THE SKILLED MECHANIC

How to Become One, and What It Means to Succed in This Calling.

By NATH'L C. FOWLER, Jr.

Author of "The Boy—How to Help Him Succeed," "Building Business," "Fowler's Cyclopedia of Publicity and Printing," "Practical Publicity," "Dollars and Sense," "Gumption," Etc.

The terms skilled or skillful may be so broadly defined as to cover all hand work requiring more than the exercise of automatic action, and it may be so narrowed as to eliminate any work save that of extraordinary, or, at least, of more than ordinary mechanical ability.

For the sake of convenience, I propose to consider in this article all hand-workers whose employment demands the use of their brain at the same time that they exercise their muscles. Such men may be classified as brain-and-hand-workers or as hand-and-brain-workers, in the one case the brain doing more than the hand; and in the other, the hand accomplishing more than half of the work.

The expert worker is commercially one grade above the skilled mechanic; by the combination of ability and experience, he does some particular kind of work better than it can be executed by the so-called skilled workman. Neither the skilled mechanic, nor the expert workman, nor anyone who employs both brain and hands, can be classed as a laborer, or as a mechanic in a purely mechanical sense. While by the false ethics of an artificial society the skilled mechanic and the majority of expert workmen are not considered the social equals of successful workers in some other callings, they are recognized at their full worth by the representatives of civilized society. And this recognition is advancing in mighty strides, and sooner or later the combination of brain and hand work will rank so high that society will dare file no exceptions to it.

The formation of gigantic monopolies, the consolidations of capital, and the fearful increase of business upon paper, cannot but produce a reaction which will apprize work at work's value, and render unto intelligent workmen the appreciation of high progress The skilled workman is a product of civilization, and progress in no small measure depends upon the work of his brain and of his hand. He is a builder of something, a maker of the tangible. The institute of technology and the technical school are to-day more vigorously pushing progress than are many of our classical institutions which teach less of the necessities than the realities of life.

Chances to Rise.

The bright, capable workman, with a fair education, does not permanently remain at a standstill in any department of mechanics, unless, in spite of his mechanical ingenuity and capacity, he completely lacks ambition, a condition which too often exists. Sooner or later, he may become a foreman or superintendent, and possibly a manufacturer.

The boy without pronounced business or professional capacity stands a better chance of success, both in the present and for the future, by entering some trade which allows his hand to do his hand's best, than by taking chances with what he is probably unfitted for. If the bulk of his work is something which encourages and develops his handicraft, he is reasonably certain of rising from the ranks and of earning a comfortable livelihood. The workman is almost certain of permanent living wages.

If his mind takes little thought of what his hand is doing, an ordinary mechanic he will remain; but if the work of his hand comes under the intelligent direction of his brain, then he will rise as high as his combination of brain and hand will allow; which may be only a few steps above the ordinary or to any height, even to that of manufacturer and proprietor.

The ordinary mechanic, above the laborer grade and beyond the apprenticeship step, earns from $10 to $12 a week on an average, and up to seven dollars a day as a maximum. The skilled workman, who is able to do something beyond mere hand-work, seldom receives less than three dollars a day, and from that up to five dollars a day. The expert workman often earns as much as $2,000 a year, and from that up to $5,000 a year, although comparatively few receive the latter amount. His average income is probably not in excess of $2,000, although there are by no means a small number earning as much as $2,500 a year. The foreman and superintendent, who are either skilled workmen or expert workers, and who are disciplinarians as well as mechanics, are seldom paid less than $1,000 a year, the amximum being not far from $10,000, and the average from $1,200 to $1,500 a year.

The terms foreman and superintendent are, to an extent, analagous, and frequently both offices are vested in or[illegible]n; but the superintendent o[illegible]foreman, the latter being u[illegible]of a department, w[illegible]ent is manager [illegible]d has gen-

stand the principles of electricity. To an extent, at least, they are expert workers. The railroad engineer is a machinist, but he is classed above the ordinary mechanic. He is a man of nerve, of character, of presence of mind, of discretion, and able to meet emergencies. Without an abundance of qualities beyond those of mechanical ability, he would not be able to successfully hold the throttle of a freight locomotive.

