

built in the time lost each year by workers with broken bones.

As the limb fitted with a Stader splint can remain in use, the joints do not stiffen, the muscles do not become weak, and the blood, circulating more freely, can bring a richer supply of repair materials and thus speed up the knitting of the bones. Usually a fracture of the two bones of the lower leg means five or six weeks of traction treatment, with wires and pulleys, and from five to fourteen weeks more in a plaster cast. After that there is generally another two or three months of restricted action, while the weakened, flabby muscles are slowly brought back to normal.

But patients with such fractures seldom have to wear the Stader splint longer than nine weeks. When it is taken off, there is no dreary period of rehabilitation. As the patient has been walking or using his arm most of this time, the muscles are strong and able to carry on as usual.

Often the time wasted by a fracture goes far beyond the period of healing. Doctors have long been troubled by the mental effects of months in a hospital bed. Gradually a man with a slow-healing leg fracture loses his interest in the outside world, and takes on the resigned attitude of a permanent invalid. Sometimes it is a full year after leaving the hospital before he arouses himself enough to get another job. A patient able to leave his bed within a few days escapes this mental hazard.

This new method may be of immense benefit in a battle or a blitz. Patients with legs slung from wires or encumbered by plaster casts cannot quickly be moved to safety. From Bataan comes a story of Medical Corps men cutting traction wires and ordering soldiers with broken legs to get under the beds when Jap fliers bombed the hospital. But patients wearing the Stader splint can easily get away, in many cases under their own power.

According to a report by the Surgeon-General, in the last war, nearly one-third of all days lost from disability involved fractures. Over 46 per cent of discharges due to disability were the result of broken bones; the days lost for which fractures were responsible reached the staggering total of 5,125,220!

Because a veterinarian wanted, years ago, to make pet dogs more comfortable than was possible with the usual casts and splints, we now have a new weapon against suffering in peace and loss of time and men in war.

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### Not Always Latex

➤ "LATEX" and "rubber" have come to be practically synonymous in the minds of many persons. Any plant with milky juice is apt to be regarded as the grand solution to all our rubber problems. Contrariwise, any plant that doesn't "bleed white" when you cut it is dismissed as hopeless so far as rubber is concerned.

Nothing could be farther from truth. Some plants with milky sap, like dandelion and poppy, contain no rubber at all, or so little as not to count. Milkiness is not necessarily an indicator for rubber, but merely the mark of an emulsion, that is, of a liquid with millions of minute droplets of some other substance, like an oil or a resin, suspended in it. Common cow's milk is an emulsion: globules of butterfat and other substances suspended in watery whey. Non-rubbery plant latexes usually are emulsions of resins, which are exactly what a tire-maker doesn't want.

Wholly without latex are several of the plants now regarded as most promising alternative sources of natural rubber, notably guayule, kok-sagyz, rabbit-brush and goldenrod. Instead of being emulsified as minute droplets in a watery medium to form a latex, the rubber in these plants is embedded as small solid particles or shreds in the living tissues themselves.

Extracting rubber that occurs in this form is quite a different problem from that presented by the latex-producing group of rubber plants. Guayule and kok-sagyz (the only ones at present used on a practical scale) are harvested as whole plants, which are dried and then ground down to an impalpably fine pulp in pebble mills. The rubber particles are then separated out of this

## ● RADIO

*Saturday, November 21, 1:30 p.m., EWT*  
"Adventures in Science," with Watson Davis, director of Science Service, over Columbia Broadcasting System.

Charles R. Reed, senior meteorologist in charge of Des Moines Weather Observatory, will discuss "Bumper Crop Weather."

*Tuesday, November 17, 7:30 p.m., EWT*

Science Clubs of America programs over WRUL, Boston, on 6.04, 9.70 and 11.73 megacycles.

One in a series of regular periods, over this short wave station to serve science clubs, particularly in the high schools, throughout the Americas. Have your science group listen in at this time.

*Monday, November 16, 9:15 a.m., EWT; 2:30 p.m., CWT; 9:30 a.m., MWT; and 1:30 p.m., PWT*

Science at Work, School of the Air of the Americas over the Columbia Broadcasting System, presented in cooperation with the National Education Association, Science Service and Science Clubs of America.

"Explosives at Work" will be the subject of the program.

"soup" by suitable chemico-physical means. The whole process is tedious, and costlier than rubber manufacturers would like to have it. Department of Agriculture technologists are now hard at work, in efforts to simplify it and make it cheaper.

One curious thing about these plants that produce their rubber solid is that they belong to the same botanical family, the composites. This is the very large, evolutionally highly successful group that contains sunflowers, dandelions, wild asters, daisies, lettuce, thistles, artichokes and ragweeds.

By no means all composites contain rubber; only a few do. But all rubber-producing composites worth bothering with have it embedded as solid particles, not as latex. What this may signify nobody knows as yet; it just stands as a curious botanical coincidence.

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