

MEDICINE

Stomach Ulcer Cause

Experiment with wetting agents that reduce surface tension of watery solutions shows that when digestive juices penetrate stomach lining, self-digestion occurs.

► ULCERS in the upper part of the digestive tract are indicated as a consequence of the stomach's "digesting itself"—a classic and much-debated paradox of physiology—by experiments of three University of Kentucky researchers, Dr. R. L. Driver, Dr. G. S. Dozier and Dr. H. C. Denham (*Science*, Aug. 13). So long as normal health prevails, the acidified digestive juices of the stomach cannot penetrate the lining, but if something happens to make it more permeable, the damaging self-digestion begins, causing the acutely distressing internal "raw" spots.

In their experiments, the three physiologists introduced several well-known wetting agents, or substances that reduce surface tension of watery solutions, into the upper intestines of laboratory animals, together with an acidified solu-

tion of pepsin. Ulcers developed in a very high percentage of cases. In the control experiments, where pepsin and hydrochloric acid were introduced separately and without the addition of wetting agents, there was no ulceration.

Four wetting agents were used: calgon, pinacol, hexylresorcinol and methyl salicylate. They all make the mucous lining of the digestive tract more permeable, though each acts in a different fashion to bring this about.

The three Kentucky scientists call particular attention to the action of calgon, which is a water-softener; that is, it takes calcium ions out of circulation.

"Calcium," they state, "combines with lipids and proteins to produce a hardening and protective effect on the mucosa. It is not inconceivable that the beneficial effects of milk in the treat-

ment of ulcers may be attributed in part to its calcium content, and it would seem that the fortification of milk with a calcium salt is indicated."

Science News Letter, August 21, 1943

MEDICINE

Surgeon Uses Special Tub In Treating Severe Burns

► A NEW surgical tub, expected to reduce greatly the danger of infection and contamination in the treatment of burns and wounds, has been developed by Dr. Neal Owens, professor of clinical surgery (plastic surgery) in the Tulane school of medicine. The tub, which was built in Birmingham, Ala., was demonstrated by Dr. Owens to the staff of the South Highlands Infirmary, there.

"Designed to offer all necessary requirements for the proper treatment of burns and infected wounds, the tub avoids the usual contamination encountered with our present equipment," Dr. Owens pointed out.

The tub is shaped to accommodate a person lying on his back with his arms spread perpendicular to his body and his legs slightly apart. It has small metal supports pointing upward from its rim. The patient does not lie in the tub, but is suspended on sterile canvas straps in a manner which permits thorough cleansing of the entire body and subsequent application of a dressing without the usual contamination.

Dr. Owens said he found many years ago in the treatment of burns that the normal facilities for the care of such patients were inadequate. About a year ago he set about to design equipment which would make the patient with extensive burns or wounds more accessible for treatment.

"In treating the patient while suspended above the tub, one can thoroughly examine the wound and evaluate its progress more accurately. Because of the special features of the tub it should be a valuable aid in developing a more suitable type of treatment in cases of established infection," Dr. Owens predicted.

Science News Letter, August 21, 1943



NEW PLANT—A big Douglas C-54 cargo transport is shown being finished just inside the door of the new all-timber assembly plant just constructed at Chicago by the Austin Company. By use of laminated timber construction and in other ways, it is estimated that more than 30,000 tons of steel and important metals were saved in putting up this plant. Notice the great beams that look like steel girders.

GENERAL SCIENCE

17-Year-Old Youths Go to College for Army

► FIRST group of 17-year-old boys selected to prepare for the Army specialized training program have started study at 11 colleges under War Department auspices. Plans are under way to add 12