human being still older. For this reason the scientists are turning to old deposits of the earth, called the Tertiary, confident that there will be found the solution of the true riddle of human evolution.

While Sinanthropus has many characteristics of modern man, Dr. Weidenreich feels that there will be found in Asia a link between him and modern men, a kind of ancient man somewhat like the Neanderthalers of Europe. He is convinced that Sinanthropus is a direct ancestor of modern man, at least the Asiatic variety, and that somewhere among the direct ancestors of Sinanthropus was a creature whose future descendants included both men and apes.

*Science News Letter, August 21, 1937*

CHEMISTRY

# Wool Made Unshrinkable By New Revolutionary Invention

## Simple Dipping in Chemical Does the Trick Without Damaging Durability, Softness or Fluffiness

A NEW, revolutionary method which solves the old problem of making wool unshrinkable, without damaging it in any way, has just been invented by A. J. Hall, English textile chemist.

The important feature of Mr. Hall's process is that it permits shrinking wool without adversely affecting its durability, it original softness and fluffiness, and its color—something which heretofore has proved to be impossible. These defects have been associated with unshrinkable processes for over forty years, since they were first practiced. In spite of much research, they have remained unsolved.

Extremely simple, Mr. Hall's method merely consists of dipping the wool in a solution containing the chemical sulfuryl chloride. The chemical is dissolved in "white spirit"—a solvent which is used a great deal in dry cleaning. About 1½ to 2 per cent. solution is used and the treatment lasts about an hour.

Already Mr. Hall's invention has aroused considerable interest among wool manufacturers and finishers. Many important firms have taken out licenses under the patents which are being applied for in most of the countries throughout the world.

Previously it was always thought that to make wool unshrinkable, treatment with chlorine in some active form—like sodium hypochloride or chlorine gas, the same gas used by Germans in the first gas attacks in the early stages of the war—was necessary. But always the wool came out with a harsh feel. If the wool was dyed, the treatment bleached the dyes. Then if such unshrinkable wool was made into clothes, they did not last as long as garments made out of untreated wool.

Tests on wool treated by Mr. Hall's processes show that all these defects are overcome. The wool has the original soft and fluffy feel. It is just about as durable as the untreated wool. Its color and the dyes on it are not changed in the least. The wool does not seem to be chemically altered at all, the microscope reveals.

Other features of the new method are: wool can be treated as it comes from the sheep's back or in the form of socks and other clothing. The wool does not have to be washed first, or treated in any special way. The treating solution can be used over and over again and Mr. Hall has used the same solution for over a year. It is only necessary to add sulfuryl chloride as it is used up, and purify the solution once in a while.

Wool mixed with rayon and cotton can be treated without harming these fibers, provided they are not too damp.

*Science News Letter, August 21, 1937*

ENGINEERING

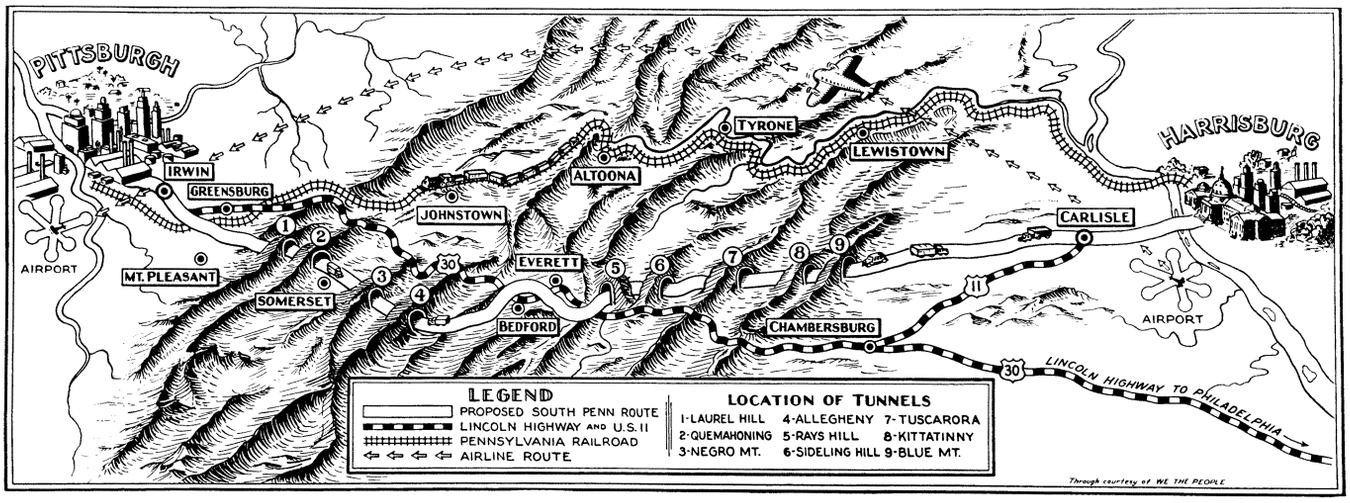
## New Mountain Highway Will Have Nine Tunnels

RELIEF for the American motorist on one of the toughest year-round trips in the country—between Harrisburg and Pittsburgh directly across the Allegheny Mountains—is now under way.

