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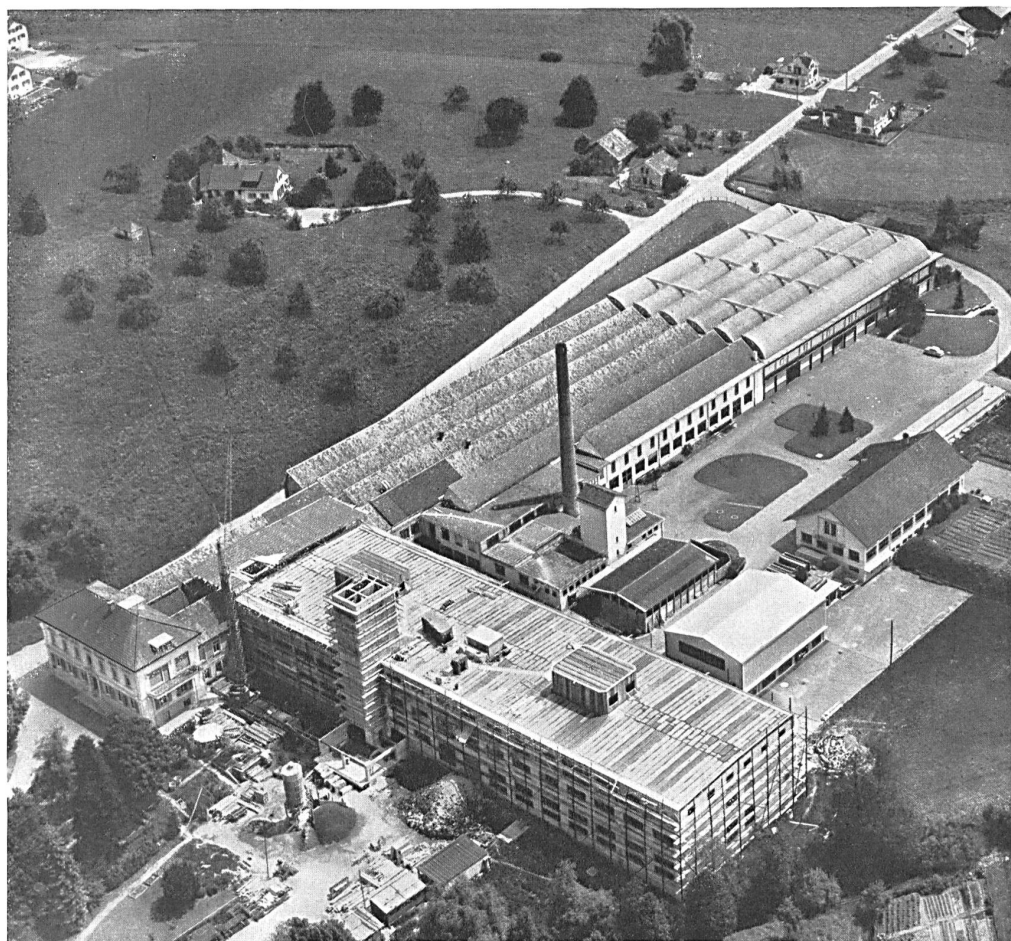
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# Confidence and Progress

## A Fiftieth Anniversary



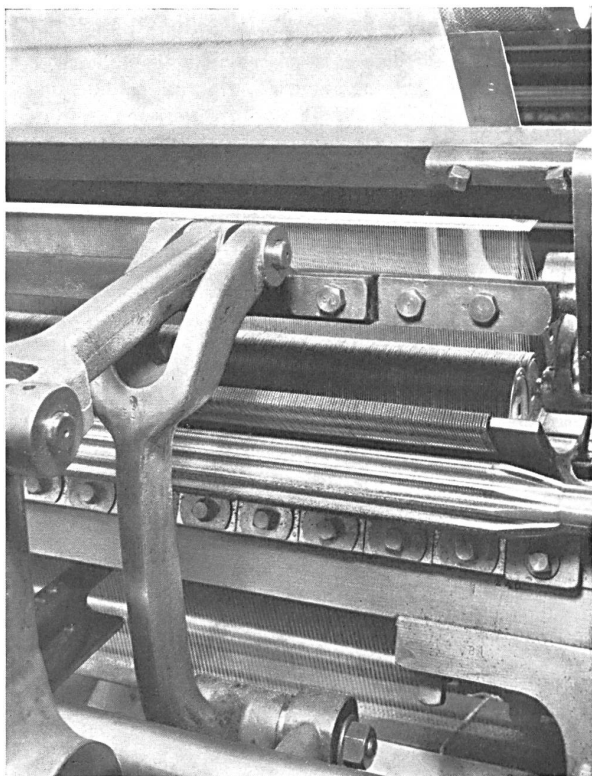
View of the factory in 1963, the jubilee year

