

1947  
NEW ZEALAND

---

DEPARTMENT OF LANDS AND SURVEY

**SURVEYS**

(ANNUAL REPORT ON)

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

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Wellington, 30th June, 1947.

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

SIR,—

I have the honour to present herewith my report on the survey operations of the Department for the year ended 31st March, 1947.

I have, &c.,  
R. G. DICK,  
Surveyor-General.

The Hon. the Minister of Lands.

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**REPORT**

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As reported last year, all available staff have been concentrated solely on work of the most urgent nature. The field staff have so far been able to cope with all settlement surveys.

During the year twelve additional survey cadets were appointed in order to build up a badly depleted field staff. This, however, has been partly offset by the resignation of four of the junior surveyors, who have accepted positions outside the Service.

Adjustments of staff are continually being made to deal with the arrears of work. There is a serious accumulation of arrears in survey-plan examination which must be brought up to date to assure that land transactions are not delayed unduly.

## ROUTINE ACTIVITIES

The following schedule summarizes the field-work carried out by staff and contract surveyors for the year ending 31st March, 1947 :—

*Summary of Field-work*

Class of Survey.	Area, Milceage, &c.	Average Cost.	Total Cost.
			£ s. d.
Geodetic triangulation .. ..	.. ..	.. ..	1,432 9 5
Minor triangulation .. ..	162 square miles ..	89-48s. per square mile	724 15 10
Topographical mapping (1 : 63360) ..	492.8 square miles	£5.42 per square mile	2,672 9 9
Topographical survey for settlement ..	192,563 acres ..	7-39d. per acre ..	7,110 6 9
Topographical survey for housing ..	600 acres ..	47-78s. per acre ..	1,433 7 10
Rural surveys .. ..	90,308 acres ..	3-16s. per acre ..	14,289 3 5
Village and suburban surveys .. ..	557 acres ..	49-48s. per acre ..	1,378 3 3
Town and housing sections (2 acres to 10 acres)	1,614 lots ..	£4-67 per section ..	7,543 12 3
Native land surveys .. ..	963 acres ..	7-53s. per acre ..	362 9 1
Standard traverse surveys .. ..	18.15 miles ..	£33-04 per mile ..	599 15 5
Roads and railways surveys .. ..	84.5 miles ..	£57-85 per mile ..	4,888 12 5
Maintenance of survey marks .. ..	.. ..	.. ..	705 8 11
Inspection and investigation surveys ..	.. ..	.. ..	1,058 18 2
Precise levelling .. ..	.. ..	.. ..	456 4 3
Location of boundaries and compass surveys	.. ..	.. ..	1,967 8 7
Police Department (surveys and Court attendance)	.. ..	.. ..	205 4 7
Extra-urban planning .. ..	.. ..	.. ..	372 6 7
Miscellaneous (reports, &c.) .. ..	.. ..	.. ..	2,411 13 6
Total cost .. ..	.. ..	.. ..	49,612 10 0

The output of work in items such as topographical surveys for settlement, rural surveys (settlement), and town and housing surveys has increased by 30 per cent. during the year. The total expenditure for the year is equal to last year's return.

The output of mapping for the production of published topographical maps has fallen from 3,144 square miles to 493 square miles, the staff on this class of work having been diverted to the more urgent settlement surveys.

The item "Extra-urban planning" covers the cost of the preparation of schemes at Tekapo (South Canterbury) and Wanaka (Central Otago).

The following table summarizes the apportionment of surveys made for land-settlement in the various districts. The total areas do not agree with the return of field-work owing to the fact that the table summarizes the actual areas dealt with during the year, part of the costs of which are carried forward :—

*Surveys for Land-settlement*

District.	Preliminary Topographical Surveys.	Final Land Title Surveys.	Number of Units.
	Acres.	Acres.	
Auckland and North Auckland .. ..	14,600	7,947	57
Gisborne .. ..	13,795	4,209	12
Hawke's Bay .. ..	27,138	16,992	51
Taranaki .. ..	2,587	3,342	26
Wellington .. ..	30,209	2,715	16
Marlborough .. ..	10,900	3,887	7
Nelson .. ..	30	238	4
Westland .. ..	800	461	3
Canterbury .. ..	22,880	15,183	20
Otago .. ..	14,390	4,097	10
Southland .. ..	3,983	2,138	13
Totals .. ..	141,312	61,209	219

The actual areas dealt with have decreased considerably in the Auckland District, while other districts generally show increases. Final land surveys are in many cases awaiting finality of schemes of subdivision.

