COTTON NOW GOES INTO ROADS

As an extra safeguard against "washboard" roads on secondary highways and airport runways, layers of cotton sheeting are now used in the base construction. Shown above are workmen laying a "cotton" road near Birmingham, Ala.

CHEMISTRY

Scientists Hope to Separate Gas Isotopes By Whirling

THE once-abandoned hope of physical science to separate the isotopes of a gas by whirling the chemically inseparable parts in a centrifuge is to be revived once more in new experiments at the University of Virginia.

Isotopes are the two or more varieties of a chemical element which are found to have slightly different masses although considered the same element. Thus there are two kinds of argon, two kinds of lithium, three kinds of oxygen and so on. Chemical methods will not separate them while physical methods will accomplish separation only in some cases, and then only with the utmost technical difficulty.

Prof. J. W. Beams and F. B. Haynes, assistant professor, report to the Editor of the *Physical Review* (Sept. 1), journal of the American Physical Society, that their new air-driven centrifuge, which has potential speeds of nearly 1,800 miles an hour, is so much more powerful than any similar device previously tried that the long-sought goal of science is at least worth one more attempt.

Some Need Less Speed

The separation of some isotopes, it appears from calculations, should be accomplished at only half the speed which their ultra-centrifuge should attain.

The idea of centrifuging two gases to separate them was tried early in isotope research for it appeared possible to obtain the two fractions of different weights by whirling them, just as one can separate cream and milk in a cream separator.

Inherent in the new research program, which will have the greatest possible benefit to science if successful, is the development of a centrifuge rotor which will spin freely in the penetrating cold of liquid air temperatures at minus 192 degrees below zero centigrade. Operation in even lower temperature is anticipated, report Profs. Beams and Haynes.

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ENGINEERING

Cotton Roads of the South Are New Crop Outlet

DOWN in Alabama recently dusky cotton pickers, pulling long cotton sacks bulging with the fleecy staple, paused long enough at the end of their rows to watch highway construction near-by. Their attention was attracted by the laying of a canvas-like material between the layers of sand, slag and asphalt.

The Negro farm hands didn't know it, but the same substance they were picking, except in different form, was being used to build up the road. No one took the trouble to tell them, but they were seeing history in the making. Now traffic is moving over this first "Cotton Highway," a small part of an extended program being fostered by the U. S. Department of Agriculture in which some 6,167,000 square yards of cotton fabric are being provided for the building of over 500 miles of roads in 24 states.

Advocates of "cotton paving" contend that it not only reinforces the bituminous surfacing of the highway, but also prevents it from cracking and improves its resistance to water. In a broader sense it is hoped that a great new domestic market will be provided for the chief product of the southern farm.

But the cotton fabric must prove its case before being widely used in highway construction. Six bales of cotton per mile are required for the usual