

Frederick W. Taylor to Henri Le Chatelier¹

Correspondence Apropos the Introduction of Scientific Management to France

Courtesy of HENRI LE CHATELIER

IT IS my purpose to make an historic record of the introduction of scientific management to France by the publication of certain letters of Frederick W. Taylor.

I recall how I first made contact with Mr. Taylor. At the Paris exposition in 1900 the Bethlehem Steel Company exhibited a lathe operating with tools made of the new Taylor-White steel. The machine cut enormous chips which immediately showed blue because of the heat generated, and the point of the tool was a dull red. In common with all engineers who visited the exhibit, I was profoundly impressed by the fact that here was something new and significant.

Four years later, in 1904, I founded the *Revue de Métallurgie* with the objective of promoting among French metallurgists a better understanding of scientific methods of work. I proposed to bring to their attention all pertinent information of unusual significance. High-speed steel belonged obviously in this category, and I decided to publish in whole or in part all articles bearing upon the subject. Among others I published a lecture by an English engineer, Mr. Gledhill, in which he attributed the discovery of the Taylor-White method of tempering high-speed steel to a lucky accident.

Very skeptical of the role of accident in human affairs, I disagreed with this explanation in a lecture before the Société d'Encouragement pour l'Industrie Nationale in April, 1904. This lecture was printed in the *Revue de Métallurgie*, Vol. I, p. 334 (1904):

With respect to the practical interest in this discovery, one should first call attention to its essential scientific nature.

¹The Taylor Society acknowledges the kindness of Henri Le Chatelier in depositing in the library of the Society letters written to him by Frederick W. Taylor. A part of these letters were published in French translation in Vol. I, No. 3 (September, 1926) of *Bulletin of the International Committee of Scientific Management* (Prague). M. Le Chatelier's introductory statement is reprinted from that Bulletin by permission.

It has often been stated that it was merely the result of accident; that a careless workman had heated a tool of Mushet tungsten steel to too high a temperature, and, contrary to current belief, this abnormal treatment had improved the tool. This refusal to recognize the significance of careful observation and wise utilization of a petty incident is a disregard of the essential nature of scientific method.

This passage some time later came to the attention of Taylor, whose acquaintance I had not yet made, and in 1906 he sent me a word of appreciation; a note which unfortunately I have not preserved, for I did not then realize that it was the beginning of an extensive and cordial correspondence. In it he said that I was absolutely correct in maintaining the position that chance had nothing to do with the discovery of high-speed steel; that in fact it was the result of several years of research by a number of collaborators; that he had not yet published an account of the discovery, but was about to do so in full in a forthcoming presidential address before the American Society of Mechanical Engineers. He said further that this address, of which he would send me a copy, was to be the report of a comprehensive study of the art of cutting metals, of which the story of high-speed steel was only one detail. As soon as I received this study I was impressed by its extraordinary importance, and at once requested of Taylor the permission to translate and publish it in full in the *Revue de Métallurgie*, a permission which he very graciously granted.

In his letter, however, he remarked that in view of my interest in "On the Art of Cutting Metals," he would like to call my attention to an earlier, and in his judgment much more important, study—"Shop Management"—that he would like to have me read it and give him an appraisal, for it had not yet received the attention which it merited.

I present now the letters of Mr. Taylor relative to the translation and publication of his books in France.

October, 1928

BULLETIN OF THE TAYLOR SOCIETY

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FREDERICK W. TAYLOR
CONSULTING ENGINEER
NEAR
HIGHLAND STATION
CHESTNUT HILL
PHILADELPHIA

September 9, 1907

Mr. H. Le Chatelier,
73 rue Notre Dame des Champs,
Paris, France.

My dear Mr. Le Chatelier:—

Day before yesterday ten copies of the French translation which you have had made of my papers "On the Art of Cutting Metals," "Notes on Belting," and "Shop Management," were received by me. Please let me thank you very warmly for sending these copies, one of which I shall forward to the American Society of Mechanical Engineers, and others to my associates who have been connected with this work.

I want to express to you my great appreciation for the introduction which you have written to the paper. Words of commendation such as those contained in this introduction, coming as they do from engineers of another nationality, afford me, and I am sure also my several colleagues, greater gratification even than if they had been written by Americans. I have not yet had time to read through the entire translation, but so far as I have gone the translation of Mr. L. des Croix impresses me as most accurate; in fact, it appears to me that in many cases the translation is an improvement on the original. I have always felt that the French language was peculiarly adapted to the clear expression of scientific facts.

I regret very much to say that we have, within the last week, discovered one serious error and several minor errors in the work, and I am enclosing you herewith pages which I have cut out from one of the copies which you sent me, giving these corrections. I deeply regret that we did not discover the errors before your translation went to print. The most serious of these errors is that on page 195, in which (32r) should have been written as (32r)². This error is truly serious, for the reason that it is made in one of our most important and fundamental formulae.

Sincerely yours,

Fred. W. Taylor

Here is a second letter which does not deal with questions of management, but which is interesting because of the opinion Taylor gives on methods of teaching.

January 13, 1908

My dear Mr. Le Chatelier:—

I have just read with great pleasure your lecture upon "L'Enseignement de H. Sainte-Claire-Deville: L'Oeuvre de Moissan," and I thank you very much for your remembrance in sending me the essay. I was very particularly interested in the first few pages of your paper, in which you announce the philosophy of your teaching. While the opinion of a layman such as I am can of course have but little weight, still I trust you will accept my congratulations and the assurance that I am in most hearty accord with the general principles which you announce.

It seems to me of vastly more importance to teach the student first, the broad general principles underlying a science, second, to show him the true scientific methods of investigation (such as were adopted by Moissan), and third, to lead him to use his own brains and initiative in approaching any new subject, rather than to attempt to cram students with a mass of detailed information. As you very wisely say, all of this detailed information later in life would be useful, and much of it may become necessary, but while studying under a man of the calibre of yourself, the most important good which can be derived by a student, to my mind, is the observation of your general methods and the appreciation of your true and genuine enthusiasm for the advancement of science.

I think you are again to be congratulated upon having chosen for your opening discourse a eulogy upon two of your great predecessors. There is nothing more calculated to stimulate both the ambition and earnestness of purpose in the young men than a eulogy such as yours, of two great and successful men like Deville and Moissan.

Please let me also call attention to another fact which, as a foreigner, has been particularly impressed upon me. In reading your essay, I have been impressed throughout with the wonderful simplicity and clearness with which you have written, on what would ordinarily be a rather complicated scientific subject. I am, of course, not very familiar with French scientific writing, and it seems to me therefore that this remarkable clearness and