Ability in Demand.

While shrewdness in business pays better than skill in mechanics, and while this business quality undoubtedly wins a greater money return than does any work of hand or of intellect, yet the skilled workman is not without opportunity for rapid advancement. He is in no sense a second factor in civilization. As a matter of fact, he has a right to be really prouder of his attainment than has the man whose wealth consists only of money. When civilization advances another peg, the skilled mechanic, the man of brain and hand-action, will have the same social recognition as does the rank and file of our business and professional men. The quality of skilled labor is rapidly growing better, and is progressing by such gigantic strides that it is only a question of time when the intelligent work of the hand will be considered upon the same plane as is the work of the brain, and there will be no such thing as despised labor. There will be little labor that involves muscle alone.

Comparatively few educational authorities, or those who have given educational ways and means intelligent thought, are in favor of a classical college education for those who propose to enter a mechanical trade; but the educational opinion is almost unanimous in advising, for anyone who intends to be more than a common laborer, a course in the technical school of institute of technology, or, at least, a course in manual training. The boy who enters a trade without, at least, a partial technical education, is liable to stay near the bottom, or to rise very slowly, while the technical-school-trained boy usually makes rapid advances after his first year at work. Of course, experience teaches, but experience is often too far away to properly instruct in the preliminaries. A few years given to hard technical study in a good trade school or institute of technology will pay better in the end than can any amount of working experience. But on the other hand technical education without experience is well-nigh worthless.

Experience without technical education is worth something. The combination of the two wins success. A thorough technical education, with experience, never allows its possessor to remain at a standstill. He must rise, and generally rises rapidly.

Technical Training.

No boy should begin to learn a trade, unless poverty requires it, until he has received a good common school education; and, if possible, he should enter some technical school to be scientifically trained for his work. Time spent in a technical school is not wasted. It pays. Perhaps not during the first year of active work, but during the second year its advantages will permanently appear. The well-educated hand-worker is sure to outstrip the untrained workman. It is a fact that few well-educated and well-trained mechanics remain in the rear ranks, and that most of them are either front-rank workmen, or are promoted to command.

Let us take two boys of equal capacity and of equal trade opportunity. One spends, say three years, in the technical school, and the other enters the shop immediately after graduation from the common school. The latter boy has three years trade-start of the other. At the end of three years the first boy, educated and school-trained for his work, enters the same shop. In shop experience he is three years behind the other, and for one or two years the untrained and unskilled boy may be his superior; but at the end of five years the boy especially trained, with a solid technical education back of him, will outstrip the untrained boy two to one, all things being equal.

Education fits for experience. Experience seldom takes the place of education, and when it does, it does so at the expense of the individual.

One's earlier years are, by nature and by convenience, an absorbent and educational period, in which it is natural and easy for one to enjoy school study, and to acquire the knowledge which should precede actual experience. The first few years of technical school training give a foundation, which the actual work in the shop cannot afford. Experience needs education for its economical development. The scientific or technical school disciplines the boy's mind, and gives him, [illegible]he most economical way, the broad [illegible]s of mechanics—the principles [illegible]nce teaches more slowly.

[illegible]be said to impress [illegible]echanic with [illegible]a technical [illegible]ome high- [illegible]inciples The [illegible]ute, [illegible]d his

[illegible]tood that [illegible]t produce [illegible]xpert hand- [illegible]of any use, work upon— the first place. [illegible]erial, the most [illegible]orthless, and cer- [illegible]cial value.

The boy of natural capacity, with a willingness to work, and an ambition to amount to something, finds that his education makes it much easier for him to market his ability; and, further, it enables him to develop much more rapidly than he could hope to do if he entered the shop directly from the common school. The man is made from the boy, not the boy from the man. As the crude boy is shaped, so is the man likely to be. Therefore, the boy's educational years will probably be the most important ones of his whole life.

