

# World War II Brought Development of Synthetic Rubber

Program And  
ms Aided  
w Product  
ce Substituted  
ct Which Only  
re Had Been Able  
provide.

and been for World War  
rubber would still be  
as, but of course ne-  
matter of invention,  
ment. As a result,  
a and grown industry  
er from the cradle  
to take its place along  
rubber and plastics in  
era.

hours indicate the  
that America's synthetic  
last. In 1944 we pro-  
duce. This year we  
production to 1,500,000  
that will be producing  
The synthetic rub-  
has cost more than  
indians and employs  
workers in 50 new  
of these is the Co-  
poration at Baton  
rouge, of which Dayton  
one of the cooperators.  
think of synthetic  
something very new, just  
but such is not the case.  
over 50 years since the  
synthetic rubber was  
that was quite by acci-  
dent many years of  
research before the rub-  
ber made on even a very

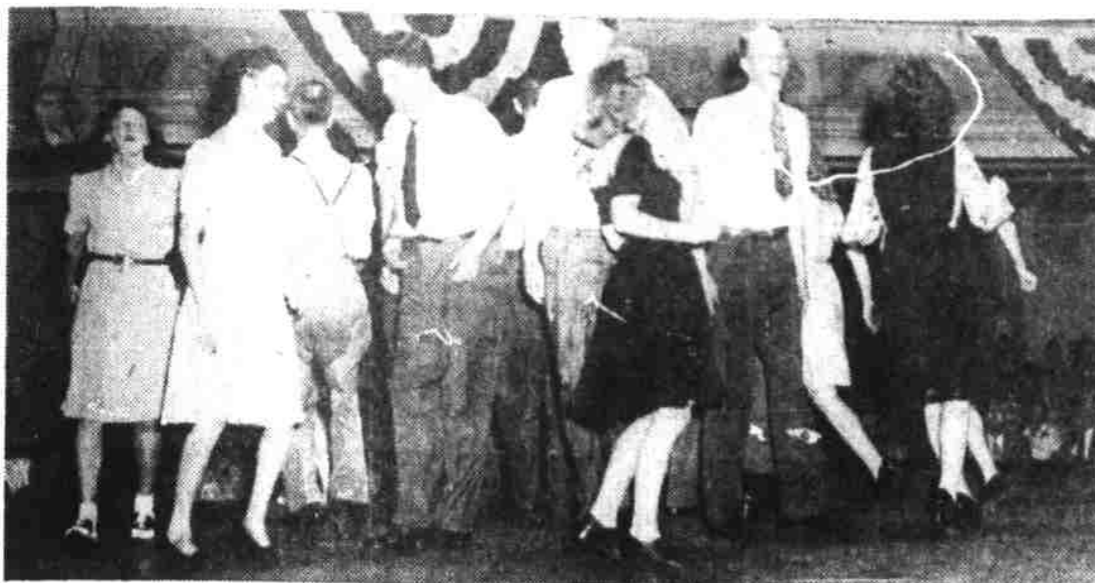
in 1826 the scientist,  
Ludwig, introduced by the  
abilities of a substitute  
rubber, discovered  
composed of five atoms  
of eight atoms of hy-  
drogen. Any rubber-like  
substance was in 1892  
John Stille, experi-  
menting in large yellow  
oil resembling rubber  
compound was inven-

ted by Julius A. Nieu-  
wenhuis, a Dutch chemist,  
essentially what today is  
the first really successful  
synthetic rubber. Working  
with a plastic, he pro-  
duced a rubber known as  
chloroprene.

Stille, a chemist, inter-  
ested in a use for ethylene  
chloride material from oil-  
field operations was exper-  
imenting with chemicals. One day  
he added dichloride and some-  
thing into a beaker  
and from this, hoped  
to discover something  
new. Surprisingly,  
the substance began to congeal,  
and next morning,  
the substance appeared  
in the beaker. Fur-  
ther experiments revealed a  
new rubber known as  
chloroprene.

Further experimentation,  
did not duplicate ex-  
actly the structure of rub-  
ber. Researchers had more  
and the idea of du-

## Top Honors For Dayton Rubber Square Dance Team



Thunderous applause from over 3,000 people greeted the Dayton Rubber Square Dance Team as it took top honors at the 1944 Folk Festival in Asheville.

## Only 19 Men Reclassified This Week

Only 19 men were reclassified during the past week by the draft board serving the Waynesville area of the county with three continued in class 1-A as follows: Spencer Walker, Elmer D. Hendrix and Jack Ray Ferguson. Placed in class 2-A was Carroll J. Morrow.

Placed in class 1-C (discharged) were: Herman W. Brooke, John N. Sutton, Thomas A. Sutton and Joseph C. Swainson.

Placed in class 2-A (F) was Clive W. Caldwell.

Placed in class 2-B was William G. Dotson.

Placed in class 2-B (F) was Charles M. Dunn.

Placed in class 2-C was Reeves Ferguson.

Placed in class 4-A was William Sutton.

Placed in class 4-F were Carl F. Henry and Handy W. Kirkpatrick.

