THE CONGRESSIONAL FRONT.
By Congressman Everett M. Dirksen
16th Congressional District.

THE STORY OF RUBBER.

Nearly a hundred years ago, an obscure experimenter by the name of Charles Goodyear was seeking a way to vulcanize rubber. While cooking rubber juice in an open kettle he accidentally spilled sulphur into the kettle and thus discovered the basis of the process which produced a great industry and made tires and tubes, girdles and baby pants, garden hose and hot water bottles, raincoats and overshoes an intrinsic part of our daily existence.

RUBBER JUICE.
Rubber juice or "latex" as it is called in the trade is the sticky, milky juice of the rubber tree. Originally, this tree was discovered in Northern Brazil. Somehow, these trees developed leaf-blight and other diseases and it was difficult to reduce it to cultivation. Long ago, seeds of the Brazilian rubber tree were taken to the Dutch East Indies for cultivation and the climate, rainfall and other factors in those Pacific Islands made it possible to conquer this tree disease and convert these far eastern islands into the world's greatest source of crude rubber. In fact, 95% of the crude rubber used in American industry in later years came from this source.

PRODUCTION AND PRICE.
Only 123,000 tons of rubber were produced in 1914 when the 1st World War began at a price which ranged from 61¢ to 65¢ a pound. The United States took about one-half of the entire world output. In the years which followed, there came an expansion of the motorcar industry, the airplane, snappy pants for babies, girdles for women and a host of other uses and world production of crude rubber exceeded 1,000,000 tons in 1934. In these years, the United States continued to use from 43% to 75% of the world output. From an all-time high price of $2.06 per pound in 1910, it dropped to an all-time low of 3¢ a pound in 1932 and then moved to higher levels until today, the price is about 22½¢ per pound.

THE SOURCE IS DESTROYED.
Pearl Harbor brought problems. Before we could accumulate a rubber stockpile sufficient for a long war, the supply was cut off by the conflict in the Pacific and it became necessary to look elsewhere. For many years, Henry Ford, Harvey Firestone and others tried to develop a source of rubber in Brazil, Central America and Africa but the effort was only partially successful. Meanwhile, chemists had been experimenting with goldenrod, bamboo shoots, guayule and other plants as a source of rubber but all this failed to produce rubber in substantial quantity. The beginning of the conflict therefore found us with other sources of rubber which consisted of a few thousand tons of artificial rubber, a few thousand tons from Brazil, a few thousand tons from guayule, and a few thousand tons from Mexico.

Requirements.
Our whole industrial, social, and military life is geared to rubber. The development of suburban areas was possible because of the motor car. Rubber is indispensable to get the airplane off the ground. It is indispensable in battleships and army raincoats. It is indispensable to busses and trucks which are an essential part of our transportation system. It has a thousand uses. Estimated annual needs run from 800,000 to 1,000,000 tons, not including the rubber which we must provide to our allies. With the original supply cut off, from whence shall we obtain this indispensable product?

Sources.
A number of rubber sources are available but all fall short of our needs. The recent rubber drive produced 434,000 tons but old rubber can only be used in limited quantities when mixed with new crude rubber. Mexico produces less than enough for her own needs. Brazilian production runs about 30,000 tons a year and little of it is available for export. It will be a considerable time before guayule becomes a commercial source and the supply will be but a trickle. Finally, there are the so-called synthetic or artificial types of rubber which have boon on the market a number of years and which we recognize under such trade names as Neoprene, Thiokol, Ameripol,
Hy-car, Chemigum. Some of these are better than crude rubber for special purposes but the price is high. Production measured in terms of tons is small.

**RECENT DEVELOPMENTS.**

War has spurred our inventive genius. It has chased chemists and scientists into the nation's laboratories to meet the present problem. They have been engaged in further development of old processes and in finding new processes. Three basic sources of rubber are now in sight. The first is from petroleum by-products. The second is from alcohol which may be obtained either from farm products or as an industrial by-product, and the third is from acetylene. These groupings can in turn be further classified as follows: From petroleum by-products or compounds comes a type of rubber called Buna S which is regarded as best for tires; also Buna N which is on the market today under the trade names of Ameripol, Hycar and Chemigum; also a type known as Butyl Rubber; also a type called Thiokol made from a chemical combination of ethylene dichloride and sodium polysulfide. From alcohol, one derives a substance known as butadiene which is the basic ingredient of all synthetic rubber. From acetylene, which is produced from coal and lime, one can derive a type of rubber used in gasoline hose and for oil-resistant purposes. Finally, there is a new process whereby grain is fermented to produce a syrupy substance known as butylene glycol which is converted into butadiene. The butadiene is in turn mixed with styrene in proportions of 3 to 1 to produce rubber.

**EXPERTS.**

In recent months, the nation's capital has been filled with experts who have presented claims for their respective processes and products. Somehow, the experts do not agree and as a result, much confusion has developed on the whole rubber situation.

**PROGRAM.**

The present synthetic rubber program calls for production of 800,000 tons of synthetic rubber. Of this amount 200,000 tons are scheduled to be produced from alcohol. However, it was not specified that such alcohol shall be derived from farm products and it is therefore presumed that alcohol made as an industrial by-product will also be used in this process. A few thousand tons of rubber will be derived from the acetylene process. The remainder will be made from petroleum derivatives.

**CORN RUBBER.**

In referring to rubber made from grain, one might refer to it as corn rubber, wheat rubber, or soybean rubber. Let's refer to it as "corn rubber". The new process consists of mashing and fermenting corn by means of a tiny organism or bug and converting it into a heavy yellowish looking fluid called butylene glycol. This butylene glycol is passed over a catalytic agent and becomes butadiene. A liquid known as styrene is then bubbled through the butadiene to produce rubber. In recent weeks amazing advances have been made in this particular field of synthetic rubber. Should it produce 7 or 8 pounds to the bushel by a quick process, there is reason to believe that the world will yet reckon with "corn rubber".

**POINT OF AGREEMENT.**

On one thing all are agreed and that is that we need lots of rubber quick. Price is of course a factor but not so important as supply and speed. It remains therefore in the interest of the war effort and in the interest of our well-being that we produce the "mostest" rubber in the "fastest" possible time. Notwithstanding the controversies now going on over methods, the inventive genius and resource of this country will bring up the answer.