Skipper's Point.

Johnson's Claim (Area, 53 acres; owner, Robert Johnson),—This claim is worked by ground-sluicing, about 2 acres being stripped during the year. The water is brought in by about a mile and a half of water-races with a length of 70 ft. of pipes. The pressure for sluicing is 250 ft. The value of water-races and plant is estimated at £4,000. The owner says that the claim wants 1,000 ft. rock-tunnel for a tail-race put in to where the ground is better, but this is an undertaking for a company, and that he intends trying to float one. The tail-race was washed up for a yield of 60 oz. of gold, valued at £231.

Londonderry Claim (Owners, Skipper's Sluicing Company, Limited; manager, James Scott).—The ground held comprises an area of 63 acres. The face of wash is very thick, averaging about 170 ft. and is of a light sandy character, containing a little gold throughout, the best part being in stony seams. The stuff is sluiced on to a false bottom, which is variable, consisting in some places of gravel and in others of white sand and tough clay. The bed-rock is mica-schist, but no gold is got below the false bottom. As there is good fall for tailings, no elevating is required. Two nozzles are employed. Water rights are held for twenty Government heads from Skipper's Creek, and the water is conveyed by a race five miles in length, and by 33 in. and 22 in. diameter iron pipes about two miles long. The water-race has a fall of 8 ft. to a mile. At the claim, iron sluice-boxes are set in a tail-race having a fall of 1 in 10, and tram-rails—fitted both crosswise and longitudinally—serve for riffles. The gold is of a character which admits of its being easily saved. Owing to the frost and snow at this altitude in winter, time-work is only carried on for about eight months in the year. Eight to twelve men are ordinarily employed. A tail-race tunnel 310 ft. long and 6 ft. by 5 ft. in section, which will admit of the claim being worked to better advantage, has been recently completed at a cost of about £1,000.

Upper Shotover.

On the Upper Shotover several parties are engaged in sluicing operations on the river-beaches. The material is raised by means of suction. Messrs. Alfred Smith and Sons were the first to engage in this method, and their example was in time followed by others, and there are at least half a dozen plants of a similar description now in use.

Messrs. A. Smith and Sons still continue to work their claim on the Shotover River with the suction elevator. The suction-pipe is attached to a bent pipe connecting with the horizontal pipe leading to the sluice boxes. This horizontal pipe is supported on a log structure, and is so adjusted that it can turn on its bed. The water from the race is conveyed through pipes decreasing to 5 in. in diameter at the nozzle. The nozzle is $1\frac{3}{4}$ in. diameter, and is fixed with a packed joint where it discharges into the bend-pipe and in a direct line with the horizontal pipe. On the water being turned on, a vacuum is created in the suction-pipe by the force of the water from the nozzle, and the wash is ejected through the horizontal pipe and into the sluice-box. At the lower end of the suction-pipe whatever material is convenient, whether water or gravel, is sucked up and carried along with the stream of water from the nozzle. As the material gets removed from its end the suction-pipe drops gradually down until the bottom is reached, the end of the pipe having in the meantime described an arc of a circle. The necessity for the packed joint is thus apparent, the nozzle remaining rigid and fast while the pipe into which it discharges has made a partial revolution. One great recommendation for this method is that all the parts can be moved with comparative ease, the whole of the fixtures being on the surface, and the plant can be set at any point without loss of time. The power used in working the pumps is from three sluice-heads of water with a pressure of 160 lb. to the square inch, which under the circumstances will develop upwards of 100-horse power. Therefore, although the work of elevating is conveniently and effectually done, the expenditure of power is very great, and this method of elevating will be only applicable to places where large water-power is available. But where such power can be got this method of elevating is unmistakably more convenient and effective for comparatively shallow ground than are those elevators in general use, which require the water-jet to be applied at the bottom instead of the top as in this case.

Success attendant on Messrs. Smith and Sons' operations has induced several other parties to adopt this method, and no doubt wherever water-power is available the plants will be effective for elevating purposes. The names of the parties who are working in this manner are Smith and Sons, B. Rogers, Gammell and Shursthardt, and Stoeller, all of whom are working on the Upper Shotover, above Skipper's Creek; Collins and party, Sainsbury, and Ward and Thompson work on the Shotover, but below Skipper's Creek. Several other claims are taken up in the river-bed, and will be worked by similar plants.

The following report and sketch-plan, furnished by Mr. Hayes, Inspector of Mines, Dunedin, gives a full description of, and conveys a general idea of, the working of the plant:—

"In accordance with request, I visited Smith and Sons' claim, and examined their arrangement for a horizontal-jet-pump elevator for working in river-beds. To make it clear, I send you a tracing (from actual measurements which I took) on a scale of $\frac{3}{4}$ in. to 1 ft. Messrs. Smith state that the proportions and sizes given are the result of a good deal of experimenting to arrive at the best for effective work. The whole affair is so simple that very little explanation is needed in addition to the sectional drawing. The bend-pipe, short throat-pipe, and first expanding-pipe are of good hard cast-iron. These are the only castings required. Although I have shown the supports like chocks, they may be made of two posts bolted together. Taking the applicability of the system for working on river-bed beaches, you may assume the arrangement being fixed in position with the uptake pipe (lower end) resting on the ground; a small hole is dug under it, and the pipe-end allowed to drop into the hole. The water being turned on, a rush of air is created in the uptake pipe, into which the ground which the operator looses with his pick is drawn. As the hole gets deeper the weight of the uptake pipe naturally causes it to describe the arc of a