The Swiss Net Comp. Ltd., at Münchwilen, was founded in 1913; this thriving concern is consequently celebrating its fiftieth anniversary this year. We take the opportunity therefore of presenting in these pages a branch of textile production whose products are widely used and known to all, but whose manufacturing methods are certainly a mystery to many.

### A premeditated foundation

A remarkable feature of the Swiss tulle industry is that neither its very existence nor its geographical situation is the outcome of many years of gradual economic and social development, as is so often the case with the Swiss textile industry. No, the foundation of the Swiss Net Comp. Ltd.,

the only firm that has ever manufactured real bobbinet tulle in Switzerland, is the result of careful commercial calculation and purely economic considerations. Half a century ago, embroidery on tulle was very much in vogue and the Swiss embroidery industry consumed huge quantities of tulle of foreign origin. Consequently Emmanuel Cavigelli, a Swiss employed in the Italian tulle industry, had the bright idea of starting up its production here in Switzerland. Backing for his scheme having been found in Swiss industrial circles, a company was founded and manufacture started up in the premises of a disused factory, at Münchwilen near Wil, in the vicinity of St. Gall, the centre of the Swiss embroidery industry. Right from the start, the founders' optimism was justified and, in spite of the difficulties and obstacles raised by the first World War, output and sales expanded steadily and satisfactorily.



Part of a bobbinet machine for making tulle

## What is Tulle?

Tulle was at one time made entirely by hand — mainly in the French town of Tulle (Corrèze) — according to the bobbin lace technique. The manufacture of tulle by machine was carried out for the first time over 150 years ago, by John Heathcoat in Nottingham (Great Britain). The principle of his invention has remained essentially the same right up to the present day. His machine being designed to make net by means of bobbins, real tulle manufactured on these looms is called bobbinet tulle.

A tulle loom is a machine of imposing dimensions; its mechanism is very complicated, so we shall make no attempt to explain it in detail. It is nevertheless interesting to know that tulle is made from two sets of yarns: the warp yarns, which lie lengthwise with regard to the finished material, and the weft yarns, which pass alternately from right to left, then from left to right across the fabric, each time describing a complete turn round the warp yarns they meet. At this point the tensions of the two sets of yarns balance and the yarns have a twisted appearance. There are as many weft yarns (in technical jargon « bobbin yarns ») as there are warp yarns. The warp yarns are stretched vertically on the loom between the warp-beam at the bottom of the loom and the cloth-beam at the top. The bobbin yarns are wound on bobbins, placed in carriages, which enable them to travel along the path required. There are always two outside yarns, one on the right, the other on the left, and several thousands of intermediate yarns, the exact number depending on the width of the loom. Half of the bobbin yarns, each of which has passed once round the yarn next to it, then go on to pass round each of the yarns situated immediately to the right, the other half effecting

