

1940.
NEW ZEALAND.

DEPARTMENT OF LANDS AND SURVEY.

SURVEYS

(ANNUAL REPORT ON).

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

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The SURVEYOR-GENERAL to the Hon. the MINISTER OF LANDS.

SIR,—

Wellington, 24th June, 1940.

I have the honour to present herewith the report on survey operations for the year ending 31st March, 1940.

I have, &c.,
H. E. WALSHIE,
Surveyor-General.

The Hon. Frank Langstone, Minister of Lands.

REPORT.

THE work executed by the staff in field and office during the year ended 31st March, 1940, is set out in the tables appended hereto. Generally the amount of field-work shows a slight falling off as compared with last year's return. This is probably accounted for by the adverse weather conditions during the season, and the costs have consequently risen to the same extent. Office-work as shown in Table 4 is, on the other hand, a little more than last year.

FIELD.

Geodetic Triangulation.—The area completed this year comprised the whole of the Canterbury district and the northern portion of Otago district. In the geodetic network (including base nets) 37 stations were occupied and the resulting 102 closed triangles show an average triangular error of one second. Besides these, 23 stations of lower order-work were occupied, the resulting 82 triangles having an average close of 1.4 seconds per triangle. In attempting to make an economical use of the lights, observations for latitude and for azimuth were not taken at the same time, and several stations will need to be re-occupied for latitude observations.

Mr. W. G. Nelson, Surveyor in charge of the geodetic party, reports:

"Bilby steel towers were used on the Canterbury Plains in order to obtain lines of suitable geodetic length. Considerable delay was experienced in obtaining delivery of the towers, and second-order work referred to above and which was commenced during the winter, when the weather was too severe to permit of geodetic observations on higher country, was continued. Trig. signals were also built on certain geodetic stations whilst awaiting delivery of the towers.

"Observations conforming to geodetic specifications were obtained on the towers, but the observers had to wait until the weather was practically calm in order to do this. The delays thus occasioned were such that it was considered advisable in February to transfer the operations of the party to the higher country in Otago before the season became too late for the safe occupation of stations situated at a considerable altitude. Good progress was made on Otago stations, and the programme as approved by you will be completed before the winter renders further night observing impracticable.

"The Waitaki base-line was prepared for measurement during the winter.

"The delay referred to above in delivery of the towers involved a corresponding delay in commencement of observations till the spring, when the seasonal north-west gales in Canterbury hampered observations; also considerable quantities of timber were required to be purchased for trig. signals. In this connection twenty-one wooden signals and one steel signal (on Rangiora water-tower) were erected and one signal repaired.

"Wooden towers 30 ft. in height were erected on six stations. Timber sufficient for three towers was purchased, and the towers after first erections were dismantled and re-erected as required.

"Wooden towers 15 ft. in height were erected on four stations. One tower was purchased and, after first erection, dismantled and re-erected as required on various stations.

"The two Bilby steel towers were erected on four stations—viz., to a height of 120 ft. at Sandy Knolls and Rakaia, and to 110 ft. at Ashburton and Rangitata. One dozen lamps received from Messrs. Cooke, Troughton, and Sims during the year were a much-needed addition to the equipment in view of the fact that two observers are frequently observing simultaneously. It was found necessary to purchase four time-switches for fitting on these lamps."

Minor Triangulation.—Some 225 square miles was completed at a cost of 22s. per mile. These works were scattered areas, each being required for some special purpose.

Topographical.—For developmental purposes some 30,000 acres have been topographically surveyed by ground methods, principally in the Auckland district. At Onekaka work is still proceeding on an area of 560 acres for town and works site, the mapping being on a large scale with contours at vertical intervals of 5 ft. On the national series of topographical maps made from aerial photographs, an area of 2,100 square miles has been photographed, while 1,100 square miles have been mapped. Until further instrumental equipment is available, a large proportion of the work has been done by plane table combined with the photographs. Orders for equipment were being placed, but owing to the outbreak of war these were cancelled.

Standard Surveys.—Very little of this work has been done during the year. The rural surveys, comprising 12 miles in the Gisborne, Hawke's Bay, and Wellington districts, cost £25 per mile, and the city work (30½ miles in Dunedin) £43 per mile. Maintenance-costs on these and other basic control surveys amounted to £1,700.

Precise Levelling.—Work on this was interrupted by more urgent surveys being required, but 81 miles of double levelling was run in Canterbury at a cost of £12 5s. 11d. per mile.

Rural Surveys.—A total of 87,932 acres are returned under this heading, the average cost being 1s. 4d. an acre.

Native Surveys.—A total of 12,321 acres is returned as having been carried out under direct instructions from this Department, the cost being 1s. 4d. per acre. There were also done by private arrangement 6,320 acres, the cost not being available.

Town and Suburban Surveys. Two hundred and five sections of suburban lands averaging 6½ acres each are returned for the year, the average cost being £9 16s. per section. Two hundred and one town lots were laid off at an average cost of £4 15s. per lot.

Housing. 1,708 building lots were laid off for the year, the average cost per lot being £2 14s. per lot, and preliminary surveys over an area of 839 acres were made at a cost of £1,318.

Roads and Railways. One hundred and seventy-seven miles were surveyed during the year, the average cost per mile being £25. This work is falling into arrears, there being over 400 miles of roads requiring survey at the end of the year.

Inspections. Very few inspections have been made, those returned under this heading being more in the nature of investigations into old surveys found to be inaccurate on comparison with modern surveys.

Other Work.—The total cost of work which cannot be allocated under the separate headings amounts this year to £6,059 12s. Of this the location of pegs and boundaries not amounting to complete surveys accounts for £1,526; inspections and investigations to £893; maintenance of survey reference marks, £1,701; Police Court proceedings, £300; and office routine, reports, leave, &c., to £1,638.

OFFICE.

Plan Examination and Recording.—The number of plans examined and passed shows an increase of 5 per cent. on the very high total of last year, and the year has been exceptionally busy in this respect. Notwithstanding this number, a certain amount of arrears has accumulated, and, although not serious, an endeavour must be made to reduce these during the coming year. The new uniform system of recording is now generally in operation.

Computing Branch, Head Office. Tidal analysis has been continued during part of the year, but this work is now well in hand and no longer urgent. The times and heights of high and low waters for 1941 for the seven standard ports—Auckland, New Plymouth, Wellington, Lyttelton, Dunedin, Bluff, and Westport—were predicted by means of the machine at the Tidal Institute, University of Liverpool, from the harmonic constants computed by this branch.

Positions of points along the coast were supplied to the Admiralty survey ship H.M.S. "Endeavour," until this work was discontinued.

The adjustment of second-order triangulation, principally in the Auckland district, has now been completed and co-ordinates computed on the adopted projection.

Map Publications.—Details of these appear in the tables and reports of the Assistant Surveyor-General appended hereto.

