YARN,[1] the name given to any textile fibre when prepared by the process of spinning for being woven into cloth. It is only in a few minor and exceptional cases, such as the weaving of haircloth or wire, that there is any making of fabrics without the previous spinning of yarn. But yarn is of the most diverse description, and its value varies in proportion to its lustre, its bleaching and dyeing properties, its fineness, strength, elasticity, uniformity of diameter, smoothness, suppleness and colour in its natural condition. Yarn is single, folded and fancy, and if twisted to the right it is called twist way, and if to the left, weft way, but those terms do not necessarily imply that the yarn is for either warp or weft.

Single Yarn consists of fibrous matter as twisted together during the process of spinning. If it is intended for warp it should be strong, elastic and smooth; if for weft it has less twist and is spongy. The raw material from which yarn is made has much to do with its appearance and value. Thus *Cotton Yarn*, although it varies from a soft spongy thread to a closely compacted one, is generally dull in appearance, soft, pliable and of but moderate strength and elasticity. Dulness in this material is not, however, a constant feature; when combed and gassed it is brighter than when simply carded, and when mercerized it assumes a high lustre. *Cotton-waste Yarn* is of two classes, both of low counts, and is made from the cotton wasted in the preparing, spinning and weaving operations: one from soft material that had not previously been spun; the other from hard threads which are broken up into separate filaments. The best grades of cotton have been spun into commercial threads, 588,000 yds. of which weigh 1 lb, but for experimental purposes much finer threads have been spun. For yarn in more general use the range is up to 250,000 yds. per lb. When spun from soft waste it is up to 13,400 yds. per lb, and from hard waste it is up to 2520 yds. per lb. *Linen Yarn* is of two kinds, namely, Line and Tow. In their natural conditions both are stiff, inelastic and somewhat rough, but the method of spinning has much to do with their appearance. If spun wet they are more compact, smoother and brighter than when spun dry; yet line yarn is always stronger and better in these respects than tow, which is by comparison soft, full and hairy. Both bleach to a pure white, become lustrous and moderately soft. Exceptionally fine linen yarn contains 180,000 yds. per lb, but the range of line yarn in general use is up to 60,000 yds. per lb, and that of tow 10,000 yds. per lb. *Woollen Yarn* is soft, spongy, hairy, elastic, moderately strong and possesses felting properties in a high degree; it bleaches indifferently but dyes readily. It is spun into threads that range up to 15,000 yds. per lb. Several kinds of waste yarn are spun from wool, such as Shoddy, Mungo and Extract, most of which are irregular, lustreless and only suitable for coarse counts, but they dye well. *Shoddy* is made from the liberated fibres of soft spun woollen threads and cloths that have not been felted. *Mungo* is made from the liberated fibres of hard spun woollen yarn, and felted cloths, while *Extract* is made from the woollen material contained in mixed goods, the vegetable fibrous matters from which have been destroyed by acids and heat. *Worsted Yarn* is made from combed wool, and is, as a consequence, uniform in diameter, lustrous, smooth, very elastic and strong. It is spun into threads that range up to 56,000 yds. per lb. *Silk* is made into Net, Spun and Noil yarns, all of which are readily dyed. *Net Silk* yields Organzine and Tram; both are, in proportion to diameter, the strongest and most elastic of textile threads, and are highly lustrous and smooth; but organzine is hard twisted and used for warp, while tram is slightly twisted and used for weft. They give a range up to 450,000 yds. per lb. *Spun Silk* is made by combing and spinning the material wasted during the conversion of cocoons into fabrics; it is less lustrous and elastic than net silk, also weaker. *Silk Noil* is made from the fibres rejected by the comber during the making of spun silk, and is inferior in all respects to spun silk. *Mixed Yarn* is obtained by mixing and spinning different fibrous materials together; as cotton and wool, silk and ramie, and the proportions in which they are mixed vary from 10% to 80% of the most expensive fibre. The counts of single yarns made from different fibres are differently expressed, as are occasionally those spun in different districts from similar fibres. Cotton yarns are based upon the number of hanks, of 840 yds., contained in 1 lb; linen, upon the number of leas, of 300 yds., in 1 lb; worsted, upon the number of hanks, of 560 yds., in 1 lb. Wool is expressed in the West of England by the number of hanks, of 320 yds., in 1 lb.; in parts of Yorkshire by the number of skeins, of 1520 yds., in 6 lb; in some parts of the United States by the number of runs, of 1600 yds., in 1 lb. Silk is expressed by the weight of 1000 yds. in drams; also by the weight, in deniers, of 476 meters, the denier being an Italian weight equal to $\frac{1}{5533}$ part of 1 lb; spun silk, by the number of hanks, of 840 yds., in 1 lb.

