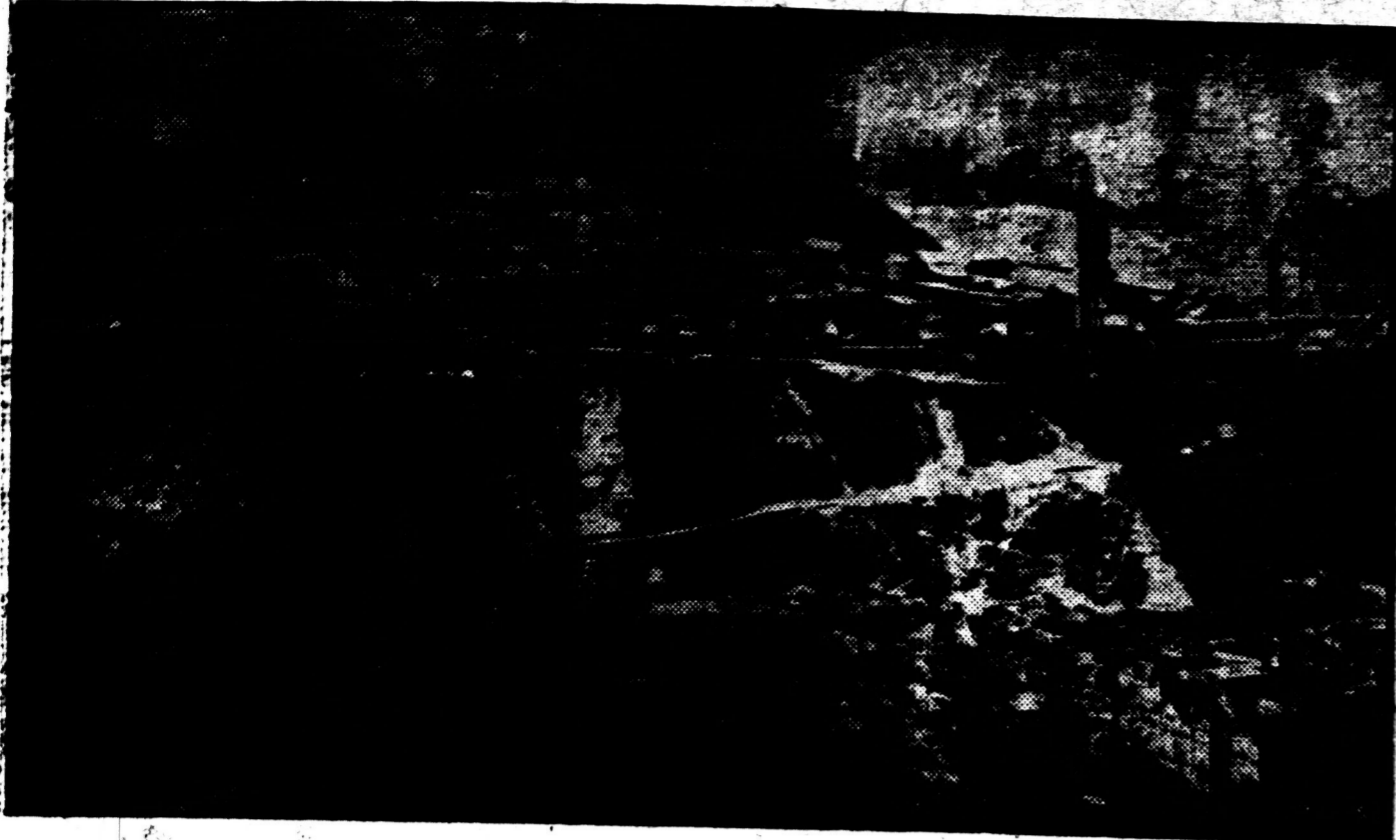


SMELTING IN EXCELSIS

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The Great Smelter at Trail, B.C.

A LITTLE more than a year ago, a world-wide attention was first directed to British Columbia by reason of the discovery in the late "thirties" and early "sixties" of alluvial gold in the Fraser river and in the streams of the Cariboo district—and for many years a rich harvest was reaped from these sources, mining as an important, basic industry of the Province—and it is now by far the most important industry in British Columbia—was not, fairly launched until nearly forty-five years later; and the building of the Trail smelter in 1896 by that brilliant young American financier and copper king, F. Auguste Heineze, not only made Rossland, whose mine have since produced gold, silver and copper to the value of \$70,000,000 in round figures, but had the effect of enormously stimulating mineral development and the investment of capital in mining in other sections of the province. But Heineze was essentially a business man, and in establishing his smelter was certainly not actuated by philanthropic or humanitarian motives. It was to part of his plan to operate the smelter for the profit of anyone but himself. Hence although he received a land grant from the Provincial Government as a consideration for the construction of the smelter and of a narrow-gauge railway to afford connection between the works at Trail and the mines at Rossland, and also obtained an assurance from the Dominion Government of a bonus of a dollar on each ton of ore treated, he also took care that the rate imposed on the treatment of customs ore should be a tolerably stiff one. In fact, so long as the development of the mines progressed and it became necessary to market ore of a lower grade average, the margin of profit left to the miners after paying treatment charges became considerably restricted; and consequently the satisfaction was very general when in 1896 the reduction works and railway were acquired by the Canadian Pacific Railway, and the rates were at once reduced very materially. It is fair, however, to state that the new owners were in a much better position to undertake to smelt at a low cost owing to the great expenditure of the following development of the Crowsnest field. In 1906, the smelter became the property of a complicated Mining and Smelting Co. of Canada, which also acquired