An analysis of the cost of survey work apportioned to the various districts are listed hereunder :—

District.	By Staff Surveyors.		By Contract Surveyors.		Totals.		Percentage.	Number of Surveyors.	
	£	s. d.	£	s. d.	£	s. d.		Staff.	Contract.
Head Office ..	1,373	8 5	..	..	1,373	8 5	2.8	1	..
Auckland and North Auckland	6,923	11 4	2,933	11 1	9,857	2 5	19.9	6	27
Gisborne ..	1,554	5 9	..	..	1,554	5 9	3.1	2	..
Hawke's Bay ..	4,216	15 5	477	7 6	4,694	2 11	9.5	3	3
Taranaki ..	2,267	5 2	173	0 4	2,440	5 6	4.9	2	2
Wellington ..	6,152	19 5	2,136	10 9	8,289	10 2	16.7	4	15
Marlborough ..	2,370	12 3	29	3 6	2,399	15 9	4.8	1	1
Nelson ..	2,001	3 4	246	10 9	2,247	14 1	4.5	1	2
Westland ..	528	12 7	64	16 6	593	9 1	1.2	..	1
Canterbury ..	6,318	3 1	2,384	19 11	8,703	3 0	17.6	3	4
Otago ..	2,861	17 8	318	8 2	3,180	5 10	6.4	2	4
Southland ..	4,279	7 1	..	..	4,279	7 1	8.6	2	..
Totals ..	40,848	1 6	8,764	8 6	49,612	10 0	100.00	27	59
					(49,586	14 11)		(28)	(60)

Last year's figures are shown in parentheses.

There is a slight increase in the amount of work issued on contract to private surveyors as compared with the previous year. Fifty-nine private surveyors were employed on contract during the year. It is not possible for private surveyors to absorb any more contract work, as in every case the private practitioner has more private survey work than he can cope with.

#### FIELD-WORK IN HAND

The following summarizes the field-work that was awaiting action at the end of the year :—

Geodetic triangulation .. ..	Base-line measurements.
Topographical mapping .. ..	1,590 square miles.
Standard traverses .. ..	12 miles.
Topographical surveys for settlement .. ..	35,942 acres.
Land surveys for settlement .. ..	136,827 acres.
Maori land surveys .. ..	12,847 acres.
Roads .. ..	185 miles.

The efforts of the depleted field staff will be concentrated during the year on the reduction of the accumulated land-settlement surveys. Final land surveys are in many cases awaiting final decision in regard to the scheme of subdivision to be adopted. These accumulated arrears have increased 100 per cent. since last report.

## TOWN SCHEME SUBDIVISIONS

(Section 16, Land Act, 1924, and the Land Subdivision in Counties Act, 1946)

The following table summarizes the number of plans, saleable lots, and areas set aside dealt with in accordance with the provisions of section 16 of the Land Act, 1924, and the Land Subdivision in Counties Act, 1946, for the year ending 31st March, 1947 :—

