

should be more. It should aid the workmen, for out of the greater profit made from the larger output a larger and more permanent wage could be paid, and it should help the consumer, for the larger output more cheaply made by workmen earning a higher wage and by factories earning a greater profit can be sold to him at a lower cost.

I have spoken frankly, gentlemen, on this particular line because I have received a circular issued under the auspices of your own association from which I take these words, referring to the reduction in the tariff on the goods in which you are interested as producers: "This means workmen thrown out of jobs. It means that wages must go down in order to compete. It may mean longer hours than 48 hours a week." You have been yourselves, you see, as frank as I, and your statement was made first. If in the final result the words I have quoted are put into effect by you in a substantial degree, it may become the duty of the department of commerce to inquire into your business methods. If such should be the case, the spirit in which the work will be undertaken will be a kindly and considerate one. The truth will be sought and sought thoroughly, but it will be sought only with the wish to help and not at all with a purpose of injury. It may be well to tell you candidly as a brother business man some of the things for which we should look if we had to ask you for information. It would be necessary to learn not only what is done but what ought to be done, for we should think it more important to point to better methods than to find fault with bad ones. Nor would our representatives be told to accept even the best processes as final ones. There is always something better farther on. We should probably not accept as conclusive the statement of the amount of wages paid as compared with the total cost of the goods or the total selling price. The question would be asked whether this relation need exist just as it is or no, and whether there are portions of the output on which the relation should hold good. It would be remembered that the existence of a condition does not necessarily justify that condition. We should have to examine into all the classes of labor and into the various operations to see whether and how far any of them are capable of improvement, or whether and how far any of them were in any one particular plant on a better basis than in another. The spirit of the inquiry would be, "The public is entitled to efficiency." If, for example, it were stated that a given assortment of foreign goods cost, let us say, \$100, and of American goods, let us say, \$150, that would not be final. It would be necessary to inquire not only as to whether that were true but whether it were not also true that with care and skill and time it might cease to be true in whole or part or need not everywhere be true either in whole or part. Nor would statements based upon averages be accepted as final. We should want to know the best and the worst, for averages may be misleading. In one industry, for example, some concerns run on as low a ratio of labor cost to total cost as 22 per cent, while the average in the industry is over 40 per cent. The public is entitled to the best. My business judgment would not approve, nor do I believe public opinion would permit, taxing the people to sustain industries less efficient than the best the industry knew. It might be necessary to discuss with people furnishing materials and apparatus as to whether they found objection to the use of the best equipment and the most economical materials (not meaning by "economical" the lowest in price), and certainly the sciences of chemistry and of mechanics, as well as that of accountancy, would all come into play. There need be no friction about this. If the industry is on a scientific basis, what could better advertise it than to have the facts made plain by impartial inquiry? If there has developed an accurate science of cost, if correct standards exist if the best is everywhere sought, if the human factor receives a just recognition and reward, if all these are so then with what glory would the trade be visited when these things are made clear. If they are not so, then who needs to learn the facts more than those whose interest is so deeply concerned? You should therefore look upon these suggestions as conveying nothing in the least in the nature of a threat, but rather as tendering disinterested assistance.

Possibly by this time you have reached the conclusion that while the ideas to which you have listened so courteously might have some value in the lines of business with which the speaker is familiar, yet they can not apply

with any force to your own work. One will say that what is true of a forge shop or machine works will not apply to lithography. You will pardon me for repeating in another form something already said, namely, that it has been my experience that the statement that wages must be reduced or piecework rates cut down to get costs down has often been the mark of inefficiency. The best and most profitable establishments commonly do not so proceed. Therefore, I took the trouble to look a little into such sources as were easily available respecting your industry. Be it understood no personal or unkindly criticism is meant, nor are the statements my own. I read you first from the National Lithographer for April, 1912, page 28, under the title of "The Cost System's Mission," with a subtitle, "Consideration of the Subject by the Editor of the Printer Journalist, Adapted to Lithographers." He says:

"Properly understood and applied, the cost system is intended to show the ways to cut down cost and to secure efficiency. The great trouble has been that lithographers have gone along in blissful ignorance, without knowing what were the costs, where were the leaks or the waste, or why the cost. * * * Lithographing has been sick for lack of system, business methods, proper knowledge and application of knowledge, and without adequate sustenance. There has been no thorough management, or the use of proper efficiency and up-to-date appliances."

The whole article, which I have photographed, is of similar tenor and should cause reflection to the thoughtful.

Six months later the National Lithographer, in October, 1912, page 27, published, under the head "Lithographic Costs," this statement:

"A western litho concern wrote to the central office of the national association recently as follows:

"The other day we were requested to make a quotation on 1,000 twenty-four sheet posters in four colors, lithographed on a double sheet 42 by 56, and after submitting our figures for this work we were informed that the same poster, or rather a poster of similar design, was furnished for \$875. We figured the work to cost \$1,340, and at that we thought our price entirely too low, taking into consideration the risk of matching and loss of time. * * * Judging from these figures we are inclined to think that there exists a vast difference of opinion as to the true costs of manufacture. * * * We fully realize that a plant equipped for making a specialty of any particular class of work can do it cheaper. However, taking this into consideration, there surely can not be a difference of 50 per cent in cost."