Imagine a super highway through this rugged country for 165 miles of which 125 miles will be in a straight line, averaging only one curve per mile and with no grade greater than three per cent.

***CLIMB DODGER***

***This picture map shows how the new highway will dive under mountains to smooth the way for motorists***

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*HOW IT LOOKS NOW*

***East portal of the Blue Mountain tunnel in Franklin county, Pennsylvania, which will be used in the super highway through the Alleghany Mountains. There will be nine tunnels totaling seven miles in length.***

Seven miles of tunnels through the mountains will save the motorist 10,000 feet in accumulated vertical climb and wherever possible the highway runs on the south side of mountains to facilitate wintertime travel.

Key to the project is the old South Penn Railroad which was laid out some fifty years ago and then abandoned with its nine tunnels half finished. Still in excellent condition the tunnels will be drilled through and ventilated for motor vehicle traffic.

Tunnel Highway, as the road will be known, will have no major highways or railroad crossings at grades. There will be ramp entrances to the highway. Because of the broad curves, low grades and great sight distances it is anticipated that speeds of 50 and 60 miles an hour will be safe on the highway. It is planned that four lanes of traffic will be provided, two in each direction, with a planted center strip providing permanent separation of traffic in the two directions.

All parts of the right-of-way are above the highwater mark of even such floods as that of March, 1936. It is estimated by the Pennsylvania Department of Highways that from five to six hours will be cut from the present running time between the two terminal cities.

*Science News Letter, August 21, 1937*

PHARMACY

# Stabilization of Drug Plants Should Follow Lead of Foods

FOOD plants were standardized long ago; drug plants should follow their lead. The necessity for this was pointed out by Dr. Arno Viehoever, of the Philadelphia College of Pharmacy and Science, at the meeting of the American Pharmaceutical Association in New York City.

We know to a fractional per cent. how much starch to expect in a given strain of potatoes or how much gluten in a variety of wheat, but the quantity and quality of digitalin in a batch of foxglove is still pretty much a hit-or-miss matter.

This is because food plants have long been carefully bred, and adjusted to the soil and climate of the regions where they are cultivated, whereas drug plants are still either gathered wild in the woods, or if cultivated have not yet been improved by breeding.

Modes of preparation, too, are greatly in need of standardization, Dr. Viehoever declared. Too many drugs are simply dried in the open air, or otherwise made ready for market by grandmothers' methods, despite the fact that machinery for control of temperature, humidity, aeration and other factors has long been in use in other industries, including food preparation, and could be adapted to the drug industry without much difficulty.

Not only is the cultivation of drug plants important. The season when they are gathered, and even the time of day, may affect the quality of the medicines prepared from them.

Decomposition of the drugs by enzyme action must ordinarily be guarded against but in the case of certain drugs such as cascara and possibly digitalis, Dr. Viehoever pointed out, partial decomposition by enzyme action makes the drug a more successful medicine. Scientific pharmaceutical practice must take all these factors into account.

### Improves Trench Mouth Remedy

A method of improving sodium perborate, the tooth powder remedy for trench mouth or Vincent's infection and other ails of teeth and gums, was reported by L. L. Manchey and S. Lee of New York.

The harmful effects of this remedy have been attributed to its being too alkaline—the opposite of too acid but equally irritating. The New York pharmacists found that by mixing mono-calcium phosphate with the perborate, they could reduce the alkalinity of the perborate to about that of human saliva. Tests made by applying the new mixture to the gums of human subjects showed that it had no harmful effects.

*Science News Letter, August 21, 1937*

## ●RADIO

*August 24, 4:15 p. m., E.S.T.*

**ADOPTED CHILDREN**—Dr. Mandel Sherman, psychologist of the University of Chicago.

*August 31, 4:15 p. m., E.S.T.*

**SOUR WATER**—Ralph E. Tarbett of the U. S. Public Health Service.

**In the Science Service series of radio discussions over the Columbia Broadcasting System.**