District.	Number of Plans.	Number of Saleable Lots.	Area : Recreation Reserves.	Area : Roads.	Total Area.
			A. R. P.	A. R. P.	A. R. P.
Auckland and North Auckland ..	288	3,413	104 2 13	120 2 37	1,296 2 27
Gisborne .. .. .	12	22	..	..	10 1 03
Hawke's Bay .. .. .	22	190	10 0 34	9 1 06	103 0 20
Taranaki .. .. .	18	39	..	0 1 38	27 1 38
Wellington .. .. .	76	709	6 3 16	28 0 24	259 0 07
Marlborough .. .. .	7	156	1 1 30	10 0 16	73 1 39
Nelson .. .. .	36	415	3 3 05	16 3 08	145 2 32
Westland .. .. .	5	31	0 2 01	..	8 1 36
Canterbury .. .. .	111	1,490	14 0 25	34 1 38	518 0 23
Otago .. .. .	32	190	2 2 26	5 1 26	96 2 37
Southland .. .. .	10	77	4 3 35	0 0 24	28 0 18
Totals .. .. .	617 (386)	6,732 (3,615)	149 0 25	225 2 17	2,567 1 00 (1,487 1 11)

Last year's returns are shown in parentheses.

Last year's receipts of plans were the largest on record. These have been surpassed by the unusual totals shown, which are 40 per cent. to 50 per cent. in excess of the previous year. The number of saleable lots dealt with has increased from 3,615 to 6,732.

The amount of investigation and inspection of subdivisions has relatively increased. Local authorities have, during the past year, shown an increased interest in subdivisional development and have given full co-operation.

As anticipated in last year's report, section 16 of the Land Act, 1924, was repealed by new legislation to provide more adequate control of subdivisional development. The passing of the Land Subdivision in Counties Act, 1946, has served to place the administration of land subdivisions on a better basis. This new legislation makes provision for the following matters :—

- (a) The original legislation was extended to embrace any subdivision of land in allotments of up to 10 acres.
- (b) Provision was made whereby the local authority has the right to comment on subdivisional proposals prior to their approval by the Minister. Experience gained since the coming into operation of the Act shows that local authorities are willingly seeking the co-operation and advice of the Department. This provision assures that the views of the local authority are obtained before final consideration of any scheme, and where conflict of opinion occurs, differences are resolved by negotiation.
- (c) The Act provides that an esplanade reserve, 66 ft. wide, shall be set aside along any foreshore, river, stream, or margin of a lake.
- (d) Apart from the provisions of esplanade reserves, the subdividing owner is required to make provision for recreation reserves either by the donation of land or the equivalent in cash. The land set aside may be actual land for reserve or Crown land which is available for disposal for cash. Moneys accruing from cash contributions or the sale of Crown land are earmarked for the purchase of recreation areas or the improvement of existing areas.

Generally the Act ensures that land subdivision shall conform to the most up-to-date planning principles.

## OFFICE-WORK (PLAN EXAMINATION)

The following table summarizes the number of land-survey plans examined and instruments of title prepared for the year ending 31st March, 1947 :—

District.	Plans placed on Instruments of Title.	Survey Plans examined and approved.			
		Crown.	Other Depart-ments.	Maori.	Land Transfer.
Auckland and North Auckland ..	14,619	189	180	37	831
Gisborne .. .. .	770	17	..	7	67
Hawke's Bay .. .. .	1,921	22	23	10	157
Taranaki .. .. .	1,498	14	53	8	100
Wellington .. .. .	5,272	22	87	3	334
Marlborough .. .. .	593	6	15	1	37
Nelson .. .. .	1,378	24	27	..	180
Westland .. .. .	556	13	5	..	25
Canterbury .. .. .	5,547	56	35	2	411
Otago .. .. .	2,983	35	28	..	195
Southland .. .. .	1,201	21	24	2	62
Totals .. .. .	36,338 (28,270)	419 (361)	477 (578)	70 (59)	2,399 (1,830)

Last year's returns are shown in parentheses.

There is a further increase of 30 per cent. in this class of work. Arrears in plan examination are increasing to an alarming extent, the accumulated total arrears throughout the Dominion being 926 plans. The available staff has not been sufficient to cope with this unusual influx of land-survey plans, in spite of the employment of staff on overtime. Until more junior staff have been trained it will not be possible to increase the output of the present staff to any great extent.