at that time the War Eagle—Centre Star group of mines at Rossland, the St. Eugene lead mine at Moyle and some further properties, (which since have been further augmented) and the capacity of the plant was greatly increased, so that the undertaking now ranks as one of the largest and most important of its kind in the British Empire. This is attested by the fact that the smelter has treated to date 5,179,307 tons of ore having a gross value of \$94,315,754 and representing 1,778,921 oz. gold, 27,000,250 oz. silver, 458,326,584 lb. lead, 75,847,410 lb. copper, and 23,854,996 lb. zinc.

The site of the smelter was admirably selected having regard to engineering and commercial considerations and requirements on an elevated terrace of gravelly soil overlooking the Columbia river; and only a few miles distant are the magnificent Falls of Bonington, from which the plant derives its power. Moreover, ore can be shipped for treatment to this centre most readily and advantageously from the various localities in both West and East Kootenay, and indeed from much farther afield. In consequence the Trail smelter has become almost a national institution. In recent years it has treated in addition to British Columbia lead, zinc and copper ores, ores from the Yukon, Manitoba, and Ontario, from the United States and from China. From quite small beginnings the works have been expanded until they now cover many acres of ground, and employ to 1,500 men, a large proportion of whom are necessarily skilled. In this article it is not proposed to go into technical details, but it may be stated briefly that the main smelting plant consists of blast-furnaces, four lead blast-furnaces, and two 12-ft. basic-lined converters, the product of which is refined locally, employing electrolytic methods. This latter, perhaps the most interesting part of the story; and as a national achievement reflects the greatest possible credit on those responsible for its successful establishment. Before the war the only useful metal in refined form produced in Canada was lead, which was exclusively undertaken at Trail; but all our copper and zinc, both refined by the way essential metals in the manufacture of munitions, are shipped out of the country as matte, or in other unfinished state, to be refined, and then to satisfy our own requirements for these metals in finished or unmanufactured form we re-purchased at, of course, a vastly enhanced price representing the profits of manufacture in a foreign country plus the import duty. All of which is the reverse of good business. But the war, which has had so stimulative an effect on the national energies in general, influenced action beneficially in this direction also; and upon the urging of the Munition Board set to work with a will, and succeeded after much experimentation in producing refined zinc electrolytically on a commercial scale. The plant now in operation has a capacity of from 60 to 70 tons of spelter daily, and last year produced 10,000 tons of zinc, having a value of \$3,000,000, which, as is stated in an official report, marks "an epoch in the metallurgical history of Canada." So also with the refining of copper, which before the war was on many sides pronounced to be an undertaking that could not economically be conducted in Canada, but which during the past two years has been most successfully carried on at Trail; the two copper converters installed in 1916 enabling the matte from the copper furnaces that previously had been shipped away for further treatment, to be converted into blister-copper, which in turn is refined electrolytically in a plant which has an initial capacity of 10 tons daily, but which since has been enlarged to handle twice that amount. Other products of the smelter are copper sulphate, lead pipe, shrapnel, wire, gold, silver, sulphuric acid, and hydrofluosulphic acid. In short, it is now as complete a metallurgical works as there is on the continent, and as such has played a most important and useful role in furnishing the metals needed for munition making in Canada, thus contributing materially to the effectiveness of the Dominion's war efforts. Since its proud boast is that it has an honor roll on which is inscribed the names of something like three hundred of its employees, who enlisted voluntarily for overseas service early in the war. Among these are several members of the engineering staff, all of whom have won distinction for conspicuous gallantry and devotion to duty in the battlefields of France and Flanders.—N. L.

ALL BROTHERS HAD NOTICED

Father Had Not Noticed Over Possible Bad Effect of Movies on Little Son.

After all, it's hard to figure out correctly the effect of the movies on the child mind. It happened that mother and sister had gone to a concert and it was up to father to entertain little brother, age seven. Father likes the movies—some of them—so he thought that would serve the purpose. Of course you can not tell much about a film by the name or by the pictures out in front either for that matter. But father likes pictures of western life and he thought the horses and mountains might please brother. So when he saw the poster of a cowboy, in they went.

