the shop. One hundred years ago the mechanic and the artisan were trained as apprentices. Shops were small, numerous and domestic. Owners worked with their men, knew them, and were known of them. Shop processes were hand processes; there were no machines or simple machines. Apprenticeship was long and exacting, but profitable both to owner and workman. The latter graduated from the shop a finished journeyman skilled in all the processes of a trade. The former, in an age which laid stress upon quality and not quantity, enjoyed at little cost the services of a carefully-trained young workman. But the apprentice ship system is going or gone. It was human and personal, and modern industrialism is not human or personal. It departs rejected of all men. The shop now lays stress upon quantity, not quality, and the owner no longer finds the apprentice profitable. Skilled in one small process in a trade, and jealous of the secrets of that process, the journeyman is now unwilling and incompetent to train the apprentice. And for the apprentice himself, the system is too slow and its rewards too remote. He can rise to the stature of a laborer, a helper, or a machine attendant in a few weeks. Why should he give years to a trade?

Even as the apprentice disappears, the shop teaches less and less. Numberless kitchen looms of former days become the great city factory that covers acres. Labor is divided and again divided. Five score trades of metal workers have grown out of the trade of the millwright. The butcher of early colonial days is represented in the four dozen trades of a modern Chicago packing-house. One man could once make a coat in a village tailor shop. A New York factory needs thirty-seven men. Thus the all round journeyman becomes a narrow specialist, and the man of many parts becomes the man of one part. In that part, too, he quickly attains the limit of his powers and as quickly recedes from it. "The trades of many machine attendants may be learned in a few days," said a member of the Moseley Commission. "We saw few gray haired mechanics at the machines; the pace was killing," he added. Work becomes standardized; cheap labor replaces expert labor; the machine replaces the man; the automatic in the machine replaces the rational in one thousand men. The workman does not know his employer, or his fellow-workmen, or the product which his hands help to shape. He is himself a number. "No Admittance" is written over the door of the factory. "No Admittance," not rarely, is written in spirit over its machines and processes.

While the shop teaches less, it demands more. At the workbench, knowledge now reigns supreme. Mathematics, Science and Art, as the products of patient research, now transform all industrial activities. Directly or indirectly they make old trades more exact, and more scientific, as witness the trades of the wood worker, metal worker, textile worker and engineer. Directly or indirectly they create new and highly skilled trades—the trades of the artworker chemist, electrician—and that great army of trades which minister to the comforts of our homes and our leisure hours. They replace the man-and-the-shovel by the steam-crane, physical strength by nervous energy, manual dexterity by intellectual dexterity. They lead ambitious men up and out