

No. 2.

C O U N T Y O F B O U R K E

C O U N T Y O F E V E L Y N S.E.

NOTES.

Note 1. Gray's Reef.—This reef consists of an aggregate of thin and very irregular veins or strings of quartz, mixed with rubby and sometimes silty shales. The adjacent walls are of white, fine grained, but much jointed sandstone. The veins crop out on a ridge, forming the watershed between the river Plenty and a tributary of the Diamond Creek. The principal workings have been on two parallel lines, a short distance apart. The northern end of the reef has a general direction of N. 50° E., with a pretty steep easterly dip. At the southern end the direction is N. 35° E., with an easterly dip of 70°. Iron and arsenical pyrites are sparingly disseminated through the mass. The gold is said to have been very patchy, but, nevertheless, tolerably abundant in places.

Note 2. The Pioneer Reef possesses characters almost identical with those of Gray's Reef. The quartz veins are very thin and irregular, with a general direction of N. 25° E. At the north-east end, on the top of the ridge, is a shaft 150 feet deep. Here, at the surface, the quartz is said to have been very rich—4 ozs. per ton to a depth of 30 feet—at which depth the gold is reported to have run out; but it is more than probable, that the auriferous quartz was cut through, owing to a steep southerly dip in the vein, as the two next shafts to the south, situated much lower down the hill, but on the same line of quartz, met with it again. These were being worked by some Germans, who showed very good specimens, and stated the yield to be over 2 ozs. to the ton, but that owing to the thinness of the veins it required a great amount of labor to knock out a ton of quartz.

Note 3. An excavation in this tertiary outlier, as well as several holes on the opposite (southern) side of the gully, together with a section exposed on the steep bank of the river (east side), a few yards N. of where the section fence crosses it, show an alternation of stratified ferruginous sands, grits, and conglomerates, forming a deposit of probably not less than 50 or 60 feet in thickness. None of the excavations or shafts, though made in the search for gold, have reached the underlying bed rock. Nearly the whole of the area, colored yellow is occupied by similar sands, grits, and conglomerates, which closely resemble those of the Upper Miocene beds on the Brighton coast and other places, but no fossils have yet been found to enable this identification to be positively established. From the position they occupy, with regard to the adjacent elevated basaltic outcrops, there is good reason for believing that they pass beneath them, but there are no wells or shafts to prove this. Gold, in small quantities, is said to have been found near the surface where these drifts occur, but no proper attempt appears to have been made to determine whether the drifts themselves are auriferous and would pay for working.

Note 4. A cutting in the road at this point shows a section of the tertiary drift deposits, consisting of coarse ferruginous sands, with but little quartz gravel associated with them. At the bottom of the cutting the decomposed surface of the bed rock—white pipeclay derived from the adjacent shales—is exposed, so that the drift beds are here not more than 10 to 15 feet thick.

Note 5. Thick beds, or cake-like masses, of a nearly homogeneous quartz rock, in some places becoming a conglomerate from the abundance of embedded quartz pebbles, and in others resembling "a porcelanite," occur very abundantly in the neighborhood of this volcanic hill (Mount Cooper) to the exclusion of the ferruginous sands and grits, associated with the basalt lying to the north-east and east of it, which is undoubtedly of older date. This siliceous rock is more abundant in the neighborhood of volcanic points of eruption than elsewhere, though it is not confined to such localities. It may be seen underlying the basalt on the Saltwater River above Raleigh's Point, and also at Keller. Though excessively hard, it is not a good road metal, being too brittle.

NOTES.

Note 6. Quarry showing section of light and bluish-grey silty basalt, in very distinct and well-formed pillars, built up of successive layers about 4 to 1 inch each in thickness. On exposure to the atmosphere each successive layer soon breaks up, and weathers to a dirty yellowish-brown color. It has been used in this neighbourhood for "road-metal," but on account of its non-durability does not answer well for that purpose, although, on becoming thoroughly broken up and disintegrated, forms a fine, fertile red soil. These basaltic outcrops in general appearance bear great resemblance to the larger ones farther east, known as the Kangaroo Ground, but are not underlain by the peculiar siliceous rock found under the latter. They are open, rounded, dome-shaped hills, with generally steep sides, well grassed, and with little or no timber.

Note 7. Sugar-loaf Hill—Highest point of the Plenty River and Darebin Creek watershed in this sheet. The crest of this rise is occupied by numerous irregular blocks, cropping out of an exceedingly hard and flinty "breccia," composed of angular and here and there a few semi-rounded pieces of sandstone and altered shale. This breccia has, in all probability, filled a pre-existing fissure in the bed rock.

