Do You Know?

Tin-zinc alloys have been developed for coating steel to prevent rust.

In China only military *vehicles* can be green in color, and only fire equipment painted red; hospital cars and ambulances are white.

When rain wets *coal* in transit in coal cars, a sulfurous acid is sometimes generated that corrodes the metal sides of the cars.

Scrap metal is still wanted; American steel mills require over 2,000,000 tons a month of scrap iron to mix with an equal amount of pig iron to make structural steel.

Hazlenut bushes can be grown as ornamental shrubs in many parts of the United States; they are easy to grow, have little preference to soils, and five-year-old bushes often yield three quarts of shelled nuts.

TINY FIBRILS—Ground wood pulp structure revealed under an electron microscope.

PLANT PHYSIOLOGY

Wood Fibers Break Into Tiny Fibrils

➤ WOOD FIBERS, from which paper, explosives and lacquer are made, break into thin fibrils of rod-shaped particles as they are worn away. Fibers such as ramie and rayon, on the other hand, tend to split lengthwise at first, then break up in a haphazard manner when ground in water.

To study just how fibers disintegrate, Dr. P. H. Hermans, director of the Institute for Cellulose Research, Utrecht, Netherlands, ground several varieties in water. He then photographed the worn-down fibers with an electron microscope.

Only in the case of wood pulp are details of a fine structure inside the finest fibrils more or less distinctly visible, Dr. Hermans reports in the *Textile Research Journal* (Nov.).

Science News Letter, January 25, 1947

GENERAL SCIENCE

Mechanizing Exploration

➤ MECHANIZED exploration of the Antarctic may become possible as result of tests to be conducted by the Navy's expedition under the technical direction of Rear Adm. Richard E. Byrd, the Navy said.

Equipment for compacting snow for the use of vehicles and methods for preparing vehicles for use in the snow are scheduled for tests. The equipment was designed by engineers of the Navy's Bureau of Yards and Docks. Other experiments to aid overland travel in Antarctica will include determination of the differences in the properties of snow and ice at the extremely low temperatures of the polar regions compared with their properties in the temperate zones.

With the results of the experiments, engineers hope to design vehicles to replace the traditional dogsleds used in polar exploration. The present Byrd Expedition's attack on the problem of land travel on the wastes of the Antarctic will include devices for compacting the snow for vehicles to operate on top of the cold, white surface.

Drier and more powdery than the snow that falls in the United States, the polar snow becomes a blinding swirl dangerous to a traveler from the slightest gust of wind.

Some of the scientific problems to be tackled with special instruments on the current expedition are load tests, penetrometer readings, compression, bending, punching and shear tests of the ice or snow.

Two variations of a German model slat snow roller, a standard sheepsfoot roller, groups of pontoons and snow drags will all be tested for use in compressing the snow for travel.

For possible use on airstrips, a snow surface heater has been designed to convert the snow into ice. A tractor pulls a compressor and heater on toboggan runners with a fuel oil tank mounted on top. By melting the snow so it can form ice, this equipment is expected to provide a fast method of preparing the surface of an airstrip with solid ice.

Lengths of wood, operating on the same principle as snow shoes, will be tried for surface transportation. They will be used on tractors to distribute the weight on the snow surface.

Jeeps and other vehicles to be used in Antarctic travel will profit from wartime designs for enclosures. Use of plexiglass, windshield wipers and asbestos insulation will protect polar travelers.

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