The world needs more skilled workmen and expert hand-workers. There is room for many more than are now available. These men, far more than the business men, are the pushers of progress. They, with the farmer, are producers of material commodities. They actually do something, something which contributes to the roundness and wholeness of life.

There is a superficiality to some lines of business, particularly of those done upon paper; and even the professional, expert though he may be, to an extent, handles the intangible; but the skilled workman and expert worker are natural producers of actualities—indispensable necessities in the world at large.

A liberal technical education is an asset: First, because it assists in developing ambition; second, because it broadens the mind and makes it adaptable to the work of both the mind and the hand; third, it disciplines the mind, that the mind may the more master the muscle; fourth, it opens opportunity for advancement; fifth, it is economical, because it enables the boy to accomplish more in a given time, after he is fairly started in his work, than he could possibly effect without this education; sixth, it fits him for proprietorship.

The blacksmith, unless he is self-taught, at an expense far greater in the aggregate than is the cost of being school-taught, is many times more likely to remain a journeyman blacksmith than is his neighbor who has had the advantage of some sort of technical education. This trained man will not long remain at the anvil. In time, he will be master of many anvils and of anvil men. True, he may rise to proprietorship without the aid of the technical school, but he will be promoted quicker with this school-taught education, and can hold his own better than he can hope to do otherwise. This argument applies to other mechanical departments, much more than it does to blacksmithing. It is simply a question of going to one's work before the mind and hand are economically and practically trained, or of going at it with mind and hand especially trained and disciplined to do that work in the most economical and satisfactory manner.

Finding a Level.

I am not unfamiliar with the criticism, which is sometimes merited, that the technical schcol-taught boy leaves the institute with a head out of proportion to his body, and considers himself superior to manual labor. Undoubtedly this is the case in altogether too many instances, but if the boy has the right stuff in him this big-headedness is only a transient affliction, and will do but temporary harm. The technical school never made a wise man out of a fool, never made a mechanical genius out of a boy who could not saw a board straight, and never will. It simply gives the boy of parts a better opportunity to use what is in him. That is all it can do, and that is all it should do. It is the boy's business to do the rest. The more thorough the preparation, the greater the chance of success.

The rapid increase in manual training schools in our cities and larger towns has done much to properly fit our boys, and especially our poor boys, for lucrative positions. School boards all over the country, and even in some of the smaller towns, are beginning to appreciate the usefulness of the technical school, and are establishing manual training schools or classes. Not a few of our manufacturing establishments are supporting training schools, where the sons of workmen are educated free of charge, or at nominal cost.

The future of American manufactures is, to a large extent, vested in the manual-training and technical school of to-day. America cannot hold the position she has worked so hard to obtain, unless she does more than she ever has done before to educate the young in technical matters. Within the next few years I expect to see a technical or manual-training school located in every country center as a part of the educational system. What we have to do, we must do; but let us prepare for what we have to do, so that what we have to do may be accomplished at the minimum of exhaustion and at the maximum of effectiveness.

There's economy in preparation.

Trade in Business.

Mr. Joseph W. Phinney, manager of the American Type Founders' company of Boston, in a letter to the author, says:

"If I advised a boy to become a skilled mechanic instead of entering business, what would be my reason for so doing?

"I should only so advise when satisfied that the boy's desire to learn a trade was prompted by a natural aptitude and liking for mechanics; understanding this fact, and knowing the trade that he had the most decided leaning towards, I should then urge him a thorough theoretical and practical training, a training that ought to make him an expert, a first-class workman, and one that should command the very best consideration in position and wages.

"The same methods would obtain in advising a boy to take up business.

"As to the particular advantages and disadvantages in becoming a skilled mechanic, I do not know of any disadvantages where the boy has a natural and proper desire for mechanics. Under these circumstances he will make a much larger success in the work for which he has an aptitude than if forced into a work toward which he must always feel indifferent or antagonistic. It is avoiding the misfit of the square peg in the round hole."