Aerial Mapping.—The staff of this branch has been strengthened, and several other draughtsmen have been partly trained so as to be available if necessary. The lack of equipment is still felt, and until this can be overcome the output will not be as large as is desirable. In order to speed up the work extra ground survey had to be put in hand, especially for certain areas required for military purposes.

Town Schemes. Analysis of these show a falling off in the area subdivided. The percentage of the area set aside for recreation purposes is very low, this being accounted for by the number of small schemes and resubdivisions of previous schemes.

Warrants for Title, &c.—The number of warrants for certificates of title issued during the year was 246, and 11 proclamations of road-lines under the Native Land Act, 1931, were dealt with.

PROPOSED OPERATIONS, 1940–41.

Geodetic Triangulation.—The measurement of the three bases in the South Island should be carried out if equipment can be made available. The observations to connect the third base should be nearly completed by the end of the year, and the completion of the whole programme should then be within measurable distance.

Surveys.—Sufficient work is in sight to keep the staff busy for the coming year.

Office.—Routine work will be more than sufficient to keep the office staff fully occupied. No new work is contemplated, though the change to war conditions will affect the work being carried out.

Staff.—The recruitment of officers for service was being felt at the end of the year, but during the coming year its effect will be greatly accentuated. However, it is anticipated that the dropping of work not immediately necessary will not greatly impair the efficiency of the service, and the service absolutely necessary may be carried on.

STAFF.

I regret to have to record the deaths of two officers who have long and faithfully served the Department, Mr. J. L. Climie, Wellington, after thirty-two years, and Mr. A. G. Ensoll, Auckland, after twenty-five years.

By retirement on superannuation the services have been lost of Mr. P. W. G. Barlow, Chief Surveyor, Napier; Mr. H. M. Kensington, Standards Surveyor, Auckland; Mr. R. J. Crawford, Draughtsman in Charge, Aerial Survey Branch, Head Office; and Mr. P. E. Webb, Draughtsman, Napier.

The following young officers are on leave and with the Forces either overseas or undergoing training for that purpose: K. Gustofson (Auckland), H. Kereopa (Auckland), W. Kingsley (Auckland), T. Manahi (Auckland), A. E. Moore (Auckland), G. L. Frank (Gisborne), A. E. Christian (New Plymouth), G. E. Drake (New Plymouth), W. G. C. Gasquoine (Wellington), C. E. W. Evison (Blenheim), C. D. Bell (Nelson), T. P. Gibson (Christchurch), W. T. Pethick (Christchurch), A. J. Gillon (Dunedin), D. J. T. Sharp (Dunedin), D. C. Berry (Invercargill), H. D. McKechnie (Invercargill), C. W. J. Pierson (Invercargill).

In addition to these, many others have enlisted and are awaiting the call for service.

APPRECIATION.

I wish to express my appreciation of the loyal and efficient manner in which the staff has carried out its duties during the year under review.

H. E. WALSH, Surveyor-General.

APPENDIX.

HEAD OFFICE DRAUGHTING BRANCH.

(R. G. DICK, Assistant Surveyor-General.)

MAP PUBLICATIONS.

The following tables summarize the printing-costs, sales, and credits of maps published by the Department for the year ending 31st March, 1940 :—

Table 1A.—Summary of Printing-costs of Map Publications for the Year ended 31st March, 1940.

Class of Map.		Number of Issues.	Number of Maps printed.	Total Cost.	Average Cost per Issue.	Average Cost per Map.
				£ s. d.	£ s. d.	s. d.
Survey Districts, 40 ch.	..	35	1,902	245 16 9	7 0 6	2 7
Survey Districts, 80 ch.	..	12	3,000	85 19 7	7 3 4	0 7
Counties .. ..	..	1	300	7 17 2	..	..
Boroughs .. ..	..	2	305	168 6 1	84 3 0	11 0
Territorial (4-mile)	..	5	2,500	97 19 11	19 12 0	0 10
Miscellaneous ..	..	12	11,549	861 13 2	71 16 10	1 6
Totals .. ..	..	67	19,556	1,467 12 8	..	..

Table 1B.—Summary of Map Sales and Credits for the Year ended 31st March, 1940.

Item.				Credits.			
				£	s.	d.	£ s. d.
Sale of lithographs to the public	..	..	..	941	19	8	
Sale of lithographs to other Departments	..	..	..	937	19	3	
Lithographs issued free to other Departments	..	..	..	719	16	9	
Lithographs for office use	..	..	..	665	16	2	
							3,265 11 10
Sale of publications and plan forms	..	..	..				526 14 2
Search fees	..	..	..				22 6 6
Royalty fees	..	..	..				409 17 4
Total	..	..	..				£4,224 9 10

Table 1c.—Summarized Statement of Sale and Disposal of Lithographs, Publications, Plan Forms, and Search Fees from 1st April, 1939, to 31st March, 1940.

District.	Survey Districts, 80 ch.	Survey Districts, 40 ch.	Counties.	Cities.	Boroughs.	Towns.	Four-mile Series.	General Maps.	Miscellaneous.	Topographical.	Publications.	Plan Forms.	Search Fees.	Totals.
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Auckland and North Auckland	103 17 6	87 16 6	200 18 0	56 5 6	30 13 0	4 16 0	64 15 6	5 12 0	7 15 6	0 12 0	18 14 3	217 3 6	9 4 0	815 13 3
Gisborne ..	7 2 6	2 10 0	25 11 6	..	3 19 6	..	5 11 6	5 12 0	3 3 0	..	0 5 0	3 12 6	..	57 7 6
Hawke's Bay ..	5 15 0	9 0 1	20 3 4	..	7 0 1	..	10 5 6	0 11 6	0 8 0	..	4 10 9	24 10 0	1 17 0	84 1 3
Taranaki ..	39 5 0	22 2 0	16 5 9	6 16 0	12 1 0	4 15 6	8 7 0	0 1 0	0 11 3	3 2 0	2 0 7	16 7 0	..	131 14 1
Wellington ..	37 12 6	50 14 6	37 9 9	10 2 6	30 11 6	5 19 6	20 17 6	9 5 6	3 2 6	4 6 0	4 13 6	68 2 0	1 9 0	284 6 3
Marlborough ..	24 5 0	7 13 6	9 19 0	..	5 5 6	1 5 6	26 5 0	1 3 0	..	..	0 18 8	6 10 6	0 4 0	83 9 8
Nelson ..	42 16 6	6 15 0	38 5 0	8 5 0	4 9 0	2 11 6	16 10 11	11 19 3	10 2 0	..	2 6 0	20 15 0	4 13 6	169 8 8
Westland ..	3 2 6	4 4 0	23 15 0	2 0 6	2 10 6	0 6 6	6 12 6	0 8 0	0 17 0	0 11 0	3 10 1	11 17 6	1 2 6	60 17 7
Canterbury ..	70 12 6	23 15 0	56 12 0	17 5 0	12 13 0	..	71 5 0	6 14 6	4 5 6	1 8 0	4 7 6	45 7 0	1 4 0	315 9 0
Otago ..	105 5 0	26 19 0	5 12 0	11 1 6	9 10 6	4 12 6	27 4 6	1 9 0	13 5 6	2 6 6	4 18 5	22 14 6	0 19 6	235 18 5
Southland ..	44 10 0	6 17 6	5 10 0	42 3 0	5 3 6	6 13 6	3 10 0	1 11 6	3 11 6	..	2 0 5	14 8 6	1 13 0	137 12 5
Head Office ..	208 14 6	5 0 0	152 1 2	32 9 3	73 10 0	5 1 0	253 2 0	649 3 6	19 8 0	13 4 0	27 1 0	..	..	1,438 14 5
Totals	692 18 6	253 7 1	592 2 6	186 8 3	197 7 1	36 1 6	514 6 11	701 0 9	66 9 9	25 9 6	75 6 2	451 8 0	22 6 6	3,814 12 6

