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From the testing laboratory to the fashion show

In all fields of industry, large sums are now set aside for scientific research and technical development. The search for new and continually improved products calls for large-scale efforts and close collaboration on the part of research organisations and production circles. And yet, even someone professionally connected with textiles seldom pauses when examining a modern clothing fabric, a poplin for raincoats or men's shirts, to think of the enormous amount of work that goes into the production of such a product. The pleasure given by the pleasant handle, attractive colours and designs makes one forget all the processes involved: the careful choice of raw materials, the finely calculated balance between natural and artificial fibres, the right dyeing process for the material, the finish, etc.

The role of textile research is to determine which of the many new fibres, dyestuffs and auxiliary products offered by the chemical industry will give the best results. The fabrics made with the new fibres must be tested for resistance and wearing qualities. They require new bleaching and preparatory processes prior to dyeing and finishing. The suitability and fastness of the new dyes are also subjected to searching tests. Finally, every day sees the production of new finishing products which give fabrics qualities of use and wear that would hardly have been dreamed of a mere ten years ago.

At each of the above stages, scientific research ruthlessly eliminates all the products and processes that do not come up to the very highest standards. A large number of laboratories equipped with extremely ingenious apparatuses, a veritable arsenal of highly perfected testing processes and last but not least a host of experienced textile technicians and chemists are at the service of the Stoffels production teams. In the fibre laboratory, new fibres and fabrics are examined under the microscope; in the dyeing laboratory, new dyes and combinations are tried out and tested; in the finishing laboratory, the new finishing products and their combinations are tested for their practical qualities, the chemical laboratory in its turn perfects new methods of bleaching and preparation. In an airconditioned testing room, tests are carried out on the characteristics of fabrics, the fastness of colours and the new finishes, under the very same conditions they are expected to meet in practice, in the form of finished garments. A well-stocked library provides chemists with the most up-to-date technical literature. Mention should also be made of the invaluable collaboration afforded by the Federal Institute of Technology in Zurich, which allows the technical staff to keep abreast of the latest textile research taking place all over the

world. The Federal Material Testing Laboratory and Research Institute (EMPA), whose textile section is situated in St. Gall, the home of Stoffels, is continually consulted on the special questions connected with development and testing in the field of textiles.

Months may go by before a new fabric meets with the high standards laid down by Stoffel & Co. for allowing its products to be put on the market. Actually this is quite understandable when one realises the numerous stages of development and testing through which a new fabric, a mixture of cotton and terylene, for example, has to pass. First of all it is necessary to determine the right proportion of the two kinds of fibres; in the laboratory reserved for the study and testing of fibres, the fabric is next tested for strength, stretching, resistance to tearing and friction, insulating power, reaction to staining, washability and ironing behaviour. If a single one of the stages in this severe examination gives a negative result, the fabric is rejected.

Practically every type of fabric requires a special type of dye. In the dyeing laboratory, hundreds of dyes are tried out and tested on the samples of fabric. Finally, only those possessing the best qualities and the highest degree of fastness are adopted. In the testing and chemical laboratories, the dyed fabric is submitted artificially to the effects it is expected to resist in practice: sunlight, washing products, perspiration, heat of the iron, etc. In this connection, it is interesting to note that a given fabric dyed with identical dyes may react differently to the tests depending on the finish it has been given. That is why it is necessary to carry out experiments in order to determine the ideal combination of a given dyestuff with the appropriate finish. This matching of the dyestuff and finish is becoming more and more important. By means of special finishing processes, it is possible greatly to improve the appearance, touch, wearing qualities and reaction to washing of fabrics, especially cotton. By treating cotton with artificial resins and loading products, it can be given the brilliancy and handle of silk; impregnating it makes it water-repellent and resistant to stains; thanks to resinous finishes, men's cotton poplin shirts no longer require ironing; finally, other resins stabilise fabrics to such a point that they no longer shrink when washed.

Before a finished fabric goes to a ready-to-wear clothing factory, appears on the counter of a shop or the runway of a fashion parade, or is put away in cupboards and drawers, it is thoroughly examined at the testing laboratory where it is spared nothing — from artificial rain to tests for resistance to tearing and experimental washes — of what it will have to stand up to later on in its existence in the form of a shirt, waterproof, summer dress or curtains. And it is only when it has victoriously surmounted the whole gamut of these pitiless tests that the green light is given for it to be manufactured on a large scale in the Stoffel factories.

Stoffel & Co., Saint-Gall