## OTHER OFFICE-WORK

The following summarizes the miscellaneous office-work carried out during the year, last year's returns being shown in parentheses :—

Record maps (revised or redrawn) .. .. .	270	(164)
Cadastral maps (revised or redrawn) .. .. .	44	(49)
Tracings .. .. .	6,810	(5,485)
Photostats and prints .. .. .	48,064	(34,405)

This class of work has increased 30 per cent. during the year. There has been a phenomenal increase in the number of prints and photostats supplied, greater than at any other period in the Department's history. The photostat machines at Auckland, Wellington, and Christchurch are employed to capacity.

The bulk of the record maps revised or redrawn has been carried out in the Nelson and Marlborough districts. As stated in last year's report, this vital work is falling into serious arrears. Existing record maps are out of date, but will have to serve the needs of the public for some years or until there is a falling off in other classes of office-work. No system of survey can function adequately unless the records are kept up to date.

An even worse position is revealed in regard to the publication of cadastral maps (survey district and towns). Staff cannot be spared to draw or revise the existing out-of-date published maps. In order to meet the demand for this type of map it has been necessary to reprint unrevised maps.

## REPRESENTATION COMMISSION

After the first meeting of the Representation Commission in March, 1946, the determinations of the Commission were transcribed on to maps and, with technical descriptions, were advertised for objections in April. This entailed considerable draughting-work and printing.

After objections had been determined by the Commission in May, 1946, the final report was prepared and published in July.

The call for maps to illustrate electoral boundaries revealed the need to redraw and revise many of the older maps. The topographical map provides an excellent basis for the illustration of electoral boundaries in the main cities.

## WARRANTS

During the year 189 warrants for certificates of title comprising 740 items and 12 proclamations of road-lines under the Native Land Act, 1931, were dealt with. The issue of certificates of titles increased by 100 per cent. on last year's returns.

## MAP SALES

The following table summarizes the total map sales for the year ending 31st March, 1947 :—

Class of Map.	Sold for Cash or Credit.	Free Issues and Office Use.	Totals.
	£ s. d.	£ s. d.	£ s. d.
Survey districts and counties .. ..	951 1 10	924 9 0	1,875 10 10
Towns .. .. .	510 0 7	423 18 9	933 19 4
Territorial .. .. .	508 14 7	376 5 0	884 19 7
Topographical .. .. .	2,464 16 9	328 6 6	2,793 3 3
Miscellaneous .. .. .	285 16 4	79 16 0	365 12 4
Totals .. .. .	4,720 10 1	2,132 15 3	6,853 5 4
Previous year .. .. .	(4,363 8 11)	(2,002 0 9)	(6,365 9 8)

## SUMMARIZED EXPENDITURE

The following schedule sets out the salary expenditure for the year ending 31st March, 1947, apportioned to the various classes of work in both the field and the office. Relative figures for the previous year are also shown :—

	1946-47.		1945-46.	
	£	s. d.	£	s. d.
General (Crown surveys, records, tracings, investigations, diagrams, and general office work) .. .. .	64,940	3 9	58,879	6 7
Triangulation .. .. .	3,024	1 4	728	5 3
Topographical mapping .. .. .	9,454	2 6	14,659	15 3
Standard traverse .. .. .	481	5 4	185	9 4
Survey maintenance .. .. .	516	10 0	281	17 5
Precise levelling .. .. .	648	1 2	43	1 2
Inspection and investigation surveys .. .. .	1,218	1 4	772	19 9
Town scheme plans .. .. .	1,431	14 0	821	7 5
Land-settlement (topographical and schemes) .. .. .	12,412	0 1	4,212	11 10
Work for—				
Native Department .. .. .	2,523	11 11	1,658	9 4
Lands and Deeds Department .. .. .	18,520	3 3	14,048	8 4
Public Works Department .. .. .	4,055	5 3	5,041	18 3
Housing Department .. .. .	3,070	0 2	2,660	0 4
Other Departments .. .. .	9,216	18 1	7,543	3 7
Totals .. .. .	£131,511	18 2	£111,671	8 4

The relative increase in salary expenditure is due to a slight increase in office staff and the effect of recent salary increases. The item "Topographical mapping" mainly incorporates special topographical surveys required for general Government development works, very little work having been carried out on the preparation of the national topographical map series. The schedule indicates the increased activity in land-settlement work, expenditure increasing from £4,212 to £12,412 since last annual report.

