science News Letter, October 24, 1942

ORNITHOLOGY

Birds U-Boat Victims

➤ U-BOATS CLAIM thousands of victims never mentioned in the tragic lists of "missing at sea." They are aquatic birds—ducks, gulls and many others—that get their feathers soaked in oil set afloat from torpedoed ships (sometimes, too, from the fuel tanks of submarines destroyed in combat) and either sink from exhaustion or struggle ashore only to die in misery.

This distressing picture of suffering among war's innocents is presented by Roger T. Peterson of the National Audubon Society (*Audubon Magazine*).

Normally, swimming birds' feathers, filmed with the birds' own natural body oil, keep their bodies warm and dry, no matter how cold the water they swim and dive in. But contact with mineral oil breaks this natural protection. Cold water reaches their skins, and if they do not die of chill and exhaustion, pneu-