Southern British Columbia is said to be Rich in Important Water Powers

# By JAMES WHITE

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I N British Columbia, there are many important waterpowers. The investigation of the water-powers of British Columbia by the Commission of Conservation has disclosed the existence of two great water-power centres, namely, Nelson, with 400,000 h.p. within a radius of 50 miles, and Vancouver, with 300,000 h.p. within the same distance. Based on experience at Toronto, these quantities would suffice for a population of 1,700,000 at Nelson, or for 10 manufacturing cities of 170,000 each. The power near Vancouver would suffice for one manufacturing city of 1,250,000 population, or for 10 cities of 125,000 each.

There are 12 power-sites in British Columbia of 50,000 h.p. and upwards. With the exception of the South fork Quesnel and Peace rivers, all these powers are less than 125 miles from the 49th parallel.

Horse-power

125,000
73,000
50,000
100,000
200,000
70,000
52,000
52,000
84,000
100,000
90,000
100,000

There are 18 power sites of between 20,000 and 50,000 h.p. Eight of these sites are distant less than 100 miles from the 49th parallel.

Kootenay River, Cora Lynn to Granite Rapids	22,000
Kootenay River, rapids near mouth	22,000
Pend d'Oreille River, Nine-mile Falls	32,000
Pend d'Oreille River, Fifteen-mile Creek	34,000
Columbia River, Long Rapids	30,000
Adams River	30,000
Barrière River, ultimate development	20,000
Murtle River, Helmcken Falls	20,000
Nahatlatch River, rapids below lakes	30,000
Jones Lake (Fraser River)	25,000
Jordan River (25,000 h.p. developed), ultimate	38,000
Cheakamus River, Bear Mount Canyon	40,000
Powell River (24,000 h.p. developed), ultimate 32,000-	-35,000
Nechako River, Grand Canyon	30,000
Nechako River, Tetachuck Falls and rapids	30,000
Bulkley River, Hagwilget Canyon	20,000
Nass River, falls below Cranberry River	20,000
Nass River, rapids and falls below White River	20,000

There are 29 power sites of between 10,000 and 20,000 h.p. capacity and 585 of less than 10,000 h.p. The report of the Commission of Conservation on the *Water Powers of British Columbia* includes all available data respecting 644 water-power sites.

\*From "Conservation."

+Development debarred owing to presence of railways.

The Greater Winnipeg Water District may go into the sand and gravel business to supply the city of Winnipeg and the other municipalities that were associated with the city in the Shoal Lake Water scheme. It is thought that the board will be able to sell sand and gravel for paving and other purposes at lower rates than are now being paid to private contractors.

## ILLOGICAL TESTS OF INTELLIGENCE

### BY HALBERT P. GILLETTE Editor, "Engineering and Contracting," Chicago

**P** ROF. James, in his "Talks to Teachers on Psychology," began by warning against certain fads and fancies, the pseudo-psychology of his day. There are always numbers of men who seize upon and exploit for their own profit every new science. Usually they are not in the least bit scientific themselves, but they ape the ways and the words of scientists so skilfully that they are often able to pass for men of learning. During the past decade we have seen and heard a host of such mimics—pseudomorphs, they would be called were they minerals—who have termed themselves "efficiency engineers." Men who were neither engineers nor efficient, who could not even properly define science, efficiency or engineering, have been posing as "fathers" and "pioneers" of the science of management. Small wonder that they have almost brought "efficiency engineering" and "scientific management" into disrepute.

#### "Scientific Management" and Charlatanism

Applied psychology is a new science that seems fated to pass through a period of charlatanism analogous to the period from which "scientific management" is just emerging. "Epoch making" books on Character Reading, Will Power, Memorizing, etc., are being widely advertised. The advertisements alone should suffice to put a thinking man upon his guard, so extravagant are the claims; but most men, even among the so-called educated classes, are not trained to think, and are therefore easily taken in by specious argument and spacious assertion.

During the last 12 years more than 2,000 books on business matters have been published in the English language. These were preceded by countless articles on management, accounting, "system," etc., etc. We are now beginning to see so many articles on applied psychology that it will not be surprising if 2,000 books on the subject appear within the next decade. Engineers can no more afford to ignore the current literature on applied psychology than that on scientific management. But if they wish to conserve their time they must learn how to discriminate between the good and the worthless. As a first step in acquiring a faculty of discrimination, it is well to study at least one or two books on logic, such as Bains or Jevons. The next step should be to adopt a suggestion that Molesworth made about "engineers' pocketbooks"-write your own. In short, analyze the reasoning methods used by others as well as by yourself.

#### **Cannot Add Different Units**

An engineer, being trained to use mathematics, knows that before he can calculate the combined effect of different energies, he must reduce them to a common unit. He knows that 100 horse-power can be added to 10 British thermal units per second, only by converting H.P. to B.T.U. per sec., or vice versa. An engineer knows that 100 H.P. plus 10 B.T.U. per sec. does not make 110 units of any kind whatsoever. Yet the same engineer will probably read without criticism an article in which a military officer is "rated" thus:—

Physical qualities	 	9
Intelligence	 	12
Leadership	 	15
Personal qualities	 	9
General value to the service	 	22
Total rating in scale of 100		67

Ask yourself how it is possible to add 9 units relating to "physical qualities" to 12 units relating to "intelligence." Stop right there. Do not let yourself be confused by the use of "units" to which you are unaccustomed. Remember that you can not add a per cent. of a full barrel of cement to a per cent. of a full car load of sand, and get a per cent. of anything in particular. Consider, then, that you can not

add physical qualities to mental qualities, any more than you