(1) *Printing-costs.*

The printing-costs for the year exceeded last year's total by £358. This increase was largely due to the special printing of aviation strip maps, a series of six maps on a scale of 8 miles to an inch produced for the use of aviators.

There was a marked decline in the number of 80-chain survey-district maps printed due to the shortage in the stock of lithographic paper. Supplies of this paper have now come to hand and it is hoped that the accumulation of drawings now in the hands of the Government Printer will be considerably reduced.

Experimental work in colour printing, preparatory to the publication of the Centennial Atlas, has been successfully carried out by the Department in collaboration with the Government Printing Office. The results of this work will be of great value in the production of military and air training maps, as well as for the Centennial Atlas.

(2) *Map Sales and Credits.*

Map sales and credits as illustrated in Tables 1b and 1c show a falling off, particularly the sale of maps to the public. This would appear to indicate that the public are not conversant with the types of maps available for all purposes. The institution of a map-sales campaign and the appointment of agencies would greatly assist in popularizing the departmental maps.

(3) *Lithographic Draughting.*

(a) *Centennial Atlas.*—Good progress had been made with the drawing of the final maps for the Centennial Atlas, until the outbreak of the war necessitated the transfer of staff to work of a more urgent nature. A small skeleton staff has been retained to meet the requirements of the research officers of the Internal Affairs Department for the preparation of data tracings and preliminary maps.

The decrease in staff, due to enlistments and transfers, will seriously affect the atlas draughting, and it is anticipated that work will have to be held in abeyance pending the return of normal conditions.

The following is a schedule of the maps completed to date :—

Physical Map of New Zealand.	Provincial Map.
Geological Map of New Zealand	Counties Map.
Climatological Maps of New Zealand.	Population Maps (in three series).
Pacific Explorations.	Forestry Maps (in four series).
Tasman's Chart.	Ten-mile Series of New Zealand (8 drawings).
Cook's Chart.	City Maps (4 drawings).
Post-Cook Navigators.	Dependencies of New Zealand.
Antarctic Explorations.	The World.

A considerable amount of preliminary work has been carried out on the economic and historical map series, in respect to fair drawing and preparatory plotting, which in most cases is awaiting the final decision of the Atlas Committee as to the method of representation and layout.

Early in the year the Atlas Committee decided that it would be necessary to increase the number of maps required to suitably illustrate the economic and historical series. The consequent research and draughting work entailed has further delayed the proposed date of publication.

The supervision entailed in both the research and draughting work has been ably carried out by Mr. R. C. Airey, Inspecting Draughtsman.

(b) *Special Feature Maps.*—The following special feature maps have been completed or are in the course of preparation :—

- (1) *Soil Maps (Hawke's Bay)*: Draughting assistance was rendered to the Scientific and Industrial Research Department for the production of maps of soil surveys of Hawke's Bay.
- (2) *Pasture Maps (Hawke's Bay)*: Head Office draughting staff has continued with the draughting of special maps to illustrate pastures in parts of the Hawke's Bay District. Three drawings have been completed ready for publication, one of which has been published. These maps are prepared from pasture surveys carried out by the Scientific and Industrial Research Department.
- (3) *Air Training Maps*: Maps of selected areas on a scale of 4 miles to an inch are under preparation by the Head Office draughting staff. These maps are for the purpose of training pilots and are being modelled on the Ordnance maps of a similar scale.

Aerial Survey Mapping.—On the outbreak of the war this branch undertook the preparation of special scale maps for military-training purposes. Mr. J. A. Henderson was transferred from the field-control work in the Hawke's Bay District to plane-table work for the Army Department in the Auckland District. Work on the Hawke's Bay 1-mile-to-the-inch sheets was put aside by the draughting staff, which was increased to meet the demands of the Army Department for these military-training maps.

As it was not possible to purchase the two Zeiss multiplex projectors, the plotting of contours on the military maps has been carried out by plane table with the assistance of the vertical photographs supplemented by the use of the Barr and Stroud stereoscope plotters on areas that are broken and scrub or bush covered.

In addition to the military topographical mapping in the Auckland District, two surveyors and parties from the Wellington District Office have been employed on similar work in the Wellington District.

Sheet No. 134 (Hastings) of the 1-mile-to-the-inch topographical series was published during the year. The standard of work on this map compares favourably with that produced in other countries.

The following is a summary of the topographical work completed and in hand as at 31st March, 1940 :—

District.				Area flown.	Area mapped.	Published.	Scale.	Mapping in Hand.
				Square Miles.	Square Miles.	Square Miles.		Square Miles.
Hawke's Bay	..	..	..	1,680	860	400	1/63360	420
Auckland	..	..	..	272	100	..	1/25000	172
Wellington	..	..	..	231	120	..	1/25000	111
Totals	..	..	..	2,183	1,080	400	..	703

Mr. R. J. Crawford, draughtsman in charge of the branch, retired after forty-three years' service on the 31st March, 1940, Mr. G. T. Railton being appointed as his successor.

DRAUGHTSMEN'S AND COMPUTERS' EXAMINATIONS.

At the annual examinations held in October, 1939, forty-five candidates presented themselves for examination. The results were :—

First-grade Draughtsmen—

K. A. Bell (Scientific and Industrial Research Department, Hastings).
D. G. Francis (Gisborne).
S. Gibson (State Forest Service, Wellington).
J. R. Johansson (Head Office).
C. R. Lanning (Auckland).
S. A. Park (Dunedin).
J. N. Whibley (New Plymouth).

Second-grade Draughtsmen—

M. M. Bee (Napier).
A. J. Gordon (Dunedin).
A. L. Cullington (Auckland).
K. W. T. Holcroft (Nelson).
H. D. McKechie (Invercargill).
T. J. O'Sullivan (Dunedin).
W. T. Pethick (Christchurch).
F. W. Smith (Christchurch).

