

Oregon have generally been the states with the highest incidence, with the adjacent states having next highest rates.

Outstanding exception to the rule of low smallpox incidence in the rest of the country is Indiana. During the past

20 years this state has had about four times the number of smallpox cases recorded by all of the New England and Middle Atlantic States plus Delaware, Maryland and the District of Columbia.

Science News Letter, July 18, 1942

CHEMISTRY

Possible Rubber Substitutes From Soybean Oil Tested

They Don't Have Quite So Much Stretch and Bounce As Real Rubber, But Will Serve Many of Its Purposes

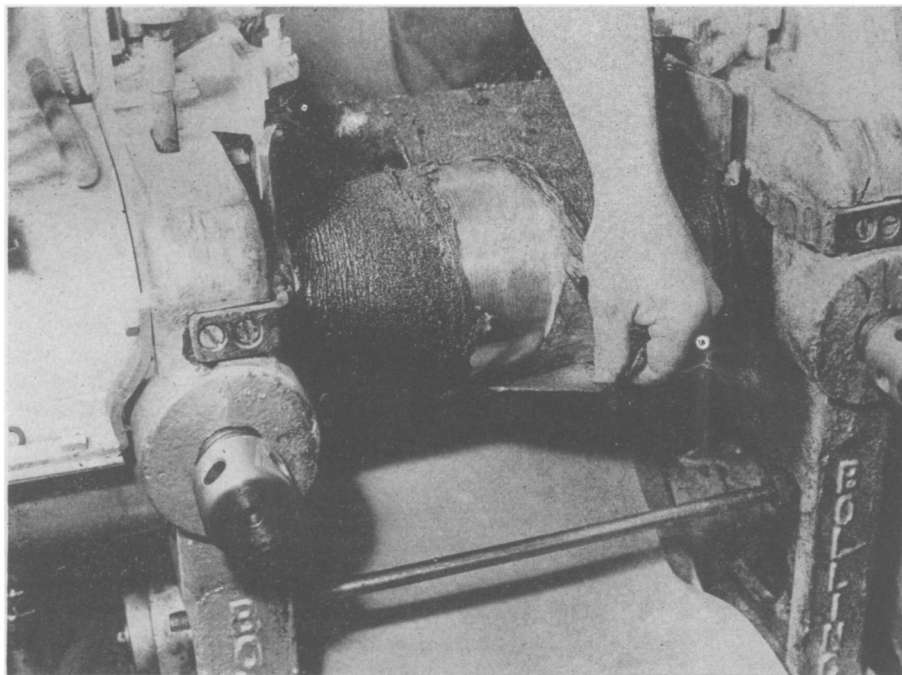
RUBBER-LIKE substances, with at least part of the stretch and bounce of real rubber, have been prepared from soybean and corn oils at the Northern Research Laboratory of the U. S. Department of Agriculture at Peoria, Ill. Some of these products will stretch 200% or more and return to original shape; they show tensile strengths of about 500 pounds per square inch. Natural rubber averages a 600% stretch, with a tensile strength of 3,000 pounds or more.

The substitutes are thus only approxi-

mations of real rubber in these respects. However, they may be able to do part of rubber's job in such things as water-proofing, resistance to abrasion and cracking, etc. In these ways they may be able to eke out the country's short supply of natural rubber.

Up to now, most of the research has been on laboratory scale only, but some of it has proceeded to the pilot-plant stage. If results there are still promising, the next step would be commercial trials.

Science News Letter, July 18, 1942



IT STRETCHES

This is not rubber but it does have some stretch and bounce. It can be used for such purposes as water-proofing or resistance to abrasion and cracking. Great advantage is that it is made of soybean oil.

GEOLOGY

Russia's Frozen Expenses Have Lessons for U. S.

PERPETUALLY frozen ground covers 40% of the area of the Soviet Union. This is more area than the vast expanse of the whole United States. Alaska, just across the way from Siberia, has similar territory where the soil is icebound the whole year round. But Alaska has not been developed in these frigid regions to the same extent that Soviet scientists, engineers and developers have established colonies and industrial enterprises and mines on the frozen ground.

War brings added interest in the permanently frozen areas of the North American continent. The new defense highway from the U. S. A. through Canada to Alaska has to cross some such ground. Engineers at work on this project need all the information and help that can be given them. They need to know how to handle this ground that always has a fresh supply of ice and water in its depths. There are engineering tricks that can be used to keep houses and other structures from being damaged by the failure of the ground beneath. Often building upon such a foundation is worse than building on sand.

One of the Soviet's leading authorities upon frozen ground is the President of Leningrad University, Dr. K. I. Lukashev, a geologist who is deputy chairman of the Soviet Government Purchasing Commission in Washington. Although primarily engaged in getting American supplies to the Soviet's war effort, Geologist Lukashev has discussed mutual problems with American geologists. Russian technical literature, including an authoritative book by Dr. Lukashev himself, have been made available for American use.

For at least 300 feet, perhaps deeper, the soil is frozen in some places in both the American and Asiatic arctic regions. How long the ground has been frozen is not known, since in the more northern regions the ice age was continuous. The recurrent sweeps of great glaciers, by which geologists are able to do some dating in northern U. S. latitudes, are lacking. Geologic time is less important in wartime than immediate engineering problems. As geologists learn more about this icy area, there will undoubtedly be more accurate details about the happenings in the hundreds of thousands of years of recent geologic time, millennia before man came to the western world.

Science News Letter, July 18, 1942