

functions. The number of men engaged in teaching who have done serious practical work outside of the schoolroom is small. The academic circle which they tread reminds one of the Illinois farmer whose circle of experience was to raise more corn to feed more hogs, to buy more land—to raise more corn to feed more hogs, to buy more land—*ad infinitum*.

Educators of to-day should break out of the circle in which they are travelling and look at matters from a new point of view. This should be from the vantage ground of the factory, the workshop, the railroad or the counting-room; it should be industrial and commercial rather than academic. The practical needs of everyday workers should be considered, after a scientific study of conditions at present existing. There should be no prejudgment by the social or educational philosopher who knows not the difference between a "shaper" and a "milling machine," and evolves theories of what ought to be, but never is.

Industrial life in its relation to national growth and prosperity, in its influence on international competition, and in its demands upon educators, offers interesting fields of investigation. *This change of view from the speculative and philosophic to the practical and industrial will result in many desirable changes for the betterment of our system of education.* Hitherto the speculative element has been supreme; the time has come for this influence to be tempered by the introduction of more rational and scientific views.

### **This is the Age of Technical Education.**

With advancing civilization, with the luxuries of yesterday becoming conveniences to-day and necessities tomorrow; with our products going to far-away lands in competition with local goods, with competition becoming sharper day by day, with the margin of profit becoming steadily narrower, it is found

necessary to seek new lines of economy. In the accurate application of the laws of science, an almost limitless field is open. Mere practice, no matter how long continued, can not long avail against theory followed by intelligent application. A stupid fireman can burn up the profits of his establishment by ignorant firing; an engineman was recently discovered running an engine for no other purpose than to get exhaust steam to heat his building. He was a "practical man of long experience." A soap manufacturer who had depended upon the "knack" of one workman for many years, nearly went into bankruptcy when the man died, for no one else seemed to have the requisite "knack;" but the employment of a trained chemist without the "knack" regained for him his lost business. A large railroad company recently saved more than half a million dollars in six months by equipping a laboratory in connection with its machine shops and putting in charge a technically trained man—one who could unite theory with common sense.

*Day by day the demands for scientific and technical training become more and more emphatic.* The present age has truly been called the age of science, but with this designation the story is only half told. *Pure science to be of the greatest value must be applied.* The application of science to industry has made this the age of technical education; it has changed many of the conditions of life and has given rise to new problems, the solution of which depends in a high degree upon men who have received a technical education.

### **Technical Training Covers a Broad Field.**

Technical training in its broadest significance, should be made to include professional schools, as of law, medicine, theology, engineering, dentistry, pharmacy, the special research work of universities, as well as the more modest