Anthracite and semi-anthracite coals do not go any higher.

Petroleum has a heating capacity theoretically of 20,000 B.T.U.

It may be of interest at this point although outside the question, to compare oil as fuel with coal. It has been found by repeated experiments that 1 lb. of petroleum under the same boilers will equal practically 134 of coal, therefore a gallon of petroleum will equal 12 lbs. of coal. That is that oil at 3c. per gal. equals coal at \$4.70 per ton; one ton of average coal should be equivalent in heating value to 132 cords of good dry wood, fir or pine.

These calculations depend so largely on the qualities of the coal and wood that they are probably of little value except for the purposes of comparison.

THE RARE METALS IN BLACK SANDS.

SOME comment has been made in the press lately on a letter addressed by the Provincial Mineralogist to the sender of a sample of black sand from Cariboo. This sample on assay gave a value of \$1.42 per ounce of gold and \$10.65 for platinum. Osmiridium, we believe, is \$10.00 per ounce. This would add about \$5 in osmiridium to the value, which must have been highly concentrated, as in tests of black sand made from the Tulmeen River over a long period a value of about \$1 per lb. only was obtained from the ordinary black sand from sluice boxes. What this would have given on assay is another matter. The Tulameen sand contained little or no osmiridium. One Chinaman working out the gravel under an old cabin obtained 40 ounces of platinum in one day, which had evidently been discarded by earlier gold workers.

It must also be remembered that the price of metal platinum so called as found in these sands varies considerably from pure platinum. The platinum dust as brought in by the miners, even if properly cleaned by them, is only saleable at probably half the finished price of the metal. This is on the principle that although gold is at \$20.67 per ounce, placer gold rarely fetches \$18.00 and may run as low as \$12.50. It usually carries more or less iron and contains other metals of the same group, viz. iridium, osmium, vanadium, ittyrium, etc., etc., either in separate grains or alloyed. If these individual grains could be separated they could be sold at very high values, but this is not practicable under ordinary conditions and they become a deterrent to value. Osmiridium is usually found in small flat scales which seem to bear evidences of having been flat hexagonal table crystals with a more silvery lustre than platinum, which is usually in rounded or irregular grains more or less black according as they approach or recede from the matrix. The question of

this matrix is assuming a more interesting aspect every day and it would certainly appear advisable for any prospector owning copper or quartz prospects in locality where placer platinum has been found in any quantity to have one assay made for this metal. The price of platinum approaches very close to gold now and is not unlikely to pass it before long. Native platinum has, so far as we are aware, only been actuall seen in rock on one occasion. Mr. Carmichel, Provincial Assayer, in his report published in 1895 mentions having seen it in a dyke rock from Vancouver Island and that the assay was very high. The actual specimen was unfortunately lost, and the owner states that he spent several hundred dollars on assays made by various parties in the States without having succeeded in getting, not even a trace, in any sample other than the ore mentioned above. It has been reported from Wyoming in corellite, in copper claims in the Similkameen District, Christina Lake, B. C., and sperrylite (an assenide) from Sudbury, Ont., where it is associated with the nickel ores. In placer form it occurs in Colombia, S. A.; Trinity and Shasta Counties, California: Rio Pardo, Brazil; Sonora, Mexico; Yukon, and New South Wales. Russia still continues to ship 90 per cent. of the world's output. It would seem to occur almost unreservedly associated with the heavier basic magnesian rocks, peridotites, pyroxenites, etc., which easily become serpentized, and wherever chrome iron or chromiferous magnetite is found it should be carefully examined for by crushing and panning the rock in as large a quantity as possible.

The report of Mr.W. F. Robertson, Provincial Mineralogist, and of Messrs. Faulds and Shepherd, M.E.'s, on the Fernie explosion is now issued. It consists almost entirely of a diary and list of places examined with a resumé as to the probable source of the explosion such as was found at the inquest. No speculations of any interest are entered into as to this mysterious explosion. There is one thing pretty evident, and that is that instructions should have been sent immediately to the mine officials to stop any work of clearing the mine up, except to save life, until after examination by the Government officials. The question which arose as to McDonald's room having been the source could then have been properly settled. It would not appear that tamping being in a hole is any evidence of a shot not having fired gas, as it might fire from the back, particularly in the case of machines undercutting long faces. The system of working while possibly eminently suitable to the roof and floor in question is certainly an expensive system to ventilate, entailing considerable expenditure in cloth and temporary air stops, etc. The long wall system where the roads are made more or less in the waste, while in some cases difficult to maintain, is one

4