

French country. A good force of men are at work on the rock cutting, and gangs of men and horses all along this contract of twenty miles. In all about 500 men are at work upon this contract. Many culverts and water courses are already completed, and many in progress. A considerable quantity of grading is in active progress, several long cuttings and embankments being in a forward state. The next important structure to the bridge at Riviere du Loup is at Isle Verte, where the work is actively progressing.

Heavy work has to be done at Trois Pistoles. This is on contract No. 2. The grading throughout the whole of contracts Nos 1 and 2 is in a forward state, and except at two or three heavy places will be completed it is expected this fall. Upwards of 500 men are employed upon No. 2 and Messrs. Worthington, who are the contractors for one and two, about 40 miles in all, are pushing forward the work with great energy. They have been fortunate in finding good stone for the culverts in close proximity to the work, and consequently they have already got a considerable part of this work in a forward state.—All the culvert work appears to be done in a very satisfactory manner. A large 15 foot arch culvert, about two miles east of Trois Pistoles, has one of its walls already completed up to the course from which the arch will spring and is as fine a piece of solid, well executed work as is to be found in Canada. The length of this culvert is about 75 feet. Competent inspectors are appointed to overlook the masonry, and from the character of the work executed so far, they appear to be thoroughly doing their duty.

The heaviest work upon contracts one and two is at the crossing of the Trois Pistoles river, about one mile and a half west of the village of that name. The river and the valley through which it runs are about 1,100 feet wide at the point where the line crosses them, and the railway will run at a height of about 70 feet from the bed of the river. This crossing is the heaviest work between Riviere du Loup and the Metis, a distance of about 90 miles. On the west side of the river the line is carried for nearly two miles across a number of gorges in which there will be several culverts and a number of side-hill embankments. The bridge, which will be 500 feet long will start at the west bank, and be carried nearly half-way across the flats, thus placing the bridge across the main channel, and allowing no check to the flow of the river. The bridge is approached on the west side by a heavy embankment about 40 feet deep, made from a cutting of the stiffest kind of blue clay. This bank will be about 800 feet long, and is being actively constructed. The material on both sides of the river is the same, and is very difficult to work, coming out in large blocks of blue clay. On the east side of the river the embankment will be about 1,400 feet long and about 65 feet high at the deepest point. Large gangs of men and horses are at work on both sides of the river, and the contractors are preparing to put in tramways and tip wagons, as soon as the haul gets long enough to use them with advantage. An excellent stone quarry for the piers of the bridge has been found on the St. Lawrence, about 9 miles from Trois Pistoles, to which point the stone is now being brought in scows. One of the Worthington's lives at Riviere du Loup, and the other at Trois Pistoles. They have now at work on these two contracts upwards of 1,000 men, and are pushing forward the work with great energy and skill.

Bic is the headquarters of contract No. 5, which was awarded to Mr. Haycock, of Ottawa. He took the contract about the end of April, and has already made considerable arrangements for carrying on the work, having now 350 men at work grading the line at several points. There is not much bridge or culvert work on this contract, but the large part of the grading is rock. No. 7 ends at Rimouski. The village is large and prettily situated. Work is going on, on both sides of the river, which will be spanned by a bridge 300 feet

in length.—The country from Riviere du Loup is like a continuous village, very similar in its general characteristics, to that between Chaudiere and Riviere du Loup.

From Rimouski the line will run through a very level country for about 22 miles, to the Metis crossing, the Metapedia Road. The course of the line from Metis to the mouth of the Metapedia has been a source of considerable labor to the engineers, who after careful examination of the country, have found a moderately easy line, with favorable gradients throughout. The railway will cross the Metis about four miles from its mouth, and ascend by easy grades the highland between the St. Lawrence and the Restigouche. It then descends to the level of Lake Metapedia; then runs along the banks of the Metapedia river, which it crosses once instead of fourteen times as proposed originally by Major Robinson.

The scenery along the line through the valley of the Metapedia and Restigouche, and alone the shores of the Bay of Chaleurs will be the finest of any railway on this continent; about five miles from Bay of Metis the line will reach its highest level above the St. Lawrence.

Mining.

SEMI-ANNUAL REVIEW OF GOLD MINING IN CALIFORNIA.