The total expenditure apportioned among the various Chief Surveyors' offices is as follows:—

District.	Expenditure.	Percentage.
	£    s.    d.	
Head Office .. .. .	11,912 8 5	9.1
Auckland and North Auckland .. .. .	39,752 1 8	30.2
Gisborne .. .. .	4,781 15 10	3.6
Hawke's Bay .. .. .	9,216 10 4	7.0
Taranaki .. .. .	7,084 6 1	5.4
Wellington .. .. .	16,990 11 3	12.9
Marlborough .. .. .	4,890 0 3	3.7
Nelson .. .. .	5,451 13 0	4.2
Westland .. .. .	2,224 15 7	1.7
Canterbury .. .. .	14,093 6 6	10.7
Otago .. .. .	7,566 12 3	5.8
Southland .. .. .	7,547 13 0	5.7
Total .. .. .	131,511 18 2	100.0

#### SPECIALIZED ACTIVITIES

The following sets out the limited amount of survey work of a specialized nature that has been carried out during the year.

#### *Triangulation*

*Geodetic Triangulation.*—In order to take advantage of the opportunity of employing the special base-line-measuring equipment loaned by the Tanganyika Government, the measurement of the three South Island bases were commenced in February, 1947. The tapes were standardized by the National Physical Laboratory, Great Britain, in November, 1946. Excellent progress has been made by the field party to date. The results of this work will be available for report later.

Opportunity was taken to employ survey cadets on this class of work in order that they might gain first-hand experience of precision methods of measurement and observation. It is anticipated that the measurement of the three South Island bases and the remeasurement of three of the North Island will be completed by August, 1947, when the equipment will be returned to Tanganyika as arranged.

It is intended to complete observations for La Place longitudes at a number of selected stations during the year, which will finalize all observational works for the geodetic triangulation of the Dominion which was commenced in 1911.

*Second and Third Order Triangulation.*—Except for a small network of triangulation required in connection with land-survey work, no work has been carried out under this heading. It is hoped to extend observational work in the Southland District this season in order to check up discrepancies in the original triangulation of that district.

#### *Precise Levelling*

In last year's report it was indicated that precise-levelling work required for river control and drainage engineering in the Bay of Plenty district would be put in hand. Unfortunately, staff was not available. Tide-gauges have, however, been established by the Public Works Department at selected stations along the coast. It is hoped to put this work in hand as staff becomes available.

In accordance with instructions received from the Public Works Department, the Department has determined the precise alignment of the proposed Rimutaka Tunnel and also commenced a precise levelling traverse. The alignment was finalized by breaking down from the existing geodetic triangulation station. Six miles of the twenty-two miles of the precise levelling was completed by the end of January, 1947. Owing to staff shortage, this work has since been held up.

### *Topographical Mapping*

The following tables show the progress made in topographical mapping to date :—

#### *1 : 25000 Series*

—	Area (Square Miles).	Number of Sheets.
Maps published as at 31st March, 1946 ..	1,100	28
Maps published during year .. ..	15	1
Mapping in hand .. ..	1,725	33
Totals .. ..	2,840	62

The only field-work completed in this series is special mapping carried out in the Otago District in connection with mining and forestry developments in the Kaitangata and Balclutha locality covering an area of 410 square miles. This work will be plotted at Head Office.

One drawing of a Wellington sheet was published during the year.

#### *1 : 63360 Series*

—	North Island.		South Island.		Total.	
	Area (Square Miles).	Number of Sheets.	Area (Square Miles).	Number of Sheets.	Area (Square Miles).	Number of Sheets.
Published at 31st March, 1946	17,450	69	24,100	77	41,550	146
Published during the year ..	150	1	1,568	5	1,718	6
Drawings completed ..	436	1	436	1	872	2
Mapping in hand .. ..	6,245	21	2,946	12	9,191	33
Totals .. ..	24,281 (24,181)	92 (92)	29,050 (27,770)	95 (93)	53,331 (53,169)	187 (185)

Last year's returns are shown in parentheses.

