

making it 40 per man, not more. I would refer to the article in the Appendix on Mineral Resources of the Colony, where it will be seen that, from six men's ground of 30 feet each, some £45,000 profit has been made in a reef in five years. The adjoining claim, it being also six men's ground of 30 feet each, has produced some twenty-five or thirty thousand pounds profit. I cannot see that it would have been advantageous to the general public to have given the two claims to six men, instead of it being divisible amongst twelve. While the object should undoubtedly be to give so large a claim that the miner may settle down for some time on it, and make himself a home, and also have so much ground that it will be worth his while to work the claim by efficient machinery and appliances,—yet, I think care should be taken that we do not go too far, and prevent population being attracted to the Colony by locking up the auriferous land in too few hands, by the means of such large quartz claims as those recommended by my colleagues.—E.A.B.]

WATER SUPPLY.

105. Without water, the separation of gold from its matrices, or from the “dirt” and “gravel” in which free gold is imbedded, becomes an impossibility; it is therefore of the highest importance to the development of the Gold Fields that a liberal supply of this element be secured to the miner, to enable him successfully to carry on his operations. Importance of water supply.

106. Your Commissioners, while engaged in making their inquiry, occupied a considerable portion of their time in taking evidence on this subject, and in making a personal examination of the districts, so far as the time at their disposal would allow. They found that generally an exaggerated notion prevailed as to the facilities for obtaining a plentiful and permanent supply from reservoirs for the storage of storm-water, or by means of races from rivers or permanent watercourses situate at a height sufficiently elevated to procure a supply therefrom by gravitation. Exaggerated notions existing as to facilities for supply.

107. New South Wales, in common with all other Australian Colonies, is very badly watered, and, considering its extensive area, remarkable for having so few springs and brooks of running water. Very few streams exist sufficiently large to be called rivers, and in seasons of drought even these cease to run, and not a drop of water is to be seen for miles. An under-current might possibly exist, but certainly not sufficient to supply a Gold Field except in a limited quantity for domestic purposes. In the interior these rivers traverse an almost level country, and consequently have scarcely any fall; now and then all traces of a river disappear, and change into a swampy reed-bed. The water (when there is any), after spreading itself over the swamp, collects again at the lowest level, forms another channel, and moves on sluggishly as before. Australian rivers.

108. In the more elevated mining districts the conformation of the ground is generally favourable to the formation of reservoirs, where water could be conveniently stored in sufficient quantities for quartz-crushing, puddling, and domestic purposes; and we have no doubt companies would be found willing to undertake such works on established Gold Fields, were a code of Regulations in existence that would enable them to dispose of the water so collected at a fair and reasonable rate. Facilities for water supply.

109. Where the water supply is required for sluicing purposes, your commissioners feel confident that no reservoir could be depended on. It is, then, necessary that the water be brought from some permanent source by means of a race, or artificial channel, as the quantity consumed by half a dozen sluice-heads would empty a moderately large reservoir in a few days. Water for sluicing.

110. A general opinion seems to prevail in many localities, that if scientific knowledge combined with capital were brought to bear, water could be obtained in enormous quantities. Thus Mr. W. D. Bourke, of the Hanging Rock Gold Field, on being questioned as to what he would recommend to procure a permanent supply of water, states:—“By tapping some of the swamps on the table-land, at or about Hanging Rock, and cutting a race along the main ridge through Bowling Alley Point, a never-failing supply would be given to all Bowling Alley Point and Nundle, and would afford motive power for quartz-crushing as well as unearthing alluvial deposit.” The same witness says:—“I think the Government ought to undertake the work, as I do not think it would pay the private capitalist to do it, but as a national undertaking it would be worth the Government's while to do it. It would attract population here to the extent of 2,000 or 3,000. It would largely increase the yield of gold and the Revenue, and no doubt a large water-rent would be obtained. We have races eleven miles long, and the longest is that from Bowling Alley Point. The race I would propose should supply thirty sluice-heads at £2 a week.” Mr. W. D. Bourke's evidence.

111. Great advantages would doubtless accrue were it possible to carry out such works as Mr. Bourke suggests. Its impossibility however is easily shown. A sluice-head with a discharge of 12 ft. by 6 ft., or a sectional area of 72 square inches, and a fall of half an inch per foot, would carry off about 750,000 gallons per day. Thirty such sluice-heads would therefore require some 22,000,000 gallons daily; a quantity far in excess of anything likely to be obtained from swamps situate on the summit of the main dividing range, where the watershed necessarily is very limited. Quantity of water required for ground sluicing.

112. Where running streams exist and can be diverted from their natural channels so as to supply a Gold Field by gravitation, many and great advantages would be gained by delivering the water to one reservoir, from which the water could be drawn off and rented; the loss from soakage, evaporation, injuries by cattle, and other causes, being proportionately far less for one race sufficiently large to carry all the water that can be obtained than from several small races. It is therefore of considerable consequence that the applicant for a water license should give a guarantee that the necessary works should be satisfactorily performed, as it is not improbable the success or otherwise of the Gold Field will depend on the water being brought on and disposed of in an economical manner. Water supply by gravitation.

113. The Gold Fields of New South Wales extend over a vast tract of country, and are very scattered. No comprehensive scheme of water supply such as our Victorian neighbours have partly carried out on the Coliban can therefore apply. The Western District extends from Gulgong to Extent of Gold Fields in New South Wales.