Second-grade Computers—

F. B. Boaden (Auckland).
St. J. Coventry (Wellington).
H. E. Ellis (Napier).
W. A. Fraser (Invercargill).
D. S. Gray (Dunedin).
L. R. Larcombe (Invercargill).
A. J. Reid (Head Office).
I. F. Stirling (Auckland).
J. N. Whibley (New Plymouth).
A. J. Woodgate (Dunedin).

STANDARD OF LENGTH.

During the year 31-chain bands, comprising 195 chains, were tested with the standard bands in the custody of Head Office.

TOWN SCHEME PLANS.

The following table sets out in summary form the number of town scheme plans dealt with under section 16 of the Land Act, 1924:—

Table 1D.—Summary of Town Scheme Subdivisions dealt with under Section 16 of the Land Act, 1924, for the Year ended 31st March, 1940.

District.	Number of Plans.	Number of Saleable Lots.	New Roads.			Reserves.			Reserves (Percentage).	Saleable Lots.			Total Areas.		
			A.	R.	P.	A.	R.	P.		A.	R.	P.	A.	R.	P.
Auckland and North Auckland	116	822	29	0	30.9	8	3	28.6	3	271	2	30.0	309	3	09.5
Gisborne	7	21	..	..	..	..	..	..	..	28	3	34.5	28	3	34.5
Hawke's Bay	7	70	..	..	..	..	..	..	..	20	0	28.3	20	0	28.3
Taranaki	5	11	..	..	..	0	0	13.0	3	2	3	33.7	3	0	06.7
Wellington	23	204	3	3	06.2	1	2	15.5	2	62	2	09.9	67	3	31.6
Marlborough	1	2	..	..	..	..	..	..	..	1	1	18.4	1	1	18.4
Nelson	11	115	3	0	32.3	6	0	12.0	18	34	0	20.6	43	1	24.9
Westland	3	8	0	0	06.6	..	..	..	..	1	0	34.5	1	1	01.1
Canterbury	31	174	0	3	30.7	1	3	09.5	4	48	2	32.7	51	1	32.9
Otago	16	61	0	0	24.5	0	0	38.5	2	14	3	18.9	15	1	01.9
Southland	7	101	4	3	31.7	0	3	35.5	5	21	3	19.0	27	3	06.2
Totals	227	1,589	42	1	02.9	19	2	32.6	4	508	2	00.5	570	1	36.0

There has been a considerable falling off in the area and number of lots dealt with as compared with the previous year. The area dealt with has declined approximately 30 per cent. and the number of lots approximately 25 per cent.

The majority of the plans comprised small subdivisions or resubdivisions, with a resulting decrease in the percentage of area set aside as recreation reserves and open spaces. The area set aside for new roads represents approximately 5½ miles of new road for subdivisional purposes.

CENTENNIAL EXHIBITION.

The Department was responsible for the layout of a display in the Government Court of the Centennial Exhibition. The exhibit was designed to illustrate the progress made over the past century in the types of equipment used in the land surveys of New Zealand and to demonstrate in educational form the methods used by the Department in survey plan preparation and map production.

In addition to the exhibit, a special film, called "Boundaries," was produced by the studio staff of the Industries and Commerce, Tourist and Publicity Department picturizing the various activities of the Department in the field and in the office. This film was screened periodically in the cinema attached to the Government Court.

EXPENDITURE.

Salary expenditure shows a slight increase on the previous year's total (see Tables 1E and 1F). The major portion of the expenditure has been devoted to the survey, plan-preparation, and plan-examination work. There are still considerable arrears in this work, with the consequent falling behind of general mapping and recording work.

The major portion of the expenditure under the heading of "Mapping" has been incurred in the preparation of the Centennial Atlas and topographical maps.

GENERAL.

The uniform instructions issued to district offices have met with general satisfaction, the Inspecting Draughtsman (Mr. R. C. Airey) visiting all offices during the year to give advice as to the practical application of these instructions.

I wish to express my appreciation of the loyal co-operation and assistance given and the excellent standard of the work produced by the Head Office draughting staff during the past year.

Table Ie.—General Summary of Salary Expenditure from 1st April, 1939, to 31st March, 1940.

Item.	(1) Survey.	(2) Plan Preparation.	(3) Plan Examination.	(4) Mapping.	(5) Records.	(6) Diagrams.	(7) Tracings.	(8) Investigation.	(9) General.	(10) Supervision.	Totals.
General ..	£ s. d. 9,046 10 9	£ s. d. 3,363 19 3	£ s. d. 2,147 7 10	£ s. d. 3,963 9 2	£ s. d. 4,626 12 10	£ s. d. 1,102 17 4	£ s. d. 6,419 18 3	£ s. d. 1,845 12 11	£ s. d. 11,349 0 8	£ s. d. 4,656 11 4	£ s. d. 48,486 4 4
Triangulation ..	£ s. d. 6,316 18 11	£ s. d. 15 8 8	£ s. d. 837 13 2	£ s. d. 4 19 6	£ s. d. ..	£ s. d. ..	£ s. d. 13 6 0	£ s. d. ..	£ s. d. 95 5 5	£ s. d. ..	£ s. d. 7,283 11 8
Topographical ..	£ s. d. 2,234 0 3	£ s. d. 950 7 6	£ s. d. 117 10 11	£ s. d. 278 4 8	£ s. d. 31 6 10	£ s. d. ..	£ s. d. 130 13 4	£ s. d. ..	£ s. d. 128 2 5	£ s. d. ..	£ s. d. 3,870 5 11
Standard traverse ..	£ s. d. 2,923 8 9	£ s. d. 115 8 2	£ s. d. 179 1 0	£ s. d. ..	£ s. d. 3 12 2	£ s. d. ..	£ s. d. 33 6 1	£ s. d. 1 10 0	£ s. d. 31 5 7	£ s. d. 1 19 3	£ s. d. 3,289 11 9
Survey maintenance ..	£ s. d. 790 5 0	£ s. d. 33 19 10	£ s. d. 2 14 7	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 19 16 6	£ s. d. ..	£ s. d. ..	£ s. d. 13 18 5	£ s. d. 860 14 4
Levelling ..	£ s. d. 113 3 5	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 1 0 9	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 114 4 2
Levelling, precise ..	£ s. d. 1,014 9 11	£ s. d. 17 14 2	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 1,032 4 1
Inspection and investigation ..	£ s. d. 639 14 9	£ s. d. 19 13 5	£ s. d. 37 7 9	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 11 15 2	£ s. d. 13 9 8	£ s. d. ..	£ s. d. 1 18 0	£ s. d. 723 18 9
Scheme plans ..	£ s. d. 66 1 0	£ s. d. 2 1 5	£ s. d. 125 7 4	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 5 18 5	£ s. d. 29 19 6	£ s. d. ..	£ s. d. 136 2 11	£ s. d. 365 10 7
Land-development ..	£ s. d. 213 12 9	£ s. d. 24 18 2	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 62 12 3	£ s. d. 40 16 10	£ s. d. ..	£ s. d. 24 4 11	£ s. d. 366 4 11
Tidal survey ..	£ s. d. ..	£ s. d. ..	£ s. d. 161 16 1	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. ..	£ s. d. 101 16 1
Native Department ..	£ s. d. 509 11 2	£ s. d. 54 13 9	£ s. d. 217 6 4	£ s. d. ..	£ s. d. 2 16 0	£ s. d. 141 14 10	£ s. d. 100 2 6	£ s. d. 733 17 16	£ s. d. 17 16 6	£ s. d. 404 4 9	£ s. d. 2,182 3 8
Lands and Deeds Department ..	£ s. d. ..	£ s. d. ..	£ s. d. 5,122 2 10	£ s. d. ..	£ s. d. 254 3 2	£ s. d. 1,391 10 10	£ s. d. 77 14 2	£ s. d. 878 10 9	£ s. d. 920 15 11	£ s. d. 1,963 6 0	£ s. d. 10,823 18 2
Public Works Department ..	£ s. d. 6,504 13 9	£ s. d. 589 17 1	£ s. d. 1,271 18 7	£ s. d. ..	£ s. d. 3 16 5	£ s. d. ..	£ s. d. 489 19 9	£ s. d. 110 0 6	£ s. d. 6 3 8	£ s. d. 563 1 10	£ s. d. 9,281 13 8
Housing Department ..	£ s. d. 2,548 16 7	£ s. d. 269 2 1	£ s. d. 446 6 3	£ s. d. ..	£ s. d. ..	£ s. d. 0 9 6	£ s. d. 843 4 9	£ s. d. 380 1 10	£ s. d. 205 14 4	£ s. d. 737 10 9	£ s. d. 5,431 6 1
Other Departments ..	£ s. d. 1,883 8 0	£ s. d. 111 9 10	£ s. d. 1,035 7 1	£ s. d. 1,399 4 7	£ s. d. 44 6 8	£ s. d. 3 0 11	£ s. d. 1,895 12 8	£ s. d. 147 12 6	£ s. d. 85 11 6	£ s. d. 317 3 10	£ s. d. 6,422 17 1
Totals ..	£ s. d. 34,304 15 0	£ s. d. 5,530 13 11	£ s. d. 11,641 19 9	£ s. d. 5,645 17 11	£ s. d. 4,966 14 1	£ s. d. 2,839 13 5	£ s. d. 10,105 0 7	£ s. d. 4,181 11 10	£ s. d. 12,839 16 0	£ s. d. 8,560 2 0	£ s. d. 100,616 4 6

