

THE ACTIVE WHITE CREEK FAULT.

Recent movements observed along the White Creek fault after the earthquake of the 17th June are the chief subject of geologic interest at present attaching to the area. The fault crosses the former main road to the West Coast near White Creek, a tributary of the Buller River, seven and a half miles west of Murchison, or practically midway between Newton Flat Post-office and the Buller-Marua junction. This fault is slightly concave westward, and determines the eastern boundary of a fault-bound strip of Tertiary sedimentary rocks, averaging one-quarter mile in width. This Tertiary strip has been traced from the mouth of White Creek south-westward for six miles into the Big Deepdale basin, where the two faults that bound it appear to unite and continue as a single fault. Northward from White Creek the traces of the two faults continue across the basin of Newton River and head towards the Mokihinui basin. Since the 17th June the country west of the White Creek fault has subsided about 15 ft. relatively to the country to the east. Reports from various quarters indicate that the movement was spasmodic. No recent movement has been detected along any other fault of the Murchison Subdivision. The widely scattered centres of origin of after-shocks show that release of stress is taking place over a large part of Nelson Province. This sympathetic release of stress is accompanied by minor tremors, and will probably continue for some months.

A structurally similar strip of Tertiary rocks that is so conspicuous near the Glengarry-Marua junction was recognized in the Big Deepdale about twelve miles south-south-west from the junction of this river with the Buller. The strata of this strip probably wedge out southward, as the two bounding faults approach one another and unite.

COAL.

The coal-measures at Owen Junction are being capably prospected by a small party of miners. A seam from 5 ft. 6 in. to 6 ft. thick at the outcrop was approached by an adit; the coal was about to be mined when the earthquake of the 17th June caused the collapse of the adit. The seam is so disposed as to permit economical mining, and ready access to the main road and projected railway places the prospect in a favourable position.

6. PALÆONTOLOGICAL WORK, 1928-29.

(By J. MARWICK.)

The chief work during the past year has been the preparation of a Palæontological Bulletin on the Tertiary Mollusca of the Gisborne - East Coast district. This is now nearing completion, and should be ready for publication during the present winter. The extensive fossil collections on which this work is based were gathered chiefly by the geologists of Taranaki Oil Fields, Ltd., and as a result of their careful collecting we have a much more extended view of the Tertiary faunas than was hitherto possible.

In December, 1929, following a reported mud-flow in the Cheviot district, the writer visited the locality, which is in the bed of the Gower River, on the farm of Mr. A. Sloss, who kindly provided transport from the railway. A description of the mud-flows, of which several occurred, has appeared in the *Journal of Science and Technology*, Vol. XI, No. 1, 1929. A visit was also paid to Gore Bay, and a small collection of Mollusca was obtained from the clays exposed on the roadside at the last bend before going down to the beach. The shells are almost certainly of mid-Tertiary age.

In company with Professor R. Speight and Mr. S. Sylvester, of Canterbury College, the writer spent ten days collecting in Mount Somers district. Evidence apparently favouring the Ngaparan age of the coal-measures here was obtained, but the collections have not yet been examined in detail. A visit was also made to Charteris Bay, Lyttelton Harbour, and further fossils were gathered from the rusty sandstones. The specimens, though all casts and moulds, confirm the previously expressed opinion that the beds are approximately Awamoan in age.

During February a fortnight was spent in Nelson Province, chiefly in the Takaka and Tadmor districts. As a result of several days collecting in the quarries of the cement-works at Terakohe a large number of specimens were gathered from the limestone and overlying marl. A finely preserved fossil crayfish from the marl-quarry, the first recorded in New Zealand, was presented to the Geological Survey by Mr. Ulrich, chemist at the cement-works.

Collections were also made from the Tertiary rocks outcropping in the Wairoa River, a little below the gorge, and from the Triassic rocks of Garden Gully, above the gorge. A considerable amount of poorly preserved material from the foreshore at Nelson was collected in the hope that careful preparation and study will afford evidence as to the age of these beds. Several points of agreement tend to correlate the Nelson Mollusca with those from the Wairoa Gorge. In the Tadmor district the principal collection was got in Greenhills Stream, a tributary of the Sherry River. The beds outcropping in the Sherry and Tadmor Rivers were also examined, but with little result.

From March until October, 1928, the writer was acting as *locum tenens* for Dr. Cotton at Victoria College.

7. MANGANESE AT PARAPARAUMU.

(By J. HENDERSON.)

On the 25th March I visited Paraparaumu, and was shown by Mr. Davies, the lessee of the sheep-farm, prospecting-trenches cut many years ago on the outcrops of manganese-ore. These trenches are now in part fallen in and their sides covered with turf, so that little could be ascertained beyond the fact that manganese-ore occurs in places. McKay,* who examined the trenches in 1899, soon after they were cut, had a much better opportunity of seeing the extent and manner of occurrence of the

* A. McKay: "Report on a Deposit of Rhodochrosite at Paraparaumu, Wellington." *Mines Report*, C.-9, pp. 2 and 3, 1899.