PRESIDENT OF REPUBLICAN CLUBS

Gen. Edwin Augustus McAlpin, of New York, who was elected president of the National League of Republicans Clubs, in convention in Philadelphia, has been a national figure in political affairs for many years, and especially identified with the acaivities of the league.

WHY THUNDER SOURS MILK

Electricity in the Air Sets Microbes Working with Wonderful Energy.

To many persons the curdling of milk in a thunderstorm is a mysterious and unintelligible phenomenon. Milk, like most other substances, contains millions of bacteria. The milk bacteria that in a day or two, under natural conditions, would cause the fluid to sour, are peculiarly susceptible to electricity. Electricity inspirits and invigorates them, affecting them as alcohol, cocaine or strong tea affect men. And under the current's influence they fall to work with amazing energy, and instead of taking a couple of days to sour the milk, they accomplish the task completely in half an hour.

It is not the thunder in a storm that sours milk; it is the electricity in the air that does it. With an electric battery it is easy, on the same principle, to sour the freshest milk. A strong current excites the microbes to supermicrobic exertions, and in a few minutes they do a job that under ordinary conditions would take them a couple of days.

Employers of labor regret that electricity has not a similar effect on workmen. They say that if it had they would use a good deal of it surreptitiously.

SCENIC MARVEL OF IDAHO.

Why the General Public Knows So Little About the Wonderful Snake River.

The world is less familiar with the Snake river of Idaho than with any other river of importance in the United States; and yet it is our seventh largest river—more than 1,000 miles long, says the World's Work. It is one of the most wonderful and impressive waterways in the world. The few who have tried to follow its winding course through wild and forbidding extents of lava plateaux do not wonder that so little is known of it, for no railroads traverse the lifeless desert that borders it, and no boats for hundreds of miles at a stretch, dare ply its waters. It is navigable for only 100 miles from its junction with the Columbia to the Idaho boundary, and in several isolated sections of the interior. For the greater part of its course it flows through old and magnificent canyons of its own making through desolate and awful wastes, the result of vomiting craters and of convulsions of the earth.

A Question of Means and End.

John Morley, secretary of state for India, himself one of the very few men in British public life who do not golf (he declares he's not old enough yet to begin it), tells of an incident in a practice game to those same famous North Berwick links. A laird and his son were playing, when the younger man sent a ball whizzing dangerously near his father's ear.

"Ye maunna kill pa!" explaimed the caddie; then adding, after a thoughtful pause: "Maybe ye'll be the eldest son?"

A PERIODICAL IN HIMSELF.

New York Merchant Had Claim to Fame, Though Not Altogether Literary.

It was Oliver Wendell Holmes—was it not?—who was asked, after he had made a trip across the ocean, if he had done any literary work while on board the ship, and answered that he "had been a frequent contributor to the Atlantic."

Somewhat similar is the anecdote related of a New York merchant whose business had required him to make several jouneys to San Francisco and back during the year.

While on one of these long trips, after he had exhausted the stock of reading-matter he had brought with him, he was showing a fellow passenger a bundle of the popular magazines that formed a part of the supply.

"You don't seem to have the Overland Monthly here,' remarked the passenger.

"Huh!" exclaimed the New Yorker, "I'm the overland monthly myself."

CERTAIN DEATH FOR ONE.

Russian "Suicide Duel" Leaves No Hope for Participant Who May Be Unlucky.

A tragedy, romantic on the surface but in reality throwing a repulsive light on the hollowness of life in Russia, is reported from Moscow.

