

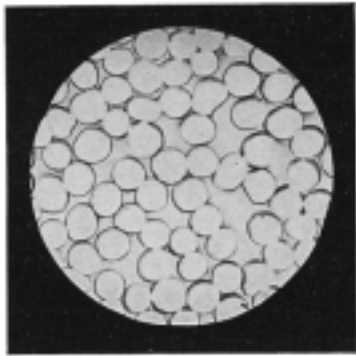
Rayon Necktie Fabrics

By E. ULLRICH

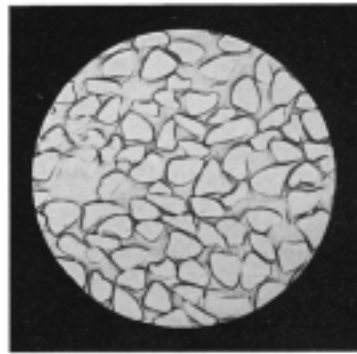
Rayon is being used more than ever before for tie fabrics. At first, it was used only for filling the warp being silk or cotton. To-day, however, as the result of the remarkable advance, particularly improvement in strength, elasticity and fineness of denier, certain rayon yarns of the cuprammonium type can be employed for warp. Therefore, quite a number of tie fab-

ric manufacturers who formerly used silk exclusively, are now using rayon. For this purpose, silk warp can be used about 0.012 mm in diameter and the denier of a single filament is 1.3. In strength and elasticity, it compares favorably with silk.

the rayon filaments would be much thicker than the silk filaments. Actually, the silk filaments are much thicker, being weighted from 40-60%. The difference between rayon and silk, therefore, is much smaller than indicated by the denier. The fineness of cuprammonium rayon when compared with silk is evident from the two micro-photographs. It measures



Rayon with circular cross-section.



Natural Silk with rounded triangular molecules.

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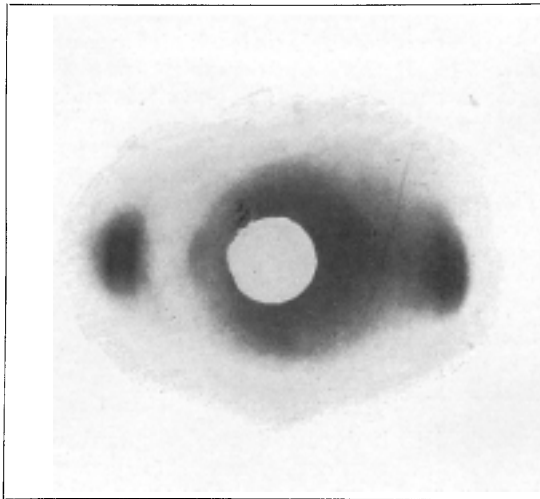


Fig. No. 1

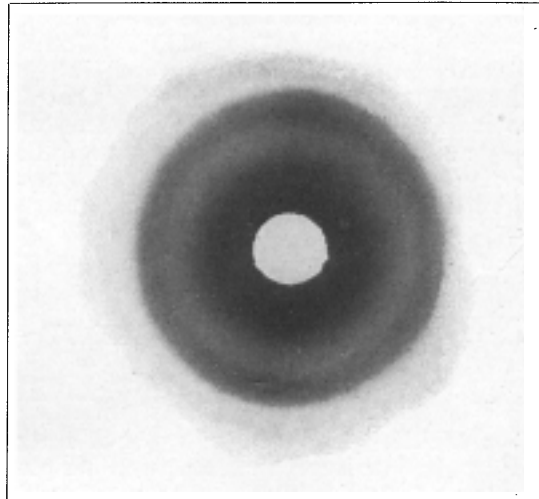


Fig. No. 2

with as small a denier as 20/22, whereas it has not been possible to weave rayon less than 50 deniers. Theoretically, therefore,

The comparatively high tensile strength of this type of rayon may be attributed to the molecular structure of the filament.

From figure No. 1, this rayon is like some natural fibers (figure No. 2) forming a fiber diagram. This indicates an orderly ar-

When rayon is used for the manufacture of neckwear, its binding properties must be taken into consideration, otherwise the

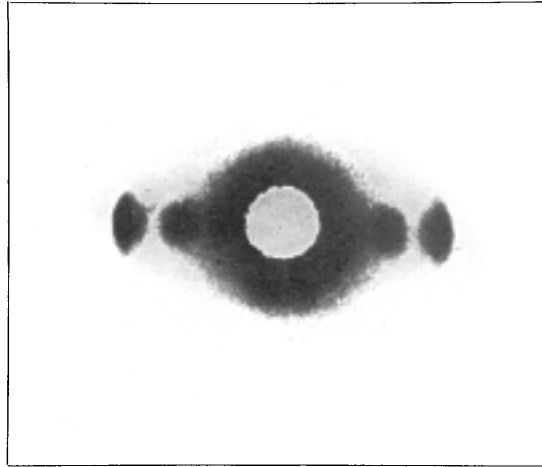


Fig. No. 3

angement of the crystals. On the other hand, a Roentgen picture of a different type of rayon (figure No. 3) reveals an irregular arrangement of the crystallites, caused by

yarns will slide on each other and the fabric will soon show unsightly "shifting" when tied a few times. Long floats, therefore, have to be avoided as far as possible.



Sample No. 1



Sample No. 2

absence of interference points. The fact that an orderly arrangement of the crystals causes a considerable increase in strength and elasticity, has been known for some time in metallurgy.

The two samples shown are made of Bemberg brand cupra-ammonium yarn. It can be seen readily that even on observation, an experienced mill man might easily consider them to be solely of silk.