Editorial

ACTIVITIES IN CALGARY OIL FIELDS.

It is just a year ago since oil was struck about 40 miles southeast of Calgary, and the surrounding country in the following summer experienced unprecedented excitement in the shape of an oil boom which received its quietus only through the outbreak of hostilities in Europe. In three months following the discovery of oil about 450 oil companies were organized with a nominal capitalization of half a billion dollars. Out of the 450 organized companies about 45 have actually carried on boring operations, and five of these have shown genuine and valuable discoveries of oil. This represents the work that has been done in the Calgary field during the past year. It is not yet on a producing basis.

INDUSTRIAL RESEARCH A MIGHTY FACTOR.

Samuel Butler said that life is the art of drawing sufficient conclusions from insufficient premises.

The thin veneer of German civilization and its absolute subservience to militarism as evidenced by the baseness of its belligerent methods and its disregard for lives and property of non-combatants, of neutrality and of treaties, have astounded us and the rest of the world; yet we cannot forget or entertain disrespect for German industrial development.

Among the various causes contributing to the latter a thorough and widely diffused technical education must be given an important place. The branches of industry in which Germany has acquired a dominant position are those in which advanced applications of science are most necessary. The German government clearly recognized the interdependence of science and industry and the duty of the state to assist industry in matters beyond private initiative. Large amounts were spent by the government in providing the highest type of technical instruction and elaborately equipped state research laboratories. A single but significant example of German confidence in scientific principles may be borrowed, for illustration, from the chemical industries, which generally involve a good deal of mechanical engineering. Baeyer discovered synthetic indigo in 1880, but nearly 20 years and nearly $5,000,000 were spent in research before commercial synthetic indigo was placed on the market. What the discovery did to the natural indigo industry is an old story.

This was an instance immensely creditable to German faith in science. Our electrical engineers can tell us of the extensive degree to which Germany met the world's demand for porcelain insulators, before the war began. Germany's practical monopoly of the treatment of the complex ores of the baser metals is well known to our metallurgists. There are many other similar cases in which Germany had no natural advantages over other nations, but only a greater scientific intelligence and greater confidence of financiers in supporting scientific advisers.

While we loathe German militarism and national dishonor, German research and industry have provided a lesson which Canada should take seriously to heart.

FUTURE STEEL RAIL DEVELOPMENT.

The present status of the steel railway problem may be stated to consist of making all rails of a lot uniformly satisfactory. For the present, at least, the problem is not so much to improve the average quality, but to effectively eliminate the defective rails. Most of the defective rails, from the standpoint of rail failures, may be divided into three classes: (1) Those with excessive segregation of carbon and phosphorus; (2) those with seams in the base; (3) those with internal fissures.

Excessive segregation is to be avoided by using steel, well deoxidized with suitable amounts of silicon, titanium or aluminum. Such steel, however, pipes deeply, and the full advantage of such steel requires the commercial development for rails of some "liquid-top" or "sink-head" process of casting the ingot. The avoidance of seams requires a close study of ingot casting to avoid surface cracks and a close study of the details of rolling the bloom, or of removing seams before the final finishing pass. The manufacturers have already done much in the last few years to eliminate these two types of defect, and the future promises much further improvement if well followed up. The third type of failure, internal fissures, is still a big conundrum, but the outlines of the problem are slowly becoming more distinct, and much may confidently be hoped for under suitable investigation.

In the development and improvement of steel rails during the last few years, the work of the Rail Committee of the American Railway Engineering Association has played an important part. The purpose has been to present reliable fundamental information that would serve as a secure foundation and safe guide for work of improvement and invention by the mills and railroads, and in this way avoid making mistakes on a large and expensive scale, as has sometimes been done in the past. At the present time about 1¼ per cent. of the rails made are removed from track as failed rails (although probably only a small part of these cause disaster to trains), but with the continued activity of all agencies we may well hope to reduce the number of rail failures to a small part of what they now are. After this has been done, attention should then be given to the matter of increasing the resistance of the rail to wear.

REPORT ON POWER CONSUMPTION IN CANADA.

The Commission of Conservation is busy compiling data respecting the power used in Canada. The importance to power users and manufacturers of such an inventory should be readily recognized. The more complete it is, the more valuable the report will be to them and to Canada as a part of the British Empire.

The requested information regarding plant operation and power consumption should be carefully and accurately set forth on the forms provided by the Commission, and returned, without delay, to Ottawa. A second blank has just been sent to those who overlooked the first one. The report is now in preparation.