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CONTENTS OF THIS ISSUE.

Anchor Ice, Formation of, and Pre- cise Temperature Measurements	202	Marine News	228
Bard Adjustable Bearing	214	Metallurgy of Iron and Steel	196
Bellechasse Telephone Co.	209	Milling, Commercial	197
Books Received	221	Mining Matters	227
Canadian Electrical Association	221	Misrepresenting Canada	219
Catalogues Received	230	Municipal Works	228
Correspondence	220	Nicholls, Frederic	195
Dams, Essential Elements in the Design of	207	Northumberland Straits, Proposal for Viaduct	200
Editorial Notes	219	Notes	225 to 228
Extracts from an Engineer's Note Book	216	Personal	227
Gasoline Centrifugal Pump	217	Portland Cement Industry in Canada	210
Goldie & McCulloch Co. New Boiler Works	211	Radium and its Connection with Chemical and Physical Problems	201
Incorporations, New	229	Railway Notes	225
Industrial Notes	226	Robb-Armstrong Corliss Engines	198
Light, Heat, Power, etc.	227	System for Industrial Establish- ments	215
Machine Shop Notes from the States	215	Technical Education	218
		Telephone and Telegraph	228

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On Technical Education.

In these days, when the struggle for existence is keen, and the Colleges and great Institutions of learning are annually turning into the ranks of industry thousands of young men equipped with their mathematics, physics, chemistry, mechanical philosophy, etc., and willing to work in the shops at low wages in order to get practical experience, it behoves every intelligent mechanic who started work early, with only the rudiments of a common school education, to take time to think, and to think deeply, what this new form of competition means. The old copy-book heading "Knowledge is Power" is as true as ever, and if the knowledge gathered by the college student has been along the lines of true scientific method, then the outlook for an ambitious mechanic with shop training only, is dark; and he must not be surprised if the best positions in the work-shop are grasped by the

college man, because of his sound knowledge of basic principles, and of his power to adapt means to ends. Fortunately for the old time shop trained mechanic, the kind of education given in most of the colleges hitherto, has been altogether wrong; for the course of study and methods adopted by these Institutions are mainly adapted to teach young men how to teach others, not to fit them for the practical duties of the business affairs of life. Those who have had exceptional opportunities for observing the actual work of young men fresh from College, especially in the domain of Engineering, perceive the fatal defect of furnishing the memory with unimportant data, and cramming the recesses of the mind with indigestible facts, instead of training the intellect to a firm grasp of fundamental truths and first principles, and by scientific method cultivating accuracy and rapidity in the application and adaptation of these truths of nature and the operation of her laws to the emergencies and critical opportunities of life. The College, or Academic system, is calculated to make *scholars*; but there is a wide difference between a scholar and an educated man. As Henry Drummond has shown, scholars are often the least educated of men, and most educated men have never been, and never will be, scholars. The average mechanic, who left school early, has now very little chance of becoming a scholar, but he has still a chance of becoming an educated man—which is a different and altogether grander thing. "In two hours an animalcule reaches its true growth; in two months an insect; in two years a fish; in three years a horse; in twenty-one years a human body, but a human mind—never! The higher we go in the scale of being, the longer time kind nature allows to make the most of what we have, hence, it is never too late to begin an education."

The great captains of industry are mostly educated men, not scholars, and I can not do better than quote the words of Mr. C. M. Schwab delivered in New York, May, 1903, when he was President of the United States Steel Corporation:

Success is not money-making, alone, and I want to state that of the truly great men I know in Industrial and Manufacturing lines, none is a College bred man, but they are men who received an Industrial and Mechanical education, and who worked up by perseverance and application. The other day I was at a gathering of forty successful business men engaged in Industrial and Manufacturing business, and the question arose as to how many were college bred men. Of the forty, only two had graduated from Colleges, and the rest, thirty-eight in number, had received only Common School Education,—had started life as poor boys.

We cannot do better than supplement this quotation, with an extract from an article entitled, "The Vague Cry for Technical Education," written by Lord Armstrong, a famous lawyer, Engineer, and founder of the greatest industrial combination in Great Britain, the celebrated Elswick Works, at Newcastle:

A man's success in life depends incomparably more upon his capacities for useful action than upon his acquirements in knowledge, and the education of the young should therefore be directed to the development of faculties and valuable qualities rather than to the acquisition of knowledge. . . . Men of capacity and possessing qualities for useful action, are at a premium all over the world, while men of mere education are at a deplorable discount. It is melancholy to know, as I do, from experience, how eagerly educational attainments are put forward by applicants for employment, and how little weight such claims carry in the selection. I can affirm with confidence, that had I acted