Two young Poles named Nidetzki and Komorovsky, attending a ball given by Count Feodorovo, were both so smitten with the beauty of the count's daughter that, though friends from boyhood, they at once became deadly enemies and before the ball was half over had determined upon a duel to the death by that most strange but most deadly of all methods—the suicide of one of the combatants. It was decided that the loser of a game of ecarte should kill himself, and toward the end of the ball the infatuated pair went to the card room for their game of death. In a few minutes Komorovsky had lost, and, quietly drawing a revolver, he shot himself through the heart. Nidetzki took the first express for Berlin.

As for the fair cause of the tragedy, she was so little impressed that within a few days she had accepted a proposal from a Russian nobleman.

Scarcity of Hickory Wood.

Hickory, one of, if not the most valuable of our native woods, has become so scarce that many substitutes have of necessity been found for it. The wonderful increase in the demand for buggies and carriages of the finer class had much to do with the virtual exhaustion of the great American hickory forests. England, Germany, China, Australia, South Africa and the South American countries made strong requisitions on the American supply. Years ago the supply of this fine wood north of the Ohio rive had been exhausted. Despite substitutes and changed conditions, hickory remains one of the most valuable of American woods.

THE SITUATION.

To Visit Our South American Neighbors

Significance of Official's Mission to South America—Will Attempt to Dispel Erroneous Beliefs Regarding Our Attitude.

Washington.—An event of great importance to both South America and the United States is the trip which Secretary of State Root is making at present to the third pan-American conference at Rio de Janeiro and to the other principal South American cities.

The purpose of the trip, it is frankly stated, is to encourage better relations with our South American neighbors. Secretary Root will make a number of speeches and will talk personally with all the most distinguished statesmen of the south American countries. He will try to remove the

SECRETARY OF STATE ROOT.
(Cabinet Official Who Is Making a Tour of South American Countries.)

popular idea from the Latin-American mind that the United States is armed with a big stick and intends eventually to bring the entire western hemisphere under its control.

In place of these erroneous beliefs Secretary Root will tell them that we will protect them from old world invasion and will try to be friendly and trade in peace with them. We will insist, he will tell them, that they must pay their debts and fight off plagues.

Root goes not officially, but as a distinguished visitor to the conference, which meets at Rio de Janeiro about the 23d of July. The president's summer palace at Petropolis, across the bay, will be his residence.

From Rio, at the conclusion of the conference the Charleston will convey Secretary Root to Montevideo and Buenos Ayres, around the Horn to Valparaiso, Bueno Ventura and up to Panama. He will inspect the canal and return home in October.

The official representatives of the United States to the Pan-American conference will be William I. Buchanan, chairman; ex-Gov. H. A. Montague, of Virginia; Dr. L. S. Rowe, of the University of Pennsylvania; Van Weer Polk, of Tennessee; Tulio Larrinaga, the Porto Rican delegate in congress; Prof. Paul S. Reinch, of the University of Wisconsin, and Charles Ray Dean, of the state department, who goes as secretary.

For the first time the South American countries have been asked to the conference at The Hague. So that fact makes the coming Pan-American conference very important.

The delegates of all the creditor countries will probably take a united stand in favor of what is known as the Drago doctrine, the name being derived from the fact that it was the first generally advocated by Dr. Louis Drago, minister for foreign affairs of the Argentine republic. This doctrine is briefly that a citizen of some foreign country, as, for example, the United States, who lends money to the the government of a South American country, ought to depend solely upon the courts of the country to which the money is loaned for collection, and that under no circumstances should he invoke the aid of his own government to collect such a debt.

In support of such a doctrine it is pointed out that money lenders who advance money to impecunious and unreliable governments, such as some of the South American republics are, charge sufficient interest and impose other hard conditions to fully compensate for the risks they run of losing the money.

It is considered unfair by South American statesmen that their governments should become involved in continuous diplomatic difficulties with foreign nations by dealings which have been of a private character and with private citizens of those countries.

The conference will discuss other subjects, such as international copyright, quarantine regulations, uniformity of customs and court regulation, and the general topic of arbitration.

To Study Yankee Tactics

Lieut. Brugere of France Will Attend United States College Through Courtesy of Roosevelt.

