requiring no different treatment in burning to that given the other ore in the piles. The bricks after burning are hard and porous and are particularly suitable for smelting in the blast furnace, the oxidation of the zinc, copper and iron in the ore being remarkably complete, average samples of large piles of burnt bricks giving 1.5 to 2.5 per cent sulphur (as sulphides), as against 7 per cent in the ordinary burnt ore. This process does away entirely with any necessity that might otherwise exist for building and operating mechanical roasting furnaces and the subsequent briquetting of the roasted material. The roasted bricks are also an improvement on the ordinary briquettes, which at best are ft. The loaded cars are run on a trestle over the bins, situated just behind the smelter building. There are 18 of these ore bins, these having a total capacity of 800 tons. They are constructed with central bottom-discharge gates, emptying into charging cars which run on rails over the scales to the charging floor of the furnace.

The ore from the Tyee mine has proved to be a comparatively free-burning ore and but little trouble has been experienced by its cintering in the roast heaps. As already stated, the average percentage of sulphur in the burnt ore is about 7 per cent, this being exclusive of the sulphur contained in the barium sul-



Roast Yard at Tyee Copper Co's smelter, showing Permanent Trestles and Burning Ore Piles.

tender and very liable to make fines in the furnace, thus retarding its work. The bricks, on the other hand, stand rough handling and usage and are a valuable addition to the furnace charge of ordinary burnt ore.

The roasted ore is shovelled into $2^{1/4}$ -ton ore cars standing on tracks in the cuttings between the ore piles. The tops of the cars are on the same level as that of the floor of the ore beds. As half of each pile can be shovelled to the nearest cars, the distance it has to be thus moved is proportionately lessened. Horses draw the ore cars two at a time along a level track to the burnt ore bins, which are distant about 1,500 phate, which is not oxidzed in the process of roasting. A general average analysis of the screened burnt ore has already been given.

The visiting smelting men particularly were much interested in the methods, novel to them, of handling the ore fines and the making and burning of the bricks into which it is made. The roasted product also had close attention; while the movable bridge, with its especial suitability and economic working, was favourably commented on as well.

The sampling mill was found to be equipped with a complete sampling plant, including Snyder automatic samplers, crushers, screens, rolls and grinders with