

# RESILIENCY

and

## Sir Walter Raleigh

ready for compounding—a critical stage in the course of manufacture as here the color of a summer bathing cap, the hardness of hose, the spring of elastic and other important matters are determined. It all depends upon what is added, in what degrees and under what conditions—so it comes that only expert chemists are capable of handling this department. They were so expert that I couldn't understand them when they told me what went into the mixers to produce say "comforts," or tennis shoe rubber, or any line of rubber goods whatever. I just looked bright when they mentioned "vulcanization"—and hunted it up in the dictionary after.

"Vulcanization," says that explanatory volume, "is the process of treating crude India rubber with sulphur at a high temperature, thereby increasing its strength and elasticity, yielding, according to the degree of heat and the amount of sulphur used, either soft or flexible rubber or the hard form called 'vulcanite' or 'ebonite.'" Before it was invented by Charles Goodyear, in 1839—rubber got soft if exposed to the heat and a MacIntosh beside the oven perished. This treatment applies to all rubber, practically, and is one of the big "finds" of commercial science. Additional elements go into rubber, according to the goods to be manufactured. There are, some five hundred and fifty formulae and all must be mixed to certain standards.

When thoroughly milled in the automatic mixers, the now homogeneous compounds are first seasoned for days in a storeroom and transferred to the tubing machines or to calendars, rollers of various sizes; for rubber ready for final "making" is in one of two forms, either sheets or tubing. The rubber is warmed on the hot rollers and worked out on to a carrying fabric, for raincoats, carriage-cloth, officers' coats, overshoes, firemen's clothing or ponchos, according to the lines of goods in making. Or, it is turned out into sheets for shoe-making, door-mats, balloons, and many

other practical uses. Or, it is shaped on the tubing machines for hose, from the garden variety to the famous "Keystone," a wax and gum treated fire hose, in praise of which the Grand Trunk Railway, the Canadian Pacific, the Grand Trunk Pacific Railway, and the chiefs of the Montreal and other Canadian fire departments have all indulged in flights of panegyric. The man who said so is the big athletic son of General Sales Manager Jamieson, whom you have probably seen on many a football field, and who now keeps an eye on the mechanical goods department by way of occupation—as gaily as though it were also a game with a tendency to increase one's vocabulary. He beamed as he told it amidst the coils—like an up-to-date Laocoon made happy.



Tapping a rubber tree for the "latex"—a method employed on a Far East plantation.

The tree as it grows in Brazilian forests, the original home of all commercial rubber.

a part of rubber manufacture. Neither did the employees seem to mind it.

I met some agreeable men at the office—true rubber gentlemen, with buoyant dispositions, "SPRING STEP" heels and, in all probability, "NOBBY TREAD" tires on their motors. Once, when my papers threatened to scatter, ten rubber bands were at my service. I say "ten" but mind, it was elastic. What I mean is, courtesy wasn't wanting and every possible attention was extended to help me get correct and lively copy.

Before starting out to observe the stages through which all rubber must pass in its manufacture, whether it be intended for toy balloons or for part of the apparatus of the diver, I was introduced to the "Para Biscuit,"

the form in which crude rubber arrives from its natural home in the forests of Brazil. It comes in another rosy form from its second adopted home in Ceylon, and the Malay States, where immense plantations have been developed from Para rubber seeds. The "biscuit" is a dusky earth-colored gum ball, much the size and shape of a football, but a solid mass except for the middle, where the stick was, that helped the juice to harden. The natives produce these marketable biscuits by means of a smoky fire of palm-nuts, over which the blade of a paddle is extended, the handle being turned while a stream of latex is slowly poured from a calabash, held over. The gum thus coagulates in layers as I saw in the half-ball they gave me to examine, in the crude rubber department of the factory.

Congo natives, as my informant darkly hinted, dispense with all these formalities of drying and get the rubber ready for market by simply smearing the juice on their skins until it is hard, when they rip it off and pack it. I smelled a case of this scrappy Congo—that is to say I definitely sniffed it, for all crude rubber "smells to heaven"—and I think it was after this that I enjoyed the naphtha.

