

THE INDUSTRIAL PROBLEM¹

By

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MR. TOASTMASTER, Members of the Taylor Society, and of the Rochester Chamber of Commerce; and Graduates of Dartmouth who make me feel so much at home: There recently appeared in the columns of the *Dearborn Independent* over the signature of Henry Ford, a quip to this effect,—that a woman putting a baby to sleep is ten times more attractive than a man putting an audience to sleep; to which Don Marquis made reply in the columns of *The Evening Sun* to the effect that he could testify from personal experience that the one who has responsibility for putting a baby to sleep has a ten times harder job than the one who puts an audience to sleep;—unless the audience happens to be teething.

I have appropriated this bit of facetiousness for this evening because it has been my fortune within the last three months to travel thousands of miles about the country and to see group after group in widely separated cities, and I am as firmly convinced as I am of anything in the world that American audiences were never teething to greater extent than they are at the present time. And the ring upon which they are biting is the query as to why in this great progressive and intelligent country of unparalleled opportunities we find the problem of extricating ourselves from the maelstrom of war conditions so difficult and sometimes seemingly so impossible. It is essential that we come to certain fundamental considerations and certain fundamental convictions as groundwork for the discussion of this subject, to say nothing about trying to arrive at any conclusion regarding it!

The war came like a lightning flash on a summer's night, and revealed not only the beauties of the things which we hold dear in civilization, but it also revealed all that is unattractive and disagreeable, to which we had been shutting our eyes listlessly for so long a period. We are now in a time when we are not so

much among conditions which are a complete change or a complete reversal from what existed before, as among conditions which impose the necessity of meeting an accelerated evolution; and within the period of a comparatively brief time we are having to solve hundreds of problems with which under ordinary circumstances we should probably have had leisure to deal during decades.

It ought to be noted that the war has not been different from other wars in that it has been followed by a reaction which has left us with a sodden materialism as against all of the glorious altruism which appeared for a time. Partisanship and acrimony and recrimination are on every side, restlessness and pessimism are all about us, and we find ourselves as members of communities and members of the citizenship of a nation with the responsibility devolving upon us, individually and collectively, to contribute with heart and mind and hand to the solution of problems which, unless they are solved, will not only drag us down to disaster, but will act as a handicap upon contemporary civilization and will withhold from posterity for all time many of the things which ought to be theirs.

So we come to a consideration of what is at the root of the whole problem,—the application of intellectual processes to the industrial problem; for I believe that there are two major factors in the world today which must be given primary regard over everything else; namely, the need of the increase of economic wealth,—which is fundamentally industrial production,—and the increase of intellectual capacity,—which is fundamentally education;—and I believe that the two are inextricably bound together.

We have been cognizant of the fact for a long period that it is necessary accurately to calculate and to estimate the forces of stress and strain upon material substances if we are to be safe in the use of these; and, yet, with all the progress that has been made in evolving such mathematical formulæ, it

seems to have been only comparatively recently that there has been any consciousness in the human mind that civilization is subject to stress and strains which can be calculated, provided we can devise the social equations and can codify facts sufficiently to draw up the formulæ by which to judge to what extent society can bear the pressure of contemporary conditions, and provided we can evolve the reckoning to know how to meet the strains that are put upon life today.

We see a great ocean liner balanced with bow and stern overhanging the giant wave which is tossing it about, and if we think of it in physical terms, we marvel at the accuracy of estimate which has made possible the building of anything capable of standing the strain, first, of being supported in the middle with both ends unsupported, and next of being supported at both ends, and thus to face great storms and giant seas with hardly a quiver!

We go to the heights of the sky-scraper of the city and we are disturbed not at all by the hurricane which rages without and which, perhaps, even swings the peak of the lofty building through an arc plainly perceptible, for we know that it has been built in conformity with formulæ accurate to calculate those strains.

Thus it is, wherever we go, on bridge or viaduct, on ocean liner or railroad train, all about us we find the absolute reliance, the infallible conviction, that we are safe because of the precision with which these formulæ have been evolved and applied. In like way I contend that there is a necessity upon us—and not only is the necessity upon us, but the possibility is before us—of evolving from this world laboratory of conflict and controversy in a way that has never been possible before, something of like kind and like measure which will enable us to protect the structure of society against the stresses and the strains which are likely to fall.

Obviously, it is with some purpose as this that the Taylor Society exists and that the practice of scientific management exists. Therefore, I think that it is worth our while to consider for just a moment what science is, because in the final analysis science is a codification of all of the factors which have been observable in the past and the interrelations of these together with the deductions from multitudes of in-

cidents, eventually combining all to find fundamental truth.

Science is never a static thing. Science is not something that has been finished in the past. It is not finished now. It never will be finished. But science is something which is calculated on the basis of known factors, which leads us to working hypotheses in regard to factors which are not known; and as these become known, our science becomes so much the more accurate.

But it is necessary that in our definition of science we also include intelligence, because unless science is devoted to an intelligent end, it may possibly become as harmful to the world as it has the possibilities of being beneficial. So far as I know, no one ever held that the accomplishments of the German Empire were not the maximum of the narrowly scientific; but the trouble is, if science is not directed by altruistic intelligence, this self-same science may become the sharpened tool that is put into the hand of him who has an anti-social sense and an instinct to do harm to society rather than to benefit it.

Gerald Stanley Lee has said in "Crowds" that he thought that the time is coming soon when we shall no longer say to men "Be good," but "Be intelligent," because except as men are intelligent they can not ultimately be good. I think in somewhat the same way, in the interpretation which we put upon science, we have a right to say that science is not true science except as it devotes itself to the welfare of mankind and is utilized for the great constructive purposes of civilization rather than those which are destructive.

In the evolution of science, we have to be on our guard not only against those things which would subtract from the benefit which science may be, but also against those things which would detract from the accuracy with which it may be applied. I think that perhaps one of the most fatal things to the scientific spirit is the closed mind. I should say with respect to scientific management that it is necessary for us, if we wish to make progress, if we wish to have any hand in evolving such formulæ as those of which I have been speaking, to be especially on our guard that our minds are at all times open, that we do not tolerate the inertia which makes us decline to take into consideration the new factors which come

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