It wasn't a very good sort of picture as to theme, for it presented a ruthless outlaw and his gang of robbers. When a wagon train of gold seekers came across the desert he not only refused to give them water, but drove them off to perish of thirst on the desert. And there also was a dance hall scene in the West. Father had some misgivings as to his choice of movie and wondered whether, at its close, his son would elect to be the bold, bad bandit or the vice-menshed owner of the dance hall and gambling hell. He said nothing but anxiously awaited the verdict.

When "The Red" came, brother whispered: "Daddy, do you know who the cowboy looks like?" "No, brother. Who?" "Our milkman," was the reply.

GOT RIGHT POINT OF VIEW

Autostat, When He Cooled Down, Was Able to See Where Traffic Policeman Was Correct.

The autostat was waiting for the corner traffic man to give the signal to make the turn at the corner. When he thought he had been there long enough he began tooting his horn impatiently. The traffic man kept on talking care of traffic. The autostat became more impatient with his horn. "You won't help matters that way, my friend," said the traffic man, as he waved him on. "Aw, take me to jail, but don't bawl me out!" exclaimed the driver. The policeman motioned him over toward the curb. "I could take your suggestion, but I won't. You are angry now, but when you cool off you will understand that the corner man has many problems to contend with," said the policeman. "We do not usually make explanations, but I am doing so in this case, because I think you should realize that you are in the wrong."

The autostat drove on, mumbling. A few days later he stopped in the same place. "Say," he said to the policeman, "I made a fool out of myself the other day. I had no right to be angry. You fellows have enough vexations without some one who goes across your corner once a day adding to them by smart remarks." The policeman smiled and waved him on. That autostat today probably would fight for the corner man if necessary.—Indianapolis News.

Only One Hog Had Dollar. A fat hog at the Omaha stock yards coughed up a dollar when "Smokey" Smith, an employee of a commission company, kicked it in the head. The hog was trying to run past him when he wanted it to go the other way. He gave it a vigorous kick. It coughed, gagged, sputtered a moment and then spat up the dollar.

Stockyard men throughout the rest of the day had a lot of fun about the incident. The commission company claimed the dollar. Smith claimed it. The owner of the hog claimed it, and as a result Smith spent it for cigars for the crowd.

A lot of the employees in the yards began to kick hogs right and left in the hope of shaking out another dollar. One employee said he had kicked 612 hogs during the day and hadn't got even a jintney.

Another Triumph for Woman Farmer.

Once again the adaptability and skill of women have confounded the critics—those incredulous critics, the farmers. They admit that in the recent efficiency tests at Maidstone, England, a very high standard has been reached. In the milking competition more than one-fourth gained over 90 marks. Two women watchers, who had only been at the work for five weeks, secured the highest possible rating. The competitions were arranged by the Kent woman's agricultural committee. Mrs. F. Heron-Maxwell, chairman of the organizing committee, said there were 2,000 women registered as land women in Kent, also 300,400 members of the "woman's land army."

Tunnel Would Pay for Itself.

It has been proposed to construct a railway tunnel under the Firth of Forth, Scotland, paralleling the famous bridge now spanning that body of water, and to pay for the tunnel by making it largely a coal mining proposition. Mining engineers point out that coal is now being mined on both sides of the firth from the same seams and that much of this excavating is done under water. At this point the estuary is only about two miles wide and it is contended that a continuous passage could be made beneath it by properly co-ordinating the mining operations. In this way what would otherwise probably prove to be too costly an improvement could be made with profit.

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STARK NAKED; HALF FROZEN.

English Merchant Skipper Tells of Hun Brutality.

With what callous brutality the Germans treat British war prisoners is evident from the story told by a merchant captain, just released from internment in a German prison camp. After his ship was torpedoed he was locked up for twenty-four hours in the U-boat or refusing to answer questions. On the following day he was searched, and for still refusing to answer was sentenced to be shot on reaching port, or before if he should cause any annoyance. One of the principal officers called him a liar, and an English swine.

Some days later the submarine put into Heligoland, and the captain was transferred to an underground cell ashore. Later, after scanty and bad food had made him ill, he was marched with other prisoners from merchant ships to a camp. Kept naked in intense cold for three hours while his clothes were being searched, German officers stood about laughing. His garments were returned to him wet, and he was put in barracks, where his only covering was verminous blankets.

In another compound the conditions were better, but the food unpalatable. The prisoners were skeletons in rags. If they fell down from weakness they were kicked and clubbed, beaten with the flat of swords, and kept standing at attention in freezing weather. They had to fight like wild beasts for food that a dog would refuse. Funerals were a daily occurrence.

Transferred to Brandenburg, where he lived 5 1/2 months, the fare was such that by the time his own parcels of food arrived, he had lost 25 pounds in weight. Twenty degrees of frost have been registered on the inside wall of the barracks in the mornings, and in summer the heat was intolerable, and the flies and mosquitoes very trying. Sixty men were almost all. Eighty hundred and fifty Russians died at that camp earlier in the war, and several were burned to death there shortly before the captives arrived.—London Chronicle.

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