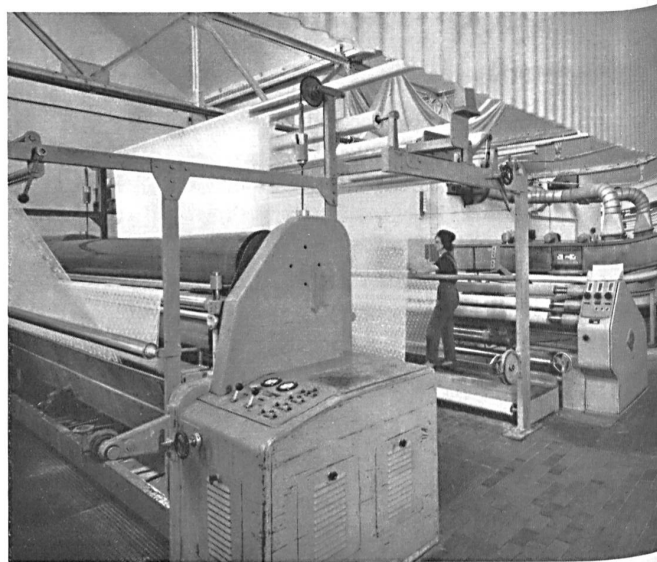
the same movement in the opposite direction. Each bobbin yarn as it turns round the last warp yarn, on the right or the left, can obviously not carry on in the same direction, and consequently has to reverse its movement. The width of a tulle loom is theoretically unlimited, so that it is possible to weave tulle in widths of up to as much as 12 yards in some cases. The net thus formed is very strong and never loses its shape. Once it has been stretched and dried on the hand tenters, its texture becomes very regular. On the other hand, it is not possible to produce tulle of widely varying degrees of fineness (size of the mesh) on the same machine and the possibility of weaving tulle with patterns is limited. Consequently the Münchwilen factory has concentrated on the manufacture of plain articles.

## Continual development

The Münchwilen firm has developed steadily and continuously ever since its foundation. We do not intend to describe here the various stages of this development, marked by the purchase of new looms and the expansion of the premises and plant. We wish simply to mention that while originally founded for manufacturing cotton tulle for the embroidery industry, the factory subsequently started to produce cotton tulle for curtaining, then rayon and even silk tulle for women's fashions and lingerie. The advent of synthetic fibres extended the firm's field of activity still further and this factory was the first in the world to use polyester fibres (filament) for the manufacture of curtains, an innovation that has since become widely established owing to its many advantages.

## Serious competition

About five years ago, the manufacture of bobbinet tulle began to meet with serious competition in the way of an imitation tulle made on raschel or warp-knitting machines. These machines had already been in existence for some time but the articles produced on them had met with comparatively little success. With the appearance of polyester yarns capable of being heat-set, it became possible to use these machines for the manufacture of imitation tulle, which did not lose its shape, the yarns being made to keep their original position permanently.



## A necessary step

In view of the rapid evolution of the situation, the Swiss tulle industry had to adapt itself without delay if it did not wish to lose a large section of the market. It decided therefore, while there was still time, to purchase a number of raschel looms and modify its production accordingly. This step proved a wise one because the popularity of cotton tulle curtains fell off rapidly while that of polyester net curtainings in raschel tricot grew steadily. Within five years, the production on warp looms became just as important as the traditional production on bobbinet looms. To differentiate these two types of manufacture, all articles in Münchwilen warp tricot bear the trade name « Muratex » (abbreviation for Münchwilen-Raschel-Textiles).

## What is Raschel tricot?

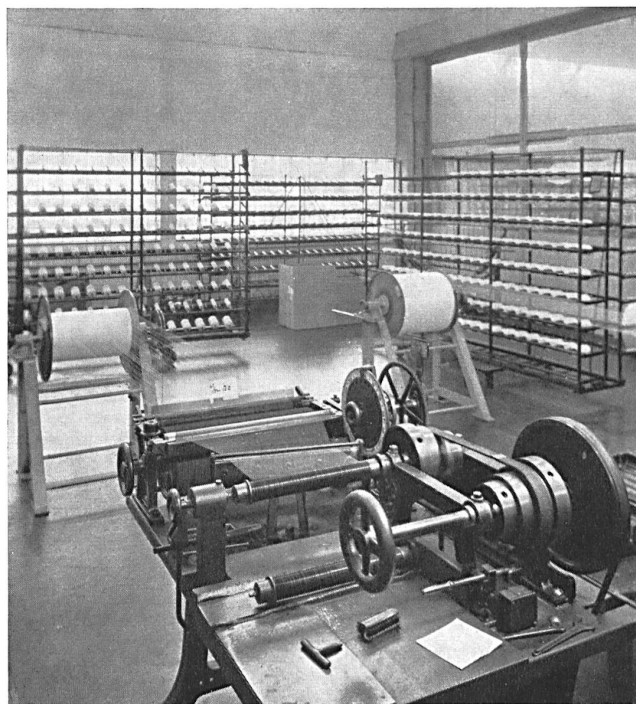
Nobody is quite sure where the name « raschel » comes from, although some maintain that the process is named after the famous French tragedian Mademoiselle Rachel (1820-1858). In a raschel loom there is no weft, only warps, of which there are at least two, sometimes more.

