sions to start the bore, and, after this, two ordinary mining-drills bored the distance. Two miners, I was told, could not bore the depth in four hours. The rock-borer was a 3½ National; but the manager informed me that a 2½ would be found more suitable for general mining purposes. Mr. David Whyte, one of the directors of the mine, stated, 'That the mine had been idle for a considerable time, not being able to pay current expenses to raise and crush the stone. The "National drill" was sent for as a test, and was then working six months. Two thousand tons of quartz were broken down and crushed during that time, which cleared off all liability on the mine, including the cost of rock-drill and air-compressor. We have a small balance on hand, and have sent for another rock-drill. In the selection of percussive power-drills by those who desire economic and progressive mining, a few facts will be found useful to follow The construction should be simple, with the fewest number of parts consistent with efficiency The material should be of the best, especially so for the inner parts, exposed to such enormous friction. The weight of rock-borer should be portable, for a workman to carry to any part of a mine, and set it to work, or take it down in a few minutes and bore with ease at any angle directed by a miner. Rapidity of action is not so necessary as to have all the working parts remaining constantly in working order, and not liable to go out of repair.

"*The National Rock-drill.*—This borer is more extensively used than all others. It is well spoken of for all kinds of mining work, and was employed in seven of the mines visited by me. It weighs 168 lb. in 80 parts, and costs £125. Osbourne and Cushion, Collins Street, agents.

"*Mitchell's Rock-drill.*—This drill is one of the latest additions to a numerous class already seeking public patronage. Mr. Mitchell is a Sandhurst engineer, and was then in Melbourne applying for letters patent when we reached there. In company with Messrs. Hobbs and Naylor (two gentlemen from Stawell) we paid a visit to Harkness and Co.'s foundry, where the drill was carefully examined in all its parts, the improvements, so far, giving general satisfaction. Next day Mr. Mitchell arrived from Melbourne and brought his drill for a trial down the Extended Hustler's Mine. The place selected was a cross-cut drive, on a hard, close-grained, thick-bedded slate rock. The machine was fixed to work in a few minutes; a start being made, I took the following time: Sixteen inches were bored in 4¾ minutes; 22 inches in 5½ minutes; 25 inches in 6 minutes. Our Stawell friends being quite satisfied, I asked Mr. Mitchell what headway could the machine make with blunt or badly-pointed drills? From a number of drills one was selected blunt, with one of the corners broken off. This drill bored 23 inches in seven minutes, without water. I left perfectly satisfied with the work performed by this little stranger. If this rock-drill can bore equally well in quartz, I make no doubt of it being far superior to all others. If the following points of difference supplied to me by Mr. Mitchell be correct, a great deal can be said in its favour: 'The weight of my rock-borer is about 145 lb. The jacket is cast in that expensive and durable metal called phosphor bronze, and the cost, with 30 feet of tubing, is only £85. The pressure used is 50 lb. for inch connection, and 60 lb. for ¾-inch. With this pressure it bores one-third faster than most of the other drills. The construction is simple, with fewer number of parts and no valve, so objectionable in others. The most inattentive workman cannot put it out of repair; careless feeding, or a drill breaking or bending, will cause it to stop—a sufficient cause to put other drills out of repair.'"

Water Races Under the Control of the Mines Department.

As stated last year, there are four water-races the property of the Government. Those under the control of the Department are the Argyle, the Nelson Creek, and the Waimea-Kumara races, upon the West Coast, the Mount Ida race, Naseby, being managed by the Trust under "The Mount Ida Water-race Trust Act, 1878," a report of whose transactions for the year ending 30th of April, 1881, will be found in the Appendix. These works have hitherto only paid a very small percentage of interest upon the cost of construction, and although efforts have been made during the past year to reduce the cost of maintaining the West Coast races, the heavy floods which occurred in March last caused so much damage as to remove all chance of showing any profit from the Waimea-Kumara race for a long time to come. These races, however, as stated in former reports, enable a considerable number of men to prospect and open new claims which could not be developed at all without the water races, and an industry is thus steadily maintained, the average annual earnings from which amount to about £140 for each man employed. In Table No. 20 will be found a statement of revenue and expenditure on account of the West Coast races for the year ending 31st March, 1881, and a similar statement for Mount Ida race for the year ending 30th of April is attached to the report by the Trust referred to above.

Settlement on Gold Fields.

On the Auckland gold fields 15 applications of 50 acres each were made on agricultural lease, and 28 selectors have taken up 5,369 acres under the homestead clauses of the Land Act. An area of 3,300 acres remains open for selection on the homestead system, and a further area of 1,000 acres is about to be proclaimed.

On the West Coast gold fields, Middle Island, every acre of clearing has to be won from the forest, and as the humid climate is unfavourable to the cultivation