Annual report on the health and medical services of the state of Queensland.

1939.

QUEENSLAND.

ANNUAL REPORT

ON THE

HEALTH AND MEDICAL SERVICES

OF THE

STATE OF QUEENSLAND

FOR THE

YEAR 1938-39.

PRESENTED TO PARLIAMENT BY COMMAND.

BRISBANE:
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A. 16—1939.

REPORTS UPON THE OPERATIONS

OF THE

HEALTH AND MEDICAL SERVICES

OF THE STATE OF QUEENSLAND;

TOGETHER WITH THE

Report of the Government Chemical Laboratory.

To the Honourable the Minister for Health and Home Affairs.

SIR,—I have the honour to submit for presentation to Parliament reports regarding the operations of the professional and scientific sections of the Department of Health and Home Affairs, as follows:—

Central Office of the Department of Health (Sir Raphael Cilento, Kt., M.D., B.S. (Adel.), D.T.M. and H. (Eng.), F.R.San.I. (Lond.), Director-General of Health and Medical Services).

Including the Reports concerning the following sectional activities:—

Section of Public Health Supervision (John Coffey, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.), Deputy Director-General of Health and Medical Services);

Section of Microbiology and Pathology (E. H. Derrick, M.D. (Melb.), Director);

Section of Medical Services Supervision: Private Hospitals (Abraham Fryberg, M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.), Health Officer);

Section of Maternal and Child Welfare (T. Henry R. Mathewson, M.B., Ch.B. (Edin.), Acting Director of Maternal and Child Welfare);

Section of School Health Services (L. St. Vincent Welch, M.R.C.S. (Eng.), L.R.C.P. (Lond.), Chief Medical Officer);

Section of Industrial Hygiene (Abraham Fryberg, M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.). Health Officer);

Section of Enthetic Diseases (Geoffrey Hayes, M.B., Ch.M. (Sydney), Officer for Venereal Diseases);

Section of Mental Hygiene (John Coffey, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.), Inspector of Asylums).

With the following appendices:—

Appendix A.—State Nutritional Advisory Board.

Appendix B.—X-ray and other Electro-Medical Equipment Advisory Board.

Appendix C.—Hookworm Campaign (S. Thompson, Microscopist in Charge).

And, under Section 24 *of "The Health Act of* 1937,"

The Report of the Government Chemical Laboratory (Frank E. Connah, F.I.C., A.A.C.I., Government Analyst and Chief Inspector of Explosives).

RAPHAEL W. CILENTO,
Director-General of Health and Medical Services.

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ANNUAL REPORT

OF THE

DIRECTOR-GENERAL

OF

HEALTH AND MEDICAL SERVICES

FOR THE

Year 1938-39.

ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES, 1938-39.

The Honourable the Minister for Health and Home Affairs.

Sir,—I have the honour to submit for your information the annual report upon the health and medical services of the State of Queensland for the year ending 30th June, 1939.

Vital Statistics.

Statistics in respect of birth and survival continue to be of increasing importance.

The actual growth of the population of Queensland has been astonishingly rapid. In 1859, the year of Separation, the population was 23,520; by December, 1891, it had reached 400,395; and on 31st December, 1938, it was estimated at 1,004,150.

During the last inter-censal period, indeed (1921 to 1933), we have the heartening indication that the population of Queensland increased by 25·3 per cent., which was more than the increase in any other State except Western Australia. The increase in New South Wales was 23·8; in Victoria, 18·9; in South Australia 17·3; and in Tasmania 6·5.

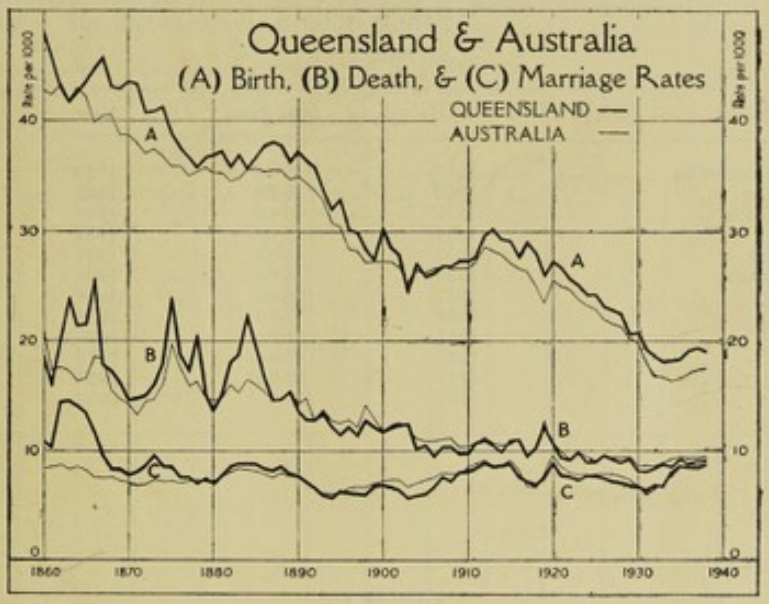
The population of Queensland in 1859 was the second smallest of the six colonies, Western Australia being the smallest. In 1867 it exceeded that of Tasmania, and in 1885 exceeded that of South Australia. Since that date it has maintained third place. In 1881 the population of Queensland was 9·5 per cent. of the total population, but that figure has increased since then to the last census, when the percentage was 14·3.

At the present time, the growth of the population is satisfactory, if compared with the growth in other parts of Australia. *This is partly owing to the fact that only one-third of the State's population is in the metropolis,* the lowest proportion of metropolitan population for any State except Tasmania. Brisbane had 20·1 per cent. of Queensland's population in 1861, and this figure has increased, though irregularly, to 31·6 per cent. at the 1933 census.

The significance of this fact rests in the discovery that, as in all States, the birth rate of city populations is markedly lower than that of country districts. Brisbane itself has one of the lowest birth rates in the world.

The birth rate as elsewhere in the white world has declined for a period of seventy years, but the infantile mortality has declined immensely during the same period.

The crude birth rate from 1861 to 1938 is shown as extracted from page 55 of the "Queensland Year Book," 1939:—



CRUDE BIRTH RATE *a*: 1861 TO 1938.

Period.	New South Wales.	Victoria.	Queensland.	South Australia.	Western Australia.	Tasmania.	Australia. *b*	New Zealand.
1861-1870	41·80	41·51	**43·89**	41·75	34·01	32·04	41·02	*n*
1871-1880	38·87	33·90	**40·62**	37·51	31·79	30·59	36·25	*n*
1881-1890	37·31	31·89	**38·31**	36·21	34·98	34·92	35·20	33·79
1891-1900	30·66	28·60	**32·70**	29·02	30·01	30·59	30·05	26·72
1901-1910	27·09	25·08	**26·80**	25·22	30·05	28·89	26·51	26·83
1911-1920	27·53	24·22	**28·33**	26·76	26·56	28·66	26·57	25·15
1921-1930	23·27	21·04	**23·56**	21·09	22·21	24·07	22·44	20·99
1929 ..	21·04	18·98	**20·60**	18·63	21·51	22·03	20·25	19·01
1930 ..	20·59	18·55	**20·80**	17·42	21·44	21·66	19·86	18·80
1931 ..	18·67	16·86	**19·28**	15·77	19·77	21·18	18·16	18·42
1932 ..	17·40	15·19	**18·56**	14·74	18·31	19·78	16·86	17·09
1933 ..	16·99	15·60	**18·14**	15·32	17·95	19·93	16·78	16·59
1934 ..	16·52	15·20	**18·17**	14·50	17·66	19·51	16·39	16·47
1935 ..	16·89	15·16	**18·31**	14·14	18·23	19·41	16·55	16·13
1936 ..	17·31	15·63	**19·17**	15·17	18·84	19·84	17·13	16·64
1937 ..	17·63	16·02	**19·36**	15·25	18·95	20·69	17·43	17·29
1938 ..	17·39	16·25	**18·98**	15·88	19·87	20·82	17·46	17·93

a Number of births per annum per 1,000 of mean population.
b Includes Australian Capital Territory and Northern Territory.
n Not available.

With the fall in quantity of the population there must be an increase in quality, and it can fairly be claimed that that is the case. The measures of general betterment introduced by the extensive adoption of public health principles and the constantly better control of epidemic diseases have done much to bring this about.

The estimated population of this State as at 1st January, 1939, was 1,004,150, and that of the metropolitan area of Brisbane, 325,890. The figures of importance from the point of view of public health are subjoined:—

TABLE I.

CRUDE BIRTH RATE.

Country.	Year.	Birth Rate.	Year.	Birth Rate.
Commonwealth of Australia	1937	17·43	1938	17·46
Queensland	**1937**	**19·36**	**1938**	**18.98**
New South Wales	1937	17·63	1938	17·39
Victoria	1937	16·02	1938	16·25
South Australia	1937	15·25	1938	15·88
Western Australia	1937	18·95	1938	19·87
Tasmania	1937	20·69	1938	20·82
New Zealand	1937	17·29	1938	17·93
England and Wales	1937	14·88	1938	15·08
Scotland	1937	17·64	1938	17·77
Irish Free State	1937	19·06	1938	19·58
Canada	1937	19·8	1938	Not available

TABLE II.

DEATH RATE.

Country.	Year.	Death Rate.	Year.	Death Rate.
Commonwealth of Australia	1937	9·44	1938	9·64
Queensland	**1937**	**9.10**	**1938**	**9.19**
New South Wales	1937	9·36	1938	9·59
Victoria	1937	10·03	1938	10·15
South Australia	1937	8·91	1938	9·35
Western Australia	1937	8·95	1938	9·20
Tasmania	1937	9·51	1938	9·71
New Zealand	1937	9·08	1938	9·71
England and Wales	1937	12·42	1938	11·62
Scotland	1937	13·85	1938	12·63
Irish Free State	1937	15·2	1938	Not available
Canada	1937	10·2	1938	Not available

TABLE III.

RATES OF INFANTILE MORTALITY IN VARIOUS COUNTRIES.

Country.	Year.	Death Rate per 1,000 Births.	Year.	Death Rate per 1,000 Births.
Commonwealth of Australia	1937	38·06	1938	38·28
Queensland	**1937**	**35.64**	**1938**	**41.28**
New South Wales	1937	40·68	1938	41·84
Victoria	1937	36·70	1938	34·21
South Australia	1937	33·06	1938	30·50
Western Australia	1937	37·52	1938	33·80
Tasmania	1937	41·73	1938	40·15
New Zealand	1937	31·21	1938	35·60
England and Wales	1937	58·00	1938	Not available
Scotland	1937	80·00	1938	Not available
Irish Free State	1937	Not available	1938	Not available
Canada	1937	Not available	1938	Not available

Communicable Diseases.

One of the most important features of public health work is the study, from time to time, of communicable diseases.

The monthly incidence of notifiable diseases reported throughout the State is set out in the following table, and for comparison the totals for the years 1937 and 1938 are also shown:—

TABLE IV.

Communicable Diseases (Exclusive of Venereal Diseases)—1st July, 1938, to 30th June, 1939. (Metropolitan Area) Population—1st January, 1939, 325,890.

Diseases.	Months.												Totals.		
	1938.						1939.								
	July.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	1938-39.	1937-38.	1936-37.
Anchylostomiasis	..	..	1	..	..	..	..	..	1	..	..	..	2	2	Nil
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Coastal Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Diphtheria	48	28	29	25	33	44	27	36	44	53	60	74	501	455	475
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Dysentery, Bacillary	1	..	..	1	..	..	..	1	..	..	..	..	3	Nil	Nil
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	1	..	1	Nil	Nil
Filariasis	..	..	1	..	..	..	..	..	..	..	..	..	1	Nil	1
Lead Poisoning	..	..	..	..	..	..	..	..	..	1	1	2	4	Nil	Nil
Leprosy	..	..	1	..	..	..	..	..	..	..	..	..	1	2	1
Leptospirosis (Weil's Disease, Parawell's Disease, Seven-day Fever)	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	1
Malaria	..	1	..	..	..	..	..	1	..	..	..	..	2	2	1
Meningitis, Cerebro-spinal	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1	2
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Poliomyelitis, Acute Anterior	4	1	..	1	..	1	1	..	1	..	..	2	11	57	Nil
Puerperal Fever	..	..	1	1	..	..	1	..	1	..	1	1	6	13	5
Puerperal Pyrexia	1	1	..	..	..	1	1	..	..	..	..	1	5	11	7
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Scarlet Fever or Scarlatina	12	23	23	15	14	8	6	10	14	16	15	21	177	231	453
Smallpox, including Amaas or Alastrim	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Tuberculosis, all forms	12	13	33	12	42	18	16	46	30	16	30	27	295	126	151
Typhoid Fever, including Para-Typhoid Fevers	2	..	1	1	1	2	5	1	..	1	3	1	18	30	50
Typhus Fever, including Rural and Urban Forms and Japanese River Fever	1	..	..	..	1	..	..	1	2	1	..	1	7	2	2
Undulant (Malta) Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil	Nil
Totals 1938-39	81	67	90	56	91	74	57	96	93	88	111	130	1,034	932	1,149
Totals 1937-38	82	58	58	63	72	73	44	88	103	83	107	101	..	932	..
Totals 1936-37	109	103	95	103	128	100	73	66	88	70	116	98	..	1	1,149

TABLE V.

Extra Metropolitan Area. Population—1st January, 1939, 678,260.

Disease.	Months.												Totals.		
	1938.						1939.								
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	1938-39.	1937-38.	1936-37.
Anchylostomiasis	..	..	1	1	..	..	1	3	..	..	6	2	14	18	4
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Coastal Fever	..	..	2	..	..	..	1	..	..	..	..	1	4	4	3
Diphtheria	50	47	29	63	27	31	48	36	40	65	84	67	587	482	634
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	3	1
Dysentery, Bacillary	..	..	..	..	..	..	..	..	..	..	..	..	Nil	2	1
Encephalitis Lethargica	..	..	..	..	..	1	..	..	..	..	..	..	1	2	Nil
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Lead Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Leprosy	..	..	1	..	..	..	1	..	..	1	..	..	3	2	9
Leptospirosis (Weil's Disease, Parawell's Disease, Seven-day Fever)	..	3	..	..	1	..	1	..	..	5	2	1	13	21	53
Malaria	..	1	..	..	..	..	..	1	..	1	2	..	5	..	4
Meningitis, Cerebro-spinal	1	..	..	..	1	..	1	..	..	..	..	..	3	..	2
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Poliomyelitis, Acute Anterior	1	3	1	..	1	5	5	2	1	1	1	4	25	103	4
Puerperal Fever	1	..	..	2	..	..	..	..	..	1	..	..	4	9	12
Puerperal Pyrexia	1	3	..	..	..	..	2	..	..	..	..	..	6	9	7
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Scarlet Fever or Scarlatina	17	16	19	16	27	17	23	20	15	23	24	20	237	251	375
Smallpox, including Amaas or Alastrim	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Tuberculosis, all Forms	15	5	13	2	12	10	14	14	16	8	15	12	136	128	118
Typhoid Fever, including Paratyphoid Fevers	3	3	21	2	5	5	3	1	7	9	2	1	62	48	40
Typhus Fever, including Rural and Urban Forms and Japanese River Fever	9	5	1	..	2	2	2	9	2	5	4	4	45	62	86
Undulant (Malta) Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	..	..
Totals	98	86	88	86	76	71	102	86	81	119	140	112	1,145	1,145	1,354
1937-38 Totals	116	83	90	61	54	72	94	98	121	92	140	124	..	1,145	..
1936-37 Totals	174	129	103	103	86	97	96	81	125	119	113	128	..	..	1,354

TABLE VI.

ANNUAL STATEMENT OF NOTIFIABLE DISEASES DURING CALENDAR YEAR, 1938 (METROPOLITAN AREA).

Diseases.	Months.												Totals.	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1938.	1937.
Anchylostomiasis	..	2	..	..	..	..	..	..	1	..	..	..	3	Nil
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Coastal Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Diphtheria	23	44	37	43	40	66	48	28	29	25	33	44	460	417
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Dysentery, Bacillary	..	..	..	..	..	..	1	..	..	1	..	..	2	Nil
Encephalitis Lethargica	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Filariasis	..	..	..	..	..	..	..	..	1	..	..	..	1	Nil
Lead Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Leprosy	..	..	..	..	2	..	..	..	1	..	..	..	3	1
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Malaria	..	..	..	..	..	..	..	1	..	..	..	..	1	2
Meningitis, Cerebro-spinal	..	..	..	..	..	..	..	..	..	..	..	..	Nil	2
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis, Acute Anterior	..	2	17	15	18	3	4	1	..	1	..	1	62	2
Puerperal Fever	..	2	3	2	2	3	..	..	1	1	..	..	14	1
Puerperal Pyrexia	..	..	..	..	..	1	1	1	..	..	..	1	4	14
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Scarlet Fever or Scarlatina	10	15	29	14	27	17	12	23	23	15	14	8	207	298
Smallpox, including Amaas or Alastrim	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Tuberculosis, all forms	6	15	8	8	14	11	12	13	33	12	24	18	192	150
Typhoid Fever, including Paratyphoid Fevers	4	8	8	1	4	Nil	2	Nil	1	1	1	2	32	28
Typhus Fever, including Rural and Urban Forms and Japanese River Fever	1	..	1	..	..	..	1	..	..	..	1	..	4	1
Undulant (Malta) Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Totals	44	88	103	83	107	101	81	67	90	56	91	74	985	916
1937 Totals	72	66	88	70	116	98	82	58	58	63	72	73	..	916
1936 Totals	81	88	100	115	88	102	109	103	95	103	128	100	1,212	..
1935 Totals	77	56	81	99	107	91	107	106	93	109	94	86	1,106	..

TABLE VII.

ANNUAL STATEMENT OF NOTIFIABLE DISEASES DURING CALENDAR YEAR 1938 (EXTRA METROPOLITAN-AREA).

Diseases.	Months.												Totals.	
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	1938.	1937.
Anchylostomiasis	..	..	1	..	4	..	..	..	1	1	..	..	7	14
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Bilharziasis	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Coastal Fever	1	..	1	..	2	..	..	..	2	..	..	..	6	1
Diphtheria	38	27	45	42	69	64	50	47	29	63	27	31	532	491
Dysentery, Amoebic	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Dysentery, Bacillary	..	2	..	..	..	1	..	..	..	..	..	..	3	1
Encephalitis Lethargica	1	1	..	..	..	..	..	..	..	..	..	1	3	Nil
Filarasis	..	..	1	..	..	..	..	..	..	..	..	..	1	1
Lead Poisoning	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Leprosy	..	1	..	..	..	..	..	..	1	..	..	..	2	5
Leptospirosis (Weil's Disease, Paraweil's Disease, Seven-day Fever)	..	1	2	..	1	..	..	3	..	..	1	..	8	21
Malaria	..	..	..	..	..	..	..	1	..	..	..	..	1	Nil
Meningitis, Cerebro-spinal	..	..	..	..	..	..	1	..	..	..	1	..	2	2
Mossman Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil
Plague, Bubonic or Oriental	..	..	..	..	..	..	..	..	..	..	..	..	..	Nil
Poliomyelitis, Acute Anterior	13	20	22	11	9	14	1	3	1	..	1	5	100	16
Puerperal Fever	..	3	1	..	1	1	1	..	..	2	..	..	9	8
Puerperal Pyrexia	2	1	1	..	..	2	1	3	..	..	..	..	10	5
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Sarina Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Scarlet Fever or Scarlatina	24	21	19	24	29	19	17	16	19	16	27	17	248	320
Smallpox (including Amaas or Alastrim)	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Tuberculosis, all forms	9	4	17	8	14	10	15	5	13	2	12	10	119	130
Typhoid Fever, including Paratyphoid Fevers	3	9	6	4	5	3	3	3	21	2	5	5	69	44
Typhus Fever, including Rural and Urban forms and Japanese River Fever	3	7	4	2	5	7	9	5	1	..	2	2	47	71
Undulant (Malta) Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	1
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	Nil	Nil
Totals	94	97	120	91	139	121	98	86	88	86	76	71	1,167	1,131
1937 Totals	96	80	124	119	112	124	116	83	90	61	54	72	..	1,131
1936 Totals	90	95	104	139	141	189	174	129	103	103	86	97	1,450	..
1935 Totals	79	72	109	87	78	119	129	95	99	90	112	82	1,151	..

The following brief particulars are set down with regard to diseases of major frequency or graver significance. Special attention is devoted this year to typhoid fever, to the control of leptospirosis, and to the matter of plumbism and nephritis:—

Diphtheria.

The numbers of cases of diphtheria reported for the last three years are as follows:—

—	1938-39.	1937-38.	1936-37.
Brisbane Metropolitan Area	501	455	475
Extra Metropolitan Area	587	482	634
Totals	1,088	937	1,109

Scarlet Fever.

It was pointed out in the last report that the small total of 482 cases was the lowest of any year since 1928-29, when 470 cases were reported.

During the present year there was a total of only 414 cases, which makes a new low record in this regard.

—	1938-39.	1937-38.	1936-37.
Brisbane Metropolitan Area	177	231	453
Extra Metropolitan Area	237	251	375
Totals	414	482	828

Plague.

No case of plague has been reported in the State since the year 1922. The examination of rat smears was continued as usual, 34,950 carcases of rats having been examined in the laboratories of the Department during the year.

Endemic Typhus Fever (All Forms).

During the year there were reported 47 cases, as against 64 cases in 1937-38 and 88 cases in 1936-37. It is anticipated that the usual periodic rise should occur shortly.

Special attention has therefore been given to the control of rats in northern areas. Local authorities have been circularised, the assistance of pest boards has been secured, and work is progressing actively.

Rat control involves, of course, prophylaxis not only against endemic typhus fever of the rural type, but also against plague and against various forms of leptospirosis.

Tuberculosis (All Forms).

Four hundred and thirty-one cases were reported during the current year, as against 254 in 1937-38 and 269 in 1936-37.

At the outset this appears a very great increase, but actually it is an indication of the fact that tuberculosis is not being adequately reported by medical practitioners. Control of tuberculosis is, in fact, the weakest link in the public health chain in Queensland.

For some time negotiations have been in progress with a view to establishing an adequate Bureau of Tuberculosis, working, from the point of view of treatment, in conjunction with the Brisbane and South Coast Hospitals Board, and from the public health and industrial aspects, with this Department.

The treatment of obvious cases of tuberculosis is the smallest part of the problem and the part to which undue attention is usually paid. Unless adequate investigation of contacts from the public health point of view, and proper prophylactic measures can be constantly provided as a matter of routine service from this Office, an increased measure of treatment facilities at the Brisbane Hospital will be relatively ineffective.

In several other States the matter has been dealt with by the correlation of public health activities and treatment activities, and this is now eminently desirable in Queensland.

The big increase in reported cases was the result of a deliberate investigation into deaths recorded as due to tuberculosis; many of the reports referred to cases already dead. The registers were searched and wherever a death from tuberculosis was recorded, if previous report of the existence of the illness had not been made by the medical officer concerned, a letter was sent to him, directing his attention to his failure to notify, and obtaining the necessary (though late) notification. The medical practitioners concerned have been informed that further laxity will be followed by prosecution.

Of the 431 cases reported, 295 were found in Brisbane and 136 outside the capital city. In Brisbane alone, therefore, it will be observed that the figure is greater than that reported in the whole State in each of the two preceding years.

Again, it is necessary to emphasise the fact that there is no actual increase in the disease, but the figures do indicate the necessity of instituting increased control of the disease, particularly from the prophylactic and industrial aspects.

Anchylostomiasis.

The details of the work done in connection with anchylostomiasis are set out in the annual report of the microscopist in charge, which is attached as Appendix C.

Plumbism and Nephritis.

During the year four cases only of lead poisoning were reported. A most interesting series of investigations, however, was made in mid-western Queensland, particularly at Barcaldine and Longreach.

Albuminuria in Children at Barcaldine.

When the Medical Officer of the Mobile Unit (Dr. D. W. Johnson) was in Barcaldine in 1937, Dr. J. J. Ward directed his attention to the frequency of albuminuria in that town. Dr. Johnson was able then, through the courtesy of Dr. Ward, to examine nine children who had, at some time, shown albuminuria. These children were drawn from three families. Four of them showed albuminuria on the occasion of Dr. Johnson's examination. Several had confirmatory signs of renal disease.

Dr. Ward has (in 1939) kindly given the complete history of one of these families. It provides a striking illustration of the tendency of albuminuria to involve many children in the one family. The facts are, briefly, as follows:—

Father, aged 54. Healthy. No evidence of renal disease. Blood pressure 130/80.

Mother, aged 49. No evidence of renal disease. Blood pressure 150/100.

The parents have been married twenty-four years and there were 8 children, 2 of whom are dead, 6 living.

This history of these children is as follows:—

1. Girl, died seven years ago at age of 16. Death certificate gave cause of death as:—
   (*a*) Acute parenchymatous nephritis.
   (*b*) Uraemia.

2. Boy, aged 20, shows evidence of severe chronic nephritis, but at present has no symptoms. Heavy albuminuria. Blood pressure 200/140. In hospital three years ago with severe nephritic symptoms.

3. Girl, aged 18, has evidence of chronic nephritis. Albuminuria. Blood pressure 160/100. Appears anaemic.

4. Girl, died nine years ago at age of 8. Death certificate gave cause of death as—
   (*a*) Chronic tubercular meningitis.
   (*b*) Gastroenteritis.

At the age of 3, she had an affection of the muscles of one of her legs, ascribed to infantile paralysis (possibly lead palsy?)

5. Girl, aged 17, twin of the last mentioned. Dull and backward. Blood pressure 175/100. No albuminuria on two examinations.

6. Girl, aged 16. Albuminuria on several occasions during last year.

7. Boy, aged 11. Very sickly looking child. Albuminuria. Blood pressure 132/84.

8. Girl, aged 9. Undersized. Anaemic looking. No albuminurina. Blood pressure 110/55.

Thus at least six of the eight children have shown evidence of renal disease.

Albuminuria in Children at Longreach.

In Longreach, enquiries with the kind assistance of the Medical Officer of Health, Dr. C. V. Watson Brown, showed that albuminuria is quite common. Dr. Brown supplied notes on seven cases as follows:—

1. D.P., aged 13. Female. Suffers from chronic epilepsy. In 1929, had acute lead poisoning with marked foot drop and wrist drop. Lead found in urine; scrapings of paint from veranda railings found to be pure lead paint. Child was a finger sucker and was in the habit of licking up the drops of water as they dripped off the railings. (There was some rain that year.) In 1934, blood urea estimation was 92 mgs. per 100 c.c. blood; urea concentration 0·75; report of blood examination not available.

This child is now a chronic epileptic with probable generalised cerebral sclerosis and with an intelligence quotient of 50.

2. D.C., aged 21. Female. Chronic nephritic since early childhood. No evidence of any predisposing infectious disease or cause. Died 15th December, 1936. Blood urea estimation, 9th November, 1936, 141 mgs. per 100 cc. blood; urea concentration 0·65; red-cell count 3,100,000; whites 14,040; Hb. 55. No examination for evidence of lead was made.

3. M.C., aged 23. Female. Chronic nephritic since childhood. Sister of above. No predisposing cause found. In 1936, blood urea estimation 66 mgs. per 100 c.c. blood; urea concentration 1·5; blood counts: Red cells 4,080,000, white cells 10,920; Hb. 80. Died January, 1939.

4. V.S., aged 14. Male. In 1934, blood urea estimation was 63; urea concentration 1·5; no record of blood count.

5. A.Q., aged 12 years. Female. 'Chronic nephritis five years' duration. No bio-chemical estimation carried out.

6. A.D., aged 8. Female. Chronic nephritis two years' duration. No bio-chemical estimation carried out.

7. A.C., aged 4. Female. Persistent albuminuria for the past six months. No bio-chemical estimation carried out. Red cells 4,130,000, white cells 7,000. Haemoglobin 80 per cent. The red cells show slight anisocytosis. No punctate basophilia observed.

Albuminuria of Pregnancy.—Enquiry elicited that both Dr. Watson Brown and Dr. Ward have observed a frequency of albuminuria of pregnancy. Dr. Watson Brown has recorded a great frequency of albuminuria in pregnant women in the Longreach district, amounting to 62 per cent. of a series of 481 women (*Medical Journal of Australia*, 1936, i. 529). The albuminuria usually disappeared after parturition. After the routine prescription of dicalcium phosphate in the antenatal clinic albuminuria was found in only 16 per cent. of 88 pregnant women. (K. U. and G. Toverud some years earlier drew attention to the decline of calcium and phosphorus in the later months of pregnancy. Of 16 women examined by them, all were in a state of negative calcium balance and 11 in negative phosphorus balance. It is a matter that can be corrected by increasing the calcium intake 1·6 grammes daily and the phosphorus 1·8 grammes or sometimes by increased vitamin D.)

Dr. Ward has noticed in Barcaldine also an unusual frequency of albuminuria during pregnancy.

De Lee, in "Principles and Practice of Obstetrics," states: "Albuminuria is found in one third to one half of the cases of pregnancy if one uses the finest tests. Ordinarily one will find albumen in only 3 to 5 per cent. of *gravidae* and 30 per cent. of parturients."

As the test for albumen used by Dr. Brown was the ordinary one of boiling with acetic acid, and as the patients did not include any parturients, the incidence of albuminuria in Longreach was most abnormal. Even the reduced incidence of 16 per cent. after the use of calcium is excessive.

Etiology of the Albuminuria.—The etiology of the albuminuria may be discussed from three aspects, namely:—

1. Lead poisoning.
2. Calcium-phosphorus deficiency.
3. Water supply.

1. *Relation to Lead Poisoning.*—The house in which the above-quoted family of Barcaldine nephritics resided was investigated with regard to the history and condition of its paintwork. The house was found to be a good weatherboard structure, which had just been erected and recently painted when the family moved in in 1915. The first child was then three months

old. The father stated that three months after they went into the house the paint would readily come off like flour when the hand was rubbed over it. They lived in the house for about five years with the paint in that condition, and during this time the next two children were born. In 1920, and again in 1925, the house was repainted with lead paint. In 1929 it was repainted with a lead and zinc mixture. It was last repainted in 1936 with a mixture in the proportion of 15 lead to 80 zinc.

There was therefore ample opportunity for the children (except perhaps the last one) to come into contact with lead paint in their infancy. The use of lead paint on the house was confirmed by analysis of a sample of paint scraped in February, 1939, from the veranda rails. This was submitted to the Government Analyst. He reported that it contained 19·1 per cent. of soluble lead (calculated as PbO) which is equivalent to 22·2 per cent. white lead.

Samples of paint were taken for analysis from the verandas of three other residences in Barcaldine. The percentages of soluble lead were 15·3, 17·7 and 41·2, respectively, corresponding to 17·6 per cent., 20·6 per cent., and 47·9 per cent. white lead. (This is probably the case with a great proportion of houses as it was in 1930-32 when investigated by me in Brisbane. At that time some 90 per cent. of houses were, if painted, painted with lead paint.)

The Medical Officer of Health, Longreach, Dr. Watson Brown, secured samples of paint from the exposed veranda railings of five of the six houses in Longreach in which the seven nephritic children resided. Each of these houses had only been painted once, so that the paint analysed was that (if any) to which the children had had access. The paint on the other house had already been examined in 1929 and found to be lead paint solely.

The Government Analyst reported as follows:—

House of.	Soluble Lead (Calculated as PbO).	White Lead.
	Per Cent.	Per Cent.
D.C. and M.C.	38·2 equivalent to	44·4
V. S.	11·6	13·4
A. Q.	45·1	52·4
A. D.	21·7	25·2
	39·5	45·9
A. C.	Lead present. Sample insufficient for quantitative estimation.	

It is significant that in every case, both in Barcaldine and Longreach, the nephritic child had lived in a lead-painted house. In the only case (D.P., Longreach) in which a direct examination of the patient was made for lead, lead was found in the urine. The child had previously had clinical symptoms of acute lead poisoning.

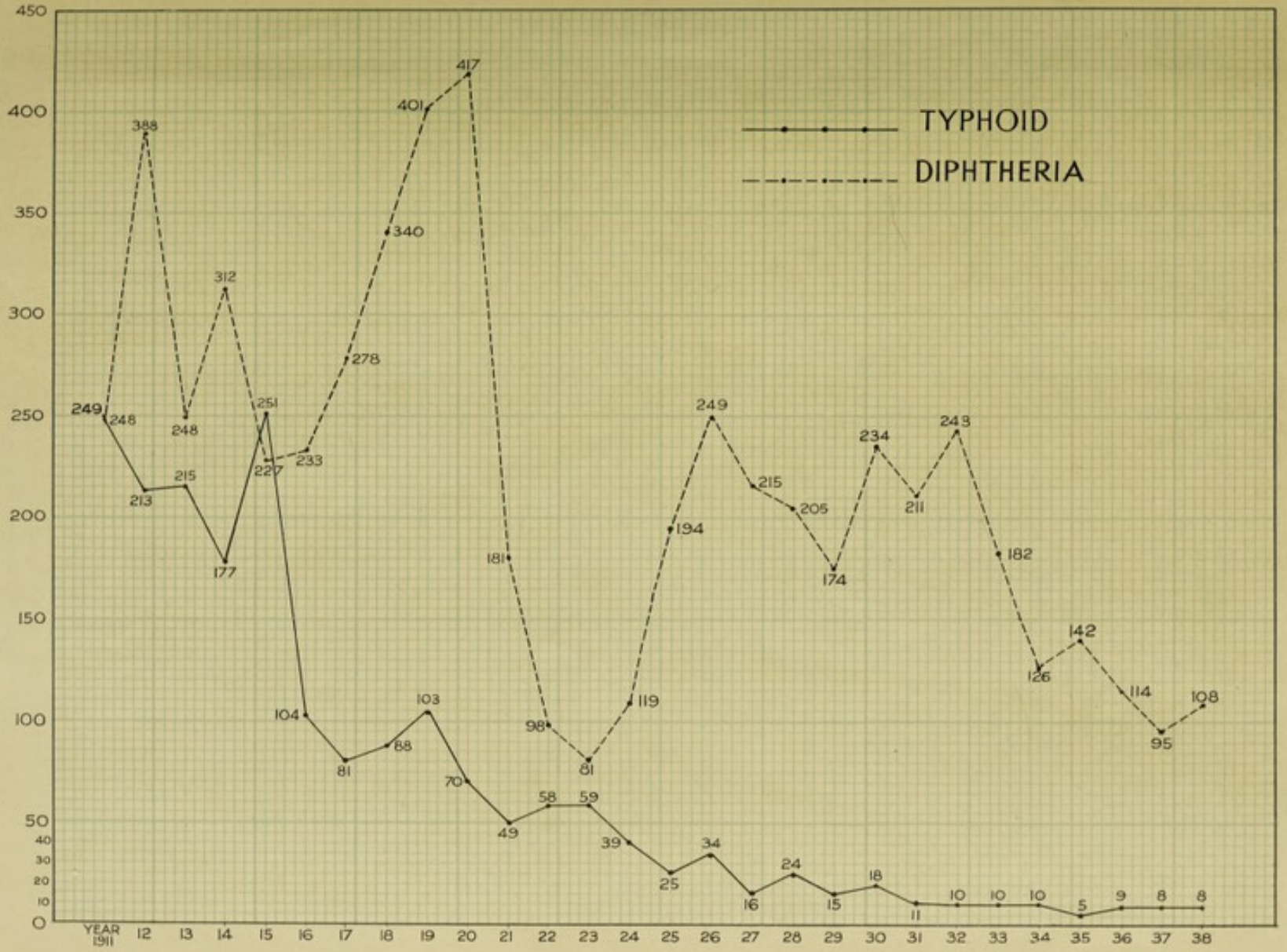
The nephritis of children in the Central-West is, therefore, in line with the type well known in Brisbane and other cities of Queensland, and is probably a sequel of lead poisoning in early childhood.

