### [JANUARY, 1906.]

The Rule of Seven. The chart of Dr. Haegler, of Basle, Switzerland, ought to be as familiar in education as the rule of three; for this "rule-of-seven" is more radically essential to wise living. Each down-

ward stroke represents the vital energy expended during a day's work, which is not quite compensated for by the upward restorative stroke of the night's rest; so that one is a little weaker every morning, a little wearier every night, as the week's work goes on.

Take the case of a laborer: a normal day's work overdraws his storage of oxygen one ounce; but a



### Rule-of-Seven Diagram

normal night's rest restores only one-sixth of it. Losing one-sixth of an ounce per day, he is six-sixths of an ounce short on Sunday morning, a whole ounce short, a whole day behind-in the same condition physically on Sunday morning, in the same need of rest, as on the previous Monday night. He is called, therefore, to a whole day's rest in order to balance his account with Nature. If he habitually disobeys this physical law of weekly rest, he "runs down" more and more until he is as far from what he ought to be as is shown by the chart. Upon this point physiologists are agreed. We breathe less oxygen and use more during ordinary work than when at rest. Absorption of mind checks respiration to the extent of about 12,960 cubic inches in eight hours. Oxygen being only another name for vital force, the bearing of the foregoing induction on the matter of health and endurance is manifest. And since success in life depends largely upon a man's reserve of vital energy, enabling him to meet stress and strain when the flood tide in his career comes, it behoves every young Engineer on the threshhold of a New Year, to consider seriously this inexorable "rule-of-seven."

# Grain Elevator Controversy.

N. N. N.

A Fort William correspondent, signing himself "A. W. Davidson, M.E. for thirty-five years,"—who is evidently a diligent reader of our journal,

and does it on the cheap, since he is not on our subscription list,—takes strong exception to the statement of facts contained in our November issue, relative to the deplorable collapse of grain elevator "D" at Fort William, and supplements his *tu quoque* defense with a scurrilous attack on the author of "Grain Pressures in Deep Bins." We have no objection to opening our columns to an intelligent, socratic discussion of this deeply interesting subject, and if the Steel Storage and Elevator Construction Co., of Buffalo, U.S.A., whose foreman "A. W. D." is, care to make an attempt to refute the allegations made in our November number, we shall be pleased to accommodate. It is a question of Canadian *versus* American grain elevator design and construction. Our "M.E. of thirty-five years' standing," is manifestly incapable of holding up the American end, and even if he was, his "prairie" method of conducting a technical controversy would rule him out of court.

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### BOOK REVIÈWS.

Secrets of the Rocks.—A story of the hills and gulches. A manual of hints and helps for the prospector and miner. By S. M. Frazier, San Francisco; Mining and Engineering Review. Size 53/4"x8"; 432 pp. (Price \$1.60.)

As indicated on the title page the author shows "where and how to search for gold and silver mines, and how to make simple, general and special tests for minerals and metals." In these days any man of spirit in Canada-guiltless of possessing wealth-is liable to pack his grip and start for the El Dorado's which are being opened out in the great forest lands of the far North. A book like this in the hand, dealing practically in a plain, lucid, attractive manner, devoid of undue technicality, with the sciences of petrology, mineralogy, inorganic chemistry, and metallurgy, will be an invaluable guide to the adventurous prospector, and even to the Engineer trained in geological survey, since it records the hard-earned experience of one who has delved in the hills and gulches and discovered their secrets. As he says in the preface, every "prospective prospector ought at least to know enough about geology and mineralogy to recognize a mineralized rock when he sees it. Fortunes and lives have been sacrificed in the search for mineral veins, where in the economy and arrangement of the earth's crust they could not possibly exist. And many valuable prospects have been abandoned or sacrificed because the discoverers did not know what they had found." This is one of the most interesting, and at the same time, profitable, books, that we have read for many a day.

Hydrographic Surveying: Methods, tables and forms of notes. By Samuel Hill Lea, M. Am. Soc. C. E., consulting engineer. New York: The Engineering News Publishing Co., 1905. Size, 9<sup>1</sup>/<sub>4</sub>" x 6<sup>3</sup>/<sub>8</sub>". 172 pp. (Price \$2.00, net.).

"The term Hydrographic Surveying is applied to surveys of rivers, lakes, canals, and other bodies of water. Under this head should be included survey of water sheds and drainage areas; also surveys of basins or reservoirs for the storage of water on a large scale." With this clear and comprehensive definition begins the manual before us, and the author elaborates imaginary hydro-surveys, with expert knowledge of the use of transit and stadia; makes soundings, measures scientifically the flow of streams, describes general field and office work, aided by a wise use of graphics, and some 99 illustrations: and all this is done with an absence of abstruse mathematics, and a literary style of Spartan-like simplicity; and at the same time with a thoroughness of treatment, altogether commendable. The manifest practicality of the book is the result of the author's wide practice in professional work: and in this respect, complies with the modern dictum, that technical text-books should be written by Engineersin practice. Exceedingly interesting to the uninitiated are the chapters on double floats, and current meters for determining the velocity of flow of streams. We should not be surprised to find this text-book widely adopted as standard in technical schools, and institutions where practical methods of Civil Engineering are taught.

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## BLUE BOOK NOTICES.

Mica.—A report written by Fritz Cirkel. M.E., Montreal. has been issued by Dr. Eugene Haanel. Superintendent of the Mines Branch of the Department of the Interior. This report deals with mica; its occurrences. exploitation, and uses; and is announced as the first of a series on the economic minerals of Canada.  $6\frac{1}{2} \ge 9\frac{1}{2}$ , pp. 130.