

CHEMISTRY

Cold-Rubber Footwear

Tire-tread tests have shown this rubber to be longer wearing and more resistant to abrasion and it is believed it will show the same properties in footwear.

► **LONG-LIFE** footwear is expected with the use of the new synthetic "cold-rubber" that is predicted will double the life of automobile tire treads and is already in use on a limited number of passenger cars. The cold-rubber footwear is now being tested in Watertown, Mass., by the Hood Rubber Company, a division of the B. F. Goodrich Company, Akron, Ohio.

This rubber, polymerized or mixed at temperatures much lower than those used in the better-known synthetic rubbers, has been found to be longer wearing and to possess greater resistance to abrasion in tire-tread testing. Trials indicate that it may show the same properties in footwear.

A prediction that 75,000-mile tires will be available in the near future was made recently by Dr. Charles P. Fryling, of the Phillips Petroleum Company, Phillips, Texas. The reason for the exceptional strength of cold rubber, he said, seems to be the regular shape of its molecules. Rubber molecules he described as like barbed wire if they could be sufficiently magnified. In cold rubber the barbs would be more or less uniform.

Behind cold rubber is much wartime and later research on the part of several uni-

versities and the rubber industry. In the process, the rubber is made at freezing or sub-freezing temperatures. In the ordinary

MEDICINE

Conquest of Smallpox

► **SMALLPOX**, once the most feared of all diseases in western civilization, today is known to most Americans only as the reason for being vaccinated, thanks to an English country doctor who was born two centuries ago this month.

Son of an English clergyman, Edward Jenner was born at Berkeley, England, May 17, 1749. After receiving his medical training in London, the young physician returned to his birthplace to practice. This decision may have been important to his great discovery.

While smallpox claimed a continuously high toll, striking the rich and poor alike, Dr. Jenner and others noted that one group of persons seemed to be immune. They were those, notably dairymaids, who had contracted the milder disease, cowpox, from cattle.

production of Buna S (GR-S) the rubber formation in the mixture used takes place at a temperature of 122 degrees Fahrenheit.

The cold rubber is made from the same mixture, chiefly butadiene and styrene, but a different catalyst is employed. In rubber making a catalyst is an oxidizing agent that promotes making big molecules out of small ones. One cold-rubber catalyst is cumene hydro-peroxide, which replaces the potassium persulfate in the ordinary synthetic rubber process.

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It was May 14, 1796, 153 years ago, that Jenner inoculated an eight-year-old James Phipps with cowpox. In July, he again inoculated the boy, this time with virulent smallpox virus. James Phipps did not contract smallpox, and vaccination was a proven weapon against the dread disease. Our word "vaccination" is derived from "vacca," a cow.

No unsung hero, Dr. Jenner received huge (for those days) awards of money from Parliament and world-wide recognition. His name is said to have swayed Napoleon and the King of Spain to release prisoners.

From the then-young United States, Jenner received enthusiastic tributes by President Jefferson and the president of the Boston Board of Health, Paul Revere.

Less well known than his dramatic experiment which made possible the conquest of smallpox is the fact that Jenner may have been the first to call attention to allergy as it occurs in an infectious disease.

Today, in an era of accelerated advances in medicine, the achievement of an English clergyman's son born two centuries ago is still a major weapon in man's war on disease.

Science News Letter, May 21, 1949

VETERINARY MEDICINE

Cows Should Also See Dentist Twice a Year

► "SEE your dentist twice a year" is as good advice for Bossy as it is for Bossy's boss, declared Dr. L. M. Hurt, president of the American Veterinary Medical Association in Chicago. Cows are often benefited by dental attention, and return profit on the investment in better milk yield, he pointed out.

A typical and serious bovine dental ailment described by Dr. Hurt is known as "scissor-mouth". This is a condition wherein the lower jaw is considerably narrower than the upper, making it impossible for the poor animal to eat comfortably unless her teeth are dressed.

Science News Letter, May 21, 1949



MEDICAL HERO'S ANNIVERSARY—Vaccination, discovered by Edward Jenner, is protecting us against once-dread smallpox 200 years after the famed English physician's birth.