There appears to be in the Central-West considerable ignorance of the fact that lead paint may be dangerous to children, and that paint containing more than 5 per cent. of soluble lead is prohibited by Section 127 of "*The Health Act of* 1937" in places to which children have easy access.

2. *Calcium-Phosphorus Deficiency.*—The albuminuria of pregnancy presents a rather different problem from that of childhood. Dr. Watson Brown was impressed by the occurrence of three cases of rickets in young children who were partially breast-fed. As emulsion had been given and sunlight was available, the condition was not one due to absence of vitamin D; and the conclusion was that the rickets was due to a calcium-phosphorus deficiency. This suggested a calcium-phosphorus deficiency in the mothers. Accordingly Dr. Brown prescribed dicalcium phosphate for the patients attending the antenatal clinic, and observed a considerable improvement in their general health. Among other good effects albuminuria became much less frequent—the incidence falling from 62 per cent. to 16 per cent.

While this improvement is very gratifying, it is clear that the problem calls for further investigation.

Do other parts of Queensland show this abnormal incidence of albuminuria of pregnancy? Would the albuminuria of childhood respond similarly to calcium therapy? (Dr. Brown apparently has not, as yet, attempted it in children.) To what extent (if any) might lead absorption be an underlying factor in these cases, the effects becoming evident because of a calcium deficiency?


TYPHOID
DIPHTHERIA
450
400
350
300
250
200
150
100
50
40
30
20
10
0
YEAR 1911
12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38
249 248 213 215 177 251 104 81 88 103 70 49 58 59 39 25 34 16 24 15 18 11 10 10 10 5 9 8 8
388 248 312 227 233 278 340 401 417 181 98 81 119 194 249 215 205 174 234 211 243 182 126 142 114 95 108

The metabolism of absorbed lead, as pointed out in previous years, is closely associated with that of calcium. The factors which cause a deposition of calcium in the bones (high calcium diet, vitamin D, &c.) will cause the deposition of circulating lead in the bones. The factors which favour decalcification (calcium deficiency in the diet, acidosis, parathyroid activity) will favour the mobilization of lead. As it is lead circulating in the vessels that produces the harmful effects, it follows that these effects will be emphasized by an inadequate supply of calcium in the diet.

In the prophylaxis of nephritis where lead is a possible factor, the first aim must be the avoidance of lead absorption. Nevertheless, in the presence of absorbed lead the need of adequate calcium becomes urgent. And, of course, quite apart from the condition of lead absorption, an adequate amount of calcium in the diet is desirable.

3. *Water Supply.*—In Barcaldine the water supply is obtained from a bore. As the albuminuria is restricted to certain families it cannot be explained by reference to a water supply which is common to the whole town.

In Longreach the supply for drinking and cooking is derived from rain water caught in tanks from individual roofs. Bore water and river water are reticulated to premises, but these are unsuitable for consumption. Thus the water supplies of the two towns are different, but albuminuria occurs in both.

Action Taken.—The owners of premises which had been painted in contravention of Section 127 of "*The Health Act of* 1937" have been directed to take immediate steps to have the painted surfaces cleaned down and all such paint removed therefrom. Painters and contractors have been warned that they must conform with the Act.

It is hoped that the action taken will bring home to those in the Central-West who have disregarded the Act the danger of using lead paint where children have access; and also that it may do something to control increased nephritis in those areas.

Typhoid Fever.

A special investigation of an outbreak of typhoid fever at Innisfail is included in the report of the Mobile Unit, page 63.

The general incidence of typhoid fever for 1938-39 remains much as in the last two years. Eighty cases were reported during the year (18 in metropolitan and 62 in extra-metropolitan areas), as against 78 in 1937-8 and 90 in 1936-37.

There is perhaps no disease which so definitely mirrors the improvement in general sanitation as the incidence of typhoid fever. When one considers that, twenty-five years ago (in 1913), the number of cases in the State for the year was 1,386, the present position may be regarded as a very definite tribute to the co-operation of local authorities and the work done by the local health inspectors and medical officers of health.

Typhoid fever is a disease that depends upon faulty sanitation. It is one in which the individual alone cannot protect himself unless he has the aid of the community. It is, therefore, as mentioned, the best indication of the extent to which the community is becoming health-conscious. The provision of better milk supplies, the more general use of pasteurisation, the protection and chlorination of water supplies, the diffusion of information among the public, and in several instances preventive inoculation, have done much to bring about this satisfactory result.

Nevertheless, the sanitary security of our favoured communities can only be maintained by continued vigilance. Over a period of some years the State has insisted upon bacteriological control of the disease and careful supervision of every carrier detected, and the general improvement of all the means mentioned above to provide better sanitary provision and administration.

The results are best exemplified by the graph attached, and also by a comparison with the corresponding graph for diphtheria. The figure shows the number of cases per hundred thousand of the community in respect of each disease.

In the 'eighties, typhoid fever was an enormous menace in this State, and it will be observed that even as late as 1911 to 1915, it represented a very considerable factor in the public health problem. At that stage, a very active campaign against typhoid was instituted by the Department of Public Health of the day, and has been continued since.

From 1916 to 1919, the disease, though over-prevalent, was more than halved in its extent.

With the institution from 1921 of more stringent precautions and the better regulation of milk supplies, the disease fell steadily until 1931, in which year it represented the low figure of 10 per 100,000 of the population.

The incidence has never since risen above that figure; in fact there has been a gradual slow fall over the last seven years, and the rate is now eight per 100,000, as will be seen on reference to the graph.

By contrast, the situation with regard to diphtheria still leaves much to be sought.

Diphtheria, unlike typhoid, is a disease in which protection is largely a matter of personal care. Certainly, the activities of the Department in detecting and isolating carriers and insisting upon three swabs from infected children before they are allowed to associate again with their fellows, and the campaigns of swabbing and the excellent work of the School Health Services Branch, have effected material improvements. But immunisation is the secret of control and there is still much to be done in this direction.

The enormous figures for disease implantation from 1912 to 1921 will be observed from the graph, and although there was a very marked fall in 1922 and 1923 (simply because the whole of the available children had been infected in the epidemic of 1921 and no new susceptible stocks had reached school age) the figures from 1925 to 1932 were still distressingly great.

From the time of the introduction of immunisation as a deliberate policy in 1933, there has been a very marked and definite fall. During the *last five years the situation has been more satisfactory than in any previous five-year period on record*, but it can be greatly improved, and the curve is the best indication of that fact. Laxity in continuing the work of immunisation at appropriate intervals may yet mar the picture again.

In spite of this, the results are most encouraging, and the figures for typhoid and diphtheria, both, demonstrate the great improvement that *personal co-operation and municipal co-operation can afford in two very destructive diseases.*

Leptospirosis, Weil's and Paraweil's Disease

Thirteen cases were reported during the year, as against 21 for 1937-38, and 54 for 1936-37. It is not to be taken from this small figure that the disease has been reduced to negligence in those areas in which it commonly occurs. It is a disease subject to periodical recurrence, and the smallness of the number of cases is an indication to local authorities to apply themselves to the extinction of the disease with greater confidence.

It is on these occasions when the disease is at its minimum and rats are best under control that extra measures have their maximum effect.

The specific investigations upon the subject are included in the report on the work of the Section of Microbiology and Pathology, which follows. An interesting point to be observed from that report is that a case of "Pomona" leptospirosis has been recorded from New South Wales, indicating that, although the disease has never been recorded in that State, undoubtedly it occurs there.

Rat Control.—With regard to actual control measures and rat destruction over the last few years, certain figures and particulars up to the conclusion of the cane-cutting season of 1938 are appended.

The general effect of the control operations has been to decrease the rat population very markedly. It has also been confirmed that the rat menace and the leptospirosis problem are associated with particular localities, and sometimes with very restricted areas. Leptospirosis, in fact, is a focal disease.

Cases of leptospirosis have occurred in several instances in the same groups and on the same farms in successive years. They have several times occurred significantly when lowlying ground is being cut, and have usually, but not always, been accompanied by a fairly heavy rat infestation.

It is observed also that the cane is usually of high tonnage and density where infestation is heavy, as is natural enough considering that the cane is the food of the rat.

In every mill area of the sugar cane districts there are bogs and lowlying sections that will require special attention permanently; there are some assigned fields which with advantage could be subjected to burning each year before harvesting, as a routine, or at least could be included in the cutting roster in such a way that they would only be harvested in fine weather after a dry spell.

The inspectors in the fields have made suggestions along these lines to the cane inspectors of the mills.

This Department has established an inspector in charge of all rat control operations during cane harvesting, and has supplied him with six inspectors, who are actively employed during the whole of the season arranging the roster of harvesting, in conjunction with representatives of the mills and of the cutters. The departmental inspectors have been ably assisted by these officers, and also by officers of the pest boards, and their joint activities have resulted in improved and methodical control measures, particularly directed towards the burning-off of rat harbourage upon border lands, gullies, and creek banks, in the first place, and in the second, the laying of large quantities of poison baits when and where required.

In two mill areas—namely, Mulgrave and Babinda—there are no pest boards functioning, and it has been noticed that in these areas infestation and consequential figures for cane areas burnt are correspondingly high. The need for better control in these areas is thereby obvious.

In the Ingham district, where two sugar-mills operate, a working arrangement was arrived at, as the result of which mill inspectors exercised their powers under "The Rat Prevention and Destruction Regulations," in liaison with departmental inspectors. The arrangement was not entirely satisfactory, and a review seems indicated.

Poisoning.—With regard to poisoning measures, wheat treated with *thallium sulphate* appears to be the most popular poison for rat destruction, and since its introduction in the South Johnstone area in 1930, has come into general use, the strength of the poison having been increased from the original ·03 per cent. to the present strength of ·05 per cent. *Phosphorus* is second favourite, but its tendency to oxidise and lose potency militates against its use in wet areas. In the Mourilyan area, the pest board supervisor claims to have evolved a satisfactory method of overcoming this objection—an important point, since the cost of phosphorus is markedly less than that of thallium sulphate. In some areas *strychnine* in corn, fat, and pollard baits is still used to some extent, but principally as a change of bait where repeated poisoning is necessary and where rats become accustomed to phosphorus or thallium.

Poisoning alone unaccompanied by the cleaning of headlands and the destruction of rat harbourage loses much of its value; there is a tendency, to some extent, to rely upon baiting rather than to continue with the effective destruction of lantana bushes and other rat harbourage on lands under the control of local authorities and State departments.

The following tables, illustrative of the work performed in the three years 1936-37-38, are included:—

TABLE VIII.

1938 Season.

Mill Areas.	Area Harvested.	Tons Crushed.	Area Burned.	Tonnage Burned.	Health Risk Burn	
			Acres.		Tons.	Acres.
Johnstone	10,656	265,508	1,738	43,052	6,200	287·4
Goondi	7,429	199,229	1,206	23,700	5,764	238·0
Mourilyan	8,473	180,588	2,000	41,409	5,389	253·0
Babinda	10,200	272,742	1,709	42,327	9,072	378·0
Mulgrave	12,007	251,589	3,888	81,671	43,075	2,805·0
Tully	12,096	291,486	3,496	84,243	7,577	306·0
Victoria	13,054	255,544	4,635	76,608	3,200	638·0
Macknade	11,403	249,540	3,526	60,800	4,008	196·0
Totals	85,318	1,966,226	22,198	453,810	84,285	5,101·4

TABLE IX.

1938 Season.

Mill Areas.	Acres Harvested.	Tonnage Crushed.	Number of Farms.	Number of Groups.	Number of Cutters.	Burn Orders.	
Johnstone	10,656	265,508	250	72	363	58	
Goondi	7,429	199,229	158	33	280	34	
Mourilyan	8,473	180,588	160	64	440	36	
Mulgrave	12,007	251,589	329	125	430	85	
Babinda	10,200	272,742	250	63	413	70	
Tully	12,096	291,486	328	76	522	73	
Victoria	13,054	255,544	298	60	462	13	Mostly by mutual consent
Macknade	11,403	249,520	221	51	466	18	
Totals	85,318	1,966,206	1,994	544	3,376	387	

TABLE X.

TOTAL ACRES HARVESTED AND PERCENTAGE BURNED. HEALTH RISK ONLY.

Mill Areas.	1936.		1937.		1938.	
	Acres Harvested.	Percentage Burned.	Acres Harvested.	Percentage Burned.	Acres Harvested.	Percentage Burned.
Johnstone	11,191	3·8	10,539	3·3	10,656	2·8
Goondi	7,464	1·3	7,461	6·1	7,429	3·5
Mourilyan	8,364	2·16	8,255	4·9	8,473	3·2
Mulgrave	12,500	2·5	12,000	4·6	12,007	9·4
Babinda	10,290	0·006	10,300	5·5	10,200	3·7
Tully	11,680	0·002	11,787	1·16	12,096	2·4
Victoria	General Burning Order.	..	13,087	3·3	13,054	5·0
Macknade	..	..	11,470	3·6	11,403	1·7
Totals	61,489	9·768	84,899	32·46	85,318	31·7

TABLE XI.

ACREAGE INSPECTED AND BURNED AND PERCENTAGE OF ACRES BURNED.

Mill Areas.	1936.			1937.			1938.		
	Acres Inspected.	Per Cent. Burned.	Acres Burned.	Acres Inspected.	Per Cent. Burned.	Acres Burned.	Acres Inspected.	Per Cent. Burned.	Acres Burned.
Johnstone	7,782	5·5	428	3,698	9·0	345	5,533	5·5	308
Goondi	2,478	4·0	101	3,772	12·0	461	5,439	4·7	258
Mourilyan	3,421	5·0	180	4,161	9·7	404	4,834	5·5	270
Mulgrave	5,081	6·0	309	5,177	10·6	550	5,531	20·4	1,130
Babinda	2,410	2·75	68	3,861	14·0	560	4,841	7·8	378
Tully	3,859	0·007	30	2,680	5·0	136	8,622	3·3	289.
Victoria	General Burning Order	..	..	2,010	21·0	429	1,950	33·6	657
Macknade	..	..	..	2,685	15·0	412	3,593	5·4	196
Totals	25,031	23·257	1,116	28,044	96·3	3,297	40,343	86·2	3,486

TABLE XII.

TOTAL BURNING IN ALL AREAS.

Mill Areas.	1936.		1937.		1938.	
	Tonnage Burned.	Per Cent. of Total Burned.	Tonnage Burned.	Per Cent. of Total Burned.	Tonnage Burned.	Per Cent. of Total Burned.
Johnstone	51,477	..	49,912	18·0	43,052	16·2
Goondi	1,802	..	35,206	17·0	23,700	11·9
Mourilyan	2,626	..	51,780	26·0	41,409	22·9
Mulgrave	77,276	..	75,849	24·8	81,671	32·4
Babinda	46,444	..	42,325	16·3	42,327	15·5
Tully	67,015	..	83,323	28·0	84,243	28·9
Victoria	General Burning Order.	..	91,598	29·0	76,608	29·9
Macknade	..	..	82,170	32·0	60,800	24·3
Totals	246,640	..	512,163	23·87 Average	453,810	22·75 Average

TABLE XIII.

ESTIMATED RAT DAMAGE.

(a) *Victoria Mill*— (C.S.R. Mills Only.)

—	Per Cent. of Crop.	Per Cent. of Stalks.	Tonnage Loss.	Baits Used.
1933	3·6	15·0	9,000	..
1934	4·2	15·0	9,500	..
1935	3·2	12·0	7,000	..
1936	0·4	4·0	1,000	600,000
1937	0·4	3·0	1,150	600,000
1938	0·3	3·0	850	510,000
Totals	2·01	8·66 Average.	28,500 Average.	1,710,000

Note.—Thallium Sulphate used last three years.

TABLE XIII.—*continued.*

(*b*) *Macknade Mill*—

—	Per Cent. Rat-eaten Stalks.	Baits Used.
1933	33·0	..
1934	32·8	..
1935	19·2	..
1936	5·3	1,536,000
1937	10·9	3,000,000
1938	10·1	Figures not available.
Six years' Average	18·22	4,536,000

(*c*) *Goondi Mill Area*—

—	Acres Affected.	Tonnage Loss.	Baits Used.
1935	120	80	..
1936	200	160	300,000
1937	400	110	300,000
1938	400	100	300,000
Totals	1,120	450	900,000

TABLE XIV.

Number of Baits Distributed.

—	Mourilyan Area.	Babinda Area.	Mulgrave Area.	Tully Area.	Johnstone Area.
1936	412,937	394,240	341,760	376,000	350,000 Plus Strychnine
1937	1,486,860	430,080	645,120	342,000	681,000 Plus Strychnine
1938	2,000,000	1,496,192	1,433,600	520,800	500,000 Plus Strychnine
Totals	3,899,797	2,320,512	2,420,480	1,238,800	1,531,000

Innisfail District Rainfall.

—	Wet Days.	Rain in Inches.
1933	204	162
1934	191	177
1935	103	122
1936–38	150	126 (Average of three years)

Note.—Exceptionally heavy rainfall during 1933–34 coincided with very heavy rat infestation.

With particular reference to the costs and the difficulties in connection with rat control, the following example from the South Johnstone area, kindly provided by Field Inspector G. Wilson, may be included:—

"Eighteen months of exceptionally wet weather from February, 1933, to July, 1934, coincided with the heaviest rat infestation experienced in South Johnstone in recent years. That period supplies a suitable background, therefore, against which to review subsequent years. The following figures indicate the unusually wet weather of 1933-34.

"The wet period was followed immediately by an exceptionally dry year in 1935, therefore that year is tabulated separately in the following table for comparison.

	Wet Days.	Inches Rain.
1933	204	162
1934	191	177
1935	103	122
1936–38	150	126 (average of three years).

"During 1933-34 the earth was almost always saturated; water in ruts on dirt roads lay so long that bacterial processes took charge, and passing vehicles released from the mud an intensely nauseating effluvium. Ordinary cultivation for the control of weeds was ineffective and farmers resorted to hand-pulling large weeds and laying them on the cane leaves to prevent their regrowth. Weeding was, therefore, confined almost entirely to plant cane; ratoons were left dirty, and headlands were allowed to remain under grass intentionally to prevent erosion. Cane grew rapidly early in the season, so that in February and March the saturated ground was no longer capable of holding it upright and large areas lodged; this may have contributed to the large number of rat bites in the 1934 crop. Rat baits were spattered with mud and soaked with water as soon as laid, and under the circumstances their use seemed wasteful and useless.

"Cane harvested in 1934 was heavily rat-infested. Borers were also plentiful, due probably to lodging. The latter five months of 1934 during the harvesting of the crop contained only slightly over normal the amount of wet days, and this ushered in exceptionally hot dry summer and autumn conditions, which persisted in unusually dry weather throughout 1935.

"Rat infestation in the 1935 crop showed very much less than in 1934. In 1936, a rather wet year resulted in slightly more rat infestation than in 1935, and 1937 and 1938 crops have showed a progressive decline in the amount of rat-infested cane and in the severity of damage in infested fields.

"Since 1935 there has occurred each year during the summer or autumn a very hot dry spell, usually severe enough to cause damage in cane on too well-drained porous hillsides. These dry spells may have been responsible for the progressive decline in rat infestation either by direct effect on the rats or indirectly by permitting the destruction of rat harbourage by firing, the only economical way of dealing with the dense grass which lines most of our gullies. Up to the time of writing, January, 1939, the season has been moist and cool, favourable to the growth of weeds and cane; harbourage has been too green for burning and the regrowth of weeds on headlands has been rapid. In November and December young rats were noticeable among young ratoon cane.

"The following amounts of rat bait have been used since 1933, the period in each case being the financial year of the Board, 1st June-31st May:—

	£	s.	d.
1933–34—			
Thallium Wheat, 103,000 baits	89	11	11
Strychnine mixed by farmers	8	4	8
	97	16	7
1934–35—			
Thallium Wheat } 375,000 baits	250	7	10
Strychnine Wheat } 375,000 baits	144	15	6
Strychnine, corn and fat, 3 tons	221	3	3
	616	6	7
1935–36—			
Thallium Wheat, 330,000 baits	242	14	3
Strychnine corn and fat, 400 lbs.	10	4	2
Bread and phosphorus, 20,000 baits	3	16	5
	256	14	10
1936–37—			
Thallium Wheat, 536,600 baits	394	15	2
Strychnine Wheat, 77,000 baits	72	17	3
Strychnine, corn and fat, 9 cwt.	26	4	11
Bread and phosphorus, 68,000	11	9	6
Experiment (sausages)	2	11	9
	507	18	7
1937–38—			
Thallium Wheat, 500,000 baits	376	10	6
Strychnine, corn and fat, 1 cwt.	4	9	6
	381	0	0

"The following are merely brief notes concerning some lines of experimentation on baiting:—

"*Colour of Wrappers.*—In view of the possible development of machine-wrapping with cellophane, as outlined in the next par, it was considered that, since it would be possible to choose a coloured cellophane, it would be wise to know whether any special colour was more attractive than others. Wheat was wrapped in blue, green, red, yellow, and white cellophane. Red and green were preferred equally to the others, by about 20 per cent. increase in take in red and green; unfortunately these results were reversed in some trials reported verbally by Mr. McDougall—blue and yellow being favourites. The matter is worthy of investigation if the packeting medium lends itself to colour choice.

"*Machine-Wrapping.*—A scheme was outlined in 1936 whereby for a moderate capital outlay (under £2,000) a co-operative bait-manufacturing shed, turning out thallium wheat baits wrapped in transparent cellophane by a machine costing about £900 landed from England, would be capable of supplying all the estimated requirements of North Queensland at a tremendous saving in the cost of the baits, even after paying freight to each district on the finished baits packed in wooden cases.

"The project was put forward at a meeting of the Pests Boards' Conference, but met with little support, and in view of the attitude of the delegates that there is no certainty at any time that the bait in present use is the best or effective at all, the matter was shelved till Mr. McDougall's researches give the writer sufficient light into the efficacy of baiting to determine whether the co-operative effort is worth while. It is worth while pointing out that, in comparison with the then cost of hand-picked baits as bought from proprietary companies by the majority of Boards, the shed proposed would be able to turn out one year's supply at such a saving that the cost of the enterprise would be recovered in the one year, including building and plant costs.

"*Sausage-meat Baits.*—The sausage baits used at one time in Hawaii were tried, and were found to give an increase in take on the first night of exposure from 85 per cent. with thallium-wheat packets to 95 per cent. with sausages, but the sausages were very perishable, were consumed avidly by slugs, and had a potential field life of only one night, and were costly and inconvenient to make, so that the increase in take was obtained at unnecessary expense.

"*Change of Bait.*—Members of the Board and sundry farmers preached the doctrine that bait must be changed in the field to catch rats that were aware of the poison properties of the previously used bait. This was tested on a badly-infested farm where thallium wheat had been used for four years without change. Of five baits laid the thallium wheat was the only one taken at all during the first three nights. The others were—flour and sugar and arsenic; flour, sugar, arsenic, and linseed oil; strychnine, fat, flour, maize; flour, blood, and strychnine, as mixed for dingoes."

I am indebted also to Mr. W. A. McDougall for some careful observations in respect of the species of rats found in cane in North Queensland and their life habits. In a recent paper Mr. McDougall made the following notes:—

"It has been our experience to date that, with traps designed to catch rats on the ground, the following animals may be taken in Northern and Central Queensland canefields and their immediate surroundings:—

Rattus rattus L. (the house rat).
Rattus conatus, Thomas (the field rat).
Rattus culmorum, T. and D.
Rattus assimilis, Gould.
Melomys littoralis, Tonnberg.
Melomys cervinipes, Gould.
Hydromys chrysogaster reginæ, T. and D. (the common water rat).
Xeromys myoides, Thomas (very rare).
Uromys caudimaculatus, Krefft; and
Mus musculus, L. (the common imported mouse).

Thetomys sp., snakes (mostly brown and the black, with an occasional carpet), blue-tongue lizards, bandicoots, native cats, phascogales, curlews, coucals, quails, landrails, and scrub turkeys.

The first nine of these animals are rats, but more than half of them, together with all the others, are of little direct importance in so far as the problem of rat control in canefields is concerned. Some occasionally take rat baits or fill several traps. However, they can be used to illustrate a point. With due regard to the more static environmental factors concerning our canefields, climatic and seasonal conditions, comparative animal populations, dominance of certain species, certain species characteristic to particular districts, it is possible to place these animals into groups.

"When, therefore, a particular canefield (or a number of similarly situated fields), is defined, it should be possible, when sufficient data have been collected, to state what group of animals may inhabit it under specific conditions. Probably this idea could be most simply illustrated to the average farmer with animals other than rats, and it is with this idea in view that we have given a list as above. As examples, he already knows that the scrub turkey may be found in canefields adjacent to scrub and not in those on open forest country; and that the brown and the black snakes and quails are more prevalent in dirty fields or in those with heavily-grassed headlands and surroundings. Again, during the past few years, when rats in cane have been given different names, the observant farmer will have noticed that the house rat is mostly found in cane near farm buildings and human habitations, either occupied or deserted.

"In taking this grouping to the subject of our native rats and its possible effect on rat control in canefields, several stumbling blocks have been encountered. The worst of these has been the correct naming of the rats, which is the chief medium through which we can correlate past and present experiences and scientific data collected by different observers.

"After the first two years' field work on the ecology of cane rats (*i.e.*, studying them in their natural living conditions), it was found that the information so collected did not fit in with past observations as presented to us by the accepted names of our rats.

"During the years 1934 and 1935 rat populations, as is known, were much larger than normal in many coastal districts of Queensland from as far south as Gympie to Mossman in the north. Cane districts such as the Whynabeal areas near Mossman, the Herbert River lands, and the Habana country near Mackay, were overrun by rats. During these years two rats called at that time *R. culmorum* (the field rat) and *Melomys littoralis* were stated to be responsible for practically all damage in all canefields. Over the past three years rat populations in all areas have rapidly decreased. Now we find the field rat and *littoralis* in their much smaller numbers more or less confined either to non-converging colonies of varying sizes and areas or scattered nests. A description of these colonies pictures the more desirable natural living conditions of the field rat. Usually these colonies are in friable and often damp soil capable of providing close ground cover, often termed "harbourage." The habitat of *M. littoralis* or smaller climbing rat known by that name, is, in general, covered by that of the field rat, and in particular by the inclusion of smaller shrubs among the cover.

"During the first year of diminishing rat populations when *littoralis* and the field rat apparently withdrew to much smaller areas, it was found in the Mackay district that blocks of soft canes (N.G. 15 and Pompey) near scrub, *i.e.*, rain forest, still showed severe rat damage, also a practically negligible field-rat population, very little harbourage amongst the surroundings and a population of *Melomys* which had not decreased proportionally as elsewhere. At this stage an attempt was made to trap in virgin rain forest away from cane "harbourage" and the field rat. The Eungella Range, west of Mackay, was selected. Here well-grown adults of *Melomys cervinipes* were found to be the common rat species. It could be taken on the bare forest floor, a place where, to date, it has been impossible to find *littoralis*. During 1937 and 1938 a number of adults and young of *cervinipes* were found to be damaging scrub cane at Habana and Sarina. By checking back on samples of catches made during 1936, when rat-breeding was fairly heavy, it was found that rats identified as *littoralis* from Habana scrub fields were actually young *cervinipes*. Last year, through the courtesy of the Mourilyan Pest Board and the energy of its surpervisor, Mr. Fox, it was possible to check the species of rats damaging cane in the Mourilyan area, in (*a*) a block near scrub, and (*b*) in cane adjoining the "creek harbourage" complex. The rats from (*a*) were *M. cervinipes* and *R. assimilis*, *i.e.*, two members of the scrub group, and those from (*b*) were the field rat and *littoralis*. It is hoped that future work will show *M. cervinipes* to be present and responsible for some of the rat damage to cane in other northern mill areas. It would certainly help to explain several field observations which do not fit into the general scheme of things when it is assumed that the field rat and *littoralis* are the only species present.

"To return to *R. culmorum*. Some time ago, during a visit by the writer to the Ayr district, an attempt was made to inspect *R. culmorum* type localities, *i.e.*, the places where the first rats were caught to be later described and given the name in which we are interested at the moment. It was found that, at the time of the visit these places could not be approached from the landward side, and inquiries made seemed to indicate that the collector of *culmorum* types approached their country in a boat. Evidently they were taken on the greasy, sandy places amongst mangrove creeks and marine swamp. In the Mackay area during the years 1935 and 1936 canegrowing in a similar situation was found to be heavily damaged by rats. These proved to be the well-known field rat and *littoralis*. In these fields, as elsewhere, from 1936 onwards the populations of these species dropped. During 1937 a second native *Rattus* species appeared occasionally. On small plots it was possible to trap out at the rate of 70-100 rats per acre with under 5 per cent. the "new" rat and the rest field rats and *littoralis*. Last year, with the population density graduating downwards from the creek banks, but with the total somewhat similar to that of the previous year, the percentages were reversed—*i.e.*, over 95 per cent. the "new" rat and the remainder an occasional field rat or *littoralis*. This "new" rat, somewhat smaller than the field rat, is the true *R. culmorum*. It damages cane near or in its own environment, but it is not so severe as the well-known field rat, which is now called *Rattus conatus*.

"In concluding this article, which, after all is only a brief sketch of its subject, acknowledgment must be made of the work done on the pure systematics of our cane rats by Mr. Troughton, of the Australian Museum, Sydney. We have submitted to him numerous specimens of the *Rattus* group, which now appears to be in a much more satisfactory condition from the field-workers' point of view than formerly. Up to the present we have not been able to give him full field information and ranges of specimens to allow of a completed work on the *Melomys* group. This is due chiefly to the position of *Melomys* spp. with regards to swamps (of which there are a number near canefields) not being fully understood."

While much yet remains to be done in connection with rat control in North Queensland, and while, moreover, many points both as to their ecology and control are obviously not fully substantiated, and while, further, the question of costs is still under discussion, much progress has been made in the study of a very important matter of public health.

One very pleasing feature has been the entire absence of industrial unrest. The cutters realise that every attempt is being made to ensure their protection by the exercise of the best scientific knowledge to which we have access, and they have not felt it necessary to make application in their own interests to the Industrial Court for several years. The Department accepts this as a tribute to the efforts it has been conscientiously making over a lengthy period.

LEPROSY.

Report on Peel Island Lazaret for 1938-1939.

Medical Officer to Lazaret: D. W. JOHNSON, M.B., B.S.

Matron-in-Charge: A. O'Brien.

On 1st July, 1938, 70 patients were detained at the lazaret, comprising 16 white males, 8 white females, 29 coloured males, and 17 coloured females (see Table XVI.).

During the year, 12 white patients and 10 coloured patients were admitted. Of these, 6 white patients (5 male and 1 female) were readmitted for further treatment; 3 white patients and 1 coloured patient were discharged on parole; 8 patients died, the majority being advanced in years.

At 30th June, 1939, 80 patients remained at the lazaret, namely 21 white males, 9 white females, 30 coloured males, and 20 coloured females. Details of these patients are seen in Table XV.

No important changes have been made in treatment during the year, beyond a tendency to increase the intramuscular dosage of "Alepol." A few injections of pure hydnocarpus oil were given, but the reactions were severe. With the present methods of treatment it is felt that most early cases of leprosy can ultimately be discharged, if the nutrition of the patient is good and there is no complicating disease.

TABLE XV.

RETURN SHOWING PARTICULARS OF LEPERS DETAINED AT PEEL ISLAND, 30TH JUNE, 1939.

