

The differences in the computed lengths on the coterminous sides of the Inland Patea triangulation are consistent but large—3·3 per mile—and are probably due in a great measure to difference of standards used at the bases. The discrepancies in bearings, 23"—or 37", allowing for spherical excess—are slight, and very satisfactory when it is considered that the origins of the two triangulations are about a hundred miles apart and the connecting series is the resultant of several surveyors' operations during the past thirty-two years. The close back on Mr. Alex. Dundas's Pohangina triangulation completed a circuit of eighty miles, of which the Rangitikei base is the key-point. Several surveyors took part in the work, and some as far back as the sixties. The differences of 1·075 link per mile in distance and 40" (48" corrected for spherical excess) in bearing cannot be considered excessive. The altitudes should have shown a closer agreement.

The junction with Mr. Thorpe's triangulation closed the circuit of eighty miles between the Waipakura and the Rangitikei base to 4" (7" corrected for spherical excess), and is excellent; but the discrepancy in distance of 2·3 links per mile cannot be general, because Messrs. John Annabell and A. D. Wilson's adjacent triangulations, part of the Wanganui series, close with Mr. Lowe's to 0·1 link per mile.

All the elements of Mr. Lowe's work are not yet available. As soon as they are I propose to fully investigate the results, and to submit for your consideration full particulars of the comparison with Mr. Cussen's Auckland triangulations also. It will be interesting to see how the geodesical elements accord.

Mr. Lowe also revised 78,300 acres of the Awarua triangulation, at a cost of £130. This will necessitate an adjustment of the co-ordinates used by Messrs. Biggs, McKay, Roach, and others on their extensive sectional and Native Land Court surveys in Awarua Block. The country included within this triangulation comprised numerous flat-topped forest- and scrub-clad hills, impassable gorges, and formidable rivers, and many parts are remote and inaccessible. Several weeks were lost owing to prevailing fogs and the dense smoke from bush-fires, all of which are inimical to economical work. The cost, 1·17d. per acre, appears reasonable.

Topographical Survey of Land to be opened for Selection.—Mr. A. A. Seaton surveyed and mapped 21,262 acres, being part of the Waimarino Block, lying north-westward of the Marton Nos. 3 and 4 Farm-homestead Blocks, in order that the area might be opened for selection as "unsurveyed land" under the Land Act. There was no other survey of this class.

Rural and Suburban Surveys.—Of the 94,623 acres returned, about one-third of the area is made up of Mr. Dalziell's Retaruke and Kirikau small grazing-runs survey; but much of the work consists of compass traverses, and no roads were laid off. Mr. C. A. Mountfort's quota is 11,551 acres in the Marton No. 3 Farm-homestead Settlement, Waimarino Block; Messrs. McKay, Biggs, and Morice contribute about 44,000 acres in the Awarua Block.

The traverse closures, as per schedule below, from ten surveyors, show an average closure per mile of 1·55 links on meridian and 1·33 links on perpendicular, the maximum being 2 on meridian and 2·59 on perpendicular, with a minimum of 0·85 on meridian and 0·51 on perpendicular. This comprised traverse-work in all classes of country and under varied conditions, and may be considered satisfactory and as showing that the surveys have been carefully executed.

SCHEDULE.—TRAVERSE CLOSURES FOR THE YEAR ENDING 31ST MARCH, 1897.

Name of Surveyor.	Total Length of Traverses.	Total Differences in closing.		Mean Differences per Mile.	
		Mer.	Perp.	Mer.	Perp.
J. D. Climie	4·03	5·6	7·9	1·39	1·96
F. A. Thompson	47·35	92·3	82·7	1·95	1·75
P. A. Dalziell	40·00	54·6	43·0	1·37	1·07
J. McKay	31·62	31·9	16·7	1·01	0·53
J. G. Littlejohn	16·51	28·1	29·8	1·70	1·80
H. J. Lewis	20·14	37·4	28·8	1·85	1·43
P. R. Earle	15·50	31·0	40·1	2·00	2·59
H. Maitland	15·00	12·8	7·6	0·85	0·51
J. M. Morice	21·15	27·5	18·9	1·30	0·90
H. I. Biggs	56·84	94·8	81·2	1·67	1·43
Totals and averages ...	268·14	416·0	356·7	1·55	1·33*

* = 2·04 lineal.

Town Section Surveys.—The bulk of the areas under this heading are Mr. Morice's Pipiriki and Mr. Biggs's Toka-anu Township, both upon Maori lands which are to be disposed of by lease in terms of "The Native Townships Act, 1895," which provides that the Governor may set apart portions of Native land as sites for townships, which are to be surveyed in an approved manner, reserves being made for all public purposes, and also to include burial-grounds, whares, and other buildings; the unoccupied available area is then to be disposed of by public auction or tender for lease for terms not exceeding twenty-one years. The proceeds, less costs of survey, roading, administration, &c., are to be divided amongst the Native owners in proportion to their interests as defined by the Native Land Court. The Surveyor-General is intrusted with the negotiations and conclusion of the necessary arrangements.