Kansas City.—Lieut. Jean Batiste Brugere, son of Gen. Brugere, chief of staff of the French army, is the guest of officers at Fort Leavenworth.

The presence of the young Frenchman in this country is a recognition by President Roosevelt of the courtesies paid Gen. Chaffee, Gen. Bell and Gen. Crozier by Gen. Brugere during the visit of the American officers to France last year.

Upon the return of the American commission, after spending several weeks in France studying French military methods, Gen. Bell made it known to the president that Gen. Brugere was exceedingly anxious that his son should have a course of study at the United States staff college. Some months ago President Roosevelt extended an invitation to the young man to enter the school at Fort Leavenworth, and Lieut. Brgere arrived in New York about the middle of March. He visited President Roosevelt and Secvretary Taft before coming west.

Lieut. Brugere, who is 22 years old, comes from a long line of French warriors. He holds a commission in the Chasseurs d'Afrique, now stationed at Tlemcen, Algeria. He was a student at the Ecole Militaire at St. Cyr for two years and at Sauneur a year, after which he received a commission in the regiment to which he belongs at the present time. Until the opening of

LIEUT. JEAN BATISTE BRUGERE.
(French Army Officer Who Will Study American Military Methods.)

the staff college next fall Lieut. Brugere will devote himself to the American language and accustom himself to American ways.

LOCOMOTIVE IN POLITICS

New York.—One of the best equipped of the few private observation locomotives owned by railroad officials in this country is the St. Lawrence, the property of the Central Vermont railway.

This locomotive, which has an interesting history, was originally owned by Col. E. C. Smith, former president of the Central Vermont road and governor of Vermont, and was used by Gov. Smith as the pilot of his private car, Mansfield.

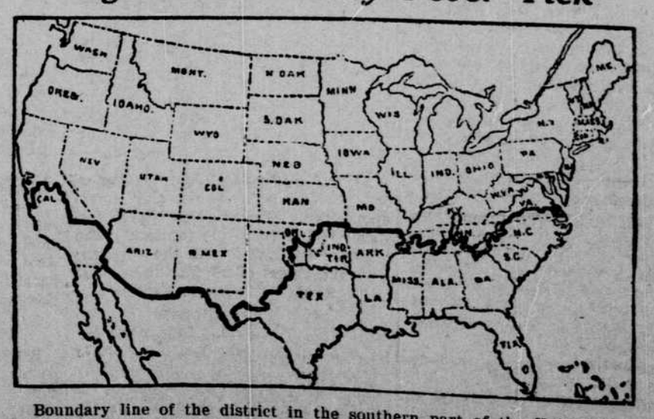
By some of those who were active in Vermont politics while Mr. Smith was chief executive of the Green Mountain state the St. Lawrence was known as "the Vermont political machine," a name which was developed through the frequent use of the locomotive on political errands in state campaigns.

When Gov. Smith retired from the presidency of the road, the St. Lawrence became the property of the railway company and is now used by General Manager Jones and other officials.

The locomotive was constructed with a view to the peculiar uses to which it might be and is now put, such as conveying the chief officials of the road on their tours of inspection over the line, as well as for hauling the private cars on trips of business or pleasure. It was built in Schenectady, 14 years ago. It is of the eight-wheel type, with the observation car in front and above the boiler. The observation saloon is handsomely furnished with carpet and rattan chairs.

The boiler mountings on the engine are nickel plated, and the observation saloon is equipped with electric lights. A speed recorder and other modern appliances are attached. The total weight of the engine is 158,000 pounds and is capable of developing 160 pounds of steam pressure, a sufficiency to guarantee a high rate of speed for a locomotive of that type.

Region Infected by Fever Tick



Boundary line of the district in the southern part of the United States which is infected with the Texas fever tick. It is estimated, from a report made by a commission to the United States agricultural department that the annual loss in cattle from the fever tick and in cotton from the boll weevil will amount to $40,000,000 annually.