No.	Name.	Sex.	Racial Origin.	Occupation.	Admission.			Remarks.
					Date.	Locality.	Age at Date of Admission.	
1	C.S.	M.	Queensland	Tailor	12-8-07	Brisbane	36	Discharged 22-12-14, readmitted 21-5-23, discharged 26-6-36, readmitted 6-7-38.
2	H.C.C.	M.	Queensland	Railway employee	30-10-13	Clermont	29	Discharged 22-12-24, readmitted 7-10-38.
3	M.G.	F.	Queensland	D. D.	10-8-16	Brisbane	20	
4	J.W.	M.	England	Labourer	14-4-17	Townsville	51	Discharged 18-12-22, readmitted 24-6-31.
5	W.K.	M.	Australia		11-3-19	Rockhampton	11	
6	A.H.B.	M.	Queensland	Railway employee	10-11-19	Maryborough	32	Discharged 21-12-25, readmitted 12-10-38
7	E.M.	M.	Aboriginal		16-12-19	Cherbourg	16	
8	S.L.	M.	Aboriginal		6-12-24	Springsure	22	
9	G.D.	M.	Aboriginal		24-3-26	Palm Island	35	
10	E.W.	M.	Aboriginal		5-6-27	Palm Island	15	
11	E.R.K.	M.	Queensland	Farm labourer	6-2-28	Mackay	9	Discharged 27-8-31, readmitted 28-10-38.
12	M.E.P.	F.	Australia	D. D.	22-11-30	Mackay	58	Discharged 18-11-35, readmitted 19-3-37.
13	R.S.	M.	Aboriginal		25-3-31	Palm Island	8	
14	W.J.L.	M.	Queensland		23-10-31	Brisbane	45	Discharged 8-6-36, readmitted 8-6-39.
15	I.S.	F.	Aboriginal		4-11-31	Palm Island	13	
16	W.D.	M.	Aboriginal	Pearler	13-5-32	Mapoon	20	
17	J.D.	F.	Aboriginal		13-5-32	Mapoon	30	
18	E.J.	F.	Aboriginal		13-5-32	Mapoon	27	
19	D.F.	F.	Aboriginal		15-9-32	Woorabinda	7	Discharged 26-3-34, readmitted 3-3-37.
20	L.T.	F.	Aboriginal		1-7-33	Nambour	37	
21	A.A.	M.	Russia	Cane farmer	14-9-33	Tully	35	Discharged 20-11-36, readmitted 9-4-37.
22	M.B.	F.	Aboriginal		5-10-33	Cherbourg	30	
23	R.A.	M.	Aboriginal		9-12-33	Palm Island	18	
24	R.J.	M.	Aboriginal	Labourer	6-7-34	Beaudesert	28	
25	T.J.	M.	Aboriginal		14-7-34	Mapoon	13	
26	E.B.	M.	Aboriginal		14-7-34	Mapoon	28	
27	O.H.	F.	Aboriginal		14-7-34	Mona Mona	20	
28	P.W.	M.	Aboriginal		14-7-34	Mapoon	10	
29	G.P.	M.	Aboriginal		5-1-35	Cooktown	40	
30	W.L.	M.	Queensland		6-3-35	Duaringa	34	
31	L.B.	M.	Aboriginal		23-3-35	Mona Mona	19	
32	K.B.	M.	Aboriginal		26-7-35	Fantome Island	50	
33	J.K.	M.	Aboriginal		26-7-35	Fantome Island	55	
34	T.M.	M.	Aboriginal		26-7-35	Burketown	35	
35	D.M.	M.	Aboriginal		16-8-35	Woorabinda	44	
36	V.L.	F.	Aboriginal		9-10-35	Woorabinda	19	
37	M.L.	F.	Aboriginal		6-12-35	Woorabinda	9	
38	A.B.	M.	England	Labourer	4-1-36	Mackay	38	
39	M.M.	M.	Aboriginal		4-3-36	Woorabinda	36	
40	G.O.	M.	Aboriginal		23-3-36	Palm Island	30	
41	R. McF.	M.	Queensland	Stockman	26-8-36	Nebo	19	
42	E.J.T.	M.	England	Shearer	25-9-36	Rockhampton	46	
43	A.N.	M.	Germany	Farmer	6-11-36	Brisbane	56	
44	E.C.	F.	Aboriginal		6-11-36	Mona Mona	20	
45	J.D.C.	M.	Queensland	Student	6-11-36	Brisbane	21	
46	T.S.	M.	Queensland	Labourer	5-1-37	Bundaberg	33	
47	G.G.B.	M.	Queensland	Clerk	11-1-37	Townsville	19	
48	M.B.	F.	Queensland	D. D.	11-1-37	Townsville	50	Discharged 12-12-38, readmitted 27-6-39.
49	G.A.	M.	England	Grazier	25-1-37	Hughenden	71	
50	P.M.	M.	Aboriginal		26-1-37	Urangan	61	
51	M.F.A.	F.	Queensland	D. D.	16-2-37	Emu Park	31	
52	Z.B.	F.	Aboriginal		10-3-37	Cherbourg	55	
53	E.H.	F.	Aboriginal		9-4-37	Mona Mona	23	
54	R.H.	M.	Aboriginal		9-4-37	Mona Mona	17	
55	M.H.	F.	Aboriginal		9-4-37	Mona Mona	19	
56	A.J.D.	M.	Queensland	Labourer	18-6-37	Rockhampton	40	
57	W.W.	M.	Aboriginal		19-6-37	Mount Isa	24	
58	J.H.	M.	Queensland	Pensioner	16-9-37	Brisbane	80	Formerly of Mackay.
59	D.C.	M.	Aboriginal		9-10-37	Thursday Island	17	
60	E.B.	F.	Aboriginal		13-11-37	Cherbourg	33	
61	A.N.	F.	Aboriginal		30-4-38	Mona Mona	10	
62	F.T.	F.	Aboriginal		30-4-38	Mona Mona	8	
63	N.H.	M.	Aboriginal		30-4-38	Mona Mona	14	
64	G.C.	M.	Aboriginal		30-4-38	Normanton	30	
65	M.M.	F.	Queensland	D. D.	3-5-38	Goondiwindi	39	
66	E.H.	F.	Aboriginal	Mission Girl	16-7-38	Mona Mona	17	
67	J.J.F.	M.	Ireland		30-9-38	Brisbane	65	
68	D.M.	F.	Queensland	D. D.	17-10-38	Babinda	35	
69	B.L.	M.	Aboriginal	Schoolboy	10-12-38	Mona Mona	15	
70	L.B.	F.	Aboriginal		10-12-38	Palm Island	36	
71	N.W.	F.	Aboriginal		10-12-38	Badu Island	24	
72	K.T.	F.	Aboriginal		10-12-38	Mapoon Mission	33	
73	M.L.	F.	England	Housekeeper	5-1-39	Rockhampton	74	
74	J.B.	M.	Queensland	Farm Labourer	12-1-39	Brisbane	25	
75	H.B.	M.	Aboriginal	Station Hand	20-1-39	Fantome Island	60	
76	L.N.	M.	Aboriginal	Farm Labourer	4-2-39	Mona Mona	15	
77	E.L.	M.	Aboriginal	Farm Labourer	4-2-39	Mona Mona	18	
78	R.T.	F.	Aboriginal		4-2-39	Mona Mona	15	
79	S.R.	F.	England		25-5-39	Mackay	69	
80	A.M.H.	F.	England		10-6-39	Townsville	72	

TABLE XVI.

RETURN SHOWING ADMISSIONS, DISCHARGES, &c., OF PATIENTS AT PEEL ISLAND LAZARET FOR THE YEARS 1925–1939.

—	1924-25.	1925-26.	1926-27.	1927-28.	1928-29.	1929-30.	1930-31.	1931-32.	1932-33.	1933-34.	1934-35.	1935-36.	1936-37.	1937-38.	1938-39.
In Lazaret on 1st July—															
White	39	45	42	38	41	32	33	32	31	30	30	24	23	28	24
Coloured	25	27	34	37	36	32	28	25	30	28	30	36	42	46	46
Admitted—															
White	8	7	3	8	4	5	10	6	2	5	2	5	16	8	12
Coloured	9	10	6	2	2	1	5	10	8	6	12	11	9	6	10
Discharged—															
White	2	7	5	4	12	3	7	6	2	3	4	4	8	3	3
Coloured	2	..	1	1	3	1	3	2	3	3	2	2	2	2	1
Died—															
White	..	2	1	1	1	1	4	1	1	2	4	2	3	9	3
Coloured	5	3	11	2	3	4	5	3	7	1	4	3	3	4	5
Remaining in Lazaret on 30th June—															
White—															
Males	29	32	31	32	24	29	27	25	23	24	19	17	22	16	21
Females	16	10	7	9	8	4	5	6	7	6	5	6	6	8	9
Coloured—															
Males	25	30	31	29	26	23	21	22	21	20	27	29	31	29	30
Females	2	4	6	7	6	5	4	8	7	10	9	13	15	17	20
Totals	72	76	75	77	64	61	57	61	58	60	60	65	74	70	80

During the year the diet has been further improved, and all fruit and vegetables are now purchased direct at the markets.

Following the resignation of the superintendent in December, 1938, Sister A. E. O'Brien was appointed matron in charge of the lazaret. As many of the patients are in poor health, the advantages of having a trained nurse resident at the lazaret are obvious.

During the year, a utility truck was purchased and a considerable saving of time has been effected in transporting visitors and stores from the jetty to the lazaret, a distance of approximately two miles. Other improvements, including the installation of electric light and a permanent water supply, are at present in abeyance because of the pending transfer of fifty aboriginal lepers to Fantome Island, North Queensland.

Recreation facilities have been increased during the year. The tennis court has been put in order, and a player-piano has been installed. Books and magazines have been added to the library, and several concert parties have visited the lazaret. A brass band has been organised, and the majority of patients have radio sets. The aim of the Department is to make the lot of the patients as comfortable as is reasonably possible under the circumstances.

The staff, particularly the matron, have given loyal and efficient service, and all have the welfare of the patients at heart.

This brief description of the communicable diseases may now well be followed by the specific sections relating to particular activities, and these again by miscellaneous matters.

In order, these are, firstly, the report of the Section of Public Health Supervision, subdivided into its two great operations—general sanitation, and food and drugs supervision; secondly, the report of the Section of Microbiology and Pathology, which is intimately related to public health supervision, and includes also the departmental researches carried out for the year; thirdly, the Section of Medical Services Supervision, which includes the control of private hospitals; and the general considerations affecting medical services throughout the State. These, in turn, are followed by the reports of the activities of those sections that deal with particular age groups among the population, namely the Section of Infant and Child Welfare, which deals with the child up to school age; the Section of School Health Services, which carries the child up to leaving age; and the Section of Industrial Hygiene, within which the great mass of the population next falls.

Particular diseases of community importance, such as venereal diseases or enthetic diseases, and mental diseases are separately included. Each of these sections is now separately presented in the rotation mentioned above.

SECTION OF PUBLIC HEALTH SUPERVISION.

DEPUTY DIRECTOR-GENERAL: JOHN COFFEY, F.R.C.S. (Edin.), L.R.C.P., D.P.H., L.M. (Rot.), F.R.San.I. (Lond.).

HEALTH OFFICER: ABRAHAM FRYBERG, M.B., B.S., D.P.H., D.T.M.

CHIEF SANITARY INSPECTOR: W. McNEIL.

CHIEF FOOD INSPECTOR: C. M. CATO.

GENERAL SANITATION—Camping Resorts—Plague Precautions—Insect Pests—Water Samples—Inspections—Toowoomba Sub-Office—Rockhampton Sub-Office—Mackay Sub-Office—Townsville Sub-Office—Cairns Sub-Office.

FOOD AND DRUGS—Fish Supply—Milk Supply—Ice Cream and Ices—Spirituous Liquors—General Inspections—Cordials and Fruit Juices—Bakehouses—Bread Standards, &c.—Labelling of Food and Drugs Unsound and Deteriorated Foods and Drugs—Tobacco Leaf—Poisons—Paint—Sampling—Bacteriological Sampling—Visits to Country Centres—Cairns Sub-Office—Townsville Sub-Office—Mackay Sub-Office—Rockhampton Sub-Office—Toowoomba Sub-Office.

GENERAL SANITATION.

It is noted from reports made by the departmental officers, and also from reports submitted each month by local authority inspectors, that a deeper appreciation, and a keener interest is being demonstrated by councils and their officials, and by many public bodies, in matters pertaining to public health, and this is being proved in a practical manner by advancement in—

(a) Sewerage Schemes.

Existing systems are being extended in Brisbane, Toowoomba, and Mackay.

New schemes are in course of construction at Townsville, Rockhampton, Maryborough, Bundaberg, Ipswich, Warwick, Goondiwindi, Qulipie, and Cunnamulla.

Schemes have been approved and are in course of preparation for Charleville, Dalby, and Tully.

Schemes are under consideration for Cairns, Innisfail, Sarina, Winton, and Longreach.

(b) Water Supplies.

Existing schemes are being extended in Herberton, Isisford, Charters Towers, Bundaberg, Rockhampton, Ipswich, Maryborough, Mount Isa, Mareeba, Quilpie, Bowen, Charleville, and Townsville.

New schemes are in course of construction at Stonehenge, Inglewood, Murgon, Texas, Hungerford, and Mungallala.

Schemes approved—Redcliffe and Childers.

Schemes are under consideration for Kingaroy, and Wondai, Townsville (Mount Spec), Gympie, Chinchilla, Clermont, Dirranbandi, Millaa Millaa, Surat, Talwood, Cooktown, Tolga, Malanda, Yungaburra, and Merinda.

Combined schemes are being considered for Southport to Coolangatta; Cairns, Gordonvale, and Edmonton.

Ingham has now a completed scheme in full operation.

Nightsoil Removal and Disposal.

A number of local authorities are not sufficiently alive to the importance of this service, and are apt to relegate it to the background of civic affairs.

It should be recognised that, in the absence of the water carriage system, the conservancy method is *a sewage-disposal system,* and as such its organisation and equipment must be as efficiently operated and supervised in every detail as the water carriage system.

A cheap contract is never a satisfactory one. Something must be sacrificed to make it profitable. Economy must be exercised, but cheapness never.

A number of local authorities omitted to submit their contracts to the Director-General before being finalised, and some councils did not submit their contracts at all. Both are breaches of Regulation 8 of the *Sanitary Conveniences and Nightsoil Disposal Regulations,* 1936. Shire clerks should note that they are held personally responsible, and that contracts which have not received the approval of the Director-General are irregular.

It is pointed out that local authorities have no power to extend contracts without first calling tenders, as required by section 19 (4) of "*The Local Government Act of* 1936."

Refuse Removal and Disposal.

This service may be regarded as the "Cinderella" of the health services. The necessity for prompt and cleanly removal from all premises, and its disposal in a sanitary and controlled manner, is not generally regarded as being essential to a clean and sanitary environment.

Uncovered wagons, irregular and careless collection, the absence of standard refuse bins, badly organised methods of disposal, and, above all, no service at all, are not in keeping with the demands for cleaner and healthier cities and towns.

Well constructed covered wagons, organised and regular collection, the provision of rubbish bins to all premises, and controlled methods of disposal are all essential to meet the requirements of modern sanitation.

Local authorities should note that Regulation 7 (*f*) of the Plague Prevention Regulations, 1937, make the council responsible for providing refuse bins to all premises.

Camping Resorts.

The popularity of camping holidays is increasing every year, thus creating a demand for hygienic and up-to-date accommodation and conditions. The Department has been fully alive to this demand, and for many years has urged local authorities to provide planned and well-laid-out camping reserves, modern sanitary conveniences, and safe water supplies, together with refuse removal, and supervision.

Local authorities are responding in a satisfactory manner to the requests of the Department in this direction, and each year brings an advancement. Many improvements have been carried out during the year in all the seaside resorts, and plans for further extensions in the provision of accommodation, water supply, and shelter sheds are under consideration for many of the resorts from the border to Cairns.

In calculating the number of conveniences necessary the Department has recommended the following as a basis for the guidance of local authorities:—

At camping grounds—

Men: 1, with urinal to every 25.

Women: 1 to every 20.

Picnic grounds—

Men: 1, with urinal to every 60.

Women: 1 to every 50.

The day of the "single unit" convenience, scattered along a beach front, has passed. The modern method is that of grouped conveniences, substantially built and of pleasing design, and with an attendant in charge.

Plague Precautions.

No case of plague in human or rodent has been reported during the year.

The vital spots along the Queensland coast are still kept under supervision, and for this purpose weekly returns of rats caught are received from Brisbane, Gympie, Maryborough, Townsville, Rockhampton, Mackay, Cairns, Bundaberg, and Ipswich.

Rat smears are regularly forwarded to the various laboratories for bacteriological examination.

The total number of rodents destroyed at the abovenamed centres during the year amounted to—Rats, 50,099; mice, 16,839 (see Tables).

Although the State has been clear of plague for a number of years no slackness in any of the precautionary measures can be permitted. In view of the international situation, and the probable neglect in other countries brought about by the unsettled conditions, any carelessness in regard to our own precautions might prove disastrous.

RAT RETURNS—YEAR 1938-39.

Town.	July.	August.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	Totals.
Gympie	19	7	2	4	5	2	1	9	6	5	23	21	104
Maryborough ..	143	164	164	146	136	89	80	187	192	166	222	183	1,872
Ipswich	562	447	489	442	426	226	423	469	394	320	384	404	4,986
Townsville ..	38	64	57	92	64	64	73	70	65	42	60	82	771
Rockhampton ..	246	238	415	402	341	275	244	364	376	222	331	352	3,806
Cairns	32	26	21	11	56	37	40	54	46	27	93	117	560
Mackay	150	71	61	2	96	115	118	85	26	76	101	68	969
Bundaberg ..	57	90	69	87	112	100	92	128	116	78	120	124	1,173
Brisbane ..	2,797	2,541	3,018	3,087	3,694	2,526	2,428	2,994	3,089	2,778	3,507	3,399	35,858
Totals ..	4,044	3,648	4,296	4,273	4,930	3,434	3,499	4,369	4,310	3,714	4,841	4,750	50,099

Grand Total, 50,099.

RAT RETURNS—YEAR 1938-39.

MICE.

Town.	July.	August.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March.	April.	May.	June.	Totals.
Gympie	..	..	..	..	..	..	..	..	..	..	..	..	..
Maryborough ..	9	2	5	6	..	..	6	6	12	1	..	..	47
Ipswich	5,229	1,929	1,181	506	502	312	769	1,174	662	379	477	691	13,811
Townsville ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cairns	17	10	6	11	11	19	15	19	10	14	14	8	154
Mackay	49	97	49	5	28	38	19	60	27	13	75	77	537
Bundaberg ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Brisbane ..	362	217	140	157	149	152	106	211	183	224	193	196	2,290
Totals ..	5,666	2,255	1,381	685	690	521	915	1,470	894	631	759	972	16,839

Grand Total, 16,839.

INSECT PESTS.

Mosquito eradication is being carried out in many centres, with varying success.

The non-success of many campaigns is that they are spasmodic, and not continuous. Nevertheless, much useful and valuable work is being accomplished in the reclamation of low-lying swampy lands, the construction of sewers, drains, and concrete street water-channels, as well as the inspection of premises by local authority health inspectors. These works are all combining to minimise the breeding of mosquitoes in many districts.

Fly infestation in many areas is down to a minimum. This may be attributable to the elimination of stables, due to so many motor vehicles being employed in place of the horse.

WATER SAMPLES.

Two hundred and sixty-nine water sampling outfits, comprising 130 for chemical analysis, and 139 for bacteriological examination were dispatched, collected on return, and delivered to the Department concerned.

These water samples were received from local authorities, public institutions, hospitals, Department of Irrigation, Water Supply and Sewerage, schools, Quarantine Department, Defence Department, and Somerset Dam.

INSPECTIONS.

The following inspections have been carried out by the headquarters staff, under the Health and Local Government Acts:—

—	1st Inspections.	Re-inspections.	Official Calls.	Reports Submitted.	Towns Visited.
Metropolitan area	533	129	169	169	..
Country centres	324	320	60	67	79
Totals	857	449	229	236	79
Grand Total	1,535				

The following inspections have been carried out under the Liquor Act, and reports submitted to the Licensing Commission:—

Area.	1st Inspections.	Re-inspections.	Reports Submitted.
Metropolitan area	178	269	195
Country centres	177	22	180
Totals	355	291	375
Grand Total	646		

The general inspections cover such matters as plague prevention, insect pests, beach and camping conveniences, rubbish tips, sanitary depots, piggeries, dust nuisances, fumes, septic tanks, hairdressers, sewerage, drainage, public conveniences, swimming baths, and miscellaneous nuisances.

Sixteen leper patients were escorted to the lazaret, which number included 6 white patients, 9 coloured patients, and 1 Asiatic.

Chemical and bacteriological samples of liquid from Kedron Brook, and a similar number from the water supply tanks on the Q.G.S. "Otter," were submitted for examination.

Experiments were conducted into the suitability of "peat moss" as a substitute for sawdust as a covering material in nightsoil pans. The experiment did not reveal any advantage over sawdust except that the "peat moss" has greater absorbent powers for moisture.

A sanitary survey of the Tarragindi district of Brisbane was made, and as a result of a recommendation to the Council, this suburb was brought within the scope of the sanitary removal service.

The practicability of installing septic tank systems at schools in unsewered areas was investigated and reports submitted.

In company with the health officer a number of private hospitals were inspected.

Chemical closets were kept under observation and reports on results submitted.

Due to heavy rainfalls in the month of March, sewers in a number of low-lying areas in Brisbane overflowed and created offensive and insanitary conditions, and much inconvenience to the residents in the localities affected. Representations were made to the Council, and action was taken to have these areas cleansed and disinfected.

Complaints were received of odours from beauty parlours and hairdressing salons, and as a consequence a special investigation was made into the construction, position, light, and principally the ventilation of these premises. Samples of hair-waving preparations were obtained and submitted to the Government Analyst.

The shipping front and river walls have been kept under observation, but a resurvey of the whole area has not yet been completed. It was noted that repairs to existing rat-proofed walls are necessary, and that much rat-proofing of the river walls remains to be done. *The first line of defence against plague is a rat-proofed shipping front.*

At the Royal National Association's Showgrounds especial attention was given to the sanitary condition of the accommodation provided during Show week. Inspectors were on duty during day and night sessions, and the departmental staff nurse supervised the ladies' accommodation. Satisfactory mutual co-operation existed between the grounds and departmental staffs, and as a result the sanitary conditions gave no cause for concern during the period of the Show. Additional accommodation, as well as improvements to existing conveniences, are to be considered during the year.

The Woolloongabba Cricket Ground accommodation also came under review, with the result that additional accommodation has been provided.

Licensed premises throughout the State were subjected to recommendations embracing such matters as additions and improvements to sanitary and bathroom accommodation, installation of septic tank systems, cleanliness and furnishing of bedrooms, sewerage and drainage disposal, and general repairs. In a number of instances reconstruction has been recommended. A large number of plans and specifications for alterations and for new hotels have been examined.

The following contracts were submitted for the approval of the Director-General:—

Nightsoil and Refuse Removal (combined).—Alma-Den, Bundaberg, Bribie Island, Bororen, Caboolture, Chinchilla, Cloncurry, Caloundra, Chillagoe, Canungra, Dirranbandi, Gladstone Injune, Jandowae, Landsborough, Longreach, Maleny, Mirani, Miriam Vale, Murgon, Morven, Mount Tambourine, Mount Isa, Nerang, Rosalie, St. George, Talwood, Texas, Winton, Yelarbon.

Nightsoil Removal.—Cleveland, Mitchell, Woodford.

Transfer of Contract.—Beaudesert, Goomeri.

The following By-laws were submitted for the approval of the Director-General:—Brisbane (sewerage ordinances), Bauhinia, Charleville, Gooburrum, Hinchinbrook, Inglewood, Murweh, Noosa, Oakey, Paroo, Quilpie, and Sarina.

Country Centres.—The following is a list of the country centres visited by Departmental officers whose reports and recommendations were forwarded to the Councils concerned for their information and necessary action:—Alexandra Headlands, Bundaberg, Beaudesert (2), Beenleigh, Burleigh Heads, Bilinga, Beerwah, Caboolture, Caloundra (2), Coolangatta (3), Cooroy (2), Currumbin, Esk, Eumundi, Forest Hill, Goomeri, Gympie (2), Gympie Terrace, Gatton, Grantham, Grandchester, Gatton College (2), Helidon, Haigslea, Ipswich, Imbil, Kilcoy, Kingaroy, Kenilworth (2), Laidley, Landsborough, Lowood, Maleny, Marburg, Maroochydore, Miami, Mooloolaba, Mudgeeraba, Murgon, Mulgowie, Nambour (3), Nanango, Nerang, Noosa, Palmwoods, Pomona, Palm Beach, Plainland, Redcliffe (2), Rosewood (2), Roma, Samford (2), Southport (2), Surfers' Paradise, Tewantin, Toogoolawah, Tugun, Tent Hill, Warwick, West Burleigh, Wondai, Woodford, Woombye, Walloon, Yandina.

Three thousand five hundred and eight miles were travelled on these tours of inspection.

An enquiry into sewerage requirements for Coolangatta was conducted by a departmental officer, and a recommendation made that a complete sewerage system was necessary. The Council has taken action in this regard.

The installation of a new septic tank for an hotel at Coolangatta was ordered by the Licensing Commission, on the recommendation of the Department. Three visits were paid for inspection purposes.

Instruction and advice were given on the disposal of septic tank effluent from a new installation at church and convent buildings, Beaudesert.

A sewerage scheme was recommended for the City of Gympie.

Refuse removal services were recommended for Cooroy, Eumundi, Pomona, Yandina, Woombye, Palmwoods, and Woodford.

Proposed new sites for nightsoil depots were inspected at Kenilworth and Nambour. The Nambour depot has long been condemned as unsuitable. The Kenilworth site is for a new service.

The sanitary depot at Eumundi was reported as unsuitable, and council were advised to procure a suitable site.

Two Northern towns were advised to change from the single pan nightsoil service to the duplicate pan service.

The seaside resorts from Southport to Coolangatta, (as also Maroochydore, Mooloolaba, and Alexandra Headlands) were policed during the Easter Holidays. This supervision of public and camp accommodation during the rush period gave every satisfaction in the sanitary control of these places.

Water supply and sewerage disposal were the subjects of inspection along with the Chief Medical Officer of the School Health Services Branch, at the Leslie Wilson Home, Redcliffe. A proposed site at Sandgate was also inspected, and a report submitted.

The sewerage systems and disposal of effluents, and other matters, were inspected and reported on after a visit of an officer with the Director-General to Gatton College.

At Cooroy a piggery which had been the source of complaint of an alleged nuisance for some time was visited, and reported as satisfactory, and the matter finalised.

A survey of the watershed for the proposed domestic water supply scheme for Beenleigh was made. The proposal was not favourably reported on, due to the extensive unprotected gathering area which was subjected to pollution from farm lands, and habitations.

TOOWOOMBA SUB-OFFICE.

Town and Country Inspections—	
Number of Inspections	564
Number of Re-inspections	15
Number of Official calls	83
Total	662
Number of nuisances	79
Number of sanitary conveniences	117
Number of sanitary depots	11
Number of garbage tips	15
Number of visits to Country towns	16
Number of miles travelled—	
By train	935
By motor car	232

During the year sanitation within the Toowoomba sub-office district has been given attention in the manner represented by the details submitted herewith.

The water supply is expected to be considerably improved both in quality and quantity during the coming year. The amplified supply will enable the council to extend the sewerage to other localities.

City of Toowoomba.—The pollution of Gowrie Creek still claims a major portion of attention, and during the period covered by this report a marked improvement was noted in the condition of the watercourse in question. The main sources of pollution have been given adequate attention by the Toowoomba City Council, and this has resulted in the satisfactory correction of the major sewerage matters from the sewerage works at Wetalla and the bacon factory at Willowburn.

Special reports were submitted in connection with inspections made at the construction workers' camp at Coobey Creek, and sewerage nuisances and complaints regarding the cannery works at Finnie, and in all instances reasonable consideration given to relevant representations made by this office.

City of Warwick.—The installation of the city sewerage system is proceeding steadily, and when completed will be the means of correcting the many sewerage imperfections which have been the basis of special adverse reports in the past.

Shire of Stanthorpe.—Several visits of inspection were made to Stanthorpe in connection with a nuisance emanating from the unsatisfactory method of providing for the disposal of the hospital sewerage, which includes septic effluent. Special detailed reports have been submitted and the matter appears to have been satisfactorily adjusted for the meantime.

Shire of Chinchilla.—Sewerage disposal practice at the Chinchilla hotels continues to give cause for serious consideration at this place; *vide* detailed reports submitted from time to time.

Hotel Sanitation.

Number of hotels inspected	89
Number of hotels re-inspected	38
Number of official calls	17
Number of reports	21

Licensing Districts Visited.—Toowoomba, Warwick, Chinchilla, Dalby, Oakey (2), Pittsworth, and Bowenville.

Towns Visited.—Stanthorpe (2), Warwick (2), Dalby (2), Oakey, Chinchilla, Clifton, Allora, Pittsworth.

Inspection duties under the provisions of "*The Liquor Acts of* 1912 *to* 1935" have been undertaken in the usual routine manner at the Toowoomba centres, and as indicated in the tabulated statements herewith. The sewerage disposal problem at the Chinchilla hotels was given considerable detailed consideration. It can be here mentioned that the disadvantages of the retentive nature of the soil formation at Chinchilla is, more or less, common to the greater part of the south-western area of the State, and the numerous sewerage nuisances to be found arising from this source is a clear indication of the urgent call for the installation of town sewerage undertakings in a number of instances.

ROCKHAMPTON SUB-OFFICE.

The year under review has been a busy one. In addition to work performed at headquarters, inspection visits were paid to forty other towns and townships as follows:—Alpha, Anakie, Bajool, Baralaba, Barcaldine, Blackall, Blackwater, Blair Athol, Bluff, Bogantungan, Bouldercombe, Callide, Capella, Clermont, Comet, Cracow, Deeford, Dululu, Emerald, Emu Park, Goovigen, Jambin, Jericho, Keppell Sands, Kokotungo, Longreach, Marmor, Mount Larcom, Mount Morgan, Raglan, Rannes, Rolleston, Rubyvale, Sapphire, Springsure, Thangool, Theodore, Wowan, and Yeppoon. These visits necessitated travelling 5,476 miles by train and car services.

Headquarters.

The existing cleansing services in the Rockhampton area have been maintained by the City Council at the same high standard as previously.

During the year the Department pointed out to the Council its obligations under the "Plague Prevention Regulations of 1937" to provide every occupier of premises with a garbage container. This obligation has not yet been executed, but will no doubt receive attention in the near future. The necessity for such action is emphasised in the small numbers of receptacles containing garbage placed outside premises for collection in some streets, the result being accumulations of garbage on premises, or destruction by burning to the annoyance of neighbours.

The fact that the City Council employs no assistant inspectors to facilitate the work of the city inspector precludes any possibility of systematic house to house inspections being carried out. Consequently, accumulations of garbage, faulty drainage, and other nuisances frequently escape detection until such times as their seriousness gives rise to complaints. This condition has been mentioned in previous reports, and it is hoped that the matter will be taken up by the council. With a population of 30,000 it is to be regretted that its health inspection service has not been augmented.

Dilapidated Houses.—Inspections of dilapidated houses were carried out in conjunction with the city inspector, and many repairs and improvements were effected under orders prepared by the city engineer's department.

Street Water Channelling.—Good progress has been made in the laying-down of concrete street water-channels.

Sewerage Scheme.—Work on the sewerage scheme undertaken by the City Council is rapidly advancing. House branches are completed in almost five of the six sections. Over two thousand connections from baths and sinks have been made, and the length of sewers completed totals ninety odd miles. The pumping station and treatment works are on the eve of completion. Installation of cisterns and lavatory pedestals will be commenced within a short period, and it is expected that the full scheme will be in progressive operation in approximately two months time. Great benefit is already experienced where waste water is no longer discharging on the street channels, and householders are voicing their appreciation.

Water Supply.—In the earlier part of the year some rumours were current to the effect that a certain chemical substance was present in the city water supply, to the detriment of health. On learning of these allegations samples of the water were obtained from reservoirs at Mount Charlton and Athelstane Range, and also from a service tap in the city. The samples were submitted to the Government Analyst and fortunately the rumours proved to be without foundation.

Hotel Sanitation.—A general inspection of hotels in the Rockhampton licensing district was not carried out during the present year, due partly to absence from headquarters when the police received their instructions, and partly to orders from the previous inspection having been served only recently. However many inspections were made of premises where repairs and improvements were in progress. With the advent of the sewerage scheme a considerable improvement in sanitary conditions will be accomplished.

COUNTRY.

Cleansing Services.—Cleansing services in operation at country townships visited were found for the most part to be well conducted.

Blackall.—An inspection of the sanitary depot at Blackall revealed much better conditions than on my previous visit. The appointment of a qualified inspector in the meantime has had beneficial results.

Alpha.—The conducting of the cleansing services at this township was found to be far from satisfactory, due mainly to the appointment of a new employee to carry out the work since the previous visit by the Local Authority's inspector. Recommendations for obtaining better conditions were submitted to head office.

Banana Area.—The numerous townships in this area were inspected, and recommendations submitted for improvements in some of the cleansing services and other matters. The worst conditions in this area were found at Cracow, and the Deputy Director-General called upon the local authority to give effect to the officer's recommendations without delay. A qualified health inspector has been appointed to the area during the year, and improved sanitary conditions may be looked forward to in the future.

Blackall.—A special visit was paid to Blackall in order to report on a complaint alleging that pollution of the Barcoo River was being caused by the discharge of the town sewerage thereto. The complaint proved to be justified, and in reporting to head office the necessity for filtration and purification of the sewerage, which included unfiltered septic tank effluents, was pointed out.

Another special visit was paid to Blackall in connection with the proposed sewerage scheme for the new hospital in course of construction, and certain recommendations were made.

Opportunity was taken to re-inspect the town sewerage, and head office advised that no action in the matter had yet been taken.

Hotel Sanitation.—Reports submitted on hotels in country districts were mostly as the result of my first inspection of these premises, and in the majority of cases would be the first since the present Licensing Commission was formed. Numerous recommendations for repairs and improvements were submitted, and these should ensure improved conditions for the travelling public.

Inspections—	
First inspections	362
Re-inspections	132
Official calls, all duties, made and received	246
Total	740
Analysis of Inspections—	
General sanitary inspections	223
Drainage	65
Houses requiring renovation	20
Rat infestation	8
Sanitary conveniences	32
Garbage dumps	8
Sanitary depots	6
Re-Inspections—	
General	75
Drainage	29
Rat infestation	10
Sanitary conveniences	18
Licensed Premises—	
First inspections	4
Re-inspections	109
Total	113
Reports submitted	4

COUNTRY.

Towns Visited.—Alpha, Anakie, Bajool, Baralaba, Barcaldine, Blackall, Blair Athol, Bogantungan, Boulderoombe, Callide, Capella, Clermont, Cracow, Deeford, Dululu, Emerald, Emu Park, Goovigen, Jambin, Jericho, Keppel Sands, Kokotungo, Longreach, Marmor, Mount Larcom, Mount Morgan, Raglan, Rannes, Rolleston, Rubyvale, Sapphire, Springsure, Thangool, Theodore, Wowan, Yeppoon, Biloela, Bluff, Bundaberg, Comet. No.: 40.

Inspections—	
Garbage depots	13
Sanitary depots	16
Sanitary services	15
General sanitary surveys	15
Drainage (special)	2
Total	61
Reports submitted	61
Licensed Premises—	
First inspections	36
Re-inspections	11
Total	47
Reports submitted	36

MACKAY SUB-OFFICE.