The balance of this article is also interesting. Nor was this an exceptional case, for the following month, viz, November, 1912, page 42, the National Lithographer shows the following, under the head of "Cost Estimations:"

"Eleven plants recently contributed to a cost symposium, and the deductions therefrom may prove interesting. It is naturally to be supposed that the cost of no two plants will be alike. At the same time, the wide divergency of figures is a curious thing to contemplate, and it forces the truth home that every plant should have as perfect a cost system as possible and that the absence of such a system in any plant is an injury to the plant itself, and is an injury to the trade at large, because of the unintelligent competition which it permits.

"The last column of the figures given below does not represent the average between the high and low item, it represents the average of the eleven items ranging from high to low both inclusive.

Total average cost per operation hour, eleven plants:

Department	High	Low	Av. Cost
Sketching	\$2.11	\$1.13	\$1.52
Engraving	2.10	.96	1.31
Transfer	2.06	.92	1.30
Stone presses	3.40	1.11	2.24
Offset presses	3.53	1.61	2.58
Finishing, men's work.....	1.39	.71	.91
Finishing, girl's hand work..	.68	.47	.54
Bronzing machine	2.03	.82	1.44

Another quotation may be made from the National Lithographer for May, 1912, page 53:

"If there is a menace to the future of lithography, it lies in the kind of workmen that are being turned out, especially in the transfer and printing departments. The old and thorough method of taking the future lithographer in hand and teaching him the real fundamentals of the business has been largely lost sight of. In all too many cases the young man has been

given his machine and practically told to go ahead, and if he has been observant at all, and may have learned the mechanical movements, it is yet with hardly any knowledge of the real principles. The result is that if all conditions are normal he may get along fairly well after awhile, but if anything goes wrong he is all at sea, and the consequence is often much lost by spoilage, to say nothing of the loss of time."

This whole article, headed "Shop Management, No. 5," is worth careful reading. I would emphasize this phrase: "By efficiency is not meant competent workmen alone, but competency from the highest authority to the one in humblest capacity."

On pages 541 and 542 of the Inland Printer for January, 1913, appears the statement:

"The only answer that seems reasonable (to certain criticisms that had been made) is that Europe is getting the benefit now of its long-established art and technical schools, and we show the lack of them."

The speaker will join you in any effort to develop vocational schools, for these would mean higher efficiency, and would respectfully suggest that the cutting of wages and the lengthening of hours is a strange substitute for lack of technical education.

Again, on page 41 of the National Lithographer for February, 1912, in an article on the subject of "How Humidity Affects Paper," are these words:

"An ever present trouble in the badly kept lithographic shop is the variation which occurs in the paper when rapid changes are taking place in atmospheric conditions. Even the very best schemed departments meet with the same difficulty, although nothing like so often as the ill-considered department."

Here is a matter where there is a broad field for our unexcelled American ingenuity and inventive genius. The whole thoughtful article which follows has no doubt received your careful attention. Let me add that you have at your disposal in this connection the effective assistance of the bureau of standards of the department of commerce, which would be well pleased to serve your industry.

Finally, another field for inquiry and action in your work is suggested by words on page 36 of the National Lithographer for May, 1912. Under the heading, "Three Efficiency Items," which are, respectively, lighting, guards for machines, and oiling machines, the writer says:

"A dimly lighted lithographic shop is poor economy, what you save in light you will lose many times over in loss of production. Don't expect your employees to show any speed if they can not see clearly what they are doing."

The statements that have just been read are not my own; they come from your own craft, and they seem to arise from existing conditions, else it is strange they should be said at all. The community may think them a strange offset against the other statement that "wages must go down in order to compete," for these also are your own words. Candidly, gentlemen, I do not for a moment believe public opinion would sustain a reduction of wages if and while such conditions exist to any considerable extent in the industry. Nor do I think public opinion would approve a cutting of wages while costs are so kept that estimates vary by one-half, or when in 11 factories the variation in the cost from the lowest to the highest is from 50 to 300 per cent. This, to be frank, seems a good deal like the "rule of the thumb."

Finally, gentlemen, pardon me if I have been too candid. I have regarded it as the truest courtesy, as that which will be most helpful to you. If aught has been said in what may have seemed an unkindly spirit, I trust it may be both forgiven and forgotten.

As a last word, it is important that we, as business men, should know that business opinion and public opinion are two different things. If they are in accord, it is well for business. If they are not in accord, it is ill for business, for business depends for its peace and prosperity upon the sustaining power of public opinion. In the relations of which I have tried with courtesy and candor to allude briefly, the purpose of the department of commerce will be as in all these relations it ought to be, to bring the power of public opinion to the support of legitimate business, and business owes it to itself and to the nation to drink in the spirit of growth.

In hard case is he that "stands pat," for the world will go by him and leave him standing. Blessed is he that moves with the movement of progressive thought, for to him shall come the reward of living.