Continued in class 2-A (F) was Welton Reynolds.

## Girls Club Entertain Sailors



The Dayton Rubber Girls Club brought a lot of happiness to convalescent sailors when they entertained the sailors from the Asheville Naval Convalescent Hospital at a picnic at Piedmont.

## Memorial Services Held For Two Canton Men

Memorial services were held at the Beavertown Baptist church on Sunday afternoon at 2:30 o'clock honoring T/Sgt. Gomer H. Scott and T/5 William M. Scott, son of Mr. and Mrs. Arthur Scott, of the Beavertown section of the county, who have paid the supreme price.

T/Sgt. Scott will be posthumously awarded the Bronze Star which was presented to his family by Lt. Col. Ralph R. White, of the army service ground forces Redistribution Station, Asheville.

Sgt. Gomer Scott was killed in France on July 25, 1944, and T/5 Scott was killed in action in Germany on March 30, of this year. Another son, Calvin C. Scott, is serving with the Navy somewhere in the Pacific.

Rev. Lucius Rogers, pastor of the church, was in charge of the service.

Last year's pig crop was down 34 per cent from the year before. Since pork accounts are about 50 per cent of the meat supply, no wonder there's a shortage.

plating the chemical structure of rubber and started their search for a duplication of the material which would have the same physical properties. They emphasized the linking together of molecules to give the physical properties of rubber regardless of its chemical structure.

**Processing and Components.** In processing synthetic rubber polymerization takes place. Polymerizing is the gathering together or chaining together of tiny molecules which will form a large molecule. The larger chain may be made up of thousands of molecules—estimated as high as 100,000 to 200,000 or more in one chain. Polymerization of the synthetic is usually characterized by jelling or thickening of the latex solution and the long chain of molecules thus formed usually follow a definite pattern in their linking of one to the other.

Most synthetic rubbers' chief raw material is either petroleum or alcohol. The controversy over the use of either of these materials has no bearing on the finished rubber or the polymerization plants, but only over which can be made faster and cheaper.

**Products and Production.** In making synthetic rubber products, production problems are more complicated. It takes about 25 percent longer to build a synthetic rubber passenger tire, for instance, and over 30 additional operations are needed.

Synthetic rubber is also used for mechanical goods such as printing rollers, certain textile machinery parts and v-belts. Synthetic rubber is superior for many mechanical products. V-belts, for example, of synthetic rubber can be made more oil and heat resistant.

**Types.** The five commercial types of products ordinarily classified as synthetic rubbers are commonly known as Buna N, Buna S, Neoprene, Butyl and Thiokol.

GR-S—the most universal type of synthetic rubber, is known also as Buna-S since it is a combination of three-quarters Butadiene and

one-quarter Styrene brought together by the chemical process called polymerization. The oil and chemical companies make the raw materials—the Butadiene and Styrene. The rubber manufacturers then carry on the polymerization process.

Another synthetic rubber known as Butyl has the least diffusion of air of all rubbers—synthetic or natural. And makes the best inner tube. So good, in fact, that it's doubtful whether any other kind of rubber will be used for tubes. Because of the present shortage of Butyl however, we cannot use it except for truck tubes. A share in the development of Butyl was done in our own plant with the cooperation of the Standard Oil Development Company.

**Future.** What then is the future of this 700 million dollar synthetic rubber industry? When natural rubber is once more available in quantity, are we going to scrap our synthetic rubber plants? And return to the use of natural plantation rubber produced by England and Holland?

Synthetic rubber production will act as a price stabilizer. We can produce it at a cost of 10c to 12c a pound and allowing for plant amortization and profit, can sell it at from 15c to 17c by the time natural rubber is once more available.

For several years after the plantations are available, we will be able to use their output plus the synthetic but within three or four years surpluses will increase, thus lowering the price.

Estimates now are that we will consume 1,500,000 tons of rubber for several years of postwar production—about 1,000,000 tons of synthetic and 500,000 tons of natural rubber.

Under the impetus of continuous research, it seems reasonable to assume that we will eventually have a synthetic rubber superior to natural rubber.

With wild and plantation rubber, we have to take what nature gives us as far as chemical composition and structure are concerned. With synthetic rubber we can tailor a molecule to suit exactly, say, the requirements of a tire tread, a printing roller, or a v-belt. We have hundreds of ingredients available for rubber compounding. We have hundreds of ingredients available for rubber compounding. We can make synthetic rubbers which will bring out to a much greater degree, their best properties.

Vegetables in the Victory Garden should be mulched just after growth begins.

### "On the House"



A GERMAN WAREHOUSE filled with liquor is raided by a crowd of liberated Russian, Polish and French civilians after its capture by American forces. As crowds below wait with outstretched arms, companions from an upper window toss bottles of booze to them. (International)

# Welcoming

# Dayton Rubber Company

to the honored few in  
Western North Carolina  
holding this high award



# DAVE

# STEEL COMPANY, INCORPORATED

Asheville, N. C.

Designers - Fabricators - Erectors

### HOME TOWN



Best Part of the Meal

# JFG

## SPECIAL COFFEE

get cups of good coffee in every pound!