

of their larger size and irregular shape.

The microcrystals of sulfathiazole can get to work faster at their job of stopping germ invasion because they dissolve more rapidly and do not clump or cake.

Favorable results with the use of these microcrystals are reported in 30 wounds resulting from injury, 57 infections such as abscesses and carbuncles, in burns and in 19 patients who had abdominal operations that might have been complicated by peritonitis.

Science News Letter, May 30, 1942

Cures 'Flu Meningitis

FIVE children under four years of age suffering from usually fatal influenza meningitis were promptly and dramatically cured by sulfadiazine treatment, Dr. Wallace Sako, Dr. Chester A. Stewart and Dr. Joel Fleet, of New Orleans, report in the same issue of the *Journal of the A.M.A.*

Two others getting the treatment died, one apparently as a result of stopping the treatment too soon and the subsequent development of chickenpox, and the other because of cisternal puncture to remove spinal fluid.

Science News Letter, May 30, 1942

AGRICULTURE

Hemp Being Grown in U. S. As War Cuts Off Imports

See Front Cover

WHEN they hang Adolf Hitler on a sour-apple tree, there'll be a good rope of American-grown hemp ready for the job. After a lapse of a couple of generations, hemp is again being cultivated in the United States, to make good the cutting off of our Asiatic import sources for cordage. You can't run a Navy, not even a modern steel-and-steam Navy, without hemp rope. The Army needs a lot, too, and war-essential industries also have their hemp demands.

The U. S. Department of Agriculture has bought and distributed about 3,000 bushels of hemp seed, enough to plant some 350,000 acres. Most of the planting will be done in Kentucky, where hemp cultivation started in 1775 and has survived on a small scale ever since. Hemp will also be grown in Wisconsin, Minnesota and Illinois. The acreage may be expanded into other states in 1943.

While the hemp seed was in the warehouses it was guarded by soldiers. Hemp is the source of very troublesome narcotic drugs.

Science News Letter, May 30, 1942

PHYSICS

Liquid Flow Through Pipe Assumes Five Different Forms

Three Kinds Previously Observed Declared Not Enough; Other Types Occur When Velocity Is Very Low or High

THE FLOW of oil, gasoline and other liquids through a pipe assumes five different forms as the velocity is increased, instead of only three as generally supposed, according to a communication to the British journal *Nature* from Alfred H. Nissan, Department of Oil Engineering and Refining of Birmingham University.

The three kinds of flow previously observed are the smooth, the critical and the turbulent. These are assumed in succession as the velocity of flow is increased. For smooth flow the frictional loss is low; for turbulent flow it is high. In the short critical range between, the loss changes rapidly from a low to a high rate of increase with velocity. The flow here is partly smooth, partly turbulent.

These three stages can be illustrated

by water flowing from a tap, by turning the tap on gradually.

Mr. Nissan, however, declares this classification to be an over-simplification. He finds two other distinct types which might be called the sub-smooth and the super-turbulent.

When the velocity is very low, the frictional loss increases with the velocity at a lower rate than for smooth flow. This sub-smooth type occurs when oil, gas or water seeps through porous layers in the earth.

When the velocity is very high, certain sound waves are produced which further increase losses and make a fourth type.

The usual methods of calculating flow fail in these cases, he says. They give results too low or too high, which may sometimes be a serious error.

Science News Letter, May 30, 1942



CRUSHING THE STRAW

After the hemp straw comes from the drier, it is fed into a hemp break which thoroughly crushes it. Then the hemp is cleaned by beating and brushing in a hemp scutcher. This process, which removes the woody, pithy portion, called hurds and sends the fiber out clean, is shown in the picture on the front cover of this week's SCIENCE NEWS LETTER. Both photographs are official pictures of the U. S. Department of Agriculture by Forsythe.