Among the chief events in the gold mining industry of California in the last six months have been the general recognition of the superiority of giant over black powder for ordinary blasting purposes, the strike of Grass Valley league against the use of giant powder, and the consequent stoppage of some of the leading mines there. In the New Almaden Mine it was found that to cut a yard of one of the tunnels cost \$65 with black and \$45.45 with giant powder, showing a saving of 30 per cent.; in the Oaks and Reese Mine a hundred feet of drifts that would have cost \$7,500 with black powder were made under contract for \$4,437.50, a saving of \$40 per cent.; and in the Empire Mine it was found on a long and fair trial that the extraction of a ton of ore cost \$5.39 with black and \$2.09 with giant powder, showing a saving of 61 per cent. by the use of the latter. These are a few of the most notable results that have been obtained in cases where precise comparisons have been made. At Smartsville it was found that with giant powder derricks were no longer needed in the hydraulic claims for lifting large boulders, which can now be shattered at one blast into pieces small enough to be carried down through the sluices. The Cornish miners at Grass Valley refused to use giant powder, ostensibly because the fumes were poisonous, but the real reason is supposed to be because the single-hand drilling for giant powder requires only half the number of men, gives greater facilities for paying by the amount of work done instead of by the day, is not so fatiguing and demands less experience.

The Eureka Mine at Grass Valley has continued to yield munificently. It produced in June more than \$47,000, of which, however, \$4,500 were from sulphurets collected in previous months. The total yield of the first half of the year was \$285,109.14 from 9,000 tons of quartz, making an average of about \$32 per ton. The expenses were \$102,000, leaving \$183,000, or more than \$1,000 per day net, and \$20 per ton net. The number of men employed is about one hundred and fifty. The Idaho Mine, which adjoins the Eureka on the east, although it had begun to do very well in November last, did not prove its value as a first class mine till this year. It is now paying from \$15,000 to \$20,000 per month in dividends, and has a large stock of ore in sight. The quartz yields \$17 per ton gross. The North Star, the Empire and the Banner have been interrupted in their workings by the miners' strike, and we have no figures from them. Work has been resumed in pumping and clearing out the Allison Mine,

and preparing for the extraction of rock; and the mill has done well by working up selections from the old dump pile, thrown out as not rich enough to pay.

The Sierra Buttes Mine yielded \$95,084 gross and \$34,000 net in the five months, inclusive, from January to June. The average gross product per month is \$19,000, the same as it was last year. The Independence Mine adjoining the Sierra Buttes claim, is yielding well, but is burthened with debts, resulting chiefly from the damage done by the snow slides of winter before last, and is paying no dividends. The Keystone of Sierra, on the mountain opposite the Sierra Buttes, also suffered severely by avalanches, but seems to have not only recovered but to have gained a much better position than it ever had before. It now promises to become one of the leading quartz mines of the State. The gross yield was \$17,000 in May and \$20,000 in June.

The returns of the Amador Mine for June have not yet been received, but the average gross yield had been about \$63,000 per month from February to May, inclusive. At the present rate of production the mine will turn out nearly, if not quite \$750,000 for 1869. The production for the first five months of this year was \$47,861.53, \$65,670.98, \$61,720.65, \$66,346.52, and \$61,576.70. The number of tons reduced averages about 2,950 per month, every ton yielding more than \$20. The dividends for each of the last five months was \$10 per share.

The working of the mines of the Mariposa Estate has been resumed. There are now 66 stamps crushing at the Benton Mills, and a new 60-stamp mill has been commenced. The Merced River furnishes abundant power to drive all the mills with little expense; and the supply of pay quartz in the Josephine and Pine Tree Mines is large. The average yield of the rock on which the mills are now at work is about \$20 per ton. The Mariposa Mine has been pumped dry, and some good quartz has been taken out, in readiness for the mill which is being remodelled to crushing. Four Ryerson amalgamators are running at the Benton Mills, and they give such satisfaction that no other mode of separating the gold from the quartz is to be used on the estate. The Princeton Green Gulch and Bear Valley Mines are lying idle.

The Oaks and Reese Mill is yielding about \$12,000 gross, and \$6,000 net per month, with sixteen stamps, and twelve more are being added. From September, 1866, to May, 1869, inclusive, \$170,000 were produced, and all that, and \$60,000 additional, were expended, so that the mine was fully opened and the mill put in good condition.

The Oneida Mine of Amador has been incorporated; the Jefferson mill has been moved away from Brown's Valley and the mine abandoned, for a time at least. The Gimerack, or Erie Mine, in Nevada County, was in a fair condition to pay well, but the mill was burned down by some villains who had been employed in the mine, and were angry with the owners for stopping work because the miners would not use giant powder. Some further experiments have been made with the Hagan furnace, but it is not in use anywhere, nor, so far as we know, is there any intention to use it. About the multitude of other quartz mines which are being worked we have no facts worthy of mention in this brief summary. In placer mining there has been little change since December, save that of the gradual exhaustion of the richer claims, the continuous decline in the total yield, and the consequent decrease in the value of property in the placer mining counties. The burden of taxation to pay debts incurred in flush times is very heavy. The opinion is gaining ground that the valuable unoccupied lands in the mineral districts should be sold without reference to its mineral or agricultural character.

THE FRENCH ATLANTIC CABLE.—The gutta-percha employed for insulation was brought direct from Singapore, as it left the hands of the natives,