The District Inspector reports:—

The year under review has been one of great progress in Mackay and district. Premises have greatly improved, and many old, out-of-date timber buildings are being demolished, and modern brick and concrete buildings are being erected in their stead.

The sewerage system is in full operation in the main portions of the city, and extensions to other parts are under way.

Main drains and concrete street water channelling have also been constructed, adding to the general advance in the sanitary circumstances of the town.

The nightsoil removal service (which will very soon have outlived its usefulness) is being maintained in good order and condition.

Samples of water from the town supply have been chemically and bacteriologically examined, and reported as being a safe and good supply.

In the country centres the general sanitary conditions are satisfactory.

Fly nuisances were investigated at Merinda and Oonooie, and reports submitted and necessary action taken.

At Dundula the fly nuisance has been reduced to a minimum as the result of action having been taken to have several slaughter-houses thoroughly cleared and cleaned.

Water sampling was carried out on two occasions at Mount Bassett.

Proserpine, Bowen, and Sarina all show advancement in health matters. Sarina is considering a sewerage scheme.

Sladepoint and Eimeo are now serviced by a nightsoil removal contract.

Inspections.

Headquarters District—

First inspections	146
Re-inspections	51
Official calls	45
Total	242

Country Areas—

Number of Towns visited	45	
First inspections		415
Re-inspections		90
Official calls		45
Total		550

Licensed Premises—

—	1st. Inspections.	Re Inspections.	Reports Submitted.
Headquarters District	40	30	26
Country Areas	44	20	44
Totals	84	50	70
Total Inspections	134		

The following areas were visited, inspections carried out, and reports submitted, and matters requiring attention referred to councils concerned:—Bowen, Baker's Creek (2), Ball Bay, Carmila, Calen, Dundula (2), Eimeo (2), Eton, Eungella Finch Hatton, Fairleigh, Glennellan (2), Gargett, Homebush, Ilbilbie, Koumala, Kuttabul, Kolizo, Mount Bassett (3), Mirian, Mount Ossa, Mount Pelion, Mount Jukes, Mirani, Merinda (2), North Eton, Nebo, Netherdale, Ooonooie, Orkabie, Pleystowe, Pinnacle, Proserpine, Queens Beach, Racecourse (3), Range, Retreat, Sarina (4), Seaforth, Seaview, The Leap, Walkerston (2).

TOWNSVILLE SUB-OFFICE.

Inspections.

Headquarters area—

First inspections	239
Re-inspections	253
Official calls	161
Total	653

Country areas—

Number of towns visited	22	
Number of inspections		518
Number of Re-inspections		78
Number of official calls		10
Total		606

Licensed premises—

—	First Inspections.	Re-Inspections.	Reports Submitted.
Headquarters area	89	103	44
Country areas	51	32	51
Totals	130	135	95
Total inspections	265		

Sanitary surveys were carried out at the following towns:—Ayr (3), Balfe's Creek, Brandon (3), Cloncurry (2), Charters Towers, Duchess, Gilliat, Giru (3), Hughenden, Homestead, Home Hill (3), Ingham (3), Julia Creek, Malbon, Maxwellton, Mount Isa (2), Nelia, Nonda, Pentland, Prairie, Richmond, Torrens Creek.

In Townsville the sewerage scheme is progressing, and it is expected that house connections will commence before 1940.

Mount Spec is under consideration as a new source to augment the Townsville water supply.

Immunisation is being continued, and well organised work is meeting with success.

The reclaiming of swampy, low-lying lands is progressing and thus reducing the mosquito-breeding areas.

The Public Estates Improvement Branch, Lands Department, is carrying out large scale reclamation work and drainage in Kissing Point area.

The sanitary services continue to be satisfactorily operated.

Two visits were made to Mount Isa in connection with sewerage and extensive alterations to the two hotels.

The necessity for a sewer and proper disposal is urgently required, especially for the business section, in which the two hotels are located.

The water supply has been augmented by a bore sunk near the bank of the Leichhardt River.

The disposal of hospital sewerage is under consideration by the Department of Public Works.

The Ayr water supply, which is drawn from shallow wells, is a cause of concern. A reticulated domestic supply is urgently required. Ayr is a progressive town, and as the population increases, the pollution of the water supply increases in proportion. It is not economic to expend money on a polluted supply, which is the practice at the present time by owners of property. Ayr is probably the only progressive town in the State in which the hotels, boarding-houses, business premises, and private places, are not permitted to install modern sewerage apparatus, and in this respect this go-ahead town is out-of-date, due to the absence of modern services.

The sanitary conditions at Charters Towers are considered satisfactory. The essential services are being well maintained.

Improvement in the town water supply is in progress, under the direction of the Irrigation, Water Supply, and Sewerage Department.

Hotel sewerage, and its disposal have been the chief sources of trouble at Hughenden. Action has been taken, on the Department's recommendations, for many improvements in this direction. Tenders have now been called for the necessary work.

CAIRNS SUB-OFFICE.

Headquarters Area.

First inspections	21
Re-inspections	6
Official calls	15
Total	42

In addition to the above, inspections were made in regard to drainage, garbage, and sanitary conveniences at each of 102 food premises visited in Cairns during the period.

Analysis of inspections—	
Drainage	5
Garbage	4
Private hospitals	3
Sanitary conveniences	6
Swampy lands	3
Licensed premises—	
First inspections	21
Re-inspections	10
Total	31

Country Areas.

Number of towns visited	35
Number of inspections	59
No. of re-inspections	11
Number of official calls	14
Total	84

In addition to the above, inspections were made in respect of drainage, garbage, and sanitary conveniences at each of 244 food premises visited during this period.

Analysis of inspections—	
Accumulations of rubbish	12
Drainage	12
Garbage disposal depots	13
Sanitary depots	20
Swampy land, &c.	2
Licensed premises—	
First inspections	56
Re-inspections	..
Total	56
Total number of inspections apart from routine inspections at food premises	213

HEADQUARTERS GENERAL.

Sanitary matters generally in Cairns are reasonably good with the exception of the nuisance caused by the discharge of septic tank effluents into the street water channels. This is receiving the attention of the local authority and certain proposals under consideration by it should have the effect of minimising, if not entirely eliminating the nuisance. However, the permanent solution of all drainage problems in Cairns is the installation of sewerage. The local authority is preparing estimates for this work and should be in a position to proceed with the installation of sewerage in the near future.

COUNTRY GENERAL.

Since my arrival in this district, I have been able to travel over a fair share of the district, and wish to report that, in the main, sanitary matters are reasonably good. Where defects have been noted, they have been brought under the notice of the respective local authorities for rectification. The worst portions of the area in regard to sanitation are those where low revenues and high cost of travel in sparsely populated areas have precluded the appointment of qualified inspectors. This is to be regretted as sanitary matters are apt to receive scant attention in the absence of periodical inspections. The local authorities in these areas should make every effort to protect the health of residents by strict enforcement of all health regulations.

Towns Visited.—Almaden, Atherton, Babinda, Chillagoe, Dimbulah, Edmonton, Einasleigh, El Arish, Feluga, Fishery Falls, Forsayth, Garradunga, Gordonvale, Herberton, Innisfail, Kairi, Kidston, Kulara, Kuranda, Lappa, Malanda, Mareeba, Millaa Millaa, Mount Garnet, Mount Molloy, Mount Surprise, Peeramon, Ravenshoe, Silkwood, Tarzali, Tolga, Tully, Yungaburra, Mossman, and Port Douglas.

Miles travelled—	
By rail	2,327
By car, &c.	323
Total	2,650

FOOD AND DRUGS.

During the fiscal year 1938-39 the work of this Division has continued upon the usual lines, and has consisted in the enforcement in the Brisbane metropolitan area and throughout the entire State of the provisions of Part IV. of the Health Act (Food and Drugs), the Food and Drug Regulations, Milksellers' Regulations, Health (Food Supply) Regulations, Poisons Regulations, and Footwear Regulations.

Inspection of premises, wholesale and retail, and of contained stocks, was conducted, and liquor-testing, bread-weighing, and milk and food sampling were carried out, in town and country areas.

Fish Supply.

The control of the city fish supply has rested in the hands of two full-time inspectors, who have attended early morning and midday sales at the Fish Market, visited wholesale and retail fishmongers' premises and fishshops, and examined on board ship and on the wharves consignments of cured fish arriving in the port of Brisbane from overseas.

These two officers, between them, have, during the period under review, condemned as unfit for human consumption 43 tons 8 cwt. 0 qr. 13 lb. of assorted fish, besides which there were condemned upon arrival at the Fish Market 7 cwt. 2 qr. 1 lb. of prawns, 1,166 crabs, and 2 turtles. Five kegs of salt herrings from overseas were also condemned as unfit for food of man.

Milk Supply.

The supervision of milk supplies for human consumption, in so far as the application of the provisions of "*The Health Act of* 1937" and Regulations thereunder extend, has been given the usual vigilant attention throughout the year, and a reasonably good compliance with the Department's requirements in such regard maintained in all phases of the work.

Bacteriological.—The number of legal milk samples obtained for the purpose of bacteriological examination was 407, and these represented samples of every type of milk, including pasteurised milk and "milk from a certified dairy."

In the main, samples conformed to the standard for bacteria content. Where samples fell below this standard, the dairyman concerned was given the necessary advice for the rectification of the fault. Continued failure on the part of the offender to improve his supply was met by prosecution for a breach of the Health Act.

Chemical.—During the year a total of 2,199 samples was obtained by the headquarters staff for chemical analysis. These were obtained in Brisbane and suburbs, Bundaberg, Birkdale, Burleigh Heads, Caboolture, Coolangatta, Currumbin, Cleveland, Dayboro', Gympie, Goodna, Ipswich, Manly, Maryborough, Merrimac, Redcliffe, Rosewood, Sandgate, Southport, Tugun, and Wynnum.

The quality of this milk is fully dealt with in the report of the Government Analyst.

Pasteurised Milk.—Particular attention has been given to the bottling and sale of pasteurised milk. The different phases of the methods in vogue at the respective pasteurised milk premises and the bottle-washing system were investigated and defects found duly corrected, so that, at the present time, the bacterial quality of this class of milk complies with the statutory standards.

Special Investigation.—A number of samples of milk purchased at city milk-bars were found to be either abnormal in their milk constituents or to contain excess water. Upon the sellers declaring that they had in no way tampered with the product, a special investigation of the methods adopted in milk-bars and refreshment-rooms in the storage and handling of milk revealed the fact that, owing to the low temperature of the refrigerators used, the milk stored therein was frequently partially frozen. From these refrigerators the milk was sold direct to the public without first allowing it to thaw out and be thoroughly mixed by agitation. The proprietors of these establishments were advised to regulate the temperature of their refrigerators to a point above freezing to prevent any undue separation of the milk-solids.

As a result of this investigation, it is expected that the existing law will be amended to prohibit the lowering of milk to any temperature below 34 deg. F.

Premises and Vehicles.—During the period under review the Milksellers' Regulations were amended to provide a specification for a better type of vehicle used in the retail sale of milk. The application of this law has already resulted in much improvement being secured in the construction of vehicles and in the protection of delivery taps from contamination by dust and flies.

Licensing of Vendors.—The application of Section 115 of the Health Act (which requires all persons selling milk to be licensed and their premises registered) was extended to include the areas of the cities of Gympie, Bundaberg, and Maryborough, and the Shires of Caboolture, Coomera, Kilcoy, Landsborough, Maroochy, Moreton, Normanby, Rosewood, Stanthorpe, and Tingalpa.

Prosecutions.—Prosecution of a number of milk-vendors during the year was found necessary, and details of these cases are shown in the following tables:—

Prosecutions for Adulterated Milk (Added Water) for Year 1938-39 (Headquarters).

Date.	Place.	Added Water.	Fines.	Costs.
		Per cent.	£ s. d.	£ s. d.
1938—				
14th July	Brisbane	17·3	17 0 0	1 7 0
25th August	Southport	4·5	5 0 0	2 8 0
8th September	Brisbane	12·7	12 0 0	1 7 0
14th September	Brisbane	18·2	18 0 0	1 7 0
10th November	Ipswich	10·9	10 0 0	1 7 0
15th November	Brisbane	7·6	7 0 0	1 1 0
25th November	Brisbane	16·4	16 0 0	3 9 0
1939—				
6th January	Brisbane	40·0	20 0 0	3 8 0
15th January	Brisbane	8·0	8 0 0	1 7 0
7th March	Brisbane	9·0	9 0 0	1 7 0
13th April	Brisbane	12·7	12 0 0	1 7 0
18th May	Brisbane	16·3	16 0 0	1 7 0
26th May	Coolangatta	9·1	9 0 0	1 7 0
Totals			£159 0 0	£22 9 0

Prosecutions for Adulterated Milk (Excess Bacteria) for Year 1938-39.

Date.	Place.	Micro-organisms per Cubic Centimetre.	Fines.	Costs.
			£ s. d.	£ s. d.
1938—				
29th November	Brisbane	5,660,000	5 0 0	2 8 0
29th November	Brisbane	3,224,000	3 0 0	2 8 0
8th December	Brisbane	5,204,000	3 0 0	2 8 0
1939—				
18th May	Brisbane	4,162,000	2 0 0	2 8 0
18th May	Brisbane	11,925,000	2 0 0	2 8 0
Totals			£15 0 0	£12 0 0

Prosecutions for Fat Deficiency.

Date.	Place.	Percentage.	Fines.	Costs.
		Per cent.	£ s. d.	£ s. d.
1938—				
8th October	Brisbane	36·3	5 0 0	1 7 0
1939—				
2nd March	Brisbane	42·4	3 0 0	1 7 0
21st March	Brisbane	45·4	3 0 0	1 7 0
13th April	Brisbane	21·2	3 0 0	1 7 0
			£14 0 0	£5 8 0

MISCELLANEOUS PROSECUTIONS AGAINST MILKSELLERS BY HEADQUARTERS STAFF FOR YEAR 1938-39.

Date.	Place.	Nature of Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1938—				
30th August	Brisbane	Use of unregistered premises	2 0 0	0 6 0
30th August	Brisbane	Use of unregistered premises	2 0 0	0 6 0
30th August	Brisbane	Use of unregistered premises	2 0 0	0 6 0
14th September	Brisbane	Sale of milk without license	..	0 6 0
4th October	Brisbane	Use of unregistered premises	3 0 0	0 6 0
4th October	Brisbane	Use of unregistered premises	3 0 0	0 6 0
7th November	Brisbane	Sale of milk without license	..	0 6 0
10th November	Brisbane	Sale of milk without license	3 0 0	0 6 0
10th November	Brisbane	Improper vehicle	5 0 0	0 6 0
11th November	Ipswich	Utensils exposed to flies and dust	2 0 0	0 6 0
11th November	Ipswich	Bottling milk by hand	2 0 0	0 6 0
24th November	Southport	Exposed to flies, &c.	2 0 0	0 6 0
24th November	Southport	Use of unregistered premises	1 0 0	0 6 0
25th November	Coolangatta	Use of unregistered premises	2 0 0	0 6 0
29th November	Brisbane	Sale of milk without license	2 0 0	0 6 0
30th November	Brisbane	Sale of milk without license	0 5 0	0 6 0
1939—				
19th January	Brisbane	Sale of milk without license	3 0 0	..
17th April	Bundaberg	Handling milk in exposed place	2 10 0	0 6 0
20th April	Brisbane	Name and address not displayed	1 0 0	0 6 0
26th May	Coolangatta	Sale of milk without license	0 10 0	0 6 0
29th June	Brisbane	Uncleaned cans	1 0 0	..
29th June	Brisbane	Use of unapproved depot	2 0 0	..
Totals	..	..	£41 5 0	£5 14 0

ICE-CREAM AND ICES.

The manufacture and sale of ice-cream and flavoured ices received special attention during the period under review. A number of sites for the erection of factories was approved, and much improvement in the conduct of the factories generally has been secured. Samples of ice-cream and ices were secured for both chemical and bacteriological analyses, and in a number of cases where manufacturers failed to conform to the legal standards their prosecution ensued. The result of legal proceedings thus taken are given in the following table:—

PROSECUTIONS OF ICE-CREAM MANUFACTURERS FOR YEAR 1938-39 (HEADQUARTERS).

Date.	Place.	Nature of Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1939—				
17th April	Bundaberg	Use of unsuitable premises	2 10 0	0 6 0
8th June	Brisbane	Sale of ice-cream containing excess bacteria (5,724,000 micro-organisms per c.c.)	2 0 0	2 2 0
8th June	Brisbane	Sale of ice-cream 4·3 per cent. deficient in fat	1 0 0	1 1 0
22nd June	Brisbane	Sale of ice-cream 4·7 per cent. deficient in fat	1 0 0	1 7 0
22nd June	Brisbane	Excess bacteria (2,014,000 micro-organisms per c.c.)	1 0 0	2 7 0
			£7 10 0	£7 3 0

SPIRITUOUS LIQUORS.

Hotel bars, clubs, wine-shops, &c., were visited and all liquors offered for sale tested or sampled. Wines were found to conform to the standard of the Food and Drug Regulations, and in practically every instance spirits contained the requisite alcoholic content. The practice of refilling proprietary spirit bottles with a spirit of another distiller still exists to a small extent, and in this regard it was found necessary to institute proceedings against two Brisbane hotelkeepers for having offered for sale spirits that were not "true to label," particulars of which are shown below:—

PROSECUTIONS OF LICENSED VICTUALLERS FOR 1938-39 (HEADQUARTERS).

Date.	Place.	Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1938—				
29th November	Brisbane	Rum (falsely described)	10 0 0	0 6 0
6th December	Brisbane	Rum (falsely described)	5 0 0	0 6 0
			£15 0 0	£0 12 0

General Inspection.

Inspections carried out by officers of headquarters staff have included visits to warehouses, general stores, bakehouses, butcheries, beverage factories, food factories, hotels, refreshment-rooms, restaurants, chemists' shops, auction marts, pie-stalls, showgrounds, and racecourses.

Steady improvement in the construction and conduct of public eating places has been secured, and this applies particularly to sports and showgrounds. As a result of the representations of this Department's officers, much money has been spent by the Queensland Cricket Association in providing hygienic methods of preparing and serving food to the public. Improvements have likewise been secured at the Royal National Exhibition, and, in addition, the Queensland Turf Club has installed a modern refreshment-room and servery in its St. Leger enclosure, thus abolishing conditions that were unsatisfactory.

Cordials and Fruit-juices.

Non-alcoholic beverages have received attention from time to time. Samples of cordials and fruit-drinks were obtained for analysis, and in a few instances these were found not to contain the required quantity of fruit-juice. In such instances it was almost invariably found that the manufacturer had been misled as to the nature of the "fruit-juice" received by him from his wholesale supplier. Such juices described as "fruit-juice" or "concentrated fruit-juice" were discovered upon analysis to consist of fruit-juice diluted with added water. The matter of the proper description of such diluted juices was taken up with the Southern suppliers, and, as a result it is anticipated that future consignments to this State will be correctly labelled.

Bakehouses.

The greater portion of the bakehouses in the Brisbane metropolitan area were inspected during the year, and in some instances structural improvements were secured.

Bread Standards, &c.

New standards for wholemeal, brown, and white bread were gazetted during the period under review. Standards were also provided for loaves described as milk, germ, raisin, currant, sultana, or diabetic bread. The new standards are acceptable to the trade, and a general improvement in the quality of bread of all classes and its correct designation is now anticipated.

The weight of bread was checked systematically by the headquarters staff, but, although warnings were given where loaves were found to be slightly under weight, no shortage was evidenced that called for the prosecution of the offender.

Labelling of Food and Drugs.

An important amendment of the labelling laws relating to the sale of food and drugs was brought about by "*The Health Act of* 1937." By this enactment all guarantees registered in the office of the Director-General and all serial numbers allotted to manufacturers were abolished as from the 1st July, 1938. For administrative purposes, the time allowed for manufactures to conform to the new conditions was extended to the 1st July, 1939. The label of any food or drug must not now bear any guarantee or serial number, nor be labelled in any manner that indicates or suggests that the article is guaranteed under the Health Act. Many labels of foods and drugs have been brought into compliance with the new requirements, and there is every indication that packers all over Australia are coming into line in this respect.

Unsound and Deteriorated Foods and Drugs.

Arising out of inspections by the headquarters staff, deteriorated and unsound food material of a total weight of 5 tons 5 cwt. 3 qr. 12 lb. has been withdrawn from sale, in addition to which a quantity of patent medicines, cigarettes, &c., has been destroyed under supervision.

Objection was taken to a shipment of canned meats on the grounds that the large number of "blown" cans present indicated that the remainder were unsafe, and the owners were not permitted to offer the food for sale in this State.

Tobacco Leaf.

Supervision over the sale of tobacco leaf was maintained, and 1,783 samples were secured and submitted to the Government Analyst. As a result, a number of growers were communicated with and advised of the necessity of exercising every care in the use of arsenic as an insecticide, and reminded that continued use of excessive quantities of this poison would result in their crop of leaf being seized and destroyed as being unfit for manufacture into smoking tobacco.

Poisons.

The sale of poisons and dangerous drugs has been supervised as in past years. This work has entailed the inspection of warehouses, chemists' shops, and premises of licensed poison dealers, and stocks found therein, and the checking of records kept at such premises. A chemist was successfully prosecuted for having sold a dangerous drug without the prescription of a medical practitioner. Results of proceedings for various offences are given below:—

Poisons Prosecutions for Year 1938-39 (Headquarters.)

Date.	Place.	Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1938—				
20th September ..	Brisbane ..	Possession of dangerous drugs	50 0 0	0 6 0
22nd December ..	Brisbane ..	Sale of cocaine without doctor's prescription	15 0 0	..
22nd December ..	Brisbane ..	Sale of cocaine without doctor's prescription	15 0 0	..
1939—				
23rd January ..	Home Hill ..	No poisons license	4 0 0	0 9 0
23rd January ..	Home Hill ..	Poison in food container	4 0 0	0 9 0
11th May	Brisbane ..	Sale of ergot without doctor's prescription	10 0 0	11 18 6
			£98 0 0	£13 2 6

Paint.

"*The Health Act of* 1937" requires that paint containing more than 5 per cent. soluble lead shall not be placed on any exterior part of premises accessible to children, nor on any gate or fence. Two hundred and forty-one samples of paint were obtained from painters engaged in decorating premises in the metropolitan area, and, of these, 19 were found upon analysis to contain soluble lead in excess of 5 per cent. In each case suitable action was taken to have the offending paint removed, and to warn the painter responsible that any similar lapse on his part in the future would lead to his prosecution.

Sampling.

A total of 7,171 samples of foods, drugs, and poisons was obtained by our officers during the year and submitted to the Government Chemical Laboratory for examination. These samples include: Beer and stout, beverages and cordials, bread, cakes, cereals, clay (modelling), cocoa, coffee, chutney, condiments, confectionery, crayons, disinfectant, drugs and medicines, essences, fish (fresh, preserved, and canned), jelly crystals, meat (fresh and canned), milk, milk preparations, paint, soap, spirituous liquor, tobacco, tobacco leaf, toilet preparations, toys, vegetables.

Bacteriological Sampling.

One thousand one hundred and seventy-two specimens, including the following articles, were collected and submitted by headquarters inspectors to the Director of the Laboratory of Microbiology for examination, viz.:—Bottles (sterility), chaff, disinfectants, ice-cream, liquid soap, milk, oatmeal, tooth brushes, tooth pastes.

Visits to Country Centres.

Outside of the Brisbane metropolitan area, officers of the headquarters staff have paid visits of inspection to the following places:—Alexandra Headland, Beerwah, Bilinga, Bundaberg, Burleigh, Caboolture, Caloundra, Chinchilla, Coolangatta, Cooran, Cooroy, Currumbin, Eumundi, Forest Hill, Gatton, Grandchester, Grantham, Gympie, Gympie Terrace, Haigslea, Helidon, Kilcoy, Laidley, Landsborough, Maleny, Marburg, Maroochydore, Maryborough, Miami, Mooloolah, Mooloolaba, Mudgeeraba, Mulgowie, Palm Beach, Palmwoods, Plainlands, Pomona, Roma, Rosewood, Southport, Surfers' Paradise, Tent Hill, Tewantin, Tugun, Walloon, West Burleigh, Woodford, Woombye, Yandina.

Cairns.

The officer in charge of the Cairns sub-office, reports that, apart from his duties in that city, visits of inspection were made to the following country centres:—Almaden, Atherton, Babinda, Chillagoe, Dimbulah, Edmonton, Einasleigh, El Arish, Feluga, Fishery Falls, Forsayth, Garradunga, Gordonvale, Herberton, Innisfail, Kairi, Kidston, Kulara, Kuranda, Lappa, Malanda, Mareeba, Millaa Millaa, Mossman, Mount Garnet, Mount Molloy, Mount Surprise, Peeramon, Port Douglas, Ravenshoe, Silkwood, Tarzali, Tolga, Tully, and Yungaburra.

Milk Supply.—Eighteen samples of milk were submitted for analysis, and, with the exception of one, were found to conform to the legal standard. One sample was adulterated with added water (6·3 per cent.), and the vendor was duly convicted for a breach of the Health Act and fined £6 and ordered to pay £1 7s. costs.

Bakehouses.—Bakeries were visited, and, where necessary, structural improvements secured. The weighing of bread was undertaken in the different centres, and two prosecutions for baking bread which was short-weight are pending.

Unsound Foods.—Quantities of perished or unsound articles of food were from time to time certified to as unfit for human consumption, and their destruction secured.

Fifteen cases of crab meat packed in glass containers were discarded owing to decomposition in a large proportion of the consignment. By arrangement with the Customs authorities, the owners were permitted to return the fish to its place of origin outside the Commonwealth of Australia.

Fruit and Vegetables.—A careful check was kept on the sale of fruit and vegetables to ensure that no contaminated lots were offered for sale. During the year fifty cases of apples were required to be freed of an arsenical spray residue before the fruit was allowed to be sold to the public.

Tobacco Leaf.—Some 216 samples of tobacco leaf offered for sale at Mareeba and Dimbulah were submitted for analysis, and, whilst the tolerance quantity of arsenic was not exceeded in any sample, some growers were advised that efforts should be made to further decrease the quantity of this poison on leaves marketed.

Spirituous Liquors.—Liquors sold in hotel bars were systematically tested for their alcoholic strength. The only trouble experienced was in the purchase by hotelkeepers of brandies from a Southern State where this spirit is packed at a lower strength than the Health Act allows in Queensland.

Poisons.—Inspections under the Poisons Regulations were carried out throughout Cairns and district. The failure on the part of chemists to keep proper records of dangerous drugs was in evidence, and warnings were given against any similar lapse by defaulters in the future.

Townsville.

The officer in charge of this sub-office reports as follows for the year under review:—

Outside the city of Townsville the following towns were visited, viz.:—Ayr, Balfe's Creek, Brandon, Charters Towers, Cloncurry, Gilliat, Giru, Duchess, Home Hill, Homestead, Hughenden, Ingham, Julia Creek, Malbon, Maxwelton, Mount Isa, Nelia, Nonda, Pentland, Prairie, Richmond, and Torrens Creek.

General Inspections.—Inspection of the following classes of premises and stocks therein was carried out:—Cafés milk-bars, milk depôts, warehouses, food stores, auction marts, bakehouses, ice-cream factories, aerated water and cordial factories, ice-works, chemists, and hotels.

Unsound Foodstuffs.—During the year some 7 cwt. 2 qr. 14 lb. of assorted articles of food were certified to as unfit for food for human consumption. These articles were subsequently destroyed.

Bread.—Bakehouses were systematically visited and bread weighed. As a result of these visits, three bakers were proceeded against for having baked bread which was deficient in its due weight; a conviction was secured in each case, and the presiding police magistrate imposed fines and expenses totalling £14 1s. 6d.

Spirituous Liquors.—Hotel premises received special attention, and spirits exposed for sale were tested for alcoholic content.

Mackay.

The work of food and drug inspection has been energetically continued during the year in Mackay and surrounding districts, visits also being paid to Baker's Creek, Ball Bay, Bowen, Calen, Carmila, Dundalla, Eimeo, Eton, Eungella, Farleigh, Finch Hatton, Gargett, Glenella, Homebush, Ilbilbie, Kolijo, Koumala, Kuttabul, Marian, Merinda, Mirani, Mount Bassett, Mount Jukes, Mount Ossa, Mount Pelion, Netherdale, North Eton, Oonooie, Orkabie, Pinnacle, Pleystowe, Proserpine, Queen's Beach, Racecourse, Range, Retreat, Sarina, Seaforth, Seaview, Slade Point, The Leap, and Walkerston.

Milk Supply.—Ninety-one samples of milk were submitted for analysis, and one was found to be adulterated with added water. Action in this case is now pending.

Minced Meat.—Samples of minced meat were secured from retail butchers in Mackay, and a number of these were found to be adulterated with the addition of a preservative substance (sulphur dioxide). Legal proceedings were taken against the offenders, and the fines inflicted by the police magistrate are shown in the following table:—

Prosecutions (Mackay Sub-office).

Date.	Place.	Complaint.	Fines.	Costs.
			£ s. d.	£ s. d.
1939—				
20th May	Mackay ..	Minced meat adulterated with 9 grains SO^2 per pound	0 10 0	2 17 0
20th May	Mackay ..	Minced meat adulterated with 9 grains SO^2 per pound	0 10 0	1 7 0
20th May	Mackay ..	Minced meat adulterated with 9·6 grains SO^2 per pound	Nil	1 7 0
20th May	Mackay ..	Minced meat adulterated with 4·6 grains SO^2 per pound	0 10 0	1 7 0
20th May	Mackay ..	Minced meat adulterated with 5·3 grains SO^2 per pound	0 10 0	1 7 0
20th May	Mackay ..	Minced meat adulterated with 6·8 grains SO^2 per pound	0 10 0	1 19 0
20th May	Mackay ..	Minced meat adulterated with 8·9 grains SO^2 per pound	0 10 0	1 13 0
Totals ..	..	..	£3 0 0	£11 17 0

Unsound Food.—Ten tons 10 cwt. 2 qr. 16 lb. of deteriorated and unsound food material was destroyed under the supervision of the Department's officer as unfit for human consumption during the period under review. The list of articles so destroyed included fruit, vegetables, ham, bacon, fish (fresh, smoked, salted, and canned), jam, preserves, and cooked meat.

Paint.—With a view to ascertaining whether painters were observing the provisions of the Health Act which prohibit the application of paint containing more than 5 per cent. soluble lead to premises accessible to children, samples of paint were secured and submitted for analysis. In a case where a painter was found to have applied paint in contravention of the Act, he was required to remove the offending paint to the satisfaction of this Department's officer.

Rockhampton.

The officer in charge of the Department's sub-office at Rockhampton reports that the usual careful attention was, during the entire year, given to the various food-manufacturing and food-handling businesses in that city, and at the various country centres in his area which were visited during the year.

Outside of Rockhampton the following towns were visited, viz.:—Bajool, Banana, Baralaba, Barcaldine, Biloela, Blackall, Bouldercombe, Callide, Cracow, Deeford, Dululu, Emu Park, Goovigen, Jambin, Keppel Sands, Longreach, Mount Larcom, Mount Morgan, Raglan, Rannes, Thangool, Theodore, Wowan, and Yeppoon.

Milk Supply.—Special attention was given to the milk sold in Rockhampton and other centres visited and the 136 samples obtained for analysis were from the following places:—Rockhampton, 101; Barcaldine, 5; Blackall, 3; Biloela, 2; Clermont, 3; Cracow, 4; Emu Park, 2; Longreach, 5; Yeppoon, 11.

Prosecutions were instituted against six vendors for having sold milk adulterated with added water, and other prosecutions were taken for various offences, which cases are enumerated in the table shown below.

Milk Vehicles.—With the advent of new Milksellers' Regulations, prompt action was taken to see that the retail milk delivery vehicles were properly constructed and that the taps of milk-vessels were protected from contamination by flies and dust. Owing to the type of the vehicle that has been in use in Rockhampton for many years being unsatisfactory, it will be some little time before all these may be expected to fully conform to the requirements of the Regulations.

Bread.—Bakehouses in the city area have been visited frequently, with beneficial results. One bakehouse considered to be unsuitable for use as such was closed by the owner. In the townships visited all bakehouses received the necessary attention.

Weighing of bread resulted in the prosecution of one baker in respect of loaves which were found to be short of the due weight. In two other instances proceedings for breaches of the Health Act in that bread was found deficient in weight are now pending.

Several other bakers were warned concerning bread found to be short-weight.

Cordials, Aerated Waters, &c.—Considerable time was devoted to the inspection of soft-drink factories and the correction of the labelling of beverages.

Aerated-water factories visited resulted in the prosecution of one manufacturer for having continued to manufacture for sale drinks under an occupied dwelling. The same person was also successfully proceeded against for having sold a drink that was misdescribed within the meaning of the Health Act in that it was not labelled "Imitation" in conformity with the Food and Drug Regulations.

The proprietors of one factory were required to discontinue operations on account of the premises being unsuitable.

General Inspections.—Inspections of food premises generally resulted in the service of 100 notices under the Health Act upon defaulters, the majority consisting of orders to effect structural improvements.

A visit paid to Rockhampton during the year by the Chief Inspector of Food and Drugs was taken advantage of in having new kitchens constructed at two café premises.

Within the Banana Local Authority area many food premises were found to be unsatisfactory, and, in all, forty-two notices were served upon property-owners either to make substantial structural alterations or to carry out a general cleansing of the premises.

Proceedings have been launched against a proprietor of a food store in Rockhampton who failed, after receiving repeated warnings, to keep his premises free from rubbish.

Samples of Foodstuffs.—Forty-five samples submitted for tentative analysis consisted of aerated waters, brewed drinks, drink crystals, essence, pickles, synthetic sweetening substance, rasp-berine, sauce, soap, and water.

Unsound Foods.—Foods totalling 1 ton 1 cwt., 3 qr. 19 lb. were certified to as being unfit for human consumption and duly destroyed. These consisted of asparagus, baked beans, cheese, cocoa, condensed milk, confectionery, dripping, egg pulp, golden syrup, hops, malt, macaroni, meals, peas (canned), pickles, sauce, savoury rice, spaghetti, jams, and tobacco.

