

Which he estimates, in the year 1863, at the sum of say £2,400 for the mere necessary plant of a moderate-sized establishment. From information, however, received from an expert and practical refiner and owner of works in New South Wales, and taking into consideration the immense rise in the price of iron, it is believed that a considerably larger sum, say from £4,000 to £5,000, would be required to cover this; to which must be added the cost of boring gear, say £150; engine and plant for pumping apparatus, and sheds, provision for fuel, &c., say £1,600.

Cost of boring—average distance bored being about 400 feet, though sometimes extending to 600—for each shaft say £150; and many shafts may have to be put down before oil may be struck, though sometimes, but not often, a lucky hit is made.

As regards the cost of refining, the same authority, referring to his own experience, believes that it will amount to say one shilling and fourpence per gallon of refined oil.

I have no information in my possession as to the number of hands that such a manufactory would give employment to. All that can be done is to refer to the various branches of trade and employment to which it would furnish occupation:

Skilled and manual labour to bore and pump, when found.

Bushmen to furnish timber as fuel.

Distillers and helpers in the refinery.

Carriers for transit of manufactured article, or labour required to provide other means of transport for a distance of some twenty-five miles.

Carpenters and coopers for barrels.

Tinsmiths for cases.

Shipping required to place product in market.

Thus it will be seen that occupation would be given to a very large number of persons to an extent which no other new industry can parallel, and so far has a claim for consideration and assistance which a Government whose policy has been and is the establishment of new industries by judicious incentives to local enterprise, will, it is confidently believed, not fail to recognize the due importance.

I have, &c.,

WM. STEWART.

The Chairman of the Committee of Colonial Industries.

The different operations in the process of rectifying the crude petroleum are as follows:—

1. The oil is allowed to settle in large vats, where any mechanical impurities and water are got rid of.

2. It is then distilled, until it parts with from 10 to 20 per cent. of its volume of naphtha, and other light foreign inflammable products, which are received and drawn off by themselves. The remainder is then continuously distilled at as low a temperature as possible, which produces an oil that does not vaporize at about 115° Fahrenheit.

3. The remainder is then agitated with a certain proportion of sulphuric acid, which precipitates most of the bituminous impurities. After being allowed to settle, the top stratum is drawn off: agitated well with water. Again it is treated with a solution of caustic soda, to neutralize any free acid formerly used. The product, after being allowed again to settle, and being separated from the alkaline solution, is again washed with water; and then redistilled. The product resulting from this distillation yields the oil of commerce, after being bleached for some time in open tanks well exposed to the action of air and light.

I might also mention the statistics of the yield of oil-bearing wells in America, which, in connection with the question of quantity, may be interesting:—

McKinlay Well, Pennsylvania, yielded 3,000 barrels per day; this was the largest. Many give from 50 to 200 barrels. A yield of 50 is considered a very good one; but the first yield is generally the largest, and afterwards they often decline, and frequently after a term dry up, but sometimes again reappear. In Peru, the yield, I am informed, is from 100 to 600 barrels per day.

## No. 10.

### MR. BUTT'S REPORT ON THE INTRODUCTION OF SALMON TROUT.

SIR,—

Wellington, 15th September, 1873.

I have the honor to acknowledge receipt of your letter of the 11th instant, requesting me to give my experience to the Industrial Committee as to the introducing of salmon and trout to the rivers of this Colony, and to bring any papers on the subject I may have with me. I accordingly attended as desired, and received your permission to render a written paper on the subject.

Presuming that what you require is to obtain as far as possible my experience as to the success obtained by the Southland Society (with which I was connected) in the past, so as to be a guide to further operations in the future, I proceed in the first place to take the brown trout.

This fish, as you are no doubt aware, has been so thoroughly acclimatized throughout the Middle Island, that it is needless to expatiate upon that subject. Its acclimatization has been successful from one end of the Island to the other. In Southland, a number of the rivers have been supplied with young fry, besides which there are some 3,000 twelve months' old fish ready to be turned into the streams in the vicinity; and 50 breeding fish retained in the ponds, which would yield this winter from 70,000 to 80,000 eggs.

Of salmon trout (a fish which is worthy of the highest consideration, as being equal in every respect to the true salmon, except as to size), the Southland Society obtained 150 ova from Hobart Town in 1870.

The hatching of their ova was not nearly so satisfactory as that of the brown trout eggs brought over from Tasmania at the same time.