

## DU PONT ANNOUNCES NYLON

The material of this name has large  
potential uses in the world of tomorrow

**N**O BETTER EXAMPLE of the fruits of research could be found than nylon—a product of chemistry so new that a name had to be coined for it, a material with so many possible applications that no one, however farseeing, can list them all, and so promising in its first uses that the du Pont Company will spend \$8,000,000 on the first unit of a new plant to produce this material commercially at Seaford, Delaware.

Nylon, it may be explained, is the generic name for all materials defined scientifically as synthetic fiber-forming polymeric amides having a protein-like chemical structure; derivable from coal, air and water, or other substances, and characterized by extreme toughness and strength and the peculiar ability to be formed into fibers and into various shapes, such as bristles, sheets, et cetera.

Last month we called attention to its use in the manufacture of "Exton" bristles for Dr. West's Miracle-

Tuft toothbrushes. That was one application. When you consider that it can be formed into filaments as strong as steel, as fine as those in a spider's web; that it is more elastic than any of the common natural fibers and that it possesses a beautiful luster, you get some idea of its exceptional characteristics.

In developing this newest of synthetic materials a group of du Pont chemists spent the better part of a decade. Their work started with an effort to synthesize from readily available native raw materials a wholly new group of chemical compounds to meet definite deficiencies of many existing industrial materials that in the main are now imported. Research opened the way for the discovery of the sought-for, chemically-made substance.

More research by chemists, physicists and engineers brought the product along to the point where a pilot plant was needed to determine how best to manufacture nylon com-

mercially. One of the accompanying illustrations shows you this semi-works laboratory unit where the material is processed into yarn for test purposes.

As the output of this plant is limited, nylon will not be available to the trade until the big plant at Seaford is built and in operation. Construction forces are already at work and they expect to complete the job by the end of 1939.

No one has ventured to predict the number of applications that will be found for nylon, although in a formal statement the Company has thrown some light on that question. Textile manufacturers in particular will be interested to know that filaments of nylon can be spun finer than those of silk and rayon, and that the new material will take dyes used for silk, wool, acetate and certain of the direct dyes used on cotton and rayon.

Of particular promise is a high-twist nylon yarn for making fine



A visitor in the laboratory views with interest a nylon stocking made for test purposes. "Now notice its fine weave and transparency," he says.

hosiery of extreme sheerness, high elasticity, high strength and improved resistance to abrasion. Sewing thread and knit goods, narrow fabrics, woven dress goods, velvets, knitted and woven underwear represent other potential uses; also brush bristles, racquet strings, fishing lines and leaders, transparent wrapping film, plastic compositions, textile finishing agents, and coated fabrics. These are some of the products upon which laboratory studies have been made thus far, and the work is still under way.

Du Pont chemists believe the time will come when this nylon development will be considered as important historically as was the first transformation of nature's cellulose into man-made rayon. Fifty-odd years ago that started a new era of textile progress. Now comes a new material of even greater potential-

ties which may set in motion the next great forward surge.

That expectation is based on important differences between these two products. Rayon is derived from cellulose of vegetable origin. Nylon is not. It is the first man-made organic textile fiber ever produced from raw materials of the *mineral kingdom*, and has physical and chemical properties that differ radically from those of rayon and all other synthetic fibers. Properties determine uses. Because nylon possesses exceptionally desirable characteristics, never before combined in one material, there is reason to believe that many industries will find new applications for it.

Within the past decade the Company has developed and put on the market many uniquely useful products, such as:

Moistureproof "Cellophane" cellulose film to protect foodstuffs from dirt and germs, and to preserve freshness and flavor.

"Cordura" rayon yarn, the super-tough fiber for truck and auto tires.

Nitrogen compounds, derived from coal, air and water, to return vital elements to the soil.

Neoprene chloroprene rubber with the resilience, strength and toughness of natural rubber, yet superior in its resistance to gasoline, oils, sunlight, heat and aging.

Improved fire retardants to reduce fire hazards in home and industry.



The Semi-Works Building at the Experimental Station near Wilmington. Here nylon is now being produced on a small scale, pending the erection of the new \$8,000,000 plant near Seaford, Delaware.

"Zerone" anti-rust anti-freeze to protect automobile radiators from freezing in winter . . . from rusting and corroding in summer.

"Dulux" enamels, the tough, long-lasting finishes now used on automobiles, trucks, streamlined trains, ships, bridges, home appliances, interior walls and refrigerators.

Others equally worthy might be cited, but readers of this publication already know about them and their applications. Nylon will take its place in the large group of du Pont chemical products as soon as the Seaford plant is in position to supply trade requirements. Meanwhile, this must be considered as only a progress report, which we shall hope to amplify in future issues.

COURTESY, WILMINGTON MORNING NEWS

A portion of the new du Pont plant site in lower Delaware where nylon will be produced on a large scale. Broken lines show roughly the 340-acre area to be developed. At the right is the Nanticoke River. A mile upstream may be seen the town of Seaford.