Table If.—General Summarized Statement of Salary Expenditure from 1st April, 1939, to 31st March, 1940.

Item.	(1) Survey.	(2) Plan Preparation.	(3) Plan Examination.	(4) Mapping.	(5) Records.	(6) Diagrams.	(7) Tracings.	(8) Investigation.	(9) General.	(10) Supervision.	Totals.
Head Office ..	£ s. d. 6,797 8 0	£ s. d. 991 9 10	£ s. d. 1,118 18 7	£ s. d. 2,208 18 6	£ s. d. 329 5 0	£ s. d. 1,344 9 3	£ s. d. 1,344 9 3	£ s. d. 13 1 3	£ s. d. 1,285 5 6	£ s. d. 260 5 5	£ s. d. 14,349 1 4
Auckland ..	£ s. d. 7,959 4 11	£ s. d. 2,297 15 2	£ s. d. 4,772 10 3	£ s. d. 1,112 5 9	£ s. d. 910 5 8	£ s. d. 1,095 7 9	£ s. d. 2,853 14 11	£ s. d. 1,579 9 5	£ s. d. 4,038 12 1	£ s. d. 3,382 0 3	£ s. d. 29,992 6 2
Gisborne ..	£ s. d. 1,056 13 0	£ s. d. 97 8 0	£ s. d. 254 5 4	£ s. d. 28 13 4	£ s. d. 348 16 3	£ s. d. 184 3 0	£ s. d. 501 15 0	£ s. d. 217 2 2	£ s. d. 616 17 3	£ s. d. 105 3 4	£ s. d. 3,410 16 8
Hawke's Bay ..	£ s. d. 2,241 19 4	£ s. d. 322 8 0	£ s. d. 713 6 3	£ s. d. 182 18 8	£ s. d. 603 0 5	£ s. d. 159 11 6	£ s. d. 337 16 0	£ s. d. 383 12 4	£ s. d. 803 15 5	£ s. d. 477 19 7	£ s. d. 6,426 7 8
Taranaki ..	£ s. d. 1,319 19 7	£ s. d. 195 18 5	£ s. d. 265 3 3	£ s. d. 453 8 0	£ s. d. 211 1 0	£ s. d. 178 12 5	£ s. d. 549 3 8	£ s. d. 117 15 7	£ s. d. 946 14 6	£ s. d. 635 17 10	£ s. d. 5,173 14 3
Wellington ..	£ s. d. 2,808 13 9	£ s. d. 364 4 10	£ s. d. 1,624 13 9	£ s. d. 562 17 0	£ s. d. 100 1 3	£ s. d. 520 10 9	£ s. d. 1,372 2 7	£ s. d. 1,103 19 9	£ s. d. 2,200 5 6	£ s. d. 1,169 12 10	£ s. d. 11,827 2 0
Marlborough ..	£ s. d. 1,456 3 1	£ s. d. 174 14 5	£ s. d. 225 13 8	£ s. d. 145 9 4	£ s. d. 243 0 3	£ s. d. 32 3 1	£ s. d. 217 14 7	£ s. d. 19 19 4	£ s. d. 297 2 7	£ s. d. 254 19 2	£ s. d. 3,066 19 6
Nelson ..	£ s. d. 1,678 18 0	£ s. d. 95 15 0	£ s. d. 485 5 0	£ s. d. 11 10 0	£ s. d. 332 10 0	£ s. d. 126 0 0	£ s. d. 401 0 0	£ s. d. 52 5 0	£ s. d. 647 15 0	£ s. d. 116 5 0	£ s. d. 3,947 3 0
Westland ..	£ s. d. 1,797 7 10	£ s. d. 143 4 0	£ s. d. 166 9 3	£ s. d. 78 11 4	£ s. d. 230 0 2	£ s. d. 63 18 3	£ s. d. 334 12 2	£ s. d. 39 8 7	£ s. d. 346 8 9	£ s. d. 141 0 10	£ s. d. 3,331 1 2
Canterbury ..	£ s. d. 3,119 18 4	£ s. d. 365 8 4	£ s. d. 1,032 5 11	£ s. d. 27 9 7	£ s. d. 1,041 18 4	£ s. d. 136 6 9	£ s. d. 1,375 0 9	£ s. d. 357 10 7	£ s. d. 676 10 8	£ s. d. 1,142 11 11	£ s. d. 9,275 1 2
Otago ..	£ s. d. 3,372 7 10	£ s. d. 253 11 3	£ s. d. 649 4 0	£ s. d. 437 13 4	£ s. d. 546 7 7	£ s. d. 222 5 10	£ s. d. 659 10 10	£ s. d. 261 11 8	£ s. d. 572 14 4	£ s. d. 512 8 5	£ s. d. 7,287 15 1
Southland ..	£ s. d. 765 1 4	£ s. d. 28 16 8	£ s. d. 344 4 6	£ s. d. 396 3 1	£ s. d. 70 8 2	£ s. d. 120 13 11	£ s. d. 158 0 10	£ s. d. 35 16 2	£ s. d. 407 14 5	£ s. d. 261 17 5	£ s. d. 2,528 16 6
Totals ..	£ s. d. 34,304 15 0	£ s. d. 5,530 13 11	£ s. d. 11,641 19 9	£ s. d. 5,645 17 11	£ s. d. 4,966 14 1	£ s. d. 2,839 13 5	£ s. d. 10,105 0 7	£ s. d. 4,181 11 10	£ s. d. 12,839 16 0	£ s. d. 8,560 2 0	£ s. d. 100,616 4 6

