



織

W o v e n t e x t i l e s

上下に開いた経糸の間に緯糸を渡す際、手で行うのではなく緯糸を持った杼(シャトル)を飛ばすことを発明したことで、18世紀、イギリス産業革命は始まった。日本でも織機の開発からトヨタ自動車が生産したが、糸から布を織る手間の合理化は人々の長年のテーマであり、そこに技術や知恵が投影されてきた。現在のシャトルは1分間におよそ180回前後往復する。空気や水の噴射で緯糸を通す機械もある。経糸と緯糸の交差の仕方は組織といい、経糸が交互に表出する平織(交点は2)、2本とびとなる綾織(交点は3)、一方が多く表出する朱子織(交点は5以上)を基本の三原組織という。綜統を吊る枠の枚数を増やし、組織を変化させると複雑な文様となる。綜統枠が16枚以上必要となるものは、ジャカード織機で織られ、経糸の上下は、紋紙という穴の開いた紙で指示する。0、1の組み合わせで情報を構築しており、コンピュータの原点きばたと言われる。糸染めをしていない糸で織られた反物は、生機と呼ばれる。

The 18th century saw the beginning of the Industrial Revolution in Great Britain, and the discovery of the flying shuttle that held the yarn and could be propelled through the cloth during the weaving process. In Japan, a loom manufacturing company that had devoted many hours over many years to the rationalization of the task of weaving cloth from yarn would eventually become the Toyota Motor Corporation. The shuttles used now do about 180 round trips a minute. There are also machines that pass the weft using air or jets of water. The intersecting of the warp and the weft is called the weave and the basic weaves are the plain weave (two intersecting points) where the weft and warp pass over and under each other in alternate rows, twill (three intersecting points) where the weft threads are passed over two or more warp ends, and the satin weave (five or more intersecting points) which is either warp-faced (showing predominately warp threads) or weft-faced (showing predominately weft threads). As the number of heddles used for lifting the warp threads is increased and the weaves are varied, the patterns become increasingly complex. Fabrics that require more than 16 heddles are woven on a jacquard loom and the top and bottom of the warp is indicated by a card in which holes have been punched, a *mongami*. These punch cards that construct information by combinations of the numbers 0 and 1 are said to be the precursor of the modern computer. Rolls of cloth woven with thread that has not been dyed are called *kibata*.

糸をループ状にし、次のループを順次引き込み、編まれるニット製品。靴下からスーツまで、多彩なかたちが生み出される。横方向に進んでいく緯編、縦方向に進んでいく経編がある。緯編機には平型と円形(丸編機、靴下編機)がある。経編も原理は緯編同様だが糸数が多く、箆に固定された導糸針を通すので、ループがほつれて伝線することはない。織物に比べて小ロットで対応できる利点があり、多様な編み方や加工によって差別化がはかられている。糸へのこだわりもそのひとつ。通常、製糸(絹)や紡績(綿など)された糸は、2本以上合わせて撚りがかけられ、撚る方向や回数によって糸に変化をつけている。さらに特徴ある布をつくるために、意匠糸も用いられる。また複雑な動きを重ねる編機の精度を保つために、適宜、部品は解体しメンテナンスが行われる。

Knit products are produced by interlacing yarn in a series of connected loops. Various shapes from socks to suits are created in this way. There is weft knit that runs in a crosswise direction and warp knit that runs in a lengthwise direction. Weft knitting machines are either flatbed or circular (round knitting machine, sock knitting machine). Knitting has an advantage over weaving in that it can be carried out in small lots and various knitting methods and processes create recognizably different knits. The use of different yarn is an example of this. Ordinarily, two strands or more of yarn that has been spun are twisted together and changing the direction and the number of times the yarn is twisted changes the final product. Fashion yarns are also used to produce even more unusual textiles. Knitting machines that have so many repetitive, complex movements are dismantled when required and undergo maintenance to maintain their precision.

編

K n i t t e x t i l e s



丸編み機、丸とニットにて撮影
Circular knitting machine, photographed at Maruwa Knit



意匠糸、青山繊維加工より
Designer yarns
from Aoyama Sen-i Kakoh