Two small parties located in Central Otago and the Thames districts were operating for part of the year. Only 162 square miles were mapped during the year when operations were closed down and staff diverted to other urgent work.

It is regretted that it has become necessary to close down this work, which is of such vital importance to national development. The series are in great demand by all State Departments, serving as a basis for many large development projects.

### REGIONAL AND WORKS PLANNING

A small staff at Head Office have proceeded with the preparation of regional survey data, and as a result a number of series of transparencies of population and land slopes have been completed.

All districts are preparing holding-maps and schedules illustrating the extent of land held under individual ownership throughout the Dominion. The work was well advanced at the end of the year, and when completed will be used in connection with land-settlement purchase.



## HEAD OFFICE

## DRAUGHTING BRANCH

Regional planning survey data is under preparation for the Commissioner of Works.

The four metropolitan areas have been drawn and published, and three of the regional areas are drawn and will be published at an early date.

Special maps were drawn for the Tourist and Agriculture Departments, and hydrological maps are in course of preparation for the Soil Conservation and River Control Council.

*Maori Social and Economic Advancement Act, 1945*

Sixty tribal districts and 460 tribal committee areas have been constituted under this Act, and the necessary technical descriptions and plans for each of these districts are now in course of preparation.

*Map Publications*

The table below is a summary of the maps published during the year, together with the cost of printing. In the case of the topographical maps, 2,500 of the 1 : 25000 series and 15,000 of the 1 : 63360 series were printed for the Army Department, and one issue of the former series comprising 1,000 maps was a special production for the Fiji Government.

*Summary of Printing-costs of Map-production for the Year ended 31st March, 1947*

Class of Map.	Number of Issues.	Number of Maps printed.	Total Cost.
Topo Maps—			£ s. d.
1 : 25000 .. .. .	4	6,100	564 3 4
1 : 63360 .. .. .	6	18,600	844 11 1
Survey districts—			
80 chains .. .. .	21	4,500	254 0 0
40 chains .. .. .	7	371	53 13 2
Counties .. .. .	5	1,300	396 0 0
Boroughs .. .. .	4	1,915	209 5 0
Territorial (4-mile) .. .. .	3	1,500	159 8 6
Miscellaneous .. .. .	14	6,800	417 5 0
Totals .. .. .	64	41,086	2,898 6 1

## COMPUTING BRANCH

*Geodetic Triangulation*

The computation of astronomical latitudes and azimuths of geodetic stations was continued and nearly completed. The adjustment of the South Island base networks was carried out in readiness to utilize the final base-line lengths when available, and a commencement was made with the setting-out of the main networks covering both Islands for the first adjustment.

*Tidal Analysis and Special Computations*

No new tidal analyses or special computations were carried out during the year.

## AERIAL BRANCH

The main work has been the plotting and contouring of the 1 : 25000 sheets of areas required by the State Forest Service and the Geological Survey.

The drawings of three 1 : 25000 sheets, and the third topographical sheet for the Fiji Government, have been completed.

Contour plans in connection with the Clarence River hydro project and the Rimutaka Tunnel were prepared from aerial photographs for the State Hydro-electric and Public Works Departments. Approximately 800 prints, enlargements, and mosaics were made for various Departments.

The area covered by new photography was approximately 4,100 square miles, and 10,000 prints were received and indexed.

## DRAUGHTING AND COMPUTING EXAMINATIONS

The examinations were held in October, when 70 candidates presented themselves. Passes were obtained as follows: first-grade Draughting, 3; first-grade Computing, 1; second-grade Draughting, 15; second-grade Computing, 5. Many partial passes were granted.

## GEOGRAPHIC BOARD

The Honorary Geographic Board, which, since 1924, had advised the Department on questions of nomenclature on maps published by the Department, was clothed with legislative authority by virtue of the passing of the New Zealand Geographic Board Act, 1946. The Honorary Board had for many years considered that its decisions should be made binding by law.

