SCIENCE NEWS

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WATERPROOFING SOIL

THE development of a chemical which may end muddy streets and country roads, and prove a time-saving aid in construction work where mud may cause delays, has been announced by the Hercules Powder Company. Designed to prevent mud by making soil waterproof, this resin compound has already been successfully used on roads, airplane landing fields and other construction projects here and abroad.

Areas treated with the resin compound may be used for construction traffic immediately after rain without danger of bogging down or rutting the surface. A car splashing through a puddle on a treated dirt road will kick up dry dust—not mud—behind it.

By mixing the resin compound, called Stabinol, with the top few inches of soil, a waterproof surface is obtained. It will not allow the water to seep through the treated soil and turn it into mud. It also resists the rise of moisture from below by capillary action. The water either is drained off or evaporates.

The product is a combination of a specially treated resin and other chemicals in the form of a dry powder suitable for easy mixing with the soil. The treated soil looks just like the original dirt.

Only a small amount of the resin compound is required, usually about one per cent. of the total soil to be treated, and the material itself is quite inexpensive, costing well under ten cents a pound. Although the amount varies with the composition of the soil, on the average about five pounds is needed per square yard. The soil stabilization it is believed will last for years.

It does not increase the load-bearing capacity of soil, but prevents the soil from getting wet and thereby losing its strength. The material is not a soil binder and should be used only with soils that have sufficient natural bonding material. It has been found effective with a wide range of soils, and particularly with those having relatively high silt or clay content.

Several types of resin stabilizers, developed by Hercules Powder Company during its investigations on soil stabilization, have been used to treat roads and streets, airplane landing fields and parking lots. Vinsol, an all-rosin product which made the soil water-repellant, was first tried. Other resin products, chemically treated to give the soil stabilizing characteristics also have been tried.

Stabinol is not offered as a "cure-all." Before soil can be treated, samples must be analyzed to determine whether the treatment will be effective and the proportion needed for satisfactory results. The company maintains a soil laboratory at Wilmington for this purpose.

ITEMS

PRIORITIES for science laboratories for facilities for assisting the war effort have now been amended and clarified by the War Production Board. Procedure for obtaining controlled materials is simplified. A new procedure has been set up for obtaining certain essential materials referred to in previous orders as Class A products. Previous restrictions on the quantity of aluminum that may be obtained are removed. Priorities assistance may be used for laboratory construction jobs costing not more than $500, the cost of labor and equipment not included. Hand tools and safety equipment bought by a laboratory for resale to its employees may be obtained under the amendments. Priority ratings assigned by the War Production Board to assist science laboratories may be used to get materials for development of products designed primarily for future civilian markets only if such activities will be carried on without diverting manpower, technical skills or facilities from war work.

AN announcement that capsules for prevention of seasickness and other kinds of motion sickness will be generally available to U. S. Army medical officers this spring appears in the *Bulletin* of the U. S. Army Medical Department. Officially known as Item 12960, Motion Sickness Preventive, U. S. Army, six capsules in a box, the preventive is expected to be useful in amphibious operations and transportation of personnel by sea and possibly also for prevention of air sickness. At least 50 per cent. reduction in occurrence of motion sickness can be achieved, it appears, from tests of the preventive that have been made over several months in continental United States and from limited tests under actual field operations. The ingredients of the preventive are being kept secret, but it contains a sedative. When used in accordance with the directions printed on the box, it has no significant untoward effects. Because of the sedative in it, however, excessive use may cause drowsiness with resulting decrease of physical efficiency.

SILVER powder, in a new ceramic type composition for use as a coating on electrically non-conductive materials such as glass and wood, gives the surface high electrical conductivity and low electrical resistance. The new composition is applied by brushing, dipping or spraying, and dries in the air without heat application except in special cases. The new material, developed by E. I. du Pont de Nemours and Company, will be of value particularly in electrical condensers and other units employed in electric circuits. Several different forms are being made, each designed to meet the varying requirements of different base materials and degrees of adherence and film toughness. All are dull metallic gray in appearance, and are little affected by aging.

ALASKA'S known mineral wealth is immense; it is suspected that the riches yet to be discovered are still greater. Under the spur of war needs, diligent surveys are now under way, according to Dr. John C. Reed of the U. S. Geological Survey. During the past year, 39 field geologists worked in the great territory, under the direction of five supervisors, each experienced in the region under his direction. Activities included the study of deposits of molybdenum, zinc, iron, copper, chromium, nickel, quartz crystals, coal, tungsten, asbestos, graphite, tin and mercury.