In addition, eighteen sacks of flour and meals contaminated with a poisonous substance were destroyed.

Poisons.—The provisions of the Poisons Regulations were enforced throughout the area, and warnings given in regard to premises and the packing of poisons.

Prosecutions, 1938-39 (Rockhampton Sub-office.)

Date.	Place.	Nature of Offence.	Fines.	Costs.
			£ s. d.	£ s. d.
1938—				
16th September ..	North Rockhampton	Bread, short-weight	5 0 0	0 6 0
7th December ..	Emu Park ..	Milk, adulterated (9 per cent. added water)	9 0 0	1 7 0
21st December ..	Rockhampton	Milk, adulterated (4·5 per cent. added water)	8 0 0	1 10 0
1939—				
8th February ..	Yeppoon ..	Water carried on milk vehicle	1 0 0	0 6 0
8th February ..	Yeppoon ..	Milk measure without lid	1 0 0	0 6 0
3rd March	Longreach ..	Milk, adulterated (14·5 per cent. added water)	15 0 0	1 7 0
3rd March	Longreach ..	Milk measure without lid	1 0 0	0 6 0
15th March	Yeppoon ..	Milk, adulterated (7·2 per cent. added water, second offence)	10 0 0	1 7 0
15th March	Yeppoon ..	Milk, adulterated (5·4 per cent. added water)	6 0 0	1 7 0
11th May	Barcaldine ..	Milk measure without lid	1 0 0	0 6 0
13th June	Biloela	Milk, adulterated (9 per cent. added water)	9 0 0	1 7 0
26th June	Rockhampton	Aerated water factory conducted under dwelling	2 10 0	0 6 0
26th June	Rockhampton	Aerated drink not labelled "Imitation" ..	2 10 0	0 6 0
Totals ..	..	..	£71 0 0	£10 7 0

Toowoomba.

The officer in charge of the Department's sub-office at Toowoomba reports that during the year the requirements of Part IV. of the Health Act (Pure Food and Drugs) and the Regulations made thereunder have been systematically enforced at his head centre and in the south-western country areas of the territory under his control.

Milk Supply.—Fifty-three samples of milk for chemical analysis were submitted to the Government Analyist during the year, and one only was found to be adulterated with added water. A sample was considerably deficient in milk fat, indicating that the milk had been separated. A statement of prosecutions for the sale of adulterated milk is contained in table shown below.

Spirituous Liquors.—Liquors exposed for sale in hotel bars were tested from time to time, but in no instance was the adulteration of such beverages detected.

Meat.—Nine samples of minced meat and one sample of mutton chops were submitted for analysis. Of these, four minced-meat samples were found to be adulterated by the addition of a preservative substance (sulphites), and starch was present in two of the samples.

Unsound Foods.—A total weight of approximately 16 cwt. of unsound foods was destroyed as unfit for use by man.

Paint.—The inspection of stocks of paint was made to ascertain that the labelling provisions of the Health Act were being observed. Samples of paint used by operative painters were secured and submitted to analysis, and a number of these were found to contain more than 5 per cent. of soluble lead. Where this paint was applied to any premises in contravention of the Act, the person responsible was required to cause the paint to be removed, and was also warned that his prosecution would follow if at any future date he was found to commit a similar offence.

PROSECUTIONS, TOOWOOMBA SUB-OFFICE, FOR YEAR, 1938-39.

Date.	Place.	Nature of Offence.	Fines.	Costs.
1938—			£ s. d.	£ s. d.
3rd October ..	Warwick ..	Adulterated milk, deficient milk fat ..	10 0 0	3 9 0
6th December ..	Dalby	Adulterated milk (added water 29 per cent.)	20 0 0	1 7 0
1939—				
22nd May	Toowoomba ..	Minced meat, adulterated with 2·7 grains SO^2 per pound and starch	2 0 0	1 7 0
22nd May	Toowoomba ..	Minced meat, adulterated with 2·9 grains SO^2 per pound and starch	2 0 0	1 10 0
22nd May	Toowoomba ..	Minced meat, adulterated with 8·06 grains SO^2 per pound	2 0 0	1 10 0
22nd May	Toowoomba ..	Minced meat, adulterated with 6·45 grains SO^2 per pound	2 0 0	1 7 0
Totals ..	..	..	£38 0 0	£10 10 0

SECTION OF MICROBIOLOGY AND PATHOLOGY.

DIRECTOR: EDWARD HOLBROOK DERRICK, M.D.

BACTERIOLOGIST: H. E. BROWN.

ASSISTANT BACTERIOLOGISTS: H. G. BEARDMORE, J. P. MORRISSY.

BACTERIOLOGIST-IN-CHARGE, MOBILE UNIT: DAVID WILLIAM JOHNSON, M.B., B.S.

ASSISTANT BACTERIOLOGIST, MOBILE UNIT: D. J. W. SMITH, M.Sc.

STATISTICAL SUMMARY—Examination of Material for Infectious Diseases—Pathological Examination—Foods, Waters, &c.—Various Materials—Special Investigations—Medico-legal—Vaccines Prepared—Examination of Rodents for Plague—Material supplied—Culture Media prepared—Routine Laboratory—Work—"Q" Fever—Human Cases—Hæmaphysalis humerosa and "Q" Fever—A Biological Survey of Moreton Island.

ACTIVITIES OF THE MOBILE UNIT—Other Activities of the Mobile Unit—Outbreak of Typhoid Fever at Innisfail—Other Aspects of the Work of the Mobile Unit—Undiagnosed Fevers—North Queensland Fevers—Problems associated with Lead Poisoning—The Histology of Lead Nephritis—The Value of Blood Alcohol Tests—Publications.

We report with regret the death on August 20, 1938, of Mr. Harry Granville Beardmore, Assistant Bacteriologist. Mr. Beardmore joined the Queensland Government Service on 1st May, 1895, as Laboratory Assistant to the Stock Institute. When the Department of Public Health took over charge of the Institute, and extended its scope as the Laboratory of Microbiology and Pathology, Mr. Beardmore was retained as Principal Assistant under the Director, Dr. J. J. Harris. In January, 1918, he resigned in order to take up an appointment as Bacteriologist in the Tasmanian Health Department, but rejoined the Queensland Health Department in September, 1921,

Mr. Beardmore gave special service to the Department in connection with the two outbreaks of plague in Queensland, 1900-1909 and 1921-22. Another of his duties was the investigation, with Dr. Chesson, the Departmental Health Officer, of an outbreak of fever in Mossman in January, 1907. The patients were suspected of suffering from *Pestis minor*. In ten of the cases bacilli morphologically resembling plague bacilli were observed in the specimens of lymph examined. This result is interesting in view of Dr. Heaslip's finding of Pasteurella-like organisms in febrile patients mentioned below.

Mr. Beardmore's work was characterised by its unfailing neatness and accuracy. He has been greatly missed from the laboratory.

The vacant position has been filled for the present by temporary appointments.

Mr. D. J. W. Smith was admitted to the degree of M.Sc. by the University of Melbourne for a thesis entitled "An Investigation Into Some Aspects of the Problem of the Epidemiology of Q Fever in Southern Queensland," which was based on work done in this laboratory.

Dr. W. G. Heaslip, as a full-time Fellow of the National Health and Medical Research Council, began an investigation of the fevers of North Queensland in July, 1938. Dr. Graham Croll, as a part-time research Fellow, investigated problems associated with lead poisoning and nephritis.

STATISTICAL SUMMARY.

No. 1.—EXAMINATION OF MATERIAL FOR INFECTIOUS DISEASES.

—	—	Specs. Recd.	Pos.
Diphtheria	Cultures	13,643	2,837
	Direct smears	16	6
	Virulence tests	318	162
Gonorrhœa	Smears	9,105	682
	Blood, complement deviation	829	228
Syphilis	Blood—Wassermann test	2,636	628
	Blood—Kline test	1,480	378
	Cerebrospinal fluid—Wassermann test	52	6
	Placental serum—Wassermann test	1	..
	Serum—Treponema pallidum	17	4
Leprosy	Smears (human)	1,092	257
	Rats	2	2
Tuberculosis	Sputum	315	61
	Urine	3	..
	Pus from ulcer	2	..
	Joint fluid	2	..
	Guinea-pig inoculation	4	..
Typhoid and Paratyphoid	Blood (agglutination)	470	66
	Blood culture	19	..
	Urine	89	4
	Fæces	223	13
Typhus	Blood (agglutination)	213	21
Undulant Fever	Blood (agglutination)	80	2

No. 1.—Examination of Material for Infectious Diseases—*continued.*

——	——	Specs. Recd.	Pos.
Leptospirosis	Blood (agglutination)	272	50
	Blood (guinea-pig inoculation)	19	5
	Blood culture	20	4
	Urine (guinea-pig inoculation)	11	1
	Urine (dark-ground examination)	2	..
	Cerebrospinal fluid (agglutination)	1	..
	Cerebrospinal fluid (guinea-pig inoculation)	1	..
"Q" Fever	Blood (guinea-pig inoculation)	88	27
	Blood (agglutination)	5	5
	Urine (guinea-pig inoculation)	4	1
Scarlet Fever	Cultures	10	..
Dysentery, Bacillary	Fæces	4	1
Dysentery, Amœbic	Fæces	10	..
Malaria	Blood	19	2
Fungus Infections	Smear	5	2
	Skin scraping	1	..
Trichomonas Vaginalis	Smears	6	..
Ducrey's Bacillus	Smears	9	2
	Cultures	2	..
Actinomycosis	Smears	4	..
Tetanus	Surface soil	1	..
Various Organisms	Pleural fluid	3	..
	Joint fluid	2	..
	Cerebrospinal fluid	12	..
	Urine	37	..
	Blood cultures	8	..
	Fæces	10	..
	Cultures	14	..
	Smears	10	..
	Pus	8	..
	Sputum	4	..
	Surface soil	1	..
	Scrapings from butcher's block	1	..
	Totals	31,215	5,457

No. 2.—Pathological Examination.

——	——	Specs. Recd.	Pos.
Blood	Full count	58	..
	Differential count	24	..
	Red cell count	9	..
	Urea estimation	4	..
	Sugar estimation	1	..
	Basophilia	3	..
	Hæmoglobin	24	..
	Monocystic leukæmia	1	..
	Reticulocyte count	1	..
	Van den Bergh reaction	1	..
Urine	Microscopical examination	54	..
	Chemical examination	33	..
	Urea estimation	113	..
	Chyluria	1	..
Fæces	Intestinal worms	737	35
	Occult blood	5	..
Cerebrospinal Fluid	Cells	11	..
	Globulin	6	..
	Protein	2	..
	Colloidal gold	6	..
	Urea estimation	2	..
Stomach Contents	Test meals	36	..
Seminal Fluid	Potency	2	..
Identification	Fly larvæ	2	..
	Mosquito larvæ	1	..
	Worms	3	..
	Rat	1	..
Tissue	Section	111	..
	Section (post-mortem)	279	..
	Totals	1,531	35

No. 3.—Foods, Waters, &c.

—	—	Specs. Reed.	Pos.
Water	Bacterial count	139	..
	Colon bacilli	139	..
	Organisms	1	..
	Sterility	8	..
	Iron bacteria	1	..
Milk	Bacterial count	542	..
	Reductase test	478	..
	Organisms	3	..
	Coliform test	6	..
	Progressive count	7	..
	Blood	1	..
	Guinea-pig inoculation (*M. tuberculosis*)	48	1
Ice Cream	Count	6	..
Chaff	Mites	1	..
Oatmeal	Poison	1	..
	Totals	1,381	1

No. 4.—Various Materials.

Disinfectant—Coefficient	14
Liquid Soap—Coefficient	1
Tooth Paste—Germicidal value	1
Soap—Germicidal value	1
Tooth Brushes—Mould	5
Bottles—Sterility	7
Tank Effluent—Sterility	5
	34

No. 5.—Special Investigations.

Guinea-pig inoculations	2,100
Guinea-pig—Post-mortems	700
Mouse inoculations	129
Mouse—Post-mortems	98
Rabbit inoculation	1
Rabbit—Post-mortem	1
Rat-kangaroo inoculation	1
Rat-kangaroo—Post-mortem	1
Bandicoot inoculation	1
Rattus culmorum inoculations	2
Rattus culmorum—Post-mortems	2
Rattus lutreolus inoculations	2
Rattus lutreolus—Post-mortem	1
Rattus assimilis inoculation	1
Rattus assimilis—Post-mortem	1
Ecto-parasites—	
Anoplura	452
Siphonaptera	92
Acarina	4,822
Animal tissue for section	94
Human sera sent to Dr. Burnet for "Q" agglutination	251
Animal sera sent to Dr. Burnet for "Q" agglutination	160
Animal sera examined for Leptospirosis—	
Rabbit antisera	5
Pig sera	200
Calf sera	50
Bandicoot sera	112
Opossum sera	4
Animal kidneys examined for Leptospirosis—	
Pigs	151
Calves	20
Bandicoots	42
Opossums	5
Rats (various)	30
	9,531

No. 6.—Medico-legal.

Post-mortem examinations	269
Blood—	
Clothing	86
Various articles	82
Seminal stains—	
Clothing	52
Swabs	9
Various articles	15
Gonorrhœa—	
Smears	6
Spermatozoa—	
Clothing	2
Smear	1
Various articles	2
Diphtheria—	
Cultures	2
Tissue—	
Section	4
	530
Attendances at Courts—	
Supreme Court	21
Police Court	26
Coroner's Court	5
Industrial Court	3
	55

No. 7.—Vaccines Prepared.

A. Typhoid-Paratyphoid Vaccine.—3,658 c.c.s. of T.A.B. vaccine were prepared.

B. Autogenous Vaccines were prepared as follows:—

From—	
Cultures	6
Fæces	5
Urine	3
Sputum	2
Nasal swabs	2
Pus	8
	26

No. 8.—Examination of Rodents for Plague.

Rodents received for examination from Brisbane City Council:—

Rattus norvegicus	17,808
Rattus rattus (dark phase)	2,130
Rattus rattus (light phase)	3,249
Hydromys chrysogaster	1
Unclassified (very young rats)	3,831
Mus musculus	882
	27,901

(In addition to these, 8,839 rats and 1,408 mice were destroyed by the Brisbane City Council without examination.)

Rat smears received from other centres:—

Mackay	1,053
Bundaberg	1,093
Maryborough	867
Gympie	98
Ipswich	1,647
Sandgate	608
Wynnum	1,195
Meat Works (Brisbane area)	488
	7,049

No rat was found infected with *Pasteurella pestis*.

Grand total of examinations for year 1938-39, 79,198.

Material Supplied.

Five hundred and fifty-seven (557) requisitions were supplied during the year to hospitals, private practitioners, and local authorities, consisting of 27,342 swabs, 26,607 cultures, 776 Wright's capsules, 252 glass slides, 988 fæces tins, 60 urine bottles, 72 blood bottles, and 155 water outfits.

Culture Media Prepared.

	Number of tubes.
Serum cultures—	
Ox serum slopes	25,410
Ox serum plates	24
Human serum plates	14
Ordinary broth—	
Small tubes	759
Large tubes (disinfectant)	972
Bottles	24
Ordinary agar—	
Small slopes	861
Large slopes	706
Sugars—	
Lactose	687
Glucose	304
Inosite	260
Mannite	101
Dulcite	100
Saccharose	98
Destrin	92
Levulose	91
Xylose	58
Amygdalin	56
Adonite	52
Maltose	50
Arabinose	36
Miscellaneous tubes and plates—	
Treble lactose (tubes)	279
Endo's (plates) for E. coli	583
Methyl Red (tubes)	284
Peptone Water (Indol) (tubes)	360
Voges-Proskauer tubes	259
Sodium Citrate tubes	342
McConkey's (plates)	1,103
Blood Agar (plates)	31
20 per cent. Lactose (tubes)	50
Schuffner's Medium for Leptospira (tubes)	780
Fletcher's Medium for Leptospira (tubes)	221
	35,047

Material in bulk—	Litres.
Agar (for count purposes)	50
Alepol 6 per cent. solution	1
Alepol 3 per cent. solution	3·5
Kaiserling Solution No. I.	55
Kaiserling Solution No. II.	58

Routine Laboratory Work.

Diphtheria.—The number of cultures examined for *Corynebacterium diphtheriae* shows the considerable increase of 3,557 over those examined last year. The number is, in fact, the highest since 1933-34, when 16,930 were examined. The swabbing of the throats of all children at several large primary schools contributed materially to the total.

Typhoid Fever.—Samples of urine and faeces from convalescent typhoid patients and from contacts were regularly tested for the presence of typhoid bacilli.

Agglutination Tests.—A large number of serum agglutination tests, representing a considerable increase over last year, has been made in the course of the investigation of fevers. Typhoid and paratyphoid, typhus and undulant fevers, as well as "Q" fever and the leptospiroses, were tested for as a routine in sera submitted for diagnosis from febrile patients.

Typhus Fever.—More cases of murine typhus have been detected in the last year than in previous years. This is probably attributable rather to the special interest in fevers than to an increase in the incidence.

Among the cases were three from among the employees at a produce and seed store. One became ill in January, 1939, the next in February, and the third in June. Several observers have called attention to series of cases of murine typhus occurring at intervals in connection with the same building.

Another patient was a mixed farmer residing near Kingaroy. He stated that he had not seen a rat for years, but that there were a few mice in his barn. This is interesting in view of the Toowoomba epidemic of 1926, which occurred in association with a mouse plague.

Undulant Fever.—A case of undulant fever was diagnosed by means of the agglutination test. The notes are given by courtesy of Drs. A. W. St. Ledger and E. N. Nash.

R.B., aged 40, had been a meat worker for 25 years. He became ill on March 2nd, 1939, with tiredness, shivers, sweats, and headache, and was admitted to the Mater Misericordiae Hospital one week later. The temperature reached 101.6 deg. F. It gradually fell, becoming normal on March 14th. The fever lasted therefore thirteen days.

A sample of blood was obtained on March 9th and injected into a guinea-pig without result. A sample of serum taken on March 31st agglutinated *Brucella abortus* to a titre of 1:1,280.

Water and Milk.—An important function of the laboratory is the regular testing of the purity of water and milk supplied for human consumption. This was continued throughout the past year.

Mycobacterium tuberculosis was found in one sample of milk out of 48 examined by guinea-pig inoculation.

Medico-legal.—Large numbers of examinations were made for the Police Department, and in many of these cases evidence of the findings was subsequently given in court.

Culture Media.—Many tubes and plates of a variety of culture media were prepared in the laboratory. Ox serum slope was the commonest medium, and because of the prevalence of diphtheria the number prepared was 3,025 in excess of those prepared last year. These serum slopes are supplied not only to medical practitioners in Brisbane and the adjacent country, but also to the Commonwealth Health Laboratories at Toowoomba, Rockhampton, Townsville, and Cairns.

"Q" Fever.

Investigations of the problems of "Q" fever have been continued during the year. In this work we have again enjoyed the cordial co-operation of Dr. F. M. Burnet and Miss Mavis Freeman, of the Walter and Eliza Hall Institute, Melbourne. Four hundred and eleven samples of sera, 251 human and 160 animal, were sent to Melbourne for the agglutination test. In addition a quantity of emulsion of the infecting agent of "Q" fever, now known as *Rickettsia burneti*, was prepared in Melbourne for use in Brisbane.

The "J" strain of "Q" fever virus, first established in May, 1936, has been maintained in guinea-pigs in the laboratory, and on June 30, 1939, had undergone 119 passages.

The outstanding developments of the "Q" fever work may be summarised as follows:—

1. The obtaining of three strains of *Rickettsia burneti* from captured bandicoots.
2. The obtaining of six strains of *Rickettsia burneti* from ticks of the species *Haemaphysalis humerosa*.
3. The successful transmission of "Q" fever experimentally from guinea-pig to guinea-pig by means of *H. humerosa*.
4. The discovery that "Q" fever is unusually common among the bandicoots on Moreton Island, and that the conditions there provide a simplification of the epidemiological problem.

Relation of "Q" Fever to Other Rickettsioses.—An important development in this regard has been the discovery by officers of the United States Public Health Service of an infection derived from ticks (*Dermacentor andersoni*) in Montana (Public Health Reports, December 30, 1938). Guinea-pigs recovered from "Q" fever were found in Washington to be immune to the Montana infection. Sera from patients convalescent from "Q" fever were found to protect guinea-pigs from the Montana infection. Further work in Washington and in Melbourne has shown that the two diseases are very closely related, perhaps identical. There appears to be no immunological difference between the two, but the "Q" virus appears to be rather milder than the other in its action on guinea-pigs.

Human Cases.

Forty-five cases were diagnosed, as against fifty-one in the previous year. All were males. Twenty-seven were diagnosed by inoculation of blood into guinea-pigs, one by inoculation of urine, and twenty-six by the agglutination test.

Thirty-seven patients lived in Brisbane, and eight in the country. New localities of infection were Gatton, Caboolture, and Childers.

No further evidence was obtained of the presence of "Q" fever in North Queensland. Forty-two more sera, making 100 in all, of aborigines from Fantome Island were examined for agglutination, and nine sera from febrile patients in Innisfail. All were negative.

A Second Laboratory Infection.—The cases of "Q" fever included another laboratory infection. The bacteriologist concerned was holding a guinea-pig for inoculation, when the syringe "exploded," and a heavily infected emulsion of mouse liver and spleen was sprayed on to his thumb. As soon as the inoculation was completed, the hand was put into a disinfectant solution for a minute or two. *There were no cuts or abrasions on the thumb or fingers.*

Twenty-eight days later a typical attack of "Q" fever began.

The circumstances surrounding this, as well as the previous, laboratory infection have been described in the *Medical Journal of Australia.*

A Second Fatal Case of "Q" Fever.—A second case of "Q" fever has proved fatal.

A pig slaughterman aged fifty became ill on 23rd February, 1939, with shivers, weakness in the limbs, headache, and high temperature. The fever continued high. The bases of the lungs became congested. He was admitted to the Brisbane Hospital on 3rd March, 1939, looking very ill. The temperature was then 104·6, the pulse rate 128, and the respiratory rate 31. His condition became steadily worse, and he died on 5th March, 1939. Post-mortem examination by Dr. J. V. Duhig showed extensive consolidation in both lungs. There was much fluid in the right pleural cavity.

Blood taken from the patient on 1st March, 1939, was inoculated into a guinea-pig which reacted typically with "Q" fever. The infection was carried through three passages in guinea-pigs.

The notes are given by courtesy of Dr. L. P. Winterbotham and Dr. A. D. D. Pye, Medical Superintendent of the Brisbane Hospital.

Investigation of the Animal Reservoir of Infection.

Investigation of Bandicoots.—One hundred and sixteen bandicoots have been examined during the year by inoculation of organs—usually liver, kidney, and spleen—into guinea-pigs, and by testing the sera for agglutinins against *Rickettsia burneti.*

Guinea-pig inoculation has resulted in the finding of three bandicoots infected with "Q" fever at the time of capture. No. 52 was a male weighing 2,173 grams, captured near Nambour. No. 129 was a female weighing 835 grams, captured at Cowan Cowan. No. 139 was a male weighing 650 grams, also captured at Cowan Cowan. Each bandicoot strain was kept until it had gone through five guinea-pig passages. At each passage two new guinea-pigs and two "Q"-immune guinea-pigs were inoculated. The bandicoot strains were thus proved to be similar to the stock "J" strain.

The sera of 151 bandicoots have now been tested for agglutination (including those reported last year). Thirty-five of these, or 23 per cent., were positive. The bandicoots captured at Cowan Cowan, on Moreton Island, showed a much greater incidence of infection than those captured on the mainland. The figures were—

——	Number Tested.	Number Positive.	Percentage Positive.
Mainland bandicoots	73	3	4
Cowan Cowan bandicoots	78	32	41
Totals	151	35	23

We are indebted to Mr. E. LeG. Troughton, Curator of Mammals, Australian Museum, Sydney, for pointing out that the correct name of these bandicoots is *Isoodon torosus* Ramsay, not *Isoodon macrourus* as they were called in last year's Annual Report.

Examination of Other Bush Animals.—Small series of other native animals, as listed below, have been examined for signs of past or present infection with "Q" fever. Their organs have been inoculated into guinea-pigs, and their sera have been tested for agglutinins against *Rickettsia burneti*. There has been no success with the inoculations, but the serum of one *Rattus youngi* and two *Hydromys chrysogaster* showed agglutination. The three reacting animals were captured at Cowan Cowan.

Animal.	Inoculation of Guinea-pigs.		Agglutination of *R. burneti*.	
	Number Inoculated.	Number Positive.	Number Tested.	Number Positive.
Rattus assimilis	10	0	10	0
Rattus lutreolus	4	0	4	0
Rattus youngi	9	0	9	1
Hydromys chrysogaster	3	0	7	2
Trichosurus vulpecula	9	0	9	0

Two more species of native rats, *R. lutreolus* and *R. assimils*, have been proved susceptible to experimental infection with "Q" fever.

Two male *R. lutreolus*, captured at Imbil, were inoculated intraperitoneally with infected guinea-pig liver-spleen emulsion. One was killed seven days later. The virus was recovered by guinea-pig inoculation from 0·01 gram of liver, but not from 1·5 mils of blood. From the other rat, the virus was recovered from the blood six days after inoculation. On the eighteenth day, and again on the thirty-first day, the serum gave strong agglutination for *R. burneti*.

Two female *R. assimilis*, also caught at Imbil, were inoculated intraperitoneally with guinea-pig material. One was killed on the seventh day and the virus was re-obtained from 0·01 gram of liver and from 2 mils of blood. From the second rat the virus was not certainly recovered from the blood, but agglutinins for *R. burneti* were found in the blood on the twenty-first, one hundred and twelfth, and two hundredth days.

In an early paper it was stated that rabbits were insusceptible to "Q" fever. Further investigation has shown that rabbits may be infected experimentally. Rabbit 26 was inoculated intraperitoneally with 10 mils. of an infected guinea-pig liver-spleen emulsion. It was killed seven days later and the "Q"-virus was re-obtained from 0·01 gram of the spleen, but not from 4 mils. of the blood. Rabbit 27 was similarly inoculated. Blood was inoculated into guinea-pigs on the seventh, tenth, and fourteenth days without producing infection. Agglutinins for *R. burneti* were found in the serum on the tenth, fourteenth, and twenty-fourth days.

Haemaphysalis Humerosa and "Q" Fever.

The Isolation of Rickettsia burneti from Ticks.—A large number of mites, ticks, fleas, and lice collected from native animals have been ground up with nutrient broth and injected into guinea-pigs.

Rickettsia burneti was successfully detected on six occasions when the inoculum was an emulsion of ticks of the species *Haemaphysalis humerosa* Warburton and Nuttall. All the other parasites tested failed to produce infection in guinea-pigs. All six tick strains were isolated from ticks removed from bandicoots captured at Moreton Island.

During the twelve month period 1st July, 1938, to 30th June, 1939, approximately 450 island ticks were inoculated into thirty-eight guinea-pigs with six positive results. The first two strains were isolated in September, 1938. Four more strains were isolated in March, 1939. In the same period approximately forty ticks from the coastal area north of Brisbane were inoculated into seven guinea-pigs without success.

The majority of ticks inoculated were males. Four strains were isolated from male ticks only, one strain from nymphal ticks, and one strain from a mixed emulsion of both male and female ticks.

The primary inoculum in three instances produced a febrile reaction in the experimental guinea-pig. In three cases infection became apparent only after passage into a second animal. The specific nature of the infection was proved by animal passage and immunity tests, and the demonstration of typical rickettsiae in the tissues of infected mice.

Tick Transmission.—Following the discovery of naturally infected ticks of the species *Haemaphysalis humerosa*, an investigation was begun into the ability of this tick to act as a vector of the disease. Guinea-pigs were used exclusively as experimental animals. The ticks were applied to the host animals beneath a small gelatin capsule supported by a suitable bandage.

The results of experiments already performed indicate—

(i.) Larval, nymphal and adult ticks can be infected with "Q" fever by feeding them upon the blood of infected animals during the febrile period.

(ii.) Infection acquired at one stage of the life-cycle is transferred to the next and succeeding stages. The virus is passed through the egg to the succeeding generation.

(iii.) The rickettsiae multiply and are often present in enormous numbers in the tissues of infected ticks.

(iv.) The feeding of infected larval, nymphal and adult ticks may produce infection in the host animal.

(v.) The faeces of infected ticks is sometimes infected, and may produce infection when applied to the abraded skin of a susceptible animal.

A Biological Survey of Moreton Island.

A simplification of the epidemiological problem of "Q" fever was provided by the discovery of a heavily infected bandicoot population upon Moreton Island. This was first suggested when two of the first five bandicoots showed agglutination. Accordingly a visit was paid by Mr. Smith to the island in September, 1938.

Through the courtesy and co-operation of the Defence Department, who provided facilities for working at Fort Cowan Cowan, it was possible to engage in trapping operations and ascertain what ectoparasites infested the limited mammalian fauna of the island.

A bandicoot (very common), *Rattus youngi* (common), *Hydromys chrysogaster* (common) and a phalanger (scarce) were the only native mammals noted. Several species of bats have been recorded, and there are also many domestic pigs gone wild.

Haemaphysalis humerosa Warburton and Nuttal appears to be the only tick present upon the island, where it heavily infests the bandicoot population. Two-thirds of the bandicoots examined have been carrying ticks. As many as two hundred were removed from one animal. Larval and nymphal ticks are also found on *R. youngi*.

Larval trombidiid mites appear to be represented only by a single species. This mite is also present on the mainland where it is not, however, the dominant form upon the bandicoot. Upon the island it is found both upon the bandicoot and *R. youngi*. A laelaptid mite present upon the bandicoot and *R. youngi*, and a sucking-louse infesting the latter, were the only other parasites recorded.

A number of guinea-pigs were taken to the island and inoculated in the field with the ectoparasites collected. One of these animals incurred infection with "Q" fever through the inoculation of a number of nymphal ticks. Arrangements were made for a regular supply of bandicoots to be forwarded to the laboratory, where five more strains of *R. burneti* were subsequently isolated from ticks, and two strains from the bandicoots themselves. The high incidence of serum agglutinins was maintained, the final figures being 41 per cent. of 78 sera tested.

The high incidence of "Q" fever in the island bandicoots with their heavy infestation with *H. humerosa* must be associated with the presence of infection in the latter. This is confirmed by the results of transmission experiments performed in the laboratory, making it clear that *H. humerosa* is a vector of a fever among bandicoots.

In April, 1939, 285 military trainees went into camp at Cowan Cowan for twelve days. If *H. humerosa* is the transmitting agent for human infection one would have expected a series of cases of "Q" fever among the trainees. No case has, however, occurred among them. The sera of 145 of the trainees was tested for agglutination with *R. burneti* eight to twelve weeks after their entry to the camp. Not one was positive. This finding suggests that *H. humerosa* may not be the vector of human infection.

In this connection the following experiment is of interest. Several larval *H. humerosa* were placed in a capsule on the arm of a volunteer. They engorged and later changed to nymphs. The nymphs again fed on the human subject and developed into adults. *H. humerosa* will therefore feed on human blood under experimental conditions. Whether it will do so in the field is not yet known.

Activities of the Mobile Unit.

Officer in Charge: DAVID WILLIAM JOHNSON, M.B., B.S.

Leptospirosis.

(1) *General Review.*—Further cases of Pomona-type leptospirosis have been diagnosed during the year, and the area of endemicity of this disease has been enlarged. This area now extends as far north as Bundaberg, as far west as Monto and Oakey, and as far south as Burringbar, New South Wales. (A dairy farmer from Burringbar developed Pomona leptospirosis in May, 1939; this is the first time the disease has been known to occur outside Queensland.) In addition, new light has been thrown on the epidemiology of this type of leptospirosis which enables us to understand the occurrence of cases without contact with rats.

(2) *New Cases of Pomona Leptospirosis.*—In the last year, nineteen new cases have been diagnosed. This brings the total number of proved cases to forty-two. Some details of these new cases are given in the following table:—

TABLE XVII.

Showing Details of New Cases of Pomona Leptospirosis.

No.	Patient.	Sex.	Age.	Occupation.	Domicile.	Month of Onset.	Inoculation of Blood.	Serum Agglutination Test.	Inoculation of Urine.
						1938—			
1	B. B.	M.	24	Dairy farm hand ..	Gympie ..	July	..	+	..
2	F. G.	M.	26	Meat inspector ..	Brisbane ..	July	..	+	..
3	R. S.	M.	30	Dairy farmer ..	Monto	November ..	+	+	..
4	W. McL.	M.	25	Calf slaughterman ..	Brisbane ..	November ..	+	+	+
						1939—			
5	W. J. H.	M.	24	Piggery hand ..	Woodford ..	January	+	..	..
6	D. L.	M.	19	Dairy farm hand ..	Dayboro' ..	February	..	+	..
7	I. S.	M.	18	Dairy farmer ..	Kilcoy	February	..	+	..
8	J. McC.	M.	20	Abattoir hand ..	Brisbane ..	March	..	+	..
9	A. V.	M.	17	Piggery hand ..	Woodford ..	March	+	+	..
10	A. H.	M.	23	Dairy farmer ..	Nambour ..	March	+	..	..
11	S. L.	F.	44	Dairy farm	Bundaberg ..	March	..	+	..
12	M. L.	F.	14	Dairy farm	Bundaberg ..	March	..	+	..
13	G. L.	F.	14	Dairy farm	Bundaberg ..	March	..	+	..
14	H. L.	F.	17	Dairy farm	Bundaberg ..	March	..	+	..
15	R. K.	M.	27	Butcher	Redland Bay ..	April	..	+	..
16	M. M.	M.	33	Calf slaughterman ..	Brisbane ..	April	+	+	..
17	F. F.	M.	49	Calf slaughterman ..	Brisbane ..	April	+	+	..
18	J. J.	M.	22	Abattoir hand ..	Brisbane ..	May	+	+	..
19	M. B.	M.	31	Dairy farmer ..	Burringbar, New South Wales	May	..	+	..

Features for Comment.

(1) *The Occupational Risk.*—Ten out of the nineteen patients lived or worked on dairy farms. This seems to indicate that the persons engaged in dairying are a group exposed to definite risk of infection. Four members of one family, including three females, were infected on a dairy farm near Bundaberg. Two of the cases worked at a piggery at Woodford. In 1937-38, two employees at the same piggery developed leptospirosis. The disease appears to be heavily endemic around Woodford.