REPORT OF THE HONORARY GEOGRAPHIC BOARD FOR THE YEAR ENDING 31st MARCH, 1940.

The fifteenth annual meeting of the Honorary Geographic Board was held on the 21st September, 1939.

The following members were present: Mr. Johannes C. Andersen (in chair), Mr. H. E. Walshe (Surveyor-General), Hon. Sir Apirana T. Ngata, Messrs. A. P. Harper, M. Crompton-Smith, and P. Te H. Jones.

A list of 151 names was submitted to the Board for decision as to correct spelling and naming, eighty-two final decisions being recorded. Owing to paper shortage, these names will be published at a later date, probably in the form of a supplementary bulletin.

The Board discussed the necessity for a complete index of the place-names of New Zealand, which will be put in hand by the Department when opportunity permits.

It was considered that the Board should be constituted as a statutory Board under the Designation of Districts Act, 1908, and the Surveyor-General was requested to approach the Internal Affairs Department with the object of amending the Act for this purpose.

R. G. DICK, Hon. Secretary.

REPORT OF SURVEY BOARD FOR THE YEAR ENDING 31st MARCH, 1940.

Members of Board. The following are members of the Survey Board appointed in accordance with the provisions of the Surveyors Act, 1938: Mr. H. E. Walshe (Surveyor-General), *ex officio* (Chairman), Messrs. G. H. Bullard, M. Crompton-Smith, C. K. Grierson, and A. H. Bogle: the two latter appointed on the recommendation of the New Zealand Institute of Surveyors.

Land Surveyors' Examination. The following candidates were successful in passing the Land Surveyors' Examination held in September, 1939, the examination-papers being set by the South Australian Board:—

C. Allen (Lands and Survey Department).
W. S. Boyes (Lands and Survey Department).
L. L. Elder (Lands and Survey Department).
L. R. Campbell (Hawke's Bay).
N. L. Masters (Hawke's Bay).
R. J. Sissons (Wellington).

Articles of Indenture.—The following students were registered under articles of indenture to private registered surveyors: J. W. Bell (Gore), R. W. Buchanan (Dunedin), J. H. Buttress (Wellington), G. T. Coldham (Auckland), S. R. Foster (Levin), J. T. Fryer (Auckland), J. J. Hogan (Wellington), E. H. King (Dunedin), S. Lewis (Nelson), J. R. Litt (Wellington), J. D. Mollard (Auckland), K. F. Nicholls (Dunedin), K. W. Paterson (Dunedin), R. D. Tremaine (Wellington), and A. Wilson (Greymouth).

The following survey cadets were appointed by the Department during the year: K. W. Loan (Invercargill), A. H. Kinkade (Auckland), J. D. C. Mason (Wellington), and A. J. Gillon (Dunedin).

Surveyors Act, 1938.—This Act came into operation on 1st July, 1939, and in accordance with its provisions the following matters have been dealt with:—

Survey Regulations: These regulations were drafted by the Board and came into operation on the 21st March, 1940.

Scale of Charges: On the recommendation of the Board the Hon. the Minister of Lands approved of the scale of charges drawn up by the New Zealand Institute of Surveyors. These charges, with a 20-per-cent. reduction, have been adopted by the Lands and Survey Department.

Conference of Survey Boards. The Board considered the various remits submitted by the reciprocating Boards for the proposed conference of Boards to be held in Melbourne in October, 1940.

R. G. DICK, Secretary.

Table A.—Summary of Field-work.

Class of Work.	Area or Mileage.	Average Cost.	Total Cost.
			£ s. d.
Geodetic triangulation (first order)	9,520 sq. miles	11.3s. per sq. mile	5,393 9 5
Triangulation (second and third order)	225 sq. miles ..	21s. per sq. mile	235 17 4
Standard traverses	42.75 miles ..	£38.01 per mile	1,624 18 0
Topographical survey for settlement	2,451 acres ..	7.31d. per acre ..	74 12 7
Rural survey	87,932 acres ..	1.34s. per acre ..	5,899 7 11
Village and suburban survey	1,339 acres ..	30.08s. per acre	2,013 13 10
Native-land survey	12,321 acres ..	1.31s. per acre ..	811 17 9
Town survey	57 acres ..	4.77 per section	959 9 3
Housing survey (section)	404 acres ..	2.14 per section	3,659 4 10
Housing and town scheme (preliminary)	839 acres ..	31.42s. per acre	1,317 18 9
Road and railway survey	177 miles ..	£25.03 per mile	4,430 13 10
Other work .. ..	..	..	6,059 12 0
Total cost of completed work .. ..	..	..	32,480 15 6

Table B.—Areas of Rural and Native Land Survey.

District.	Rural Survey.	Native Land Survey.
	Acres.	Acres.
Auckland and North Auckland	19,533	10,761
Gisborne	897	623
Hawke's Bay	21,561	..
Taranaki	1,070	4,038
Wellington	336	..
Marlborough	13,530	46
Nelson	327	..
Westland	1,521	..
Canterbury	19,198	..
Otago	9,061	..
Southland	898	..
Total	87,932	15,468

Table C.—Return of Field-work executed by Head Office from 1st April, 1939, to 31st March, 1940.

District.	Geodetic Triangulation (First Order).		Cost.
	Square Miles.	Number of Stations.	
Canterbury and Otago	9,520	49	£ s. d. 5,393 9 5

Table 1.—RETURN OF FIELD-WORK EXECUTED BY THE STAFF AND CONTRACT SURVEYORS ON LANDS ADMINISTERED BY THE LANDS AND SURVEY DEPARTMENT FROM 1ST APRIL, 1939, TO 31ST MARCH, 1940.

