

In furnishing their homes, the peasantry and middle classes of Europe preserve the same frugality. Everything necessary for comfort is there, and the tables and chairs and sofas are solid and substantial.

The uncarpeted floors, with only rugs here and there to relieve the bareness, are not pleasing to American eyes; but a German or French housewife looks upon a carpet as something always full of dirt, and prefers her scoured or waxed floors, from which every morning, every particle of dust can be removed.

These homes are not by any means unadorned. There are always, especially in the houses of the well-to-do tradesmen, some well-chosen engravings on the wall, around which fresh, growing ivy is twined in graceful wreaths, as well as a few pretty vases and other inexpensive ornaments.

It is rare to find a house in town without a few good books and a musical instrument of some kind, a piano if the family funds will allow it, or at least a zither, or concertina, or flute.

Without music these people could not live. They must have some element of poetry to brighten the toilsome routine of their lives, and it is without doubt this passion for something better than mere materialism that keeps their labor from becoming drudgery, and their frugality from changing into meanness and a sordid desire for gain.—HELEN S. CONANT, *Youth's Companion*.

THE MECHANIC'S OPPORTUNITIES.

The average working American machinist does not expect to spend his whole life at the vise-bench or at the lathe. Working at the trade gives him, and, perhaps, his family, a respectable livelihood, but he expects that the skill and knowledge gained by steady application will be the means eventually of raising his condition above that of the ordinary artisan. The ambitious dreams of various men take different flights. One anticipates rising through the grades of foreman and superintendent to the pinnacle of contentment; another means sometime in the undefined future to go working for himself, when by energy and ability he will build up a business and make his mark in the mechanical world. As sentiments akin to these are cherished by a large proportion of the younger men in our workshops, it is not necessary to write words stimulating their ambition or urging them to strive and work upwards; but it may, perhaps, prove seasonable to mention some of the ways and means that can best be used to accomplish the desired ends.

The first aim of a mechanic ought to be to learn his trade properly, to become thoroughly master of his business in the shop. That is the foundation on which his first claim to preferment should rest, but if it continues to be the only claim the chances are that he will fall behind; for in these days knowledge that must be gained out of the shop is, in nearly all cases, requisite to adapt a mechanic to successfully direct other men's work. There is no tendency around our shops to undervalue manual skill. The man who can take a bold cut and push it through with decision, then with a second cut finish with prompt accuracy, will always have admirers among shopmates and employers; but the capability of making a lathe do its best work on a crankshaft is, in certain cases, really of less value than being able to calculate what strain the shaft will safely bear in actual service. A machinist may fit up the valve motion of an engine with unexcelled accuracy,

but his insight into the business is superficial if he knows nothing about the principles on which the motion is designed, yet these one-sided mechanics are legion. A good pattern-maker is one of the most useful and helpful workmen connected with a machine shop, but the training of this pattern-maker seems unfinished when he cannot tell how fast the fly-wheel can safely be run for which he has just turned out an excellent pattern. Boiler-makers perform very important mechanical work, on the character of which life and property are often dependent, but a boiler-maker has certainly a very contracted acquaintance with this trade if it is confined entirely to riveting, caulking and other work of fastening sheets together so that they will not leak under ordinary pressure. Ability to calculate the pressure that a boiler can safely stand, how much safety valve capacity is necessary for a boiler of certain dimensions, and some acquaintance with the strength of sheets appear to belong to the trade.

The lathesman, the vise hand, the pattern-maker and the boiler-maker are just as capable of doing their routine work without having the theoretical knowledge referred to, but if an employer wishes to raise either of these men to a higher position in the shop the want of this knowledge must be a serious obstacle in their way of promotion. Should either of these men start out to work for himself, he will have to obtain an insight into the principles that underlie the mechanical operations of his work, or it will be carried on at great disadvantage.

Of late years much has been done in giving young men excellent scientific training in technical schools, and the expectation has been raised that graduates from these schools would, to a great extent, fill the places of trust and responsibility within our engineering establishments; but if men with this training push mechanics aside, the mechanics themselves are to blame for not opposing the innovation by keeping themselves the more valuable of the two classes. If a machinist possesses a fair acquaintance with drawing, is proficient enough at figures to perform ordinary mechanical calculations, and has studied the elements of mechanical science, he is in a far better position to advance in his business than a technical school graduate who has not received the advantage of a proper shop training. Without passing through the experience of doing all kinds of shop work, a man is seldom competent to supervise the operations of a shop; and few employers care to employ as a foreman a man who is not able to tell exactly how long each workman ought to be in doing any job he may be called upon to perform. An experienced mechanic also has a great advantage in scheming out arrangements about tools, and in devising methods of facilitating work that greatly enhance his value when directing the work of others. For this reason, when other recommendations are equal, the mechanic will continue to be selected as foreman, and the foreman is in the direct line of promotion for superintendent or master mechanic.

When we survey the great industrial army that has passed before the world's eyes during the last century achieving such glorious victories in peaceful art, we find that the leaders were not born amidst rulers, but were men raised from lowly degree by their own perseverance, energy, and industry. The opportunities that past leaders of industry embraced, will again come around to the men of this generation who are ready and worthy.—*American Machinist*.