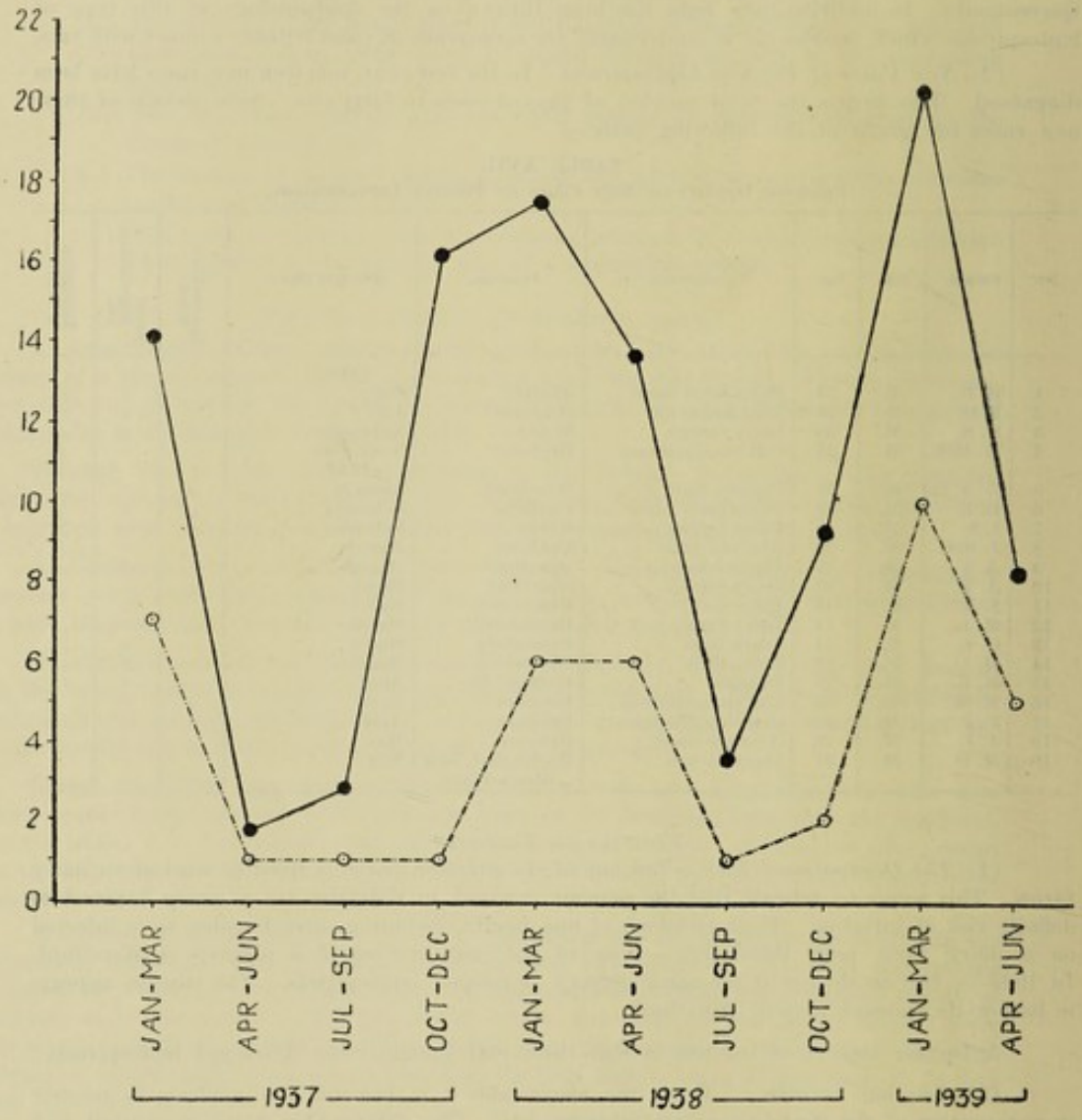
A further feature of interest is that three calf slaughtermen developed leptospirosis.

(2) *Seasonal Incidence.*—From the above table it is seen that the incidence is greatest in wet months of the year—from November to May. The relationship between rainfall and the occurrence of cases of leptospirosis is well known. Leptospirosis in the canefields follows rain in the cutting season, and, in Holland, cases have occurred after a single accidental immersion in water.

Pomona leptospirosis has the same tendency to occur after heavy rain. Forty cases have been diagnosed between 1st January, 1937, and 30th June, 1939. The number of cases becoming ill for each of the thirty months, and the rainfall in Brisbane for the same months, were submitted to Mr. P. McGovern, M.A., B.Sc., Assistant (Biometry), Queensland Agriculture and Stock Department. He has been good enough to examine the figures and report as follows:—

> "The correlation coefficient between the number of cases per month and the monthly rainfall over the period January, 1937, to June, 1939, inclusive (thirty observations) is ·6617, which is a highly significant figure. There seems to be sufficient evidence to prove a definite relationship between rainfall and the incidence of Pomona leptospirosis; but the small number of cases reported prevents a more detailed examination."

Figure II. expresses graphically the relationship between the incidence of cases and the rainfall. In the graph a period of three months, instead of one month, has been used as the unit. This has the effect of smoothing out many of the irregularities of the curves. The wet seasons are clearly associated with an increase in cases. Mr. McGovern states that with three-monthly periods (ten observations) the correlation coefficient between rainfall and incidence of cases is ·7551—also a significant figure.



Showing quarterly incidence of forty cases of Pomona leptospirosis (interrupted line), and quarterly rainfall in Brisbane in inches for the period 1st January, 1937, to 1st July, 1939 (continuous line).

(3) *Epidemiological Investigations.*—In view of the heavy incidence of leptospirosis amongst people in contact with pigs, it was decided to investigate the possibility of pigs acting as carriers. Later in the year, a commencement was made along the same lines with calves, and this work will be continued. In addition, various native animals have been examined from time to time, as detailed below.

Pigs.—Over the period August till November, 1938, serum was collected from 250 pigs killed. These animals were mostly from the coastal districts of Southern Queensland, where leptospirosis is endemic. Using the microscopic agglutination test these sera were tested for agglutinins against *L. pomona*, and 41·5 per cent. gave positive results. In some sera the titre was not above 1 : 100, indicating an old infection, but in the majority the titre was over 1 : 1,000, indicating recent infection.

Over the same period, 150 kidneys from recently killed pigs were examined for *leptospirae* by dark-ground illumination. In six kidneys *leptospirae* were seen, giving a carrier rate of 4 per cent. A strain of leptospira, pathogenic to guinea-pigs, has been isolated from pigs. It appears to be serologically identical with *L. pomona*.

Although the series examined is rather small when compared with the number of pigs killed annually at the Abattoir, sufficient information has been collected to indicate that Pomona leptospirosis is endemic in pigs in Southern Queensland. So far, no opportunity has occurred to test the pathogenicity of *L. pomona* (or the pig strain) in pigs, so that it is difficult to state whether the disease is a serious one.

Calves.—Fifty calf sera and twenty calf kidneys were also collected and examined. Agglutinins against *L. pomona* were demonstrated in four calf sera. No *leptospirae* were seen on dark-ground examination of the kidneys. This series is far too small to draw any conclusions, and the work is being continued.

Native Animals.—The kidney emulsions of various animals were examined for *leptospirae* during the year, as is shown in the following table:—

Animal.	No. Examined.
Bandicoots (*Isoodon torosus*)	42
Rats—(various species)	30
Opossums (*Trichosurus vulpecula*)	6

All were negative.

In addition, the leptospiral agglutination test was performed on the sera of eighty-seven bandicoots, and four gave evidence of having been infected with leptospirosis. The serum titres, however, were very low, and no definite conclusions can be made at this stage.

(4) *Immunity to Leptospirosis.*—In August, 1938, blood was collected from six employees on the pig floor at the Abattoir. Five of these men were slaughtermen, who had been engaged on the same work for several years. The sixth was a lad, whose duties were to keep the floor clean, and who had been employed for three months only. None of the six gave any history of illness during their employment.

The six sera were tested for agglutinins against *L. pomona*, and the sera of all five slaughtermen gave definite agglutination, the serum titre ranging from 1:30 to 1:300. The serum of the sixth employee showed no agglutinins, and it is interesting to record that in March, 1939, he developed leptospirosis (Case 8 in Table XXVI. of Annual Report 1937-38.)

These results are very interesting because they indicate that these employees, as a result of repeated exposure to infection during their work, *developed infections of leptospirosis without any signs of illness. At present they are apparently immune to the disease, and are likely to remain so.*

It is hoped to test the serum of other Abattoir employees in order to see whether any other group has developed a similar immunity.

This demonstration of the occurrence of sub-clinical infections in Pomona leptospirosis is very valuable. Frequently, during routine leptospiral agglutination tests on the sera of fever patients, a partial agglutination is noted (up to 1:100). This is not diagnostic of an *active* infection, but almost certainly means that the patient has had leptospirosis *in the past. This phenomenon appears to be fairly common in sera forwarded from country areas, and indicates that leptospirosis is not by any means a rare disease, and often escapes notice owing to its trivial symptoms.*

Again, during the outbreaks of leptospirosis at Ingham in 1933-34, many canecutters may have developed sub-clinical infections and subsequent immunity. This may, in part, explain the absence of an epidemic in that district since 1934, as the same canecutters are largely engaged year after year.

(5) *Occurrence of classic Weil's Disease in North Queensland.*—In January, 1937, a patient from Oak Forest, North Queensland, came to Brisbane and developed an illness, from which he died on the tenth day. Serological investigation indicated that this patient had classic Weil's disease contracted in North Queensland, but owing to his early death this could not be proved.

In March, 1939, two patients were admitted to Innisfail District Hospital. They were suffering from classic Weil's disease and both recovered. One was severely ill and his condition was thought to be typhoid fever; the other patient developed a scarlatiniform rash. Neither was jaundiced.

Subsequent inquiries revealed that both patients were engaged in clearing scrub near Mourilyan, in very swampy ground. They saw no rats but were bitten by leeches.

These are the only three cases of classic Weil's diseases reported from North Queensland. In the case of the Innisfail patients contact with *imported* rats cannot be excluded, as Mourilyan is a port. If imported rats (e.g., *R. rattus* and *R. norvegicus*) spread throughout the cane-growing districts further cases may occur.

Other Activities of the Mobile Unit.

Extra Metropolitan Activities.

Officer.	Date.	Places Visited.	Purpose of Visit.
	1938—		
D. J. W. Smith ..	31st August to 8th September	Moreton Island	Q Fever
D. W. Johnson ..	8th to 23rd September	Innisfail	Typhoid
		Mona Mona	Leprosy
D. W. Johnson D. J. W. Smith	6th to 19th October	Innisfail	Typhoid
D. J. W. Smith ..	12th to 14th October ..	Cairns	Hookworm
D. W. Johnson ..	4th to 12th December ..	Mona Mona	Leprosy
	1939		
D. W. Johnson ..	22nd May to 1st June	Mona Mona	Leprosy
		Townsville	Leprosy

Outbreak of Typhoid Fever at Innisfail.

Between 20th August and 1st September, 1938, seventeen cases of typhoid fever occurred at Innisfail. As enteric infections were considered to be rare in the Innisfail district, diagnosis was not known until three of these patients became seriously ill towards the third week of fever. As a result of serum agglutination tests performed at this laboratory, the Medical Officer, Mobile Unit, visited Innisfail to investigate the position.

Clinical Features.—Ten cases were very mild, having fever lasting less than a week. These were only diagnosed serologically. The remaining seven cases were typically severe, and one patient died.

Epidemiology of the Outbreak.

Residence.—The majority of patients lived in the town of Innisfail, but several lived on farms up to 16 miles away.

Water Supply.—Most depended on the town supply, which is good-quality filtered water, but not at that time chlorinated. Those living on farms, however, drew their supplies from tanks or wells.

Vegetables.—Vegetables came from very varied sources and infection from this source was unlikely.

Milk Supply.—This, too, was varied. Those patients living in rural areas kept their own cows. Those living in the town obtained milk from various vendors, whose supplies were individually investigated.

Result of Investigations.

All of the victims either patronised a certain cafe in the town or obtained their milk from one particular vendor. One patient worked at the cafe, another had all of his meals there, a third became sick a few weeks after she had obtained regular milk from this vendor, whilst a fourth patient worked and lived on this vendor's dairy premises.

None of the employees at the cafe concerned gave a history of typhoid, and Widal reactions were uniformly negative. One employee who had recently been engaged as a cook was admitted to hospital, but was not proved to be a carrier.

The premises of the milk vendor were inspected and found to be in a most insanitary condition. This vendor supplied all his own milk, supplied the cafe with raw milk, and gave a history of enteric fever in 1914. He had one employee, who developed typhoid. Hospital investigations failed to establish this vendor as a carrier, although the epidemiological evidence against him was strong.

Action taken.

The milk vendor's license was suspended and the cafe was closed for a week until investigations were completed. No further cases occurred.

Visit of Mobile Unit to Innisfail.

A large number of cases of fever occurred in Innisfail in October, and the Mobile Unit was despatched to investigate. The outbreak was probably due to influenza, as all laboratory tests for typhoid were negative.

Other Aspects of the Work of Mobile Unit.

(1) *Leprosy in Queensland.*—Three visits were made by Dr. Johnson to Mona Mona Mission Station, in connection with a special Commonwealth grant for investigation of leprosy. Townsville and Babinda were also visited for the same purpose. All suspect leprosy material forwarded to the laboratory was examined by him, as were routine smears from the Lazaret. Included in this work was a large series of suspected leprosy slides submitted by Dr. Graham Croll, who is doing investigational work on this disease amongst aborigines.

(2) *"Q" Fever Investigations.*—Mr. D. J. W. Smith has been assisting in "Q" fever investigations, and during the year made a visit to Cowan Cowan, Moreton Island, to collect data for this work.

(3) *Visits to Institutions.*—Several visits were made to the Mental Hospital, Goodna, and the Diamantina Hospital to perform pathological tests on patients. A fungus infection was shown to be a cause of dermatitis at the Mental Hospital, Goodna.

(4) *Equipment of Laboratories.*—Plans and estimates were prepared for the establishment and equipment of laboratories at the Mental Hospital, Goodna, and at the district hospitals at Innisfail and Ingham.

(5) *University Teaching.*—The staff of the Mobile Unit assisted in teaching work by giving lectures and demonstrations in Social and Tropical Medicine to fourth-year medical students in the University of Queensland.

Undiagnosed Fevers.

Amongst the fever patients investigated have been a number where a diagnosis could not be made by the tests at our disposal. Several of these have points of interest, and are recorded below.

Fever and Jaundice following an Opossum Bite.—An interesting case was that of a nurseryman, aged 47, living in Brisbane. He had kept an opossum for eleven months, since it was removed from the pouch of its dead mother. The opossum became ill and savage, and bit its owner on a finger. About eight days later, on 12th November, 1938, he became suddenly ill with abdominal pains and vomiting, headache, and fever. On the sixth day of illness he became jaundiced. The fever lasted for thirteen days, and the jaundice persisted for about two weeks more.

Many pathological tests were made—blood culture, urine culture, inoculation of blood and urine into guinea-pigs, dark-ground examination of urine, and repeated agglutination tests. None gave a definite result. The leucocyte count rose to 12,000. The opossum was also examined by agglutination tests, dark-ground examination of its kidney, and inoculation of organs into guinea-pigs, but without result. The exact nature of the infection and the relation to the opossum bite remain unexplained.

A Small Epidemic on a North Queensland Island.—In February, 1938, two visitors to an island of the Whitsunday Group became ill. The symptoms were headache and high fever. The duration of the fever was seven days and five days respectively. One had vomiting, the other had loose motions. Neither had a rash. The two patients were seen on shipboard in Brisbane just after the illness was over. A sample of blood from one and of urine from the other were obtained, and later a sample of blood from each. The tests were, however, inconclusive.

The two patients had been on the island about a week when they became ill. They stated that two or three others on the island had the same symptoms the week before. All the affected patients were men. Their women folk were not affected.

Sandflies were numerous and troublesome on the island, but were not likely to be the cause of the fever, as the women were also attacked by them. A few fleas were seen and one patient was bitten by a tick.

North Queensland Fevers.

Dr. W. G. Heaslip (Research Fellow of the National Health and Medical Research Council of the Commonwealth, allotted to work in conjunction with this State department), after a preliminary period in Adelaide, Sydney, and Brisbane, arrived in Cairns in November, 1938. He was kindly given facilities for his work there by the Commonwealth Health Laboratory.

Fifty cases of fever have been investigated, 300 samples of serum tested, and 150 mice inoculated.

From a case of scrub typhus in November, 1938, at Babinda, Dr. Heaslip infected mice, and he continued the mouse passage for ten generations. From another case of typhus occurring at Edmonton in December he infected mice, and continued the mouse passage for ten generations. Altogether, he has obtained five strains of typhus in mice.

The following animals have been infected experimentally with scrub typhus:—Rabbits, bandicoots (*Isoodon torosus*), *Rattus culmorum*, *Rattus conatus*, *Rattus assimilis*, *Rattus norvegicus*, and *Melomys littoralis*.

Captured rats and bandicoots have been examined by serum agglutination with Proteus OXK, by inoculation into mice, and by stained smears of organs. One rat caught near Redlynch was found to be *naturally infected with typhus*.

A large variety of parasites has been collected. They are at present being identified.

A Pasteurella-like organism has been found in the blood of febrile patients and in the blood and organs of captured animals. It is probable that certain cases of unidentified fever are due to this organism.

Problems Associated with Lead Poisoning.

The Investigation of the Lead Content of Human Bone.

This work was begun as a contribution to the problem of the relation of lead poisoning to nephritis. Part of the lead that gains access to the circulation is deposited with calcium in the bones, and some of it will remain there for years. The amount of lead in the bones will give, therefore, some indication of the lead absorbed by the individual, and a diagnosis of excessive lead absorption may be made in this way years after the event.

A number of lead analyses carried out by Dr. R. E. Murray were quoted in the Annual Report for 1936-37, at page 33. During the year 1938-39 the Government Analyst kindly co-operated with Dr. Croll (part-time research worker of the National Health and Medical Research Council) in this work, and performed lead analyses of samples of bone from thirty-one individuals.

A portion of rib was analysed in each case, and a portion of skull in twenty-six cases. The bone fragment was first weighed fresh, then dried in a water-oven and reweighed. The lead was estimated by the dithizone method.

The results of the lead analyses are shown in the table. The figures for the lead are calculated both for the moist bone and the dried bone. It will be noticed that the skull contains on the average about twice the proportion of lead contained in the rib, although in five instances the rib gave higher figures.

Case No.	Sex.	Age.	Cause of Death.	Milligrams of Lead per 100 Grams Bone.			
				Rib Weighed Fresh.	Rib Weighed Dry.	Skull Weighed Fresh.	Skull Weighed Dry.
			Group I.—Normal Cases.				
802	M.	33	Accident	1·5	2·5	5·3	9·5
804	M.	22	Volvulus	1·2	2·1	2·5	2·8
806	M.	20	Accident	3·2	4·3	6·4	7·7
817	F.	30	Accident	1·9	2·9	..	..
822	M.	26	Accident	1·3	1·4	2·4	2·5
860	M.	52	Accident	2·5	3·7	..	..
Average	..	30		1·9	2·8	4·1	5·6
			Group II.—Cases of Chronic Nephritis.				
766	F.	21	Chronic nephritis, cerebral hæmorrhage	4·4	6·6	4·4	5·2
791	F.	22	Chronic nephritis, cerebral hæmorrhage ..	6·5	9·6	16·0	20·5
803	F.	39	Chronic nephritis, cerebral hæmorrhage	4·6	7·7	9·5	10·6
844	F.	23	Chronic nephritis, cerebral hæmorrhage ..	3·4	4·6	12·7	12·7
931	F.	21	Chronic nephritis, cerebral hæmorrhage ..	4·8	6·2	9·2	10·5
942	F.	24	Chronic nephritis, gangrenous ileitis	2·5	4·6	..	..
1012	M.	24	Chronic nephritis, cerebral hæmorrhage ..	4·2	5·8	11·7	13·6
1030	F.	42	Chronic nephritis, cerebral hæmorrhage	7·5	12·1	11·7	13·3
Average	..	27	..	4·7	7·1	10·7	12·3

Case No.	Sex.	Age.	Cause of Death.	Milligrams of Lead per 100 Grams Bone.			
				Rib Weighed Fresh.	Rib Weighed Dry.	Skull Weighed Fresh.	Skull Weighed Dry.
			GROUP III.—CASES OF HYPERTENSION.				
777	M.	38	Hypertension, coronary occlusion	7·0	12·2	4·9	6·0
857	M.	55	Hypertension, cerebral hæmorrhage	4·2	6·0	5·5	6·1
874	M.	57	Hypertension, coronary occlusion	2·1	2·8	3·5	3·8
878	M.	40	Hypertension, accident	2·2	3·3	2·8	3·1
887	F.	49	Hypertension, heart failure	1·4	2·1	3·0	3·5
897	M.	54	Hypertension, coronary occlusion	1·2	1·8	5·1	6·2
915	M.	48	Hypertension, heart failure	2·9	4·4	6·2	7·0
924	M.	54	Hypertension, coronary occlusion	1·9	2·9	..	..
926	M.	55	Hypertension, coronary occlusion	1·8	2·7	..	..
945	M.	65	Hypertension, coronary occlusion (printer) ..	5·0	5·8	12·0	13·0
1016	M.	24	Early hypertension, accident	2·7	4·4	1·4	1·5
Average	..	49	..	2·9	4·4	4·9	5·6
			GROUP IV.—VARIOUS CASES.				
807	M.	15	Imbecility, epilepsy, accident	10·0	15·7	17·7	20·8
833	M.	25	Epilepsy, suicide	1·1	1·7	4·2	4·7
839	F.	33	Nervous breakdown, suicide	2·1	3·2	1·3	1·4
845	M.	19	Mental depression, suicide	0·9	1·3	2·7	3·3
858	M.	42	Psychosis, suicide	2·7	3·6	3·3	3·7
1056	M.	55	Accident (painter)	14·0	25·0	39·0	43·0

The cases fell into four groups. Group I. consisted of healthy individuals killed accidentally, whose organs showed no macroscopic evidence of disease. Included also is the case of a young man who died suddenly from a volvulus, but whose organs were otherwise healthy. The group gives an indication of the amount of lead which is normally present in bone in Queensland individuals, but the series is too small for definite conclusions.

Group II. consisted of eight cases of chronic nephritis in young people. Seven died of cerebral hæmorrhage. The remaining case (No. 942) died of an unusual disease, a gangrenous ileitis. The kidneys showed areas of necrosis and hæmorrhage as well as chronic changes. The reason for the large proportion of this series of nephritis cases ending in cerebral hæmorrhage is that it is only when the exitus is sudden that the cases come under the jurisdiction of the coroner. Those that die gradually (as from uræmia or cardiac failure) are usually certified by the attending practitioner.

Of the eight cases, it will be seen that five had an abnormal amount of lead in both ribs and skull, one an abnormal amount in the rib but not in the skull, and one an abnormal amount in the skull but borderline figures in the rib. The importance of lead in the etiology of chronic nephritis in young people in Queensland is therefore confirmed by these analyses, but the series of normal cases is not yet large enough for a biometrical comparison.

Group III. consisted of eleven cases of hypertension. The hypertension was diagnosed by hypertrophy of the left ventricle in the absence of intrinsic disease of the heart. Most of the patients were over forty years of age, and died as a result of disease of the circulatory system. Two were killed accidentally. The kidneys were affected only slightly.

The fact that chronic lead poisoning will cause renal and vascular changes, including an increased blood pressure, has suggested to several observers that essential hypertension may be caused by the absorption of lead into the system.

In eight of our eleven cases the lead figure was normal. Two of them (Nos. 874 and 926) were extreme examples of hypertension, the hearts weighing 21½ oz. and 22 oz. respectively, yet the amount of lead was quite low. This small series therefore gives no support to the suggestion that lead is the cause of *essential* hypertension.

Three cases of hypertension did, however, show an excessive amount of lead in the bones, and with these lead may have been a factor in the etiology. Of these, in No. 777 lead poisoning was suspected at the age of sixteen. No. 945 was a printer, and had therefore been exposed to a mild lead hazard.

Group IV. included two cases where the lead absorption had been excessive. No. 807 was an imbecile boy, subject to epileptic fits. The bone analysis suggests that these symptoms were the results of a lead encephalopathy. No. 1056 was a painter, killed by an accidental fall. The bones show that he had been absorbing a considerable amount of lead at his occupation.

The Histology of Lead Nephritis.

Dr. Croll selected seven kidneys for histological examination. The patients' ages varied from 19 to 39. Five were females and two males. In each case death had occurred from cerebral hæmorrhage, and macroscopically the kidneys showed definite nephritic changes. That the nephritis was of lead origin was indicated by an abnormal amount of lead in the bones.

To the naked eye these kidneys were smaller than normal and the surface was granular. On section the cortex was seen to be reduced in width and the renal pattern confused. Small cysts, filled with fluid, were not uncommon.

On microscopic examination the glomeruli showed thickening of Bowman's capsule with, in later stages, degeneration of the glomerular tuft. The tubules were dilated to a greater or less extent. Strands of fibrous tissue were seen intersecting the cortex. Collection of lymphocytes were frequently present amongst the fibrotic strands. The vessels showed thickening and degeneration of the intimal layers with slight increase in the media.

These changes are typical of the ischaemic type of nephritis as contrasted with the toxic or infective type. The implication is, therefore, that lead produces kidney changes by first producing vascular damage.

The references to the work of Dr. Croll done in the State laboratories have courteously been permitted by Dr. J. H. L. Cumpston, C.M.G., Canberra, the Chairman of the National Health and Medical Research Council of the Commonwealth.

The Value of Blood Alcohol Tests.

During the past year the Government Analyst has kindly estimated the amount of alcohol in the blood of eleven persons, upon whom autopsies were performed. This estimation is valuable in two types of case: Persons involved in traffic accidents, and those suspected of dying from acute alcoholism.

Traffic Accidents.—The value of a blood alcohol estimation in placing the responsibility for a traffic accident is well exemplified in Case 769. The deceased was riding a motor bicycle along a main road on the outskirts of Brisbane when he veered across the midline of the road and collided with the side of a car travelling in the opposite direction. The cyclist was struck on the head and killed at once. An observer noticed that, as the cyclist aproached, his head was bent down. Another observer had noticed a few minutes previously that his course was erratic. The police officer who investigated the accident formed the opinion that the accident was caused by the rider of the cycle not keeping a proper lookout along the road. The inattention of the cyclist and his uncertain course were fully explained when the analyst reported the presence of 0·29 grams of alcohol per 100 cubic centimetres of his blood. Such a proportion implied that the subject was thoroughly under the influence of alcohol.

Case 991 was that of a man who was seen to walk unsteadily across the road in front of a moving tram. He was thrown to the ground and died soon after from head injuries. His blood contained 0·27 grams of alcohol per 100 cubic centimetres, which confirmed the bystanders' opinion that he was drunk.

The Diagnosis of Acute Alcohol Poisoning.—From time to time there are brought to the morgue bodies, the organs of which smell strongly of methylated spirits or of rum. The subjects are usually well known to the police as heavy drinkers or "metho" addicts. The question arises, and may be difficult to answer, whether or not the exitus was due directly to alcoholic poisoning. In these circumstances considerable help is received from the estimation of the amount of alcohol in the blood.

Seven such cases were investigated in the year. The alcohol content of the blood was found to be 0·02 per cent., 0·10 per cent., 0·11 per cent., 0·14 per cent., 0·18 per cent., 0·19 per cent., and 0·31 per cent. respectively. The conclusion was that in none of these cases was death due solely to acute alcoholic poisoning, although in several of them alcoholism, acute or chronic, was doubtless a contributory factor.

> In this connection McNally (Toxicology, page 661) states:—"If there is no serious pathology and the blood contains more than 0.43 per cent. alcohol, ... one may fairly assume that death resulted from acute alcoholism. If, on the other hand, one finds serious pathology such as extensive cardio-circulatory disease or liver or kidney lesions, it would be fair to assume that in the presence of lesser concentrations of alcohol (0·25 per cent. to 0·35 per cent.) death was due to a combination of the pathologic lesions found, and acute alcoholism."

PUBLICATIONS.

The following articles were published by the laboratory staff:—

Derrick, E. H.: "The Diagnosis of Fevers in South Queensland," Medical Journal of Australia, 29th October, 1938, page 723.

Smith, D. J. W.; Brown, H. E.; and Derrick, E. H.: "A Further Series of Laboratory Infections with the Rickettsia of 'Q' Fever," Medical Journal of Australia, 7th January, 1939, page 13.

Derrick, E. H.: "Rickettsia burneti, the Cause of 'Q' Fever," Medical Journal of Australia, 7th January, 1939, page 14.

Derrick, E. H.; Smith, D. J. W.; Brown, H. E.; and Freeman, M.: "The Role of the Bandicoot in the Epidemiology of 'Q' Fever: a Preliminary Study," Medical Journal of Australia, 28th January, 1939, page 150.

Burnet, F. M.; Freeman, M.; Derrick, E. H.; and Smith, D. J. W.: "The Search for Immunological Relationship between 'Q' Fever and other Rickettsioses," Medical Journal of Australia, 8th July, 1939, page 51.

SECTION OF MEDICAL SERVICES SUPERVISION.

During the year, in continuation of activities instituted last year, and partly as the result of the establishment of an Air Raid Precautions Committee, it was decided to compile a complete record of all registered medical practitioners in the State, adding to it from time to time, in a separate category, the records of all persons outside Queensland who apply for *locum tenens* work in this State. The fullest particulars were obtained in respect of each medical practitioner, and the details were submitted to them individually for any alterations or corrections they might feel desirable.

The completed cards were arranged in sections according to whether the practitioner concerned was—

(*a*) in general practice;

(*b*) in full-time service either to the Department, to local authorities, to hospital boards, or to hospital committees;

(*c*) in part-time service with general practice.

The cards are further identified by signal marks in respect of specialty where such existed, and also as to previous military service and present availability for military service.

Further particulars are being added from time to time, and it is anticipated that the series will very shortly represent a most complete record of all relevant data regarding all medical practitioners in the State.

Particulars regarding incoming medical men have in several instances been obtained through the courtesy of the Directors of Public Health in other States, and in late months, particularly, certain of the other States have adopted a similar practice, and particulars have been exchanged with them as to medical men from Queensland who are seeking employment or otherwise establishing themselves in their States.

These departmental medical records have been of the very greatest importance in connection with section 5 of "*The Hospitals Act of* 1936," by which the Director-General has been given certain limited powers with regard to the selection of medical men for work in hospitals throughout Queensland. It is felt that these powers might perhaps be widened with profit, particularly as more and more men are showing a desire to take up State medicine as a life work, either on the public health or general hospital sides.

An attempt has also been made to arrange all public hospitals in Queensland in a rough classification based upon the full-time or part-time activities of the medical men in charge of treatment. It is felt that this classification might also be extended with profit, and correlated with the private medical facilities available in each town.

The present classification is as follows:—

I.—Full Time Medical Superintendent with Full-time and Part-time Medical Officers.

Brisbane	Ipswich
Bundaberg	Toowoomba.

II.—Full-time Medical Superintendent with Full-time Medical Officers.

Cairns	Maryborough
Innisfail	Rockhampton.
Mackay	Townsville

III.—Full-time Medical Superintendent with Part-time Medical Officers.

Atherton	Charters Towers
Gladstone	Gympie
Nambour	Mount Isa.

IV.—Full-time Superintendent only.

Boonah	Bowen
Boulia	Proserpine

V.—Full-time Medical Superintendent with right of private practice.

Alpha
Aramac
Augathella
Babinda
Baralaba
Blair Athol
Camooweal
*Charleville
Cooktown
Cloncurry
Collinsville
Chinchilla
Clermont
Cunnamulla
Cracow
Chillagoe
Dirranbandi
†Dalby
Eidsvold
Emerald
Gin Gin
Gayndah
Gordonvale
Home Hill
Inglewood
Isisford
Julia Creek
Jundah
†Kingaroy
Kynuna
Laidley
Longreach
Mitchell
Mossman
Muttaburra
Miles
Mundubbera
Mungindi
Mareeba
*Mount Morgan
Normanton
Quilpie
Roma
Richmond
St. George
Springsure
Surat
Taroom
†Tully
Tambo
Texas
Tara
Thargomindah
Thursday Island
†Warwick
Winton
Yeppoon

* Has also a full-time resident medical officer.

†Has also honorary medical officers.

VI.—Private Practitioner supervising Hospital as Part-time Superintendent.

Barcaldine
Blackall
Biggenden
Biloela
Beaudesert
Canungra
Childers
Esk
Goondiwindi
Harrisville
Herberton
Hughenden
Ingham
Kilcoy
Maleny
Monto
Mount Perry
Nanango
Stanthorpe
Wondai

NOTE.—The classification in the hospital groups, I. to VI. inclusive, is not absolute, but subject to correction. The form of service is determined by the local Hospital Board or Hospital Committee and variations are brought in from time to time.

Vacant at Present.

*Adavale
*Burketown
Croydon
Many Peaks
Mount Molloy
Mount Mulligan
Wallumbilla

* Officer visits when required.

VII.—Hospitals provided with Maternity Wards.

Atherton
Alpha
Aramac
Adavale
Augathella
Ayr
Babinda
Barcaldine
Blackall
Biggenden
Beaudesert
Boonah
Bundaberg
Brisbane
Boulia
Burketown
Bowen
Biloela
Camooweal
Cloncurry
Charters Towers
Clermont
Collinsville
Cooktown
Cracow
Charleville
Cunnamulla
Cairns
Chillagoe
Dirranbandi
Eidsvold
Emerald
Esk
Goondiwindi
Gayndah
Gin Gin
Gladstone
Gordonvale
Gympie
Georgetown
Herberton
Harrisville
Hughenden
Home Hill
Innisfail
Ingham
Inglewood
Isisford
Ipswich
Julia Creek
Jundah
Laidley
Longreach
Maleny
Maryborough
Many Peaks
Mackay
Millaa Millaa
Mitchell
Mareeba
Monto
Mossman
Mount Morgan
Mount Isa
Mundubbera
Mungindi
Muttaburra
Normanton
Nambour
Proserpine
Quilpie
Roma
Rockhampton
Richmond
Stanthorpe
St. George
Springsure
Surat
Tara
Taroom
Tambo
Thargomindah
Texas
Tully
Townsville
Toowoomba
Warwick
Wallumbilla
Winton
Wondai
Yeppoon

VIII.—Private Hospitals in Queensland as at 30th June, 1939.

