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GEOLOGICAL REPORTS ON OLDER AURIFEROUS DRIFTS OF CENTRAL OTAGO.

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Presented to both Houses of the General Assembly by command of His Excellency.

Mr. A. McKAY to the UNDER-SECRETARY for MINES.

SIR,—

Mines Department, Wellington, 15th May, 1894.

I have the honour to forward to you my report on the district in which I have been engaged during the year ending the 31st March last. The principal work of the season was an investigation and study of the older auriferous drifts of Central Otago, the report on which is divided into several heads, as under :—

1. Localities examined.
2. Description of the Auriferous Drifts according to the Localities where they occur.
3. Classification and Sectional Relationship of the Strata examined.
4. The Auriferous Drifts considered in relation to the Changes of Level and Disturbances by Faulting that have taken place since their Deposition.
5. Conclusion.

LOCALITIES EXAMINED.

The examinations for the year were begun within the Waitaki Valley, in the Maraewhenua District, and thence were continued along the eastern flanks of the Kakanui Range to the watershed of the Shag River. This north-eastern district of Otago as an auriferous field is cut off from the goldfields of Central Otago by the Kakanui Range, Mount Domett, and the Kurow Mountains. Its auriferous deposits consist chiefly of quartz grits underlying marine strata, associated with or taking the place of the coal-measures of Cretaceo-tertiary date.

Within Shag Valley, not far from Palmerston, two localities on the downs between the river and the foot of the Horse Range were visited, gold having been recently discovered at those places.

Proceeding by way of Dunback, Macrae's was visited, and from that place different examinations were made in various directions. Next, Hyde and Hamilton's were visited; and, after making the necessary examinations at these places, from Hamilton's by way of the Taieri Bridge and Ewe Burn, Naseby was reached.

Several days were spent examining the eastern and northern borders of the Maniototo Plain from the Upper Kye Burn to the Wether Burn. From the Wether Burn the line of quartz-drift or made hills was followed along the base of the Mount Ida and Hawkdun Ranges to near the head of the Mount Ida Water-race.

Returning from the Upper Manuherikia, the district around Hill's Creek and St. Bathans was examined, and also Vinegar Hill, which with the Two-mile forms the north-eastern end of a long line of deeply-involved gold-bearing strata that extends through Cambrian's, Drybread, Tinker's, Devonshire Diggings, and Waikerikeri to the Molyneux River at Clyde.

From Clyde, Cromwell and Bannockburn were reached, from which places various examinations were made, more particularly the area of quartz drifts on the western slopes of Cairnmuir Range. From Bannockburn, by way of the Carrick Range, the Nevis Valley was visited, and, returning thence to Cromwell, the Clutha Valley was followed to the junction of the Luggate Burn with the river.

From the Luggate, Criffel Diggings, Fat Boy, Frenchman's, and Mid Run were visited, and, after these, the Cardrona Valley was examined from the junction of the Cardrona with the Clutha to its source. Next, Arrowtown was reached; and thence Arthur's Point and Maori Point, on the Shotover, were visited. Returning from Maori Point to Clyde, thence Bald Hill Flat was visited, and from the latter place examinations were made to some distance down the Molyneux Valley. From Bald Hill Flat to Ophir and the Pool Burn Valley was the next journey undertaken; and from Black's No. 3, German Hill was reached, and the Rough Ridge followed to the Clyde-Naseby Road. Reaching and leaving Naseby, on the road to Palmerston, Shag Valley was examined. From Palmerston, by way of Dunedin, Lawrence was reached, and from that place Blue Spur, Weatherstone's, Waitahuna, and Waipori were examined. From Lawrence the Molyneux Valley was followed as far as Coal Creek, five miles above Roxburgh; and from Lawrence, in the opposite direction, Clinton, Waipahi, Tapanui, Kelso, and Heriot were visited, and, in the district further to the west and north-west, Waikaka and Switzers.