

Small capital prevented large enterprises in those days of the beginnings of the wool manufacture. The comber, however, whose savings permitted him in time to buy his own stock, which he sold in the form of tops, gradually took other combers into his employ, and, as machinery came into vogue, he was able to utilize it, selling his tops to the spinner, who, at first, conducted his business in the household, developed his branch of industry in the same way, and still sold his yarn to the weaver, and so on, to the completed fabric. As machinery was gradually invented and introduced and the old hand manufacture driven out, this differentiation continued along lines which, as we have seen, had been established for many generations. This custom has been so firmly fixed in the methods of manufacture in England, that there are but slight departures from it to-day, because experience has led men in that country to believe that on the whole, it is the most efficient and economical system of manufacturing.

The factory system of manufacturing grew up in the United States under circumstances wholly different from those I have described. Up to the time of the Revolution, we had practically no textile manufactures here except those carried on in the household. Our people wore either "homespun" or imported fabrics. In the meantime, the factory system was developing at rapid strides in England. The English manufacturers realized what a source of wealth and commercial supremacy they would have if they could keep these textile manufactures in their own country. The British Parliament, therefore, enacted laws, which, under the most stringent penalties, prohibited the exportation of textile machines of any nature or any parts or models of them. During the Revolution, the few manufactures we had were disorganized, but at the close of the war, when our people once more turned their attention toward the manufacturing industries and wished to develop them as they were being developed in England, with new processes and new machinery, they found that by these Acts of Parliament it was impossible to import the necessary machinery. In this country there was none of this new machinery, the use of which had already revolutionized the textile manufacture abroad.

In the woolen industry, our earliest mills were the developments of the old carding and fulling mills of the Colonial days. At the beginning every man was literally his own weaver, and the wool manufacture was unknown outside of the household. Each farmer raised his own sheep; he clipped and washed their fleeces, while his wife and daughters made the yarn and wove the coarse fabrics on the hand loom. The processes were simple; the wool, after washing, was combed as straight as possible with two cards, with leather backs and wire teeth, which were held in the hands. The wool was taken from the cards in a long, soft roll, and spun upon a large light wheel, sometimes kept in motion by the hand, sometimes by a treadle. The wheel caused

a single spindle to revolve with great velocity, and this spindle gave to the yarn its twist, the dexterous fingers of the operator regulating the supply of wool and the consequent size of the yarn. The degree of uniformity secured by this method was the evidence of marvelous dexterity. After the spinning followed the weaving on a slow moving wooden hand loom, and the dyeing and fulling by hand. The first variation in this household manufacture came with the introduction of the outside fulling mill for the preparation of the cloth after it had been woven. This part of the manufacture was naturally the first one to be done outside of the household, for it required appliances not convenient to have or easy to handle in the house. The carding mill also soon appeared, and these two mills were the real forerunners of the New England woolen mill of to-day. They were apt to be found side by side, for one was a help to the other, and both required water-power. Both adjuncts, originally, of the household industry, they were frequently combined in one mill, and, when that combination was made, the steps to the spinning jenny and the loom were short and followed naturally. Thus we have the genesis of the woolen factory of America. The tendency to consolidate all branches of the industry under one roof was a feature from the start, and as has been shown, it was a tendency entirely different from that which continued in England after the appearance of power machinery.

On every side we see significant indications of the growing perception of the fact that in these days business sagacity and ability must be reinforced by the best educational opportunities. This is pre-eminently the age of the trained man; the untrained man is at a great disadvantage in trying to make a place for himself or to solve the problem of success. Superior education was once regarded as essential only to the success of the professional man, and it was assumed that natural sagacity and alertness were sufficient capital for the business man. Under the conditions of modern life and the growing pressure of competition, it is now seen that special training is as necessary for the man of affairs as for the man of letters, law, medicine, or theology; and that the uneducated business man—the man, that is, who is not specially trained in his own field of enterprise—is a man not properly fitted for his work and probably doomed to failure; in any event he is greatly handicapped. In Germany, especially, great strides have been made along the lines of practical education. The partnership of the German textile school and the German manufactory, which has been developed during the last ten years, has seriously menaced the commercial supremacy of England, and has led in the latter country to the establishment of schools for the training of business men along scientific lines.

When the power machinery was introduced in America and factory-made cloth began to supersede the