The new Act incorporates the provisions and procedure prescribed under the Designation of Districts Act, 1908, which was repealed by the new legislation. The Board set up comprises the Surveyor-General (Chairman), two Maori representatives, one representative of the Federated Mountain Clubs, one representative of the Geographical Society, and two Government representatives.

The first meeting of the Board will be held later in the year when rules of nomenclature will be adopted and the correspondence on questions of place-names which has accumulated since the last meeting of the Honorary Board dealt with.

The findings of the Board will in future be advertised for objection, on the determination of which they become binding.

No meeting of the Honorary Board was held during the year.

## SURVEY BOARD

Two examinations were held for the qualification of surveyors during the year, the results of these being as follows:—

—	September, 1946.	March, 1947.	Totals.
Number of candidates .. .. .	59	64	123
Passed full examination .. .. .	8	8	16
Obtained credits in subjects .. .. .	40	48	88

The number of pupils registered during the year was as follows:—

Lands and Survey Department .. .. .	12
Private surveyors .. .. .	14
Total .. .. .	26

It will be noted that 16 candidates have qualified as surveyors during the year, as against 6 for the previous year. The number of candidates presenting themselves for examination has increased from 71 to 123. This increase is due to the return of students from overseas. In spite of their long absences overseas, these men have quickly rehabilitated themselves and are producing good examination results.

The Board was represented at the conference of reciprocating Boards, held in Adelaide in April, 1946, by the Chairman and Mr. C. K. Grierson. The conference was most successful. The examination syllabus was revised considerably, such subjects as Aerial Photography and Photogrammetry, Land Valuation, and Land Classification and Utilization being added as new subjects for examination. The revised examination syllabus now comprises the following subjects :—

(a) Written subjects—

- (1) Computations (A), (old subject).
- (2) Engineering Surveying (A), (old subject divided).
- (3) Town and Country Planning (A), (old subject).
- (4) Aerial Surveying and Photogrammetry (new subject).
- (5) Astronomy (old subject).
- (6) Land Classification and Utilization (new subject).
- (7) Laws and Regulations (old subject).
- (8) Computations (B), (old subject).
- (9) Engineering Surveying (B), (old subject divided).
- (10) Land Valuation (new subject).
- (11) Geodesy (old subject).
- (12) Town and Country Planning (B), (old subject).

(b) Practical subjects—

- (13) Field Survey Practice.
- (14) Adjustment and Use of Instruments.
- (15) Practical Field Astronomy.
- (16) Practical Levelling.
- (17) Aerial Surveying.

(c) Plans and Field Notes—

- (1) Rural Land Survey.
- (2) Town Land Survey.
- (3) Engineering Survey.
- (4) Triangulation Survey.
- (5) Topographical Survey.

The complete syllabus will come into operation by July, 1948. The addition of the new subjects has been brought about by the rapidly extending functions of the surveyor, who is employed in many and various classes of survey work.

During the year the Board has, in addition to the conducting of examinations, prepared and approved of the revision of the following regulations :—

(1) SURVEY REGULATIONS 1940

These regulations, which govern the practice of land surveying, were partly revised to correct anomalies that had been revealed since the date of their first coming into operation in 1940.

(2) SURVEY EXAMINATION REGULATIONS 1943

A review of these regulations was carried out in order to incorporate the resolutions of the conference of Survey Boards.

## (3) SCALE OF CHARGES FOR SURVEYS

The scale of charges for surveys, which has been in operation since 1939, were revised by the Institute of Surveyors to correct existing anomalies and provide for an increase brought about by increased costs, and after investigation by the Board were recommended to the Hon. Minister of Lands for approval.

## SURVEY DEPARTMENTS, WESTERN SAMOA AND RAROTONGA

In October the Surveyor-General visited the survey offices at Apia and Rarotonga, at the request of the Island Territories Department, to report on the staffing and reorganization of survey work in these territories.

*Approximate Cost of Paper.*—Preparation, not given ; printing (773 copies), £28 10s.

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