Name of Hospital.	Address.	Beds.		
		General.	Maternity.	Total.
Alexandra	Wickham terrace, Brisbane	27	..	27
Alexandra	Bundaberg	..	10	10
Allendale	Sarina	..	5	5
Ashgrove	Waterworks road, Ashgrove	11	..	11
Audley	Atherton	2	5	7
Avondale	Clermont	2	5	7
Balcoomba	Gladstone	17	1	18
Bayview	Townsville	17	..	17
Bay View	Cleveland	8	2	10
Bayview	Gladstone	..	6	6
Benvenue	Archer street, Toowong	11	..	11
Berilda	Laidlaw parade, East Brisbane	6	4	10
Bethesda	Rockhampton	..	..	..
Blairgowrie	Gladstone	14	..	14
Boondooma	Proston	5	3	8
Boothville	Sixth avenue, Windsor	..	12	12
Brabourne	Bundaberg	12	..	12
Braeside	Gympie	5	7	12
Brookhill	Shaw road, Nundah	..	7	7
Burra Bru	Dalby	..	8	8
Carina	Old Cleveland road, Camp Hill	..	3	3
Chatsworth	Hunter street, Greenslopes	..	6	6
Clifton	Clifton	2	3	5
Clinton	Bowen terrace, New Farm	6	2	8
Clydebank	Kingaroy	8	8	16
Cooroora	Pomona	5	6	11
Cooroy	Cooroy	5	5	10
Craiglea	Chinchilla	..	8	8
Cromer	Mackay	22	..	22
Charlwood	Toogoolawah	4	2	6
C.W.A.	Oakey	4	5	9
Dalcross	Ipswich road, South Brisbane	6	..	6
Dalkeith	Rose street, Wooloowin	14	8	22
Dayboro	Dayboro	..	4	4
Delta	Ayr	13	..	13
Dumbano	Southport	6	..	6
Ellendene	Valley, Brisbane	..	12	12
Emo Ruo	Palmwoods	3	3	6
Fellnaw	Ipswich road, Annerley	17	..	17
Fermoy	Milton road, Auchenflower	22	8	30
Fleurbaix	Cairns	18	7	25
Friendly Societies	Victoria Park road, Brisbane	24	..	24
Finchley	Toowoomba	9	..	9
Genazzano	Upper Wickham terrace, Brisbane	12	..	12
Glandore	Gympie	12	2	14
Glengowrie	Waterworks road, Red Hill	2	5	7
Glenrowan	Nanango	..	6	6
Glenrowan	Wickham terrace, Brisbane	30	..	30
Greendale	Charleville	..	4	4
Grange	Day's road, Grange	..	11	11
Gregory	Gregory terrace, Brisbane	20	..	20
Hanlonia	Gympie	..	4	4
Hazeldean	Clermont	1	4	5
Herries	Cairns	..	3	3
Hillcrest	Rockhampton	27	4	31
Hygeia	Innisfail	3	1	4
Indurra	Oakey	7	..	7
Ingarfield	Old Sandgate road, Albion	16	..	16
Ingham	Ingham	8	2	10
Janolna	Holland street, Greenslopes	7	6	13
Jesmond Dene	Charters Towers	..	3	3
Kedron	Bundaberg	..	6	6
Kia Ora	Ayr	..	3	3
Kingston	Gympie	..	9	9
Koreelah	Miles	..	5	5
Ladies Hospital	Home Hill	..	4	4
Lister	Gympie	13	..	13
Lister	Mackay	18	8	26
Lister	Townsville	18	..	18
Longreach	Longreach	10	6	16
Lowood	Lowood	3	3	6
Lorraine	Crow's Nest	5	6	11
Lucina	Rockhampton	..	4	4
Lyndhurst	Ipswich	3	3	6
Lyon-Lee	Vulture street, South Brisbane	..	5	5

VIII.—Private Hospitals in Queensland as at 30th June, 1939.—*continued.*

Name of Hospital.	Address.	Beds.		
		General.	Maternity.	Total.
Macdonald	Highgate Hill, South Brisbane	..	8	8
Mansfield	Old Cleveland road	4	8	12
Marooma	Federation street, Windsor	16	..	16
Mater Misericordiae	South Brisbane	112	..	112
Mater Misericordiae	Mackay	30	110	40
Mater Misericordiae	Rockhampton	32	..	32
Mentone	Lower Bowen terrace, New Farm	4	..	4
Miegunyah	Allora	6	..	6
Mirrabooka	Allora	4	..	4
Merrylands	Annerley, South Brisbane	..	5	5
Mylo	Toowoomba	18	4	22
Narbethong	Indooroopilly	..	5	5
Newmarket	Newmarket, Brisbane	5	4	9
Nundah	Nundah	15	5	20
Nurse Gray's	Toowoomba	..	2	2
Oakdale	Ipswich	12	8	20
Oakdene	Toowoomba	4	4	8
Oregon	Pialba	2	2	4
Oroya	Innisfail	8	4	12
Palms, The	Townsville	10	..	10
Palms, The	Kangaroo Point, Brisbane	2	6	8
Park Haven	Townsville	4	1	5
Park View	Wickham terrace, Brisbane	15	..	15
Pine, The	Stanthorpe	7	3	10
Rosemount	Nambour	..	3	3
Rosslare	Vulture street, East Brisbane	9	..	9
Rosslyn	Ayr	11	..	11
Rushton	Boonah	5	4	9
Rutherglen	New Sandgate road, Clayfield	..	5	5
Rushton	Toowoomba	..	10	10
St. Andrew's	Ipswich	8	14	22
St. Andrew's	Toowoomba	7	4	11
St. Ann's	Cleveland	3	3	6
St. Anthony's	Cairns	7	2	9
St. Aubyn's	Kingaroy	6	6	12
St. Clair	Kangaroo Point	..	11	11
St. Helen's	South Brisbane	37	..	37
St. James	Nambour	6	..	6
St. Kilda	Rosewood	..	5	5
St. Kilda	Wynnum	6	2	8
St. Margaret's	Millmerran	2	4	6
St. Margaret's	Dalby	..	6	6
St. Margaret's	Tully	..	3	3
St. Margaret's	Maryborough	11	5	16
St. Margaret's	Innisfail	..	3	3
St. Margaret's	Kilcoy	..	6	6
St. Margaret's	Toowoomba	..	3	3
St. Martin's	Brisbane	60	..	60
St. Mary's	Beaudesert	..	4	4
St. Mary's	Maryborough	25	10	35
St. Mary's	Ipswich	4	4	8
St. Monica's	Beenleigh	9	..	9
St. Vincent's	Toowoomba	70	..	70
St. Vincent's	Bundaberg	18	..	18
Sandown	Southport	8	2	10
Seaview	Sandgate	4	..	4
Sherwood	Sherwood	12	4	16
Sherwood	Innisfail	6	3	9
Stirling	Goomeri	..	4	4
Stirling	Southport	..	4	9
Stuartholme	Jandowae	1	4	5
Sunny Brae	Eumundi	3	3	4
Tablehurst	Eagle Junction, Brisbane	5	..	5
Tannachy	Rockhampton	31	9	40
The Laurels	Brunswick street, New Farm	4	4	8
Thorncliffe	Beenleigh	9	..	9
Toxteth	Gregory terrace, Brisbane	12	5	17
Tradeston	Ipswich road, Annerley	2	6	8
Turrawan	Clayfield	21	5	26
Virginia	Virginia	5	5	10
Wairoa	Toowoomba	13	..	13
Walmer	Killarney	3	4	7
Welford	Warwick	..	10	10
Welwyn	Woodford	2	3	5
Wilga	Kingaroy	11	5	16
Wilga	Toowoomba	22	..	22
Wilcarnia	Gatton	3	3	6
Wooloowin	Bradshaw street, Wooloowin	..	7	7
Yasmar	Edmonstone street, South Brisbane	10	8	18
Yootapina	Pitt street	3	8	11

During the year, frequent applications were made to the Director-General for advice on professional aspects from hospital boards and hospital committees. It is gratifying to feel that an increasing degree of confidence has been established between the Central Office and hospital authorities, and every attempt was made to provide the fullest information on all matters referred.

A full report upon the conditions existing at Herberton was provided by Dr. Fryberg at the request of the committee controlling that hospital, and inspections in respect of hospital provision for isolation were made in several localities.

The provision for isolation wards for infectious diseases throughout the State might be greatly improved. Many of the existing wards were established years ago and are inadequately planned, and have not always been used for the purpose for which they were erected. The use of such isolation wards as emergency nurses' quarters, children's wards, convalescent wards, is to be deprecated. Infectious disease is likely to arise when least expected, and an unsatisfactory condition sometimes results if provision is not always kept available.

When two years ago, the control of private hospitals was transferred from local authorities to the State, the supervision of the nurses who visit private houses, particularly in relation to confinements, was not transferred, and remained the province of the local authority concerned. It is felt that this is a situation which might with profit be corrected. To some extent these externe midwives may be regarded as "travelling private hospitals," and their equipment and the conditions under which they provide their service, as well as the nature of the service provided, are all matters definitely affecting the public health and legitimately falling within the medical services which should be supervised by the State.

A recommendation has been made in this regard and it is hoped that legislative effect will be given it at an early date.

The supervision of private hospitals has been continued and extended during the current year, and the great majority of these buildings are now satisfactory from the point of view of public health.

Supervision of Private Hospitals.

Officer Inspecting: ABRAHAM FRYBERG, M.B., B.S., D.P.H., D.T.M.

(Nurse Inspector: MAUREEN VERA O'NEILL, A.T.N.A.)

"At the end of the year 1938-39 there were 155 private hospitals licensed in the State of Queensland. When the Department took control in 1937 there were 215 hospitals licensed by the various local authorities. Of the 60 not in existence now, 41 were closed during 1937-38 and 19 during the past year.

"Inspections have been carried out during the year, and it is pleasing to note that in practically all cases the alterations suggested at previous inspections have been carried out.

"I would particularly mention that in all private hospitals the operating theatre and labour ward are now separate. This should be a factor in reducing morbidity.

"There are still 97 hospitals admitting both general and maternity cases. Only a small percentage of these have separate maternity staffs. I have spoken to the matrons of some of these hospitals and from the information they have supplied I am certain it would be a financial impossibility for them to carry on if they kept a staff to do nothing but maternity work.

"During the coming year consideration might be given to the question of the introduction of legislation to allow private hospitals of the general type to admit medical and surgical cases only.

"It is pleasing to note that a new private maternity hospital, equipped on modern lines, is shortly to be opened if certain legislative difficulties can be overcome. I hope permission will be given, as this hospital will be a definite asset to the community.

"The following are particulars of private hospitals in Queensland as at 3t0h June, 1939:—

Number of private hospitals licensed when Department took control (January, 1937)		215
Number of private hospitals closed since that date—		
1937-38	41	
1938-39	19	
		60
Number of private hospitals now in operation		155
Classification of hospitals—		
General cases only	15	
General and maternity	97	
Maternity only	42	
Mental	1	
Child welfare	0	
		155
Total number of beds available		1,813
Number of cases treated 1st July, 1938, to 31st December, 1938—		
General	11,474	
Maternity	4,416	
		15,890
Number of private hospitals where alterations were necessary to comply with Act and Regulations		121

"It is to be regretted that the only private hospital registered for the reception, care, and treatment of mothers and infants found it necessary to close during the year through lack of support. This hospital, which was well managed, was fulfilling a public need."

Particulars of Control of Private Hospitals.

The following particulars indicate how private hospitals are controlled, apart from those privately owned (147):—

Denominational—
- Bethesda, Rockhampton
- Mater Misericordiae, Brisbane
- Mater Misericordiae, Rockhampton
- Mater Misericordiae, Mackay
- St. Martin's, Brisbane
- Boothville, Brisbane

Associations not for profit—
- Country Women's Association, Oakey
- Friendly Societies, Brisbane

Classification of Diseases Treated.

Particulars of admissions of patients under this heading are given for the first time.

The private hospital year ends on 30th September, but the Government Statistician requested an extension of particulars to 30th December so that the statistics might be used by him. This accounts for the fact that figures are only given for six months:—

Patients treated in Private Hospitals, 1st July, to 31st December, 1938.

Diseases for which treated.	Patients Treated.
Infectious diseases—	
Typhoid Fever	4
Diphtheria	9
Influenza	674
Tuberculosis (pulmonary)	25
Other infectious diseases	63
General diseases—	
Cancer	229
Tumours (non-malignant or nature unspecified)	295
Other general diseases	354
Diseases of the nervous system	824
Diseases of the circulatory system	630
Diseases of the respiratory system	1,020
Diseases of the digestive system	3,750
Diseases of the genito-urinary system	1,191
Abnormal pregnancies and puerperium	598
Diseases of the skin	418
Diseases of the bone	168
Congenital malformation	15
Diseases of early infancy	11
Senility	85
Accidents	1,046
Attempted suicide	1
Diagnosis not determined	64
Total	11,474

It is noticed that the greatest numbers of admissions were patients suffering from diseases of the digestive system, and, next in order, diseases of the genito-urinary and respiratory systems. These diseases also head the list of admissions to public hospitals.

During the year Sister Maureen Vera O'Neill has been appointed to the staff as Nurse-Inspector. This enables more frequent inspections of private hospitals to be carried out.

Convalescent Homes.—It was decided that, provided the persons admitted did not require the services of a doctor, convalescent homes would not be classified as private hospitals. These homes fulfil a public need and, if they were looked upon as private hospitals, it would be necessary to staff them with a number of registered nurses. The fees charged are small as compared with the fees for private hospitals. Their registration under a separate heading might be considered during the coming year.

SECTION OF MATERNAL AND CHILD WELFARE.

ACTING DIRECTOR: THOMAS HENRY REEVE MATHEWSON, M.B., Ch.B. (Edin.).

ACTING SUPERINTENDENT: DORIS BARDSLEY, A.T.N.A.

Introduction—General—Baby Clinic and Child Welfare Railway Car—Extensions of Maternal and Child Welfare Service during the Year—Ante-natal Clinics—Alteration in Name—Staff Changes—The Year's Work—Ante-natal Clinics—Infants in Residence—Non-resident Babies—Remarks on Attendances—The Child of Pre-school Age—Baby Clinic and Child Welfare Railway Car—Acting Superintendent's Tour of Inspection—Maternal and Child Welfare Service Publications—Correspondence—Publicity—Medical Education—The Training School—Comments on Statistics—Birth—Puerperal and Maternal Mortality—Infantile Mortality—Neo-natal Mortality (including Stillbirths)—Deaths of Infants aged one month and under one year—Deaths of Infants under age of one year—Child Mortality from one to five years—Causes of Deaths in Children aged one year and under two years—Causes of Deaths in Children aged two years and under five years—Ratio of Male Death Rate to Female Death Rate—Acknowledgments—Tables of Statistics—Visits and Attendances.

ANNUAL REPORT OF ACTING DIRECTOR FOR 1938-39.

GENERAL.

Consistently good progress has been made by the Maternal and Child Welfare Service during the year. An increase in the number of mothers and children attending the clinics in the centres already established has been maintained and the response in the centres opened during the year has in some instances exceeded expectations. With the exception of the towns along the Central line, most of the places which can be reached by the railways have been provided with regular clinic service. Once these gaps are filled in, our efforts will be concentrated still further on consolidating the work in the existing centres.

BABY CLINIC AND CHILD WELFARE RAILWAY CAR.

Realising that the baby clinic and child welfare railway car had served its purpose in making the aims and objects of maternal and child welfare work known to the people of Queensland, and that one visit each year was of little practical value to mothers whose young children were in need of frequent and regular supervision in regard to feeding and general management, it was decided to inaugurate a three-weekly railway car itinerary between Winton and Mount Isa, visiting en route Hughenden, Julia Creek, Cloncurry, Richmond, and Prairie. The first of these itineraries began on the 5th February last. There has been a very satisfactory and encouraging response by the mothers and considerable interest has been awakened in maternal and child welfare work in the people living in these North-western districts.

EXTENSIONS OF MATERNAL AND CHILD WELFARE SERVICE DURING THE YEAR.

Southport, Murgon, and Bowen, which were previously sub-centres, were opened as resident centres during the year. Sub-centres were opened at Redcliffe, Corinda, Ashgrove, Beenleigh, Coolangatta, Monto, Collinsville, and Giru. Clinic service was provided for Winton, Cloncurry, Hughenden, Julia Creek, Mount Isa, Prairie, and Richmond by the visits of the baby clinic and child welfare railway car. Eight new ante-natal clinics were opened in the metropolitan area. Details of the extension of the ante-natal service which came into operation in May, 1939, are given in the next paragraph.

There are now 122 clinics, including centres and subcentres, operating throughout Queensland, which has an area of 670,500 square miles, rather more than half being situated within the Tropics, and a population of just over 1,000,000.

ANTE-NATAL CLINICS.

An extension of our ante-natal service, which is under the able supervision of Dr. Beatrice Warner, has been made possible by the appointment of a sister holding special qualifications in obstetrics and having special experience in ante-natal work. In addition to the ante-natal clinics which were established in Brisbane early in 1929, and are held on two evenings of each week—one at Fortitude Valley and one at Woolloongabba—Sister attends an ante-natal clinic which is held during the afternoon, twice a month, at each of the following places:—Caboolture, West End, Corinda, Yeronga, Enoggera, Herschell Street, Morningside, and Nundah. Matrons of private maternity hospitals in the various districts have been advised of this either by letter or by personal visit. The Matron of the District Nurses' Home has been visited and her co-operation sought. It is expected that this extension of our service will prove of great value to all expectant mothers living in these districts.

Alteration in Name.

While the words "infant welfare" and "baby clinics" have been used in connection with the activities of this department since the clinics were established in 1917, it was considered that the words "maternal and child welfare" would designate the work carried on more adequately, because supervision of the health of the mother and of the health of the child up to school age is undertaken. The adoption of this title will bring this department into uniformity with similar departments elsewhere.

Originally the activities of the infant welfare service were concentrated on the work of saving the lives of infants, but it soon became evident that the health of the infant was intimately bound up with the health and well-being of the mother. The effort to save the lives of children, and the attempt to render motherhood safe, have become merged in a common endeavour.

Staff Changes.

Miss Barron, who has been superintendent since 1924, when our training centre was established, and who has been on long service leave, resigned on 30th June, 1939, on account of ill-health.

Miss Barron joined the staff of the baby clinics in 1918 and having shown great aptitude for teaching, was selected by Miss Chatfield, the Supervisor of Baby Clinics, for training at the Karitane Hospital in Dunedin. Miss Barron completely justified her selection and proved a most efficient superintendent, an indefatigable worker, and a very able teacher thoroughly devoted to the training of our nurses in the work of one of the most important branches of preventive medicine, namely, the care of the expectant mother and the feeding and general management of the child. Miss Barron was successful in building up a maternal and child welfare service of which the State may well be proud.

Miss Bardsley has ably maintained the high traditions of the service during Miss Barron's absence.

Three nurses resigned during the year; one to be married.

Three nurses were appointed to the permanent staff and seven were appointed on probation.

Ante-natal Clinics.

Reference has already been made to the extension of the ante-natal service by the establishment of ante-natal clinics in various districts. These clinics have been opened quite recently, and we anticipate a good response as soon as their existence becomes more widely known.

The total attendances at the ante-natal clinics numbered 2,265.

Infants in Residence.

During the year we have received into residence with their mothers a number of premature and other infants whose feeding and general care and management required whole-time expert and experienced child welfare nursing supervision. Seven mothers and twelve infants (six boys and six girls), including three pairs of twins, were admitted during the first term and ten mothers and fifteen infants (seven boys and eight girls), including one pair of twins, were admitted during the second term.

Natural feeding either wholly or in part was established in most cases, and the infants made very satisfactory progress. The mothers were instructed in the care and management of their babies and in the preparation of artificial food where it was necessary. Of the twenty-seven infants who were in residence, twenty-three are attending the metropolitan clinics regularly, one has gone to the country.

As in previous years, some infants who were in need of continuous and skilled supervision had to be refused admission during four months of the year, namely, during the intervals between the terms of training. With the establishment of a mothercraft home, it will be possible to carry on this important branch of our work without interruption, and increased facilities will be provided for training a larger number of nurses in ante-natal and child welfare work. In addition to this, it will be possible to arrange refresher courses for those of our nurses who have been working for some time outside the metropolitan area and have not had opportunities of keeping in touch with recent developments in maternal and child welfare work.

The following is a summary of the progress of infants received into residence:—

SUMMARY OF PROGRESS OF INFANTS IN RESIDENCE DURING THE YEAR ENDING 30TH JUNE, 1939.

Ref. No.	Reason for Admission.	Age on Admission.	Birth Weight	Weight on Admission.	Time in Residence.	Weight on Dis.	Gain in Weight.	Remarks.
			Lb. Oz.	Lb. Oz.	Weeks.	Lb. Oz.	Lb. Oz.	
1 (Twin)	Prematurity	15 days	?	4 7½	10½	8 3	3 11½	Good progress. Naturally fed.
2 (Twin)	Prematurity	15 days	?	4 13	10	8 0¾	3 3¾	Good progress. Naturally fed.
3 (Twin)	Underfeeding.. ..	19 days	7 0	7 13	4	9 0	1 3	Natural food increased
4 (Twin)	Underfeeding.. ..	19 days	6 12	6 15¾	4	8 0½	1 0¾	Natural food increased
5	Digestive upset ..	4½ weeks	10 0	9 7½	16	13 7	3 15½	Good progress. Artificially fed from birth
6	Malnutrition	17 weeks 5 days	?	8 4	5½	10 3	1 15	Artificially fed owing to mother's health Good progress
7 (Twin)	Prematurity and Digestive upset	8½ weeks	5 4	7 3½	10	9 8	2 4½	Good progress. Naturally fed
8 (Twin)	Prematurity and Digestive upset	8½ weeks	5 0½	7 3½	10	9 8	2 4½	Good progress. Naturally fed
9	Underfeeding.. ..	8 weeks 2 days	8 15	9 7	4	11 4	1 13	Good progress. Natural food increased
10	Underfeeding.. ..	7 weeks	6 0	8 9	4	10 5	1 12	Good progress. Natural food increased
11	Underfeeding due to mother's cracked nipples	3 weeks	8 0	5 4	4	7 10¾	2 6¾	Good progress. Naturally fed
12	Refusing breast ..	27 weeks	7 8	12 8	3	13 4½	0 12½	Good progress. Naturally fed
13	Prematurity	12 weeks	3 0	5 12¾	8	8 6½	2 9¾	Good progress. Artificially fed owing to death of mother
14	Failure to gain weight	7 weeks	8 10¾	9 12½	14	14 1½	4 4	Slow but satisfactory progress. Artificially fed
15	Prematurity	15 days	4 5	4 6	4 2/7	6 7½	2 1½	Good progress. Naturally fed
16	Refusing breast ..	3 weeks	6 3	7 1	11 days	7 7	0 6	Good. progress. Naturally fed
17	Refusing breast ..	10 weeks	6 13	9 13¾	1	10 0¼	0 2½	Satisfactory progress. Partly naturally fed
18 (Twin)	Prematurity	2 weeks	4 8	4 7½	6½	7 5½	2 14	Good progress. Partly naturally fed
19 (Twin)	Prematurity	2 weeks	4 7¾	4 9	6½	7 10½	3 1½	Good progress. Partly naturally fed
20	Prematurity	13 days	4 13	4 15¾	13	9 3	4 3¾	Good progress. Artificially fed owing to death of mother
21	Refusing food ..	6½ months	7 3	10 14½	3½	11 4½	0 6½	Taking natural food well when discharged
22	Malnutrition	4½ months	8 8	10 9½	4 2/7	11 8	0 14½	Satisfactory progress. Artificially fed owing to mother's ill health
23	Prematurity	3½ weeks	4 4½	5 4½	5	7 15½	2 11	Good progress. Naturally fed
24	Digestive upset ..	5½ months	6 0	13 0	4 5/7	14 15	1 15	Good progress. Naturally fed
25	Underfeeding.. ..	5½ weeks	7 8	8 2	3	9 7½	1 5½	Good progress. Natural food increased
26	Refusing food ..	3½ weeks	7 0¼	6 15	5 5/7	9 7¾	2 8¾	Good progress. Natural food increased
27	Overfeeding and digestive upset.	4 weeks	6 13½	8 12¾	1 6/7	9 12½	15 8	Good progress. Naturally fed

NON-RESIDENT BABIES.

In addition to the supervision of the feeding and general management of a large number of healthy infants during the year, many mothers were advised in regard to the care of poorly nourished and delicate infants whose feeding and management presented some difficulty. Restoration of natural feeding was accomplished in many instances. Over-feeding and under-feeding were corrected where necessary.

REMARKS ON ATTENDANCES.

The number of infants under the age of one year seen for the first time during the year ending 30th June, 1939, was 10,186, which is 1,209 more than last year.

The proportion of mothers and infants reached by the Maternal and Child Welfare Service has risen from 30 per cent. of the total number of children born for the year ending 30th June, 1928, to 53·6 per cent. for the year ending 30th June, 1939. This represents a very satisfactory increase for the period.

The total attendances at all the clinics in the State for the year ending 30th June, 1939, numbered 241,911, an increase of 28,448 over the previous year, which indicates a very satisfactory growth of the work.

The attendances at some of the centres have been affected by the occurrence of epidemics of whooping cough, chicken-pox, measles, influenza, mumps, colds, and conjunctivitis.

The attendances at the ante-natal clinics show a small decrease when compared with those of last year. There is no doubt that this is due to the extension of the ante-natal service at the Women's Hospital. The extension of the ante-natal work in connection with the Maternal and Child Welfare Service has not been in operation long enough to affect these attendances appreciably.

The Child of Pre-school Age.

As in previous years, children of pre-school age have been encouraged to attend the clinics for regular supervision. Unfortunately, many mothers who are prepared to be advised by the clinic nurse and to exercise great care in regard to feeding, handling, and general management during the first year of the child's life, tend to relax their efforts during the second and succeeding years. Although in the past, emphasis has been placed on the work of the clinics during the child's first year, when the foundations of his health and conduct are being laid, an effort is being made to teach mothers the importance of the whole period of pre-school life. There occur many cases of improperly fed and poorly nourished children whose mothers have not realised that knowledge, care, and skill are required in the management and feeding of toddlers. An aim is being made to have every toddler brought to the clinic for examination at least once and, if possible, twice a year. It is hoped by this means to provide opportunities for supervising his feeding and general management in order that his health may be maintained and that any departures from a state of health may be detected at a time when correction may be relatively simple.

Baby Clinic and Child Welfare Railway Car.

The railway car completed its annual State-wide itinerary in October, 1938. Centres visited to that date numbered 59, and children and mothers attending numbered 411. Two thousand five hundred and thirty-seven school children attended lectures given by the nurses.

Since the beginning of February, 1939, the railway car has been engaged in a three-weekly itinerary between Winton and Mount Isa.

The two nurses employed entered enthusiastically into their new work, which began during a dust storm and great heat. Every member of the railway staff did all he could to make the nurses comfortable. Curiosity on the part of some who visited the car developed into interest and co-operation. Reports received indicate a steady growth in the activities of this branch of our service and it is evident that the people are gradually becoming clinic-minded.

During the first week of the itinerary, the clinic is open at Winton for three days, and at Hughenden for one day; during the second week, at Julia Creek for one day, at Cloncurry for two days, and at Mount Isa for two and a-half days; during the third week, at Mount Isa for one day, at Richmond for two half-days, at Prairie for one day, and at Hughenden for one day.

Acting Superintendent's Tour of Inspection.

On 15th June, 1939, Miss Bardsley left Brisbane on a tour of inspection of the clinic centres of the State. The following centres were visited:—Cairns, Mossman, Mareeba, Malanda, Innisfail, Townsville, Mount Isa, Cloncurry, Longreach, Barcaldine, Rockhampton, Mackay, Bowen, Maryborough, Gayndah, Mundubbera, Gympie, Kingaroy, Toowoomba, Stanthorpe, Dalby, and Roma. The nurses were interviewed en route at Charters Towers, Bundaberg, Warwick, and Murgon. Clinic buildings and their locations were inspected and equipment and records examined. At each centre visited Miss Bardsley discussed with the nurse in charge various aspects of maternal and child welfare work in relation to the needs of the particular area served. Miss Bardsley pays a tribute to the excellent work being done by our clinic nurses, many of whom are working alone and some under difficult conditions in regard to climate and accommodation.

As the result of the inspections there have emerged certain facts which will assist us not only in the administration of the whole service but which have indicated directions in which we may seek causes of mortality amongst infants during the first weeks of life. It is evident also that means must be found for providing supervision of those infants who are born in the maternity hospitals of some of the larger towns and whose mothers return to sparsely scattered settlements which are not at present reached by the clinics. The need for closer co-operation between the maternity hospitals and the clinics and the need for the establishment of ante-natal clinics in certain parts of the State are emphasised. It is apparent in many places that the people have not realised the importance of an adequately balanced diet, and therefore make no effort to rectify deficiencies in this respect. In some districts in the far North and in the West, the milk problem is a very real one. In many places, where it is impossible to secure fresh milk, children are given no milk except a little condensed milk. The value of goat's milk does not appear to have been sufficiently recognised in these districts, and no organised effort instituted to make it available to the mothers and children.

Maternal and Child Welfare Service Publications

When the Baby Clinics were first started, a pamphlet containing thirty-one pages, entitled "Notes for Mothers," compiled under the supervision of the late Dr. Paton, Director-General of Public Health of New South Wales at the time, was distributed by the clinics. This was revised, partly rewritten, and additions made by Dr. Turner and Miss Barron in 1924, the maternity section being revised by Doctor (now Professor) Marshall Allan, of Melbourne, and the volume grew to twice its size. During the year 1928, a further revision was carried out and additions made, and the booklet issued from the press under the title of "The Queensland Mothers' Book." Since that time, the book has been revised and additions made periodically. During this year, the book was completely revised, portions of it were rewritten and additions made. As a result of this, the volume become so bulky that it was considered advisable to publish it in two parts. Subsequently it was decided to name one part "Care of Mother and Child" and the other "The Expectant Mother." In the former, the additions include sections on the following subjects:—Difficulties which may be associated with breast-feeding and how to overcome them, complementary feeding, signs and symptoms of under-feeding and over-feeding, difficulties associated with artificial or unnatural feeding and practical points connected therewith, methods of introducing a more varied diet into the feeding of naturally and unnaturally fed infants, the 10 p.m. feeding, some common errors in the management of the baby, the training of the child, bad habits and how to deal with them, play and work, the backward child, diseases spread by insect hosts, rashes, choice and preparation of food, cooking hints, the importance of care and management of the child from two to five years, character formation, training for citizenship. For the help of mothers who are compelled to use artificial food during infancy, there have been included tables of whey and milk and milk and water mixtures, and a weaning table. Menus have been added for children after weaning has taken place. A weight chart has been inserted and pages on which the child's progress can be recorded. Several new illustrations appear.

In the part entitled "The Expectant Mother," additions have been made to the section on diet which includes a list of the foundation foods and a commentary on them. Sections have been added on the expectant father, signs of pregnancy, signs of the onset of labour, cramps, danger signs, post-natal care of the mother including a list of special exercises, care of the baby during the first month. A description of baby clothing and patterns is included in this book.

Correspondence.

Many letters seeking advice on matters relating to child welfare have been received from mothers within and outside the State, including the islands of the Pacific.

Requests have been received for our publications from persons living in various parts of the State and in other States, and one from a person living in Korea.

Publicity.

The opening of new branches has been announced by means of slides shown at the local picture shows.

An article on the work of baby clinics appeared in the Health, Food and Fitness Campaign booklet published towards the end of 1938 under the authority of the Department of Health and Home Affairs.

A lecture on the history of the child welfare movement, with special reference to Queensland, was given in June to the students attending the course on social service by the Acting Director.

Copies of an article on some aspects of maternal and child welfare work, written by the Acting Director, have been supplied each month to the press in about seventy-five towns throughout the State. Articles on the following subjects were published:—

Care of the Premature Baby—July, 1938.
The Work of the Baby Clinics—August, 1938.
Threadworms—September, 1938.
Diarrhœa—October, 1938.
Over-stimulating our Babies—November, 1938.
The Holidays, and Care of the Baby—December, 1938.
The Coddled Child—January, 1939.
Rest and Sleep—February, 1939.
The Only Child—March, 1939.
Healthy Happy Babyhood—April, 1939.
The Child from two to five Years—May, 1939.
Prevention of Infection—June, 1939.

It is impossible to estimate the effect of these articles statistically, but it cannot be doubted that they provide a valuable medium of disseminating a knowledge of welfare methods among the scattered population of this large State, with a proportion of which our nurses are unable to come into personal contact. Public education proceeds slowly, and it is realised that it can be brought about only by steady, patient, and persistent effort.

Medical Education.

At the request of the post-graduate committee of the Queensland Branch of the British Medical Association, lectures and demonstrations on infant-feeding were given at the Training School by the Acting Medical Director, assisted by Miss Bardsley. Four doctors attended on the first day and seven on the second. Considerable interest was shown by those present, and a letter of appreciation was received subsequently from the committee.

Lady Cilento, Lecturer in Mothercraft at the University of Queensland, attended the Fortitude Valley Clinic with her class of medical students on two occasions during the year. Demonstrations on the care, management, and feeding of infants were given by the Acting Medical Director, assisted by the nursing staff.

In many parts of the State there is evidence that members of the medical profession are showing increasing interest in child welfare work. It is gratifying to know that medical practitioners are appreciating the nursing service, offered by the clinics, whose nurses are always ready to co-operate with them in assisting mothers in all cases where difficulty in regard to feeding and management occurs, as well as in supervising the feeding of normal children.

It is fortunate that medical students of to-day are provided with these opportunities of receiving instruction in the management and feeding of infants and of becoming familiar with the methods employed by the clinics in overcoming difficulties which will arise when they start practice and assume the responsibilities of caring, not only for the children who are sick but for those who are well, so that they may be maintained in good health.