District.	Minor Triangulation.				Topographical Survey.				Standard Survey.				Rural Survey.						
	Acres.	Cost, per Acre.		Total Cost.	Acres.	Cost per Acre.	Total Cost.	Miles.	Cost per Mile.	Total Cost.	£	s.	d.	Acres.	Cost per Acre.	Total Cost.	£	s.	d.
		d.	£																
Auckland and North Auckland	73,600	0-16	50 0 0	2,451	7-31	74 12 7	..	..	24-00	119 19 9	17,902-00	2-01	1,800 0 10	1,800 0 10	2-01	1,800 0 10	2-01	1,800 0 10	2-01
Gisborne	..	..	..	..	..	..	..	..	..	..	897-25	1-00	45 0 0	45 0 0	1-00	45 0 0	1-00	45 0 0	1-00
Hawke's Bay	..	..	..	..	..	..	..	..	..	..	21,531-00	1-32	1,420 12 8	1,420 12 8	1-32	1,420 12 8	1-32	1,420 12 8	1-32
Taranaki	..	..	..	..	..	..	..	..	..	..	1,069-50	2-32	123 19 11	123 19 11	2-32	123 19 11	2-32	123 19 11	2-32
Wellington	..	..	..	..	..	..	..	..	..	..	336-05	4-16	69 17 5	69 17 5	4-16	69 17 5	4-16	69 17 5	4-16
Marlborough	..	..	..	..	..	..	..	..	..	..	13,530-00	0-91	616 5 7	616 5 7	0-91	616 5 7	0-91	616 5 7	0-91
Nelson	..	..	..	..	..	..	..	..	..	..	327-00	8-07	132 0 0	132 0 0	8-07	132 0 0	8-07	132 0 0	8-07
Westland	13,000	0-41	21 9 0	..	..	..	..	..	..	..	1,520-91	5-90	498 19 10	498 19 10	5-90	498 19 10	5-90	498 19 10	5-90
Canterbury	6,500	2-2	50 0 0	..	..	..	..	..	..	..	19,198-00	0-41	396 18 4	396 18 4	0-41	396 18 4	0-41	396 18 4	0-41
Otago	51,250	0-49	105 8 4	..	..	..	..	..	..	..	363-81	6-05	110 1 5	110 1 5	6-05	110 1 5	6-05	110 1 5	6-05
Southland	..	..	..	..	..	..	..	..	..	..	808-13	0-92	41 9 1	41 9 1	0-92	41 9 1	0-92	41 9 1	0-92
Totals	144,350	0-39	235 17 4	2,451	7-31	74 12 7	42-75	38-01	1,624 18 9	77,003-65	1-35	5,255 5 1	5,255 5 1	1-35	5,255 5 1	1-35	5,255 5 1	1-35	5,255 5 1

District.	Village and Suburban Sections.				Town Section Survey.				Road Survey.				Other Work				Total Cost of Completed Work.
	Acres.	Number of Sections.	Cost per Acre.		Total Cost.	Acres.	Number of Sections.	Cost per Section.	Total Cost.	Miles.	Cost per Mile.	Total Cost.	£	s.	d.		
			£	s.												£	
Auckland and North Auckland	204-25	34	23-08	..	339 10 10	16-73	68	3-41	232 1 7	7-49	24-79	185 12 11	1-352 15 7	4,034 14 4	4		
Gisborne	147-71	39	15-65	..	110 18 6	0-24	2	1-44	2 17 9	..	..	..	..	..	..
Hawke's Bay	54-83	5	52-31	..	91 2 0	1-17	1	18-62	18 12 5	..	..	..	..	..	..
Taranaki	25-31	5	36-10	..	45 14 10	1-42	4	17-85	71 7 11	..	..	..	..	..	..
Wellington	31-31	4	39-70	..	63 6 6	..	..	..	..	..	..	..	..	..	..
Marlborough	33-87	12	55-87	..	103 0 0	2-86	9	5-44	49 0 0	..	..	..	..	..	..
Nelson	290-55	15	17-90	..	260 2 1	1-81	22	2-85	62 13 6	0-50	34-00	17 0 0	108 10 6	409 10 0	5		
Westland	25-07	3	4-79	..	6 0 0	1-99	14	4-17	58 7 6	..	..	..	..	..	..
Canterbury	12-02	3	54-91	..	33 0 0	6-59	13	3-35	43 10 0	..	..	..	..	..	..
Otago	60	5	17-91	..	51 5 1	0-76	5	17-91	14 14 2	..	..	..	..	..	..
Southland	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	950-12	116	23-30	..	1,106 19 10	33-57	138	4-01	553 4 10	34-35	23-05	791 13 4	4-519 14 10	14,162 5 10	10		

Table 2.—RETURN OF FIELD-WORK EXECUTED BY THE STAFF AND CONTRACT SURVEYORS ON LANDS ADMINISTERED BY OTHER DEPARTMENTS FROM 1ST APRIL, 1939, TO 31ST MARCH, 1940.

District.	Rural Survey.			Village and Suburban Survey.			Town Section Survey.			Housing Subdivision Survey.					
	Acres.	Cost per Acre.	Total Cost.	Acres.	Number of Sections.	Cost per Acre.	Total Cost.	Acres.	Number of Sections.	Cost per Section.	Total Cost.	Acres.	Number of Sections.	Cost per Section.	Total Cost.
Auckland and North Auckland	1,631	£ 5.64	£ 459 13 8	64.33	33	£ 105.52	£ 339 8 4*	9.65	21	£ 10.28	£ 215 17 8	196.93	796	£ 2.67	£ 2,123 13 0
Gisborne ..	..	..	..	73.94	6	£ 44.46	£ 164 7 8	..	..	..	..	17.00	68	£ 1.41	£ 95 19 11
Hawke's Bay ..	..	..	..	..	..	..	..	1.40	1	£ 15.75	£ 15 15 0	4.59	24	£ 1.29	£ 30 19 10
Taranaki ..	..	..	..	15.43	3	£ 40.23	£ 31 0 8	0.26	4	£ 4.03	£ 16 2 2	18.84	87	£ 2.02	£ 176 2 0
Wellington ..	..	..	..	16.89	5	£ 63.15	£ 53 6 7	..	..	..	..	44.12	174	£ 1.22	£ 211 10 9
Marlborough ..	..	..	..	21.75	3	£ 16.74	£ 18 4 1	0.60	1	£ 12.97	£ 12 19 5	6.59	24	£ 1.12	£ 26 15 5
Nelson ..	..	..	..	..	..	..	..	..	..	..	..	1.60	9	£ 4.19	£ 37 14 6
Westland ..	..	..	..	9.62	4	£ 57.95	£ 27 17 6	0.19	3	£ 5.19	£ 15 11 3	..	..	..	..
Canterbury ..	..	..	..	135.25	23	£ 39.52	£ 206 8 1	8.98	25	£ 1.69	£ 42 3 11	77.14	364	£ 1.81	£ 660 2 6
Otago ..	5,037	£ 0.42	£ 184 9 2	27.27	4	£ 26.77	£ 36 10 0	2.71	8	£ 10.97	£ 87 15 0	28.89	121	£ 2.17	£ 263 0 2
Southland ..	..	..	..	24.27	3	£ 24.35	£ 29 11 1	..	..	..	..	7.81	41	£ 0.81	£ 33 6 9
Totals ..	10,328	£ 1.24	£ 644 2 10	388.76	89	£ 46.67	£ 906 14 0	23.79	63	£ 6.45	£ 406 4 5	403.51	1,708	£ 2.14	£ 3,659 4 10