You will like to know that the first operation in the manipulating of crude rubber for use is washing. The substance is soaked in tanks of water and then transferred to an automatic washer which grinds it to a pulp, dashes jets of water through it and mills it out in long and crinkly tissues.

The process of drying naturally follows, the crinkly tissues being taken from the washer and hung on frames in a vast "drier," like so many dangling "Golden Fleecees." They are golden in that they stand for wealth; for in just one room, like a draughty oven with its coil of live steam pipes at one end and its big exhaust fan at the other, I saw a quantity of rubber drying out which was worth two hundred and fifty thousand dollars. There were many shades and a number of grades—one being "chicle," the origin of "chiclets."

When thoroughly dried the rubber is carefully examined, and any remaining impurities extracted—pincers being used in the operation. When picked quite clean it is



A few of the applications of rubber to uses familiar to every housewife—all of which items and numerous others are at their best as Made in Canada.

All hose are shaped on the tubing apparatus and then run into a large oven known as a "vulcanizer," and baked in the right degrees of heat to "fix" them. Certain of the sheet rubber manufactures are vapor-cured after the final making—for instance, those dainty bathing bonnets, which are one of the chief delights of the feminine "dip."

Hot water bottles are also made "raw" and afterwards cured in a vulcanizing oven.

No other factory in Canada puts out hot-water bottles, in spite of the fact that they are used so generally in our hospitals as well as in our households. The first-grade bottle—THE "DIAMOND"—made at this factory has warmed the feet of Queen Victoria and also of her successor,

Queen Alexandra, if one may mention queens without their stockings. The creator of the stock in 1897, sent a sample to a nurse of the Royal Household—whence the "DIAMOND'S" use at Windsor Castle. The brand is now the recognized standard in hot-water bottledom. It carries a two years' guarantee, but has been known to stand continuous wear for over eight years.

I had only begun to get over the ground when the factory whistles shrieked that it was lunch hour. According to Trotty Veck's experience, "Nothing is so regular in coming around as dinner-time and nothing's so irregular as dinner." And a journalist, busy exploring factories is apt to subscribe to the observation when tempus starts to fugit and food is far. However, this time, a lunch at

the factory—a "regular" lunch—made a pleasant intermission, and gave me an inside view of life at the plant. The heads of the different departments sat down and a few engaging stenographers also—who gravitated to seats beside my escort, "Ye Editor," who carved and dished and jested, and was, obviously, everybody's favorite.

After lunch came another excursion through courtyards, where deep-chested horses and heavy waggons combined to make a clatter on cobbles, another threading of mechanical labyrinths and I reached the new department of Women's Raincoats. It took some study to "size it up"—much more than Mr. Fedderman, the manager of it, required to "take my measure" for a raincoat, which he did as a sort of grand finale to his most illuminating demonstration.

That garment, by the way, is a warm Scotch tweed, rubberized throughout and fashioned smartly. The style "Duchess" suggests its design. It has cape sleeves, pockets, and an elegant storm collar—and is the envy of my feminine connection.

I was first introduced to the unproofed textures—tweeds, cashmeres, gaberdines, vicunas, oxfords, serges, silks, paramattas, etc.—from which waterproofs are manufactured. No other Canadian rubber factory possesses the equip-

ment to gum these textures. The firm produces two classes of proofed goods—first, single textures with rubber on one side, and, second, double textures, with gum between; and great mechanical rollers do the coating and chemicals make the fabrics rain and spot proof. Two hundred and twenty-five kinds of cloth were ready on the shelves for immediate use.

After the proofing, the garment was "made." I looked over the shoulders of designers busy evolving styles to beat the "Duchess." I saw a roll of material measured, automatically. I observed the cutters whose keen little instruments, nerved by electricity from somewhere, went through goods laid a dozen-ply deep, without the slightest jog or hesitation. And then the "cementers" entertained me with their fingers crooked to hold the cement which

AT YOUR SERVICE

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The enormous factory or settlement of factories of the Canadian Consolidated Rubber Company, Limited, Montreal. This is the great headquarters of the system which has twenty-eight branches in Canada.