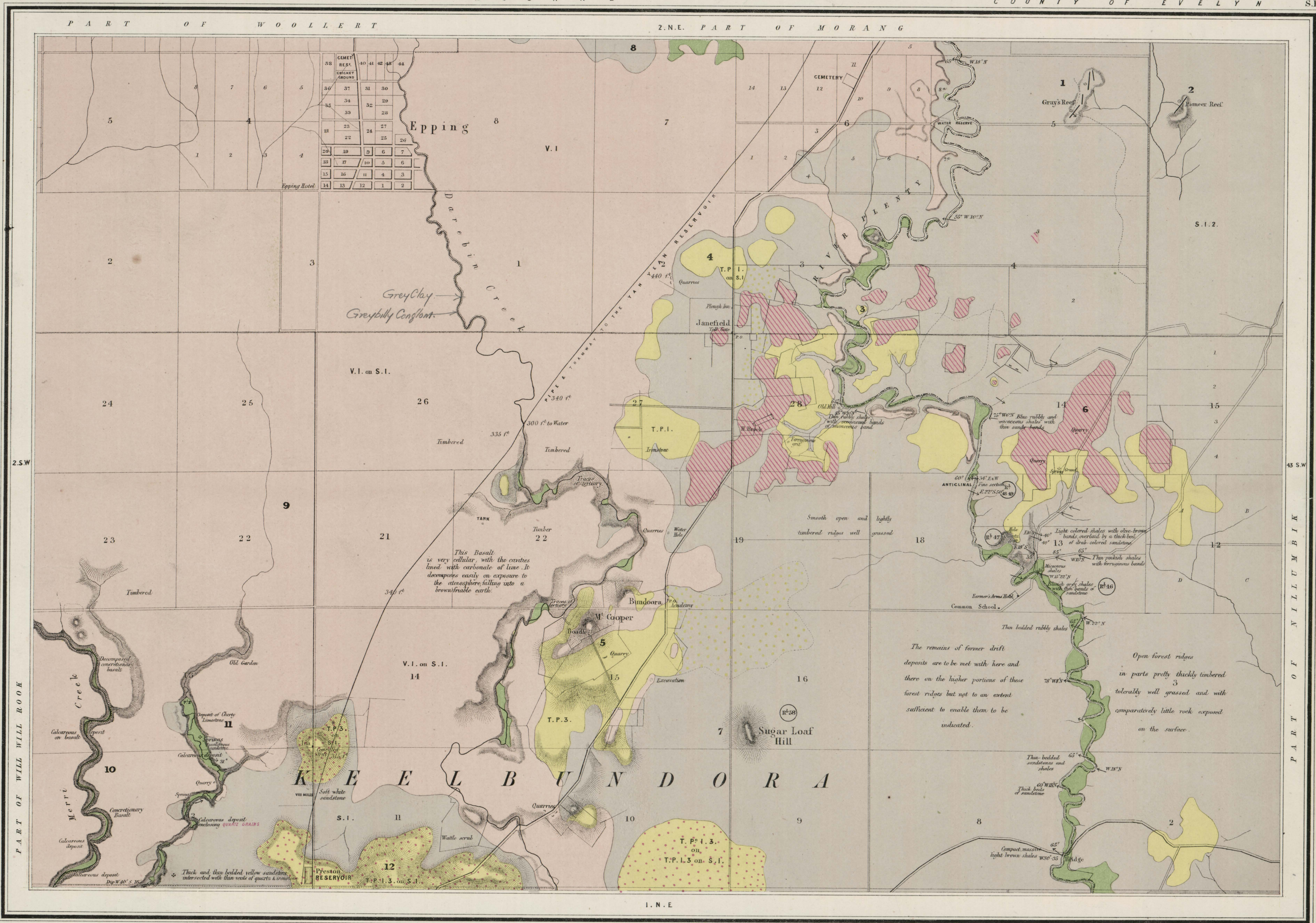
Note 8. Continuation of the ridge forming the watershed between the river Plenty and the Darebin Creek, in 4-sheet 2 N.E., composed of metamorphic schist and sandstones, and covered with numerous pieces of a dense, dark, metamorphic rock, much resembling that occurring on parts of Mount Tarrangower, near the granite boundary.

Note 9. These plains are here and there occupied by scattered clumps of timber, generally occurring in crabbly ground, and where no basalt is visible. The crabbly patches consist of a deposit of clay of variable thickness. Whether this deposit rests on basalt, or on the top of sandstone hills, which have either never been covered by the flow, or off which it has since been denuded, is uncertain, as there are no wells or sections to aid in determining. The general features of the surface, underlying the basalt, are most probably like those of the country to the eastward, undulating and hilly. The basalt is of variable thickness, according as it fills deep valleys, or rests on the sides of sandstone hills.

Note 10. The banks of the Merri Creek exhibit in places two distinct flows of lava: the upper, dark colored, dense, and compact, the lower, concretionary, and although appearing solid, falling readily to powder of a yellowish brown color, where exposed. This latter may possibly be an outcrop of the older basalt.

Note 11. The water in this creek is very brackish, and its bed, consisting of sandstone and basalt, is everywhere covered with a deposit, of variable thickness, of freshwater limestone, sometimes enclosing quartz grains and fragments of drift. This limestone, did it occur in sufficient quantity, might be available in an economic point of view. An earthy-brown variety occurs in a similar manner on the Merri Creek. A qualitative analysis of these limestones, showed them all to contain a large percentage of magnesia.

Note 12. The boundaries of this mass of Pliocene gravel are difficult to define, except approximately by the contour of the ground, owing to the absence of any sections or quarries.



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Post Pliocene	Ratallus, Lecher, Estuary beds & lower drifts	P1 Sand	Older Pliocene	Merrine & Freshwater	Brighton beds & Lower Gold drift	T.P. 1 Sand, boulder	Upper Silurian	S1 Sandstone	S2 Slates, shales & Mudstones	S3 Conglomerate	Lower Volcanic (Pliocene)	V1 Basaltic Dolerite	V2 Andesite	V3 Lava	V4 Ash, Conglomerate, Breccia &c.	Upper Volcanic (Pliocene)	V1 Basaltic Dolerite	V2 Andesite	V3 Lava	V4 Ash, Conglomerate, Breccia &c.	T1 Sand	T2 Clay	T3 Gravel
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Deposits of sand, clay & gravel at the top of the upper gold drifts (Divisional or Post Pliocene) occur at intervals along the course of all the valleys. These deposits are frequently cut through & redistributed by existing river action during floods, forming Alluvial A, 1, 2, 3. Recent gold drifts.

Scale—Two Inches to a Mile.

Gold Dip Artificial line Locality and mark of Specimen in the Museum (140) Rock Parish Boundary County Boundary Volcanic hills and Points of eruption