District.	Housing and Town Schemes (Preliminary).			Native Land Survey.			Road and Railway Survey.			Total Cost of Completed Work.		
	Acres.	Cost per Acre.	Total Cost.	Acres.	Number of Sections.	Cost per Acre.	Total Cost.	Miles.	Cost per Mile.	Total Cost.	Other Work	Total Cost.
Auckland and North Auckland	264.85	£ 42.59	£ 563 19 9	10,761.25	15	£ 0.93	£ 498 9 5†	11.18	£ 39.59	£ 442 12 6	£ 987 9 0	£ 5,631 3 4
Gisborne ..	..	..	..	622.83	8	£ 2.40	£ 74 15 5	6.68	£ 38.04	£ 254 2 6	£ 64 2 8	£ 653 8 2
Hawke's Bay ..	..	..	..	..	..	..	..	1.71	£ 20.34	£ 34 15 8	£ 2 9 4	£ 83 19 10
Taranaki ..	..	..	..	891.28†	29	£ 4.42	£ 197 3 7	9.37	£ 34.98	£ 327 16 3	£ 113 15 6	£ 862 0 2
Wellington ..	..	..	..	45.75	1	£ 18.15	£ 41 9 4	15.75	£ 35.12	£ 553 3 0	£ 169 9 7	£ 620 7 5
Marlborough ..	..	..	..	..	..	..	..	3.82	£ 48.70	£ 186 0 6	£ 61 6 8	£ 713 17 11
Nelson ..	360.00	£ 25.18	£ 765 0 0	..	..	..	..	5.23	£ 48.76	£ 256 0 0	..	£ 998 14 6
Westland ..	..	..	..	..	..	..	..	6.62	£ 16.00	£ 105 18 3	..	£ 149 7 0
Canterbury ..	..	..	..	..	..	..	..	22.95	£ 24.27	£ 556 18 7	£ 46 5 0	£ 1,511 18 1
Otago ..	14.06	£ 69.63	£ 48 19 0	..	..	..	..	24.63	£ 19.85	£ 488 18 9	£ 69 11 1	£ 1,179 3 2
Southland ..	..	..	..	..	..	..	..	34.75	£ 12.45	£ 432 14 6	£ 25 8 4	£ 521 0 8
Totals ..	838.91	£ 31.42	£ 1,317 18 9	12,321.11	44	£ 1.31	£ 811 17 9	142.71	£ 25.50	£ 3,639 0 6	£ 1,539 17 2	£ 12,925 0 3

* Includes periphery surveys for Housing Department, 30.35 acres at a cost of £214 12s. 6d.

† Does not include surveys paid for privately—namely, 3,173 acres.

‡ Does not include 3,147 acres, costs of which are not available.

Table 3.—RETURN SHOWING SURVEYORS EMPLOYED AND WORK ON HAND AT 1ST APRIL, 1940.

Chief Surveyors.	Surveyors employed.		District.	Work on Hand.						Standard Traverse.		Triangu- lation.
	Staff.	Contract.		Topo- graphical.	Rural.	Native.	Roads, &c.	Towns.	City.	Rural.		
				Sq. miles.	Acres.	Acres.	Miles.	Acres.	Miles.	Miles.	Sq. miles.	
R. L. Innis ..	12	36	..	..	20,881	1,394	98	140	..	..	..
J. S. Strawbridge ..	1	3	Gisborne ..	..	55	..	2	3	..	6	..
P. W. Barlow ..	2	2	Hawke's Bay ..	..	19,363	..	..	..	..	..	..
N. Clay ..	2	..	Taranaki ..	..	6,100	194	12	193	..	16	..
J. D. Clapperton ..	3	12	Wellington ..	..	..	1,398	19	63	..	6	..
A. C. Haase ..	1	..	Marlborough ..	..	600	150	60	..	13	14	..
A. W. Craig ..	2	2	Nelson ..	..	200	..	19	11	..	..	..
J. W. McIntyre ..	2	..	Westland ..	..	3,552	..	13	1	..	..	..
T. W. Preston ..	3	6	Canterbury ..	..	8,695	..	147	67	..	..	..
H. A. Adams ..	3	2	Otago ..	..	11,176	..	45	84	..	48	..
T. S. McMillan ..	1	..	Southland ..	..	1,397	..	7	7	3	16	..
Head Office ..	..	..	..	700	..	..	..	..	..	..	9,000
Totals ..	..	..	..	700	71,929	3,136	422	569	16	106	9,000

Table 4.—PRINCIPAL CLASSES OF OFFICE-WORK DONE FROM 1ST APRIL, 1939, TO 31ST MARCH, 1940.

District.	Plans placed on Instruments of Title.				Deeds and other Instruments passed.	Plans examined and passed.				Maps drawn for Lithography.		
	Crown.		Native Land.	Land Transfer.		Crown.	Native.	Land Transfer.	Other Depart-ments.	Standard Publications.		Sale Plans.
	Leases and Licenses, &c.	Free-hold.								Drawn.	Revised.	
Auckland and North Auckland	736	1,070	464	11,343	6,722	264	66	843	414	3	..	..
Gisborne	125	..	72	483	356	12	10	52	47	1	..	..
Hawke's Bay	69	64	..	12	733	45	9	151	43	1	..	..
Taranaki	287	68	46	788	659	12	23	87	46	2	..	..
Wellington	444	187	64	2,266	3,908	161	19	313	34	..	8	..
Marlborough	122	14	17	204	127	26	1	18	35	..	..	..
Nelson	138	34	..	963	..	37	..	103	39	..	3	..
Westland	196	44	2	273	462	39	..	37	15	..	..	..
Canterbury	459	50	..	2,985	1,598	28	..	259	95	..	..	..
Otago	189	60	..	2,997	1,622	43	..	144	36	4	22	..
Southland	188	54	..	887	763	13	..	93	27	1	4	1
Head Office .. ..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	2,953	1,645	665	23,201	16,950	680	128	2,100	831	..	..	..

Approximate Cost of Paper.—Preparation, not given ; printing (760 copies), £22 10s.