In this type of knitted article, the yarn forms a series of interlocking double S's. Each double S forms what is known as a stitch. A series of stitches placed one beside the other forms a row, and a series of stitches laid one above the other forms a rib. These stitches can be obtained either with a single yarn or with several series of yarns, which are interlocked with the yarns on either side, lengthwise, forming a warp knit. With both methods, the tricot obtained is stretchable in all directions owing to the yarns being able to slip in their stitches; at the same time, it is to a certain extent elastic owing to the tendency of the stitches to return to their original shape, in which the tensions of the different yarns are balanced.

Although raschel machines do not work with such wide widths as the bobbinet machines, they are more economical than the latter, as they produce tulle more quickly and can make a variety of patterns. It should be added that they are also used for the manufacture of the nylon tricot fabrics that are so popular nowadays for men's shirtings.

## Accessory activities

Naturally a type of manufacture so different from the traditional weaving calls for the preparation, within the factory itself, of the warps, the weft bobbins, and even the lapping, by means of cotton, rayon or nylon, of the rubber yarns necessary for the manufacture of elastic tulle and tricots. The finishing of the completed products is also carried out on the premises; the operations, although similar to those required for the finishing of traditional fabrics, are carried out on special machines, mainly because of the extraordinarily large size of the material, which in the case of bobbinet tulle may measure anything up to 12 yards wide and 100 yards long. Among the finishing operations, let us mention in particular washing, dyeing, stretching and heat-setting. In this field, the Münchwilen firm has always been able to maintain its output by keeping abreast of progress, so that



The warping process in the manufacture of tulle



Part of the premises where Muratex (raschel) articles are made

it is also capable of carrying out finishing to order for other firms. Only printing, which does not play a very important role, is done outside. Let us add that, at the present moment, the Münchwilen factory is being completely transformed and that it will be the first in the world to be equipped with hand tenters for drying with conditioned air.



Machine for covering rubber or Lycra yarns

## Manufacturing programme

In the manufacturing programme, a distinction must be made between bobbinet tulle and the totally different Muratex articles. In the first category, the Münchwilen factory still produces cotton tulle for embroidery and mosquito netting, as well as pure silk tulle known as « Illusion », which is still very popular in the United States today for the making of bridal veils. Also in bobbinet, elastic tulle is manufactured in rubber yarns or Lycra and tulle for curtains in polyester, whenever large widths are required.

In Muratex, both plain and fancy qualities are made for curtains, exclusively in polyester filaments, lace type articles for dresses and lingerie as well as elastic articles in rubber and Lycra for the corsetry industry. It goes almost without saying that inflammable articles are treated with a flame-proof finish in accordance with the legal regulations governing such articles.

## The human factor

The Swiss Net Comp. Ltd. at Münchwilen employs some 300 men and women, mostly of Italian origin. For technical reasons, the production process cannot be automatised to any great extent, hence manpower plays

an essential role. The firm has always shown great concern for the welfare of its personnel. In 1941, it created a reserve fund to which it makes frequent donations, but almost right from the start it built accommodation and dining halls for its unmarried workers while providing apartments for its married workers and their families, and assisting its staff to build their own homes.

## Confidence and progress

First of all, there was the confidence of the firm's founders in the accuracy of their calculations and forecasts, in themselves and in their staff. Then the confidence the factory inspired in its customers, by accurate work, excellent workmanship and the quality of the raw materials used.

Finally, the confidence in the future created by the certainty that the Swiss tulle industry is keeping constantly abreast of technical progress and passing on to its customers the benefit of the improvements made in the field of raw materials as well as in that of manufacture.

Confidence and progress, this motto sums up the reasons for this firm's success during the last fifty years and augurs well for its future development !

*René Cadet*