

THE SOUTHERN SERVES THE SOUTH

Railroad service that profits all of us

On the Southern Railway System last year we hauled seven million tons of farm products. We carried back to the farms a great volume of things that the farmer gets in exchange for his products.

This is a big part of the day's work of our 8,000 miles of lines, stretching across the South from the Potomac to the Mississippi.

Farm prosperity means prosperity for us. To give the best service, at rates which will enable our shippers to sell their products in the markets at a good profit, and which will enable us to make a fair profit, too, is a fundamental policy of the Southern Railway System.

Did you ever stop to think how much better service the Southern has given you in recent years since it was relieved from financial starvation? That is part of your share in our prosperity.



SOUTHERN RAILWAY SYSTEM

"IMPORTANCE OF CHEMISTRY"

Prize Winning Essay by Miss Ethel Lee Scruggs, of Henrietta School.

In view of the intense interest displayed by the large crowd who heard Dr. H. I. Jones, noted scientist, who spoke on the wonderful accomplishments in chemistry at the late chautauqua, The Courier believes its readers will be equally interested in the following essay on the "Importance of Chemistry," by Miss Ethel Lee Scruggs, pupil in Miss Blanch Burke's class at Henrietta school. The essay was a prize winner and is intensely interesting throughout. It follows:

Importance Of Chemistry.

It may fairly be claimed for chemistry that it is at present the most fundamental of all the sciences. Chemistry embraces the material universe, our solar system, the most distant stars, and the flaming nebulae no less than the dust speck within the universe, on which we live and which we call the earth. It includes within its scope the physical basis of our own bodies and those of every living thing upon the earth. It is directly concerned with the air we breathe, the water we drink, the food we eat, the materials upon which we work, and the things which we buy and sell.

To me has been assigned the pleasant task of bringing home to you some knowledge of the extent to which you are already indebted to this branch of science and a better appreciation of the benefits which it still holds out to you.

We live immersed in an ocean of air and we draw this air into our lungs approximately eighteen times a minute. The quality of this air, temperature, pressure, humidity, the small impurities which may be present, affect our comfort and well being in many ways. The nature of all this enveloping atmosphere of air has always been a subject of speculation.

The heavy toll of life in mine disasters would be much heavier were it not for the Davy lamp, the fire-damp indicators, the rescue outfits, and the regulation of explosives, all of which have come to the world through chemical knowledge. Ventilating systems as applied to theaters, halls and dwellings are based on chemical studies of the air in rooms.

The chemical and biological study of public water supplies has been the means of saving countless lives throughout the world.

Nowhere is the practical value of chemistry in its relation to every-day life more strikingly shown than in connection with our food supply. Chemical fertilizers are in constantly increasing measure responsible for the enormous total of our agricultural products. One of the greatest demands of growing plants is that for nitrogen in a form available for plant food. They have recognized that 33,800 tons of nitrogen are pressing down on every acre of land. The problem is to get the nitrogen from the air and give it to growing plants. Such plants as peas, beans, clover and alfalfa have the power to grasp the nitrogen from the air. The surplus nitrogen is stored in little balls or nodules on the roots of these plants.

Chemistry pervades the packing industry, thus reducing the cost of food by utilizing the by-products.

The relation of chemistry to the clothes we wear is of the first importance. More land is planted to cotton and cotton itself is cheaper because chemistry has taught the planter how to secure increased yields by proper fertilization and how to obtain increased profits by making use of the cottonseed for oil and cattle feed. Chemistry is now developing new sources of profit for the planter by adapting the short fiber adhering to the ginned cotton seed hull to the making of smokeless powder and the stalks of the cotton plant to paper making.

One of the highest industrial achievements is the very modern development of artificial silk which, though made from wood pulp, far surpasses in brilliance and beauty the finest products of China and Japan. The chemists alone have made it possible to have all the beautiful ranges of colors in silks, hosiery and ribbons.

The refining of petroleum involved the solution of many difficult chemical problems. The Chicago fire is said to have been started by Mrs. O'Leary's cow which kicked over a kerosene lamp. The discovery of gas has put an end to such useless disasters. When coal gas was first employed for lighting the House of Parliament the members were seen cautiously touching the pipes to find out if they were not hot from carrying such a flame. The im-

provements in incandescent lamps in the last ten years have resulted in the saving of \$24,000,000 a year in the cost of lighting as compared with the cost of equal illumination by the use of lamps.

Air is a mixture chiefly made up of oxygen and nitrogen. One of the most remarkable properties of hydrogen gas is its extreme lightness. Everyone knows that soap bubbles blown with ordinary air gradually fall to the ground; those blown with hydrogen are so light that they rise. This brought about the idea of filling balloons with hydrogen. Balloons are now filled with coal gas.

Scientists have discovered that by burning gas instead of coal and wood the smoke problem in cities would be eliminated.

Important as are the losses in the first purchase of coal, they are small compared with those which go with its (Continued On Page Six)

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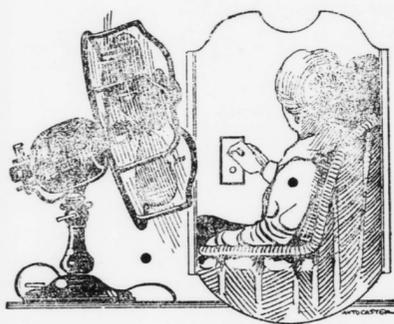
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