The Training School.

Two terms of practical and theoretical training have been held at the Child Welfare Training Centre, Fortitude Valley. Lectures dealing with various aspects of child welfare have been given to the trainees by the Acting Director and Miss Bardsley and demonstrations by Miss Bardsley and senior members of the clinic staff. Lectures on the care of the expectant mother have been given by Dr. Beatrice Warner. In addition to attending the various metropolitan clinics, the trainees have attended the ante-natal clinics during each term. The course is an intensive one and each trainee receives individual tuition which gives her every opportunity of qualifying herself for the work of advising mothers in regard to ante-natal care and the care and management of the child up to school age.

Fifty-nine nurses passed through the Training School, and of these fifty-seven passed the examinations and received child welfare certificates.

The increasing number of nurses receiving their training, whether they subsequently join the clinic staffs, enter maternity or other hospitals, engage in bush nursing or nurse privately, is improving the outlook for our maternal and child welfare service.

Comments on Statistics.

Births.

During the year 1938, the number of children born in Queensland was 18,992, which is 170 fewer than in 1937. The birth-rate was 19·1 per 1,000 of the population, compared with 19·36 for the previous year. The highest rate was 20·8, which occurred in the tropics. The rate in Brisbane was 15·9, which was slightly in excess of the rate for 1937, when it was 15·8. There were 109 more babies born in Brisbane during the year 1938 than during the year 1937. In the rest of the sub-tropics the birth-rate was 20·5. In the other portions of the State the rate declined during 1938. The excess of births over deaths represents an increase of less than 10 per cent. of the population during the year. Comparing the birth-rates of the States of the Commonwealth and the Dominion of New Zealand for the year 1938, the birth-rate of Queensland is exceeded by those of Western Australia and Tasmania (see Table XVIII.). Comparing the average birth-rates for the last five years, the Queensland rate is second only to Tasmania, while during each of the years 1935, 1936 and 1937, there were 105 males born to every 100 females in Queensland; in 1938 there were 107 (see Table XIX.).

While we may feel satisfied because our birth-rate has remained round 19 per 1,000 of the population during the last three years, there is little room for a feeling of complacency when we recall the fact that during the last fifty years our birth-rate has fallen to half. In other words, about 19,000 more infants would have been born this year if the average birth-rate for the years 1881-1890 had been maintained.

Incidentally, it may be stated that the number of marriages was the highest ever recorded for Queensland, and the rate, 8·9 per 1,000 persons, is the highest since the year 1920, when the rate was the same.

Puerperal and Maternal Mortality.

On referring to Table XXI., it will be observed that there have been 64 maternal deaths due to childbirth during the year, an increase of 5 over last year. This represents a rate of 3·37 per 1,000 live births, which is 0·29 higher than last year. If we include deaths due to miscarriages and other accidents of pregnancy, the mortality is 94, an increase of 8 over last year (see Table XXI.). The average number of deaths per 1,000 births due to childbirth over a period of five years, 1919-1923, was 4·56, and over the five years 1934-1938 was 2·85, which represents a saving of the lives of thirty-two mothers in a year. The chief causes of death during the last three years have been the toxaemias of pregnancy, hæmorrhage, and septicæmia (see Table XXII.). It must be kept in mind that for every maternal death there are many cases of sickness associated with pregnancy and childbirth, and, in consequence, more or less serious maternal invalidism or disablement.

It is not so long ago that women were reluctant to go to hospitals for their confinements. They and their husbands have now learnt to appreciate the improved accommodation provided and the value of hospital care.

For the year ending 30th June, 1926, of a total of 20,262 births in the State, 3,495 occurred in public hospitals, approximately 17 per cent.; for the year ending 30th June, 1938; of a total of 19,023, 10,452 occurred in public hospitals, approximately 55 per cent.

In an attempt to reduce our maternal mortality there must be increased co-operation between the patient, her husband, the doctor, and the nurse. There must be adequate ante-natal care, which includes not only periodic examinations, but supervision and education in regard to diet, environment, and general conditions of living. The medical practitioner requires to exercise judgment in his conduct of the case and be prepared to avail himself of every facility in regard to assistance, expert advice, and hospital care where possible. There must be efficient training of our medical students and nurses not only in the care of the expectant mother but in the management and supervision of labour.

Infantile Mortality—Neo-Natal Mortality

Although the births numbered 170 less, the infants dying during the first month of life numbered 87 more than for the previous year, representing a death rate of 28·4 per 1,000 births. These deaths, which were practically all due to ante-natal causes, and which formed 68.6 per cent. of the number of deaths of infants during the first year of life, were mainly responsible for the rise in this State's infant mortality rate for the year ending 31st December, 1938. This increase was due mainly to deaths due to pre-maturity, which accounted for 52 per cent., and deaths due to injury at birth, which accounted for 17 per cent. of the deaths which occurred during the first month of life.

The average death-rate in this age group for the five-yearly period of 1913-1917 was 30.3. The average death-rate for the five-yearly period 1934-1938 was 26-9, which represents a saving of 65 babies a year from deaths due to ante-natal causes.

The deaths of infants during the first month of life and the still-births, all of which are not at present recorded, are closely linked with the problem of maternal mortality and sickness during pregnancy, and with these they must be considered and dealt with. The post-natal activities of the Maternal and Child Welfare Service cannot be expected to influence them. Although it has been stated that still-births and neo-natal deaths (deaths during the first month) are influenced more by the complications of labour and the methods of delivery than by the results of ill-health of the mother during pregnancy, pre-maturity still accounts for more than half of the neo-natal deaths, as has been stated. Whilst in the present state of our knowledge, eclampsia and other toxaemias of pregnancy cannot be prevented in every case, and while we know little about the causation of congenital debility and malformations, we know that efficient ante-natal care will reduce the number of premature births, and consequently the number of still-births and deaths of infants during the first month, and particularly the first week of life. The fact that deaths due to injuries at birth contributed largely to our neo-natal mortality—24 per cent. in the first quarter of 1938—calls for serious thought and closer study of the problems associated with the question of interference with natural birth.

The compulsory notification of still-births would afford useful information which is largely lacking at present in the State records. The still-birth rate per 1,000 live births for the other States of the Commonwealth and the Dominion of New Zealand is recorded in Table XXIV. (see Tables XXV., XXVI., and XXVII.).

Deaths of Infants Aged 1 *Month and Under* 1 *Year.*

The death-rate in this age group showed a slight increase, namely 0·8 per 1,000 births. While the total increase in the number of deaths in this group amounted to fourteen, the increase in the number of deaths due to epidemic respiratory infections including broncho-pneumonia, pneumonia, influenza, measles and whooping cough, amounted to thirty-three, the deaths due to these causes forming 50 per cent. of the total deaths in this group, in other words deaths due to other causes showed a decrease of nineteen. This emphasises the necessity of our persevering in teaching our mothers to protect their babies from these infections, as far as possible, by not taking them into crowded and badly ventilated buildings, or allowing them to associate with older children and adults who are suffering from these infections. Deaths due to upsets of the digestive system leading to diarrhoea, the prevention of which forms an important part of the work of the clinics, were comparatively few, but should be capable of further reduction. There were seven deaths due to accidents, four less than last year, and two more than for the year 1936.

As the infant mortality rate is liable to fluctuations, in order to estimate the effect on this rate of the post-natal activities of the maternal and child welfare service, which begins when the child is about one month old, it is advisable to compare the average death rates of infants aged one month and under one year over five-yearly periods. By doing this, we find that the average for the period 1913-1917 immediately before the opening of the clinics in Queensland was 32·8. The average for the period 1934-1938 was 11·4. This represents a saving of about 400 babies a year in this age group.

Deaths of Infants Under the Age of 1 *Year.*

While Queensland appears in a less favourable position when the total infantile mortality rate, that is the number of infants dying under the age of one year, per 1,000 births, is compared with the rates of most of the other States for the year ending 31st December, 1938, the position of this State is improved when a comparison of the average rates for five-yearly periods is made (see Tables XXIX. and XXX.).

Child Mortality.

Causes of Deaths of Children Aged 1 *Year and Under* 2 *Years.*

The death rate for this age group was 0·2 less than the average for the last three years. Deaths due to epidemic respiratory infections accounted for 44 per cent. of the total deaths in this group, which represents an increase of 13 per cent. over the average for the last three years. This stresses the need for care in regard to the avoidance of contact with these infections at this age as well as at the previous age.

Deaths due to accidents numbered 18, which represents nearly 16 per cent. of the total. This number is just twice the number due to accidents in 1936, and 5 more than in 1937.

There were 7 deaths from diphtheria, 1 less than last year and 3 more than in 1936 (see Table XXXI.).

Causes of Deaths of Children Aged 2 Years and Under 5 Years.

The death rate for this age group was the same as last year and 0·1 more than the average for the last three years.

A pleasing feature of the records relating to this group is the reduction in the mortality due to diphtheria. The deaths due to this cause numbered 9, being 12 less than in 1937 and 19 less than in 1936.

Epidemic respiratory infections have taken their toll in this age group as in the two previous groups, and are responsible for 23 per cent. of the deaths, compared with 30 per cent. last year.

Deaths due to accidents number 21, being 9 more than in last year and 8 more than in 1936. In other words, the deaths caused by accidents for the age group (1-5) years number thirty-nine, which represents sixteen per cent. of the total for this group. (See Tables XXXI. and XXXII.) This unfortunately is high. Of this number of deaths, eleven were due to burns, five to drowning, four to injury by motor cars, four to falls, three to injury by animals, two to injury by railways, two to accidental poisoning, two to food poisoning, one to electric shock.

Ratio of Male Death Rate to Female Death Rate.

(Males per 100 females.)

In Table XIX. is recorded the ratio of male births to female births, which averages 105 males to 100 females for the past five years.

By referring to Table XXXIII. it will be noticed that the ratio of the male death-rate to the female death-rate during the first week of life varies from 118 in 1934 to 142 in 1938, the average for the past five years being 136. During the following three weeks, the ratio varies from 156 to 114, the average for the five years being 131. The ratio for the remaining eleven months of the year varies from 104 to 85, the average for the five years being 114. The ratio of the male death-rate to the female death-rate for the first year is 128. The ratio from 1 year to 4 years varies from 105 to 110, the average being 111. For each succeeding age group the five-yearly average ratio increases as follows:—

5 to 9 years	134
10 to 14 years	141
15 to 19 years	145

ACKNOWLEDGEMENTS.

Once again we express our thanks to the members of the Queensland Country Women's Association for their help and co-operation during the year. We appreciate their assistance in providing accommodation for the use of our clinics in many centres throughout the State and their hospitality to our nurses.

We express our thanks also to the Mothercraft Association, to the Department of Public Instruction, to the Railway Department and staff for the many courtesies to our nurses and the care they have taken of our nurses' comfort, to the proprietors and staffs of the newspapers in which our articles have appeared each month, to the Government Statistician and his staff for their generous assistance, and to others who have helped us in our work.

I wish to express my great appreciation of the loyal co-operation of every member of the clinic staff, from the Acting Superintendent down to the most junior nurse.

TABLES OF STATISTICS.

TABLE XVIII.

CRUDE BIRTH RATES FOR THE VARIOUS STATES OF THE COMMONWEALTH OF AUSTRALIA AND FOR THE DOMINION OF NEW ZEALAND, PER 1,000 OF THE POPULATION.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1934	16·52	15·20	18·17	14·50	17·66	19·51	16·47
1935	16·89	15·16	18·31	14·14	18·23	19·41	16·13
1936	17·31	15·63	19·17	15·17	18·84	19·84	16·64
1937	17·63	16·02	19·36	15·25	18·95	20·69	17·29
1938	17·39	16·25	18·98	15·88	19·87	20·82	17·93

TABLE XIX.

Masculinity of Live Births in Queensland.*					Masculinity of Live Births in Australia.*						
1934.	1935.	1936.	1937.	1938.	1911.	1921.	1931.	1934.	1935.	1936.	1937.
103·5	105·1	105·5	105·1	107·2	104·7	105·8	106·1	104·1	104·5	104·8	104·6

* Number of male per 100 female births.

TABLE XX.

PUERPERAL AND MATERNAL MORTALITY IN QUEENSLAND.

——	1934.	1935.	1936.	1937.	1938.
Deaths from abortion	28	18	31	23	22
Deaths due to accidents of pregnancy ..	5	11	11	4	8
Deaths from childbirth	47	44	49	59	64

TABLE XXI.

PUERPERAL AND MATERNAL MORTALITY RATES IN QUEENSLAND.

Year.	Number of Births.	Puerperal Deaths.	Per 1,000 Live Births.	Deaths from Childbirth.	Per 1,000 Live Births.
1934	17,360	80	4·61	47	2·70
1935	17,688	73	4·13	44	2·49
1936	18,755	91	4·85	49	2·61
1937	19,162	86	4·49	59	3·08
1938	18,992	94	4·95	64	3·37

TABLE XXII.

CHIEF CAUSES OF DEATHS DUE TO CHILDBIRTH IN QUEENSLAND.

Causes.	1936.	Percentage.	1937.	Percentage.	1938.	Percentage.
Puerperal albuminuria, eclampsia, and other toxæmias of pregnancy	17	34·7	21	35·6	21	32·8
Puerperal hæmorrhage	7	14·3	15	25·4	16	25·0
Puerperal septicæmia	14	28·6	10	16·9	11	17·2

TABLE XXIII.

PUERPERAL AND MATERNAL MORTALITY RATES FOR EACH OF THE STATES OF THE COMMONWEALTH, AND FOR THE COMMONWEALTH, INCLUDING NORTHERN TERRITORY AND FEDERAL CAPITAL TERRITORY, FOR 1938.

State.	Number of Births.	Puerperal Deaths.	Rate per 1,000 Live Births.	Deaths from Child-birth.	Rate per 1,000 Live Births.	Deaths from Abortion.	Rate per 1,000 Live Births.	Deaths from Accidents of Pregnancy.	Rate per 1,000 Live Births.
New South Wales ..	47,319	231	4·88	154	3·25	63	1·33	14	0·30
Victoria	30,344	136	4·48	73	2·41	57	1·88	6	0·20
Queensland	18,992	94	4·95	64	3·37	22	1·16	8	0·42
South Australia	9,410	46	4·89	23	2·45	14	1·49	9	0·96
West Australia	9,141	37	4·05	19	2·08	14	1·53	4	0·44
Tasmania	4·907	18	3·67	13	2·65	5	1·02	0	0·00
Commonwealth (Including Northern Territory, and Australian Capital Territory)	120,415	562	4·67	358	2·97	168	1·40	36	0·30

TABLE XXIV.

STILL-BIRTH RATE PER 1,000 LIVE BIRTHS FOR STATES OF COMMONWEALTH AND DOMINION OF NEW ZEALAND.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1936	30·7*	28·7	24·7	21·1	29·6	26·0	29·5*
1937	29·3*	26·5	27·3	†	28·0	29·1	29·3*
1938	31·1*	29·6	27·8	30·3*	24·5	30·4	27·3*

* Complete. † Not avaliable.

TABLE XXV.

MORTALITY RATES AND CAUSES OF DEATHS OF INFANTS UNDER ONE MONTH (NEO-NATAL MORTALITY) IN QUEENSLAND.

Year.	Number of Births.	Number of Deaths.	Rate per 1,000 Births.	Causes.								
				Convulsions.	Broncho-Pneumonia & Pneumonia.	Debility.	Malformations.	Prematurity.	Injury at Birth.	Atelectasis.	Icterus Neonatorum.	Other diseases peculiar to early infancy.
1936	18,755	493	26·3	9	14	26	58	228	66	43	11	18
1937	19,162	452	23·6	3	8	19	62	238	54	32	8	9
1938	18,992	539	28·4	3	9	18	61	281	91	26	9	22

TABLE XXVI.

NUMBER OF DEATHS OF INFANTS UNDER ONE MONTH OF AGE COMPARED WITH NUMBER OF DEATHS OF INFANTS UNDER ONE YEAR OF AGE FOR EACH QUARTER OF 1938, AND CHIEF CAUSES OF NEO-NATAL MORTALITY.

Quarter Ending.	Births.	Deaths. Under One Month.	Deaths. Under one Year.	Percentage of infantile deaths under one month.	Percentage of Neo-natal Mortality from Various Causes.		
					Prematurity.	Injury at Birth.	Malformation.
March	4,742	141	201	70·1	50	24	10
June	4,720	137	191	71·7	48	15	15
September	4,855	134	212	63·2	52	13	13
December	4,675	126	180	70·0	60	13	7
Whole Year	18,992	538	784	68·6	52	16	11

TABLE XXVII.

NEO-NATAL MORTALITY RATES FOR STATES AND CAPITAL CITIES OF COMMONWEALTH, AND NEW ZEALAND.

States of Commonwealth and New Zealand.	Deaths under One Month per 1,000 Births.					Capital Cities of Commonwealth and New Zealand.	Deaths under One Month per 1,000 Births.				
	1934.	1935.	1936.	1937.	1938.		1934.	1935.	1936.	1937.	1938.
New South Wales	28·94	27·76	29·51	28·29	27·90	Sydney	27·69	25·79	28·55	21·64	25·06
Victoria	27·78	27·61	26·56	26·17	24·72	Melbourne ..	29·26	27·39	25·92	..	24·62
Queensland ..	28·80	27·19	26·34	23·59	28·38	Brisbane	30·39	32·42	27·56	27·60	29·17
South Australia ..	22·46	23·70	20·99	23·70	21·15	Adelaide	28·28	24·82	20·02	..	19·20
West Australia ..	26·15	25·50	25·47	21·84	20·24	Perth	25·17	23·91	26·35	22·30	17·60
Tasmania	27·07	35·91	34·27	30·98	28·74	Hobart	27·00	Not Availa	ble		29·14
New Zealand ..	22·86	22·03	22·31	22·22	24·15	Wellington ..	Not Availa	ble			

TABLE XXVIII.

MORTALITY RATES AND CAUSES OF DEATHS OF INFANTS ONE MONTH AND UNDER ONE YEAR, IN QUEENSLAND.

Year.	Number of Births.	Number of Deaths.	Rate per 1,000.	Malformations.	Diarrhœa.	Bronchitis.	Broncho-pneumonia and Pneumonia.	Whooping Cough.	Measles.	Diphtheria.	Influenza.	Accidents.	Syphilis.	Meningitis.	Cerebral Hæmorrhage.	Prematurity.
1936	18,755	186	9·9	25	25	7	54	7	1	5	4	5	0	4	0	4
1937	19,162	231	12·1	31	38	5	53	21	1	1	8	11	3	3	3	8
1838	18,992	245	12·9	21	37	4	76	28	1	2	12	7	2	5	4	4

TABLE XXIX.

INFANTILE MORTALITY RATES (DEATHS OF INFANTS UNDER ONE YEAR PER 1,000 BORN) FOR THE STATES OF THE COMMONWEALTH OF AUSTRALIA AND FOR THE DOMINION OF NEW ZEALAND.

Year.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania.	New Zealand.
1934	46·6	44·6	40·6	35·6	40·9	42·3	31·7
1935	39·4	41·2	37·3	35·0	40·2	51·8	32·2
1936	43·5	42·3	36·2	31·1	42·2	49·6	31·0
1937	40·6	36·7	35·6	33·0	37·5	41·7	31·2
1938	41·8	34·2	41·3	30·5	33·8	40·1	35·6

TABLE XXX.

AVERAGE INFANTILE MORTALITY RATES FOR THE STATES OF THE COMMONWEALTH OF AUSTRALIA AND FOR THE DOMINION OF NEW ZEALAND (FIVE YEAR PERIODS).

(See graph at end.)

Period.	New South Wales.	Victoria.	Queensland.	South Australia.	West Australia.	Tasmania	New Zealand.
1909-1913	73·6	72·4	67·0	64·8	76·9	75·8	59·2
1914-1918	64·5	68·0	61·9	64·4	63·1	66·4	49·8
1919-1923	64·0	66·7	58·9	60·9	63·5	64·3	45·9
1924-1928	56·4	57·1	49·4	48·6	50·0	54·7	38·9
1929-1933	46·0	44·3	41·2	38·9	45·1	46·4	32·7
1934-1938	42·4	39·8	38·2	33·1	38·9	45·1	32·4

TABLE XXXI.

CAUSES OF DEATHS OF CHILDREN AGED ONE TO TWO YEARS, IN QUEENSLAND.

Year.	Poliomyelitis.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Meningitis.	Bronchitis.	Broncho-pneumonia.	Pneumonia.	Diarrhœa.	Appendicitis.	Malformations.	Accidents.	Nephritis Ac.	Nephritis Chr.	Snakebite.	Osteomyelitis.	Other Causes.	Total.	Population, 1–2 Years.	Rate per 1,000 Living.
1936	..	5	4	5	4	5	3	..	18	12	23	1	5	9	..	1	..	1	22	118	16,800	7·0
1937	..	2	1	3	8	1	..	2	15	17	15	1	6	13	..	..	..	..	22	106	17,500	6·1
1938	1	2	1	14	7	4	1	2	14	15	12	..	5	18	1	..	..	..	18	115	18,210	6·3

TABLE XXXII.

CAUSES OF DEATHS OF CHILDREN AGED TWO TO FIVE YEARS, IN QUEENSLAND.

Year.	Poliomyelitis.	Measles.	Scarlet Fever.	Whooping Cough.	Diphtheria.	Influenza.	Diabetes Mellitus.	Meningitis.	Bronchitis.	Broncho-pneumonia.	Pneumonia.	Diarrhœa.	Appendicitis.	Nephritis Ac.	Nephritis Chr.	Accidents.	Snakebite.	Osteomyelitis.	Other Causes.	Total.	Population, 2–5 Years.	Rate per 1,000 Living.
1936	1	1	2	1	28	3	1	2	..	8	6	8	5	3	..	13	2	1	23	108	49,400	2·2
1937	..	1	1	4	21	8	..	5	4	14	6	7	3	3	1	12	..	1	35	126	49,400	2·6
1938	2	3	..	8	9	3	..	3	3	10	4	8	4	3	2	21	..	1	48	132	50,430	2·6

TABLE XXXIII.

RATIO OF MALE DEATH RATE TO FEMALE DEATH RATE.

——	1934.	1935.	1936.	1937.	1938.	Average.
Under 1 week	118	151	147	120	142	136
1 to 3 weeks	156	128	140	116	114	131
1 to 11 months	104	160	103	120	85	114
Total under 1 year	118	151	133	119	119	128
1 to 4 years	105	117	120	101	110	111
5 to 9 years	169	123	151	116	113	134
10 to 14 years	135	225	122	106	116	141
15 to 19 years	129	153	153	131	159	145

VISITS TO HOMES AND ATTENDANCES AT CLINICS.

Visits to Homes.

The number of visits to newborn children and their mothers has increased, the figures for outdoor work now being—

Year.	Visits to Newborns.	Subsequent and Other Visits.	Total.
1935–36	7,888	4,732	12,620
1936–37	8,419	4,375	12,794
1937–38	8,601	3,651	12,252
1938–39	10,314	3,287	13,601

Attendances at Clinics.

Number of New Cases seen at the Clinic.

—	1935–36.	1936–37.	1937–38.	1938–39.
Infants under one year	8,024	8,907	8,977	10,186
One to two years	781	729	618	547
Over two years	1,987	1,529	1,174	1,054
Total children and infants	10,792	11,165	10,769	11,787
Expectant mothers	1,074	1,203	1,211	1,300
Non-expectant mothers	6,748	7,625	7,751	9,141
Total mothers needing advice	7,822	8,828	8,962	10,441
Total new cases	18,614	19,993	19,731	22,228

Attendances of Infants and Children at Baby Clinic Centres and Sub-centres.

—	1936–37.	1937–38.	1938–39.
Metropolitan.			
Valley Centre	14,384	13,760	16,830
Branches—			
Cribb Island	383	284	239
Kedron	916	877	826
Nundah	2,082	2,009	2,209
Sandgate	1,760	2,250	2,077
Zillmere	156	222	250
Redcliffe	..	..	283
	19,681	19,402	22,714
Herschell Street Centre	14,720	15,863	18,351
Branches—			
Goodna	174	184	38
Indooroopilly	569	582	504
Newmarket–Grange	..	97	837
Caboolture	571	665	675
Enoggera	813	520	480
Corinda	..	..	144
Ashgrove	..	..	9
	16,847	17,911	21,038
West End Centre	4,206	5,070	5,971
Woolloongabba Centre	15,601	15,337	17,901
Branches—			
Bulimba	980	1,243	1,492
Morningside	702	653	927
Yeronga	914	1,007	978
	18,197	18,240	21,298
Wynnum Centre	3,423	4,170	4,294
Southport Centre	1,335	1,427	1,775
Branches—			
Beaudesert	885	817	1,183
Beenleigh	..	..	361
Coolangatta	..	..	466
	2,220	2,244	3,785

Attendances of Infants and Children at Baby Clinic Centres and Sub-centres—*continued.*

—	1936–37.	1937–38.	1938–39.
Ipswich Centre	5,039	6,209	6,251
Branches—			
Boonah	1,200	966	908
Esk	563	550	693
Kalbar	..	17	222
Laidley	851	807	835
Lowood	607	510	416
Rosewood	768	622	485
Toogoolawah	603	603	645
Somerset Dam	..	101	658
	9,631	10,385	11,113
Toowoomba Centre	5,527	5,546	6,121
Branches—			
Allora	623	437	354
Clifton	368	466	341
Gatton	432	654	735
Oakey	364	317	532
Pittsworth	554	703	1,073
Forest Hill	..	39	133
Crow's Nest	..	..	200
	7,868	8,162	9,489
Warwick Centre	3,373	2,832	3,173
Branches—			
Goondiwindi	484	483	583
Inglewood	318	392	428
Killarney	219	177	306
Stanthorpe	1,363	1,562	1,784
	5,757	5,446	6,274
Dalby Centre	2,075	2,009	2,913
Branches—			
Chinchilla	335	875	848
Miles	..	101	768
	2,410	2,985	4,529
Roma Centre	1,405	1,402	1,610
Branches—			
Mitchell	704	1,340	1,722
Wallumbilla	..	51	216
	2,109	2,793	3,548

ATTENDANCES OF INFANTS AND CHILDREN AT BABY CLINIC CENTRES AND SUB-CENTRES—*continued.*

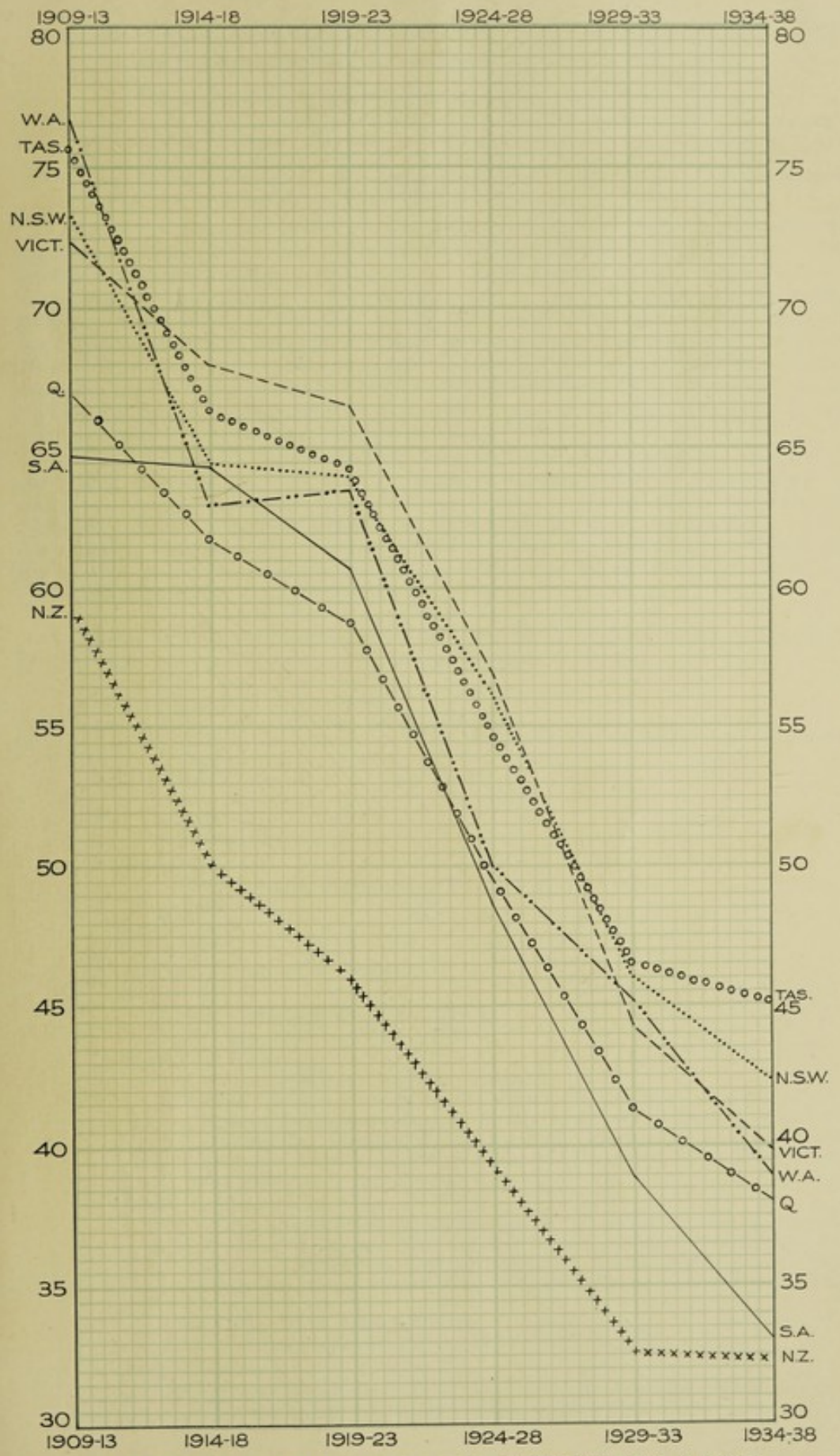
—	1936-37.	1937-38.	1938-39.
Charleville Centre	1,640	1,968	2,490
Branches—			
Cunnamulla	847	1,200	1,243
Quilpie	489	620	572
	2,976	3,788	4,305
Nambour Centre	963	971	1,874
Branches—			
Cooroy	..	28	286
Eumundi	..	63	528
Palmwoods	..	31	257
Yandina	..	30	251
	963	1,123	3,196
Kingaroy Centre	217	1,766	1,442
Branches—			
Nanango	86	748	915
Yarraman	..	..	51
	303	2,514	2,408
Murgon Centre	172	1,047	1,044
Branch—			
Wondai	106	436	534
	278	1,483	1,578
Gympie Centre	3,881	3,347	3,023
Branch—			
Pomona	88	568	347
	3,969	3,915	3,370
Gayndah Centre	30	352	348
Branches—			
Eidsvold	47	358	275
Mundubbera	72	436	348
Monto	..	..	676
	149	1,146	1,647
Maryborough Centre	5,632	7,351	6,546
Branches—			
Biggenden	51	199	300
Childers	35	627	744
Howard	244	592	609
Pialba	58	389	339
	6,020	9,158	8,538
Bundaberg Centre	6,618	6,171	5,869
Rockhampton Centre	9,340	10,020	10,457
Branches—			
Gladstone	1,487	1,605	1,838
Mount Morgan	1,192	1,421	1,115
Mount Larcom	893	769	889
Yeppoon	782	652	1,080
	13,694	14,867	15,379
Barcaldine Centre	984	1,438	1,264
Branches—			
Aramac	452	774	662
Longreach	887	1,503	1,403
	2,323	3,715	3,329

ATTENDANCES OF INFANTS AND CHILDREN AT BABY CLINIC CENTRES AND SUB-CENTRES—*continued.*

—	1936-37.	1937-38.	1938-39.
Mackay Centre	8,524	7,398	7,437
Branches—			
Sarina	638	845	786
	9,162	8,243	8,223
Bowen Centre	1,443	1,401	1,339
Branches—			
Collinsville	..	..	49
Proserpine	1,274	1,655	1,724
	2,717	3,056	3,112
Townsville Centre	11,676	10,054	10,977
Branches—			
Ayr	3,024	2,240	2,774
Home Hill	1,370	1,490	1,492
Ingham	1,706	1,400	1,630
Giru	..	..	159
	17,776	15,184	17,032
Charters Towers Centre	3,436	3,743	3,925
Innisfail Centre	1,994	2,077	2,648
Branches—			
Babinda	1,307	1,556	1,556
El Arish	29	105	92
Silkwood	..	49	160
Tully	204	771	1,016
	3,534	4,558	5,472
Cairns Centre	6,211	4,927	5,830
Branches—			
Edmonton	302	223	378
Gordonvale	1,063	1,067	1,323
Mossman	105	747	1,136
	7,681	6,964	8,667
Mareeba Centre	184	837	1,315
Branches—			
Chillagoe	..	4	161
Yungaburra	..	..	302
Dimbulah	..	..	293
	184	841	2,071
Atherton Centre	943	1,043	1,573
Branches—			
Herberton	104	513	994
Malanda	110	265	476
Millaa Millaa	52	295	434
Ravenshoe	..	9	628
	1,209	2,125	4,105
Railway Car—			
Winton	..	..	325
Cloncurry	..	..	130
Gilliat	..	..	2
Hughenden	..	..	240
Julia Creek	..	..	90
Mount Isa	..	..	315
Prairie	..	..	62
Richmond	..	..	130
	..	..	1,294

THE ANTE-NATAL CLINICS.

—	1936–37.		1937–38.		1938–39.	
	New Cases.	Attendances.	New Cases.	Attendances.	New Cases.	Attendances.
Fortitude Valley	295	1,062	351	1,356	299	1,167
Woolloongabba	304	997	272	945	257	1,085
Branch Centres (opened June, 1939)	..	..	..	..	12	13
Totals	599	2,059	623	2,301	568	2,265



GRAPHS SHOWING INFANT MORTALITY RATES

FOR THE STATES OF THE COMMONWEALTH

AND DOMINION OF NEW ZEALAND

AVERAGE OF FIVE YEARLY PERIODS

SECTION OF SCHOOL HEALTH SERVICES.

CHIEF MEDICAL OFFICER: LESLIE ST. VINCENT WELCH