MEDICINE

Seasickness Preventive

Two drugs, one an extract from belladonna and the other a synthetic, when combined are found in laboratory tests to keep stomach contractions normal.

➤ A COMBINATION of two drugs which acting together may prevent seasickness has been discovered by Captain Stewart Wolf, M.C., A.U.S., in studies at the Ninth General Hospital, U. S. Army, the Boston City Hospital and Harvard Medical School, and New York Hospital and Cornell Medical College. (*Journal of Clinical Investigation,* November)

The drugs are atropine, the antispasmodic drug extracted from belladonna, and prostigmine, the synthetic drug which has been used in treating the muscle weakness disease, myasthenia gravis.

Neither of these drugs would be effective alone. In combination, however, they prevented nausea in humans even when gagging was induced by touching the throat with a tongue depressor. In other tests, irrigation of the ear canal with icy cold water for five minutes failed to induce nausea when these drugs had been given, though without the drugs, the human guinea pigs, one of whom was Captain Wolf himself, rapidly became nauseated by this ear irrigation. Rhythmic rotation of the head while the eyes fixed a spot on the ceiling also failed to induce nausea after the atropine-prostigmine combination, but did induce nausea without it.

The drugs prevent nausea, apparently, by blocking inhibition of stomach contractions. In the tests, Captain Wolf had found that the first effect on the body of nauseating stimuli was to stop the normal activity of the stomach. This inhibition of stomach activity occurred within one minute of application of the nauseating stimuli and considerably before the skin grew clammy, the eyes began to move rapidly and involuntarily and the person felt dizzy and nauseated.

It was to learn whether nausea would occur without the stopping of stomach activity that Captain Wolf tried the effects of atropine and prostigmine. The drugs did keep the stomach contracting at the normal rate and no nausea was felt, from which Captain Wolf concludes that the drugs might be used to prevent seasickness.

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ORDNANCE

Reducing Gun Recoil

Mounting of 75-mm cannon in airplanes may herald revolution in artillery, if same rebound-eliminating method can be used on other guns.

➤ A REVOLUTION may be impending in artillery, if the still-secret method of eliminating or greatly reducing recoil used in the new 75-millimeter airplane cannon is applicable to guns used on the ground or on shipboard. It may portend enormous increases in either caliber or power of naval guns. At the very least, it should mean the disappearance of the clumsy-looking, bulbous muzzle brakes that have appeared recently on high-velocity field and anti-tank guns, especially in the Russian and German services.

One of the most difficult problems with which artillerists have to deal is recoil. When a gun is fired it pushes itself backward as hard as it pushes the shell forward. The only reason why it does not go backward as far as the shell goes forward is that it is so much heavier. Before the invention of modern recoil-absorbing mechanisms about 50 years ago, guns used to jump backward several feet when they were fired. Of course that threw the sights off the target, and the gun crews would have to push them back into position and aim them all over again.

Even now, it is necessary for the trail of a field gun to be braced firmly into the earth by means of a broad spade at its end, and for naval and harbor-defense guns to be bolted securely to deck or concrete base. Firing a salvo directly abeam from a battleship's guns will cause the whole huge craft to heel over several degrees. If the new American heavy-caliber aircraft guns are mounted on a recoil mechanism transferable to these other classes of ordnance, it should be possible to achieve far greater accuracy of fire with present weapons, or to increase muzzle energies very greatly without sacrifice of present firing qualities.

During the first World War, an attempt was made to achieve a recoil-less gun by building a piece that "shot both ways." It had two barrels pointed in opposite directions. The breech mechanism was in the middle. The cartridge was double-ended; it had a shell in the "business" end, and to absorb the recoil it had an equal mass of fine lead shot in the other. The powder charge was sandwiched between. When fired, the shell went forward normally, and the shot was "kicked" out of the rear barrel.

This gun was tested on airplanes and light surface craft, and worked fairly successfully, at least in places where the magnified shotgun charge at the rear would fall harmlessly and not shoot up supporting troops or helpless populations in towns below. This gun has never been revived.

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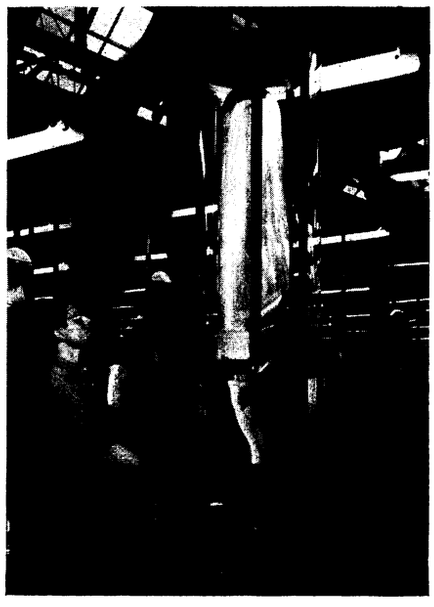

***BANDBOX FOR PROPELLERS—** This transparent plastic shield protects the propeller blade from air drafts which make the delicate checking of the balance of the blade a time-consuming process. The shield is made of Lumarith produced by the Celanese Celluloid Corporation.*