***ON THE PRODUCTION LINE—Two men are adjusting the tension on Orlon filter cloths in this picture.***

either by themselves or with each other.

Unlike wool, rayon or cotton, the entirely synthetic fibers usually absorb little or no moisture and are nearly as strong when wet as when dry. This property is particularly important in fabrics used outdoors.

Its low moisture absorption also makes Orlon fabrics easier to clean. Dirt does not become imbedded in the fiber and is, therefore, easier to remove.

The problem which now prevents even more widespread experimental use of Orlon is the difficulty of dyeing the fiber. Because it is chemically inert, it does not take too well to ordinary dyes and dyeing methods.

### Only Pastel Shades

Orlon can be dyed, but the colors obtained are not too light-fast, and only pastel shades are available at the present time. The chemists at E. I. duPont de Nemours & Company, the company which developed Orlon, believe that by the time full scale production is achieved, the techniques of dyeing this new fabric will have been mastered.

This same difficulty with dyeing was encountered when the only other two all-synthetic fibers now in general use, nylon and Vinyon N, were first produced.

Synthetic fibers account for only one percent of the overall textile uses. Last year over seven billion pounds of fibers were consumed in the United States. Seventy percent of the total textile and cordage products are cotton.

Before considering the use of Orlon as a consumer fabric, the toxic properties of both the polymer from which the yarn is prepared and the yarn itself were thoroughly investigated. They have both been classified as non-hazardous, that is, no dermatitis or skin eruptions developed from the customary patch tests on hundreds of people.

At first, Orlon is expected to make its biggest impression on the curtain industry. It is highly resistant to light, smoke, and soot and gases from industrial plants as well as from heating units in the home itself.

When Orlon is in general use for curtains, the curtain stretcher can be put to good use training climbing rose bushes in the garden. Orlon retains its shape and friendly feel either wet or dry.

Protective work clothing is another field where Orlon is expected to find immediate acceptance. Workers in chemical process industries, rayon plants, garages and gasoline stations are seeking acid-resistant fabrics which will give better protection and safety to the worker and which will last longer. Tests have shown that Orlon answers these needs.

Men's shirts, both business and sports types, should last longer and be more easily washable in the home when made of Orlon, due to the fact that it is quick drying and needs no ironing. Shrinking will be a forgotten thing, since Orlon, like nylon, can be "heat set."

Decorative striping for the pin-stripes in men's woolen and worsted suits are, at the present time, often made of acetate rayon. This fiber, however, has low strength and abrasion resistance. Orlon filament yarns, not colored by dye, would be an interesting substitute for acetate rayon in pin stripes, and would not have these disadvantages.

One of the greatest difficulties in making Orlon fiber was to find a suitable solvent for polyacrylonitrile. Materials now used are organic compounds with such complicated names as dimethyl methoxyacetamide, tetramethylene cyclic sulfone, and meta and para nitrophenols.

The name Orlon as applied to a fiber does not refer merely to a single fiber or yarn but rather to various types of Orlon acrylic fibers. All of these fibers possess many of the properties of the original Orlon but have also distinctive characterizations of their own.

Science News Letter, October 1, 1949

ASTRONOMY

## Soviets Discover New Comet, Fifth This Year

➤ SOVIET astronomers bulletined to the world discovery of a new comet at the same time that President Truman announced an atomic explosion in the USSR.

The new comet, fifth this year, was discovered by Dr. P. Shajn of Simeis Observatory in the Crimea. It is too faint to be seen with the naked eye, being thirteenth magnitude, with a short tail.

The discovery was confirmed by Dr. D. J. Martynoff of Kasan Observatory, also in Russia, before it was reported to the Copenhagen clearing house for astronomical news and thence to Harvard Observatory for relaying to American observatories.

First American observation of comet 1949e was by Astronomer Ernest G. Reuning at the U. S. Naval Observatory at Washington Sept. 23.

Located in the constellation of Cetus, the Whale, the comet is high in the night sky near the point where the ecliptic crosses the equator. It is moving slowly south. (On Sept. 24, 5:18.5 GMT, R.A. 5 min. 48.4 sec. Dec. South 2 deg. 7 min. 32 sec.)

Science News Letter, October 1, 1949