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MODERN COUNT OF YARN

What is wrong with our methods of measuring or "counting" the yarn? Well, for one thing they are not efficient, but this should not bother us too much - one can get used to anything. On the other hand however they are so confusing that we do not understand each other - which is a more serious matter. For instance in some English speaking countries $3/2$ cotton means three plies of No.2, and in the others - two plies of No.3. But cotton and linen are not as bad as wool, because you can find in the same locality a different order of numbers for cotton than for wool. For instance: two plies of No.16 cotton are written: $16/2$, but two plies of No.16 wool are: $2/16$. Rayon is often numbered in the same way as cotton, but it also follows the count of silk.

There is still more confusion with basic numbers. No.1 cotton is always (in English speaking countries) 840 yards per pound, and linen - 300 yds/lb, but who knows what is No.1 wool? It may be the same as cotton or the same as linen, or 560 yds/lb. Silk can be counted in 5 different ways (see "Facts about Silk" in the same issue of MW).

Thus the only way of being sure of the grist of our yarn is to express it in number of yards per pound. This seems like an excellent idea. Why not use it for all the yarns? For instance we could call No.1 of any yarn such grist which would give 1000 yards to the pound, or any other round number for that matter. Then No.2 would have 2000 yds and so on.

Well, this good idea is known and used all over the world with the exception of United States and British Commonwealth. It is difficult to understand why we do not adopt it.

But if we are dissatisfied with our system of measuring the yarn, and find it too complicated and not sufficiently uniform, let us have a look back to the beginning of the 19-th century in England. How did the weavers then figure out the amount of yarn needed for any particular project in weaving?

First of all they would hardly ever speak about yards. For large amounts of yarn there were "Spyndles" which had for instance 14.400 yds for linen, but 15120 for cotton and wool. Because of

imported French yarns there were also "Pences" of 16.800 yards. These were subdivided into smaller units: "carr" = 4200 yds, "hank" or "heep" = 3600 yds, "number" = 840 yds, "heer" = 600 yds, "cut", or "slip" = 300 yds, "port" = 280 yds, "shift", or "skeen" = 120 yds, "knot" = 60 yds, "thread" or "split" = 54, or 90 inches, "seventh" (used only in warping = 7.715", or 12.86", and finally "quarter" = 9 inches.

Most of these units were used at the same time in the same place. In Colonial times some of these measures were adopted in America, some (fortunately) forgotten, but there was never any serious attempt to create a uniform system which could be applied to any yarn whatsoever.

Why do we want such a uniform system? For one thing, to be able to order yarn from any place on the globe, and have an idea of what we are going to get. Or read a Scandinavian draft and be able to use it in practice. Or write to a Mexican friend about our latest achievements in weaving.

Since such a system exists and is old news in most of the countries of the world, it would be a good idea to get acquainted with it. I do not mean that we should change our methods. Not at all. They are very romantic and go very well together with our quarts which are not quarts across the border, degrees of Fahrenheit based on the personal aversion to cold of the inventor, "gauges" of wire, and daylight saving time - which saves about the only thing we can afford to waste.

But why not learn both systems at the same time, so that when we are in a serious trouble we still can explain what we mean?

The system about which we are talking, is a part of the metric system of measures. Granted that it is not perfect - in most cases it is decimal though. This means not only that one unit of measure is ten times smaller or larger than the next one, but also that one does not need to remember more than one unit in each case - all other units being derived automatically from the basic one, both as to the size and as to the name.

In weaving we need only one such unit. It is called just No.1 and it contains always 1 meter of yarn per one gram, or one kilometer per one kilogram regardless of the nature of the yarn. It may be silk, or binding twine, nylon, or metal.

No.2 means two meters per gram. No.10 = 10 meters per gram, and so on. Not only it looks simple, but it is simple.

By a strange coincidence the conversion of metric numbers into yards per pound is extremely easy. Number 1 (metric) is about 500 yds per pound. Therefore to find yds/lb corresponding to any metric number, we multiply the latter by 500. Thus No.32 metric has 16000 yds/lb, No.28 - 14000, No.7 - 3500, and so on.

The coefficient 500 is not quite exact. It should be really 496, but in practice the difference of less than one per cent is negligible. The variations in size of yarn even on the same tube or skein are greater than that.

Now what do we do, if we know the English number but would like to express it in metric system? First we find the number of yards per pound, and then divide it by 500. For instance: cotton No.16/2 is the same as No.8, and has therefore $8 \times 840 = 6720$ yards per pound. This divided by 500 gives roughly No.13 (or 13 1/2). Linen No.28 will have $(28 \times 300) 8400$ yds/lb, and its metric number is about 17.

If you like better to work with formulas, here are four: for cotton, linen, wool, and silk (in deniers).

$$\text{Cotton: } M = \frac{Nc \times 840}{500}; \text{ or } M = 1.7 \times Nc.$$

$$\text{Linen: } M = \frac{Nl \times 300}{500}; \text{ or } M = .6 \times Nl.$$

$$\text{Wool: } M = \frac{Nw \times 560}{500}; \text{ or } M = 1.1 \times Nw.$$

$$\text{Silk: } M = \frac{9000}{d};$$

where: M - metric number, Nc - number of cotton, Nl - number of linen, Nw - number of wool, and d - number of silk in deniers.

If we convert the metric number into the conventional English number, then we may use the following formulas:

$$Nc = .6 \times M; \quad Nl = 1.7 \times M; \quad Nw = .9 \times M; \quad D = \frac{9000}{M}.$$

The coefficients are only approximate but nothing would be gained by figuring them out with more accuracy.

The metric system of measuring the yarn has one more advantage. It simplifies the analysis of yarn. When we have yarn of unknown count, we cut off one meter of yarn and weigh it in milligrams on a small scale which must be very sensitive but not very accurate. Such a scale can be easily made at home. The weights (a set from 10 to 500 mgs) can be purchased in any store carrying school or laboratory supplies.

To find the metric number we divide 1000 by the weight of our sample. Thus if one meter of yarn weighs 25 mgs it is No.40. If the yarn has more than one ply (find out by untwisting) then this number is multiplied by the number of plies exactly as in the English system. If in our case of 25 mgs per meter there were 3 plies, then we multiply 40 by 3 and then mark the number of plies at the end, thus: 120/3. If we want to stress the fact that the yarn is single, we write it: 40/1. Otherwise the number alone (40) does not give any information as to the way the yarn was spun.