Folded Yarn.—Yarn is folded to impart increased strength, elasticity and smoothness, and is used, both glazed and unglazed, for warp and weft in ordinary fabrics. It is also made for such special purposes as sewing, lace-making, crocheting and hosiery. The counts of these yarns are expressed according to the number of threads twisted together, as 2/50^s, 3/60^s; the former indicating that two threads of 50^s, and the latter three threads of 60^s, were twisted together to yield yarn of 25 hanks and 20 hanks per lb respectively; the count of the single yarn being invariably named in the cotton, linen, woollen and worsted trades. With spun silk the practice adopted is to name the count of the folded yarn; thus, 70/2 and 40/3 imply that two threads of 140^s and three threads of 120^s were respectively folded together. *Sewing Cotton* should be smooth and strong, and much of it is from two to six cord. When two or three cord, the doubling twist is in the opposite direction to that of the singles. When more than three cord, it usually undergoes two twistings, the first in the same direction as the single threads, the second is in the opposite direction to, and more closely twisted than the first. Thus:—A six-cord thread is first folded and twisted two into one, then three strands of two fold are twisted into one; after which it is sized and polished. *Lace Yarn* should be strong, elastic, smooth and spun twist way in the singles, but doubled weft way. *Crochet Yarn* is bulky, elastic and has a corded appearance. It is twice doubled: the first time it is twisted in the opposite direction to the singles, the second time in the same direction as the singles. *Hosiery Yarn* is often a soft, bulky, single thread, but it is also folded, sometimes without being twisted, at other times it is slightly twisted. There are two types, namely, wool and silk, neither of which need be made from the fibres named. For the former a hairy surface is not objectionable, but the latter should be smooth, and may be gassed. *Polished Yarn* may be either single or folded, but it should be fully twisted and level. It is bleached or dyed in hanks, immersed in size and polished with brushes while the size is moist.

Fancy Yarn is made by twisting together threads of different counts, colours, materials or twistings, at regular or irregular tensions, and in the same or opposite directions. The effects thus produced are known in commerce under a great variety of names, of which the following are a few. *Grandrelle* is probably the one in greatest demand; it has a mottled effect which is due to uniformly twisting together two threads of different colours, but of approximately equal counts. In some cases the folding twist is slight, in others it is considerable. *Mock Grandrelle* presents a similar appearance to true grandrelle, but is made at the spinning machine by twisting together two rovings that are dyed in different colours. *Flaked Yarn* has a cloudy appearance imparted to it, (*a*) by twisting a hard spun thread with a roving, which, at regular or irregular intervals is made thick and thin by drawing rollers; (*b*) by supplying, intermittently, during carding or spinning, tufts of extra fibre to a thread; or (*c*) as in *Knickerbocker Yarn*, by dropping small quantities of dyed fibres into two, similar or dissimilar, rovings at the spinning machine, or into two, similar or dissimilar, threads at the doubler. *Corkscrewed Yarn* has a spiral surface effect which may be produced in different ways, such as twisting threads together that differ in tension, in count and in the quantity or direction of the twist in the single threads. If a fine, hard spun, single or folded thread be twisted with a coarse, soft spun single, the coarse thread will wrap itself about the fine one and give a corrugated surface. *Chain*, and other effects may be given by two foldings and twistings, if for the first doubling a coarse soft thread is twisted with a finer one having medium twist, and for the second a still finer thread is twisted with the twofold one, but in the opposite direction and with a different number of twists per inch. *Gimp Yarn* is spiral in structure and requires two doublings, the first to form a twofold spiral, then, at the second doubling, a fine tight thread is added. *Knopped Yarn* is formed by twisting together several strands, one of which is at intervals delivered in greater lengths than the others, in order to allow a loop to be made; the direction of twist in one single may differ from that in another. *Curled Yarn* is produced by twisting two supple threads round a longer and stiffer one, after which a fourth thread is added: (T. W. F.)

[1] The etymology is uncertain, but apparently the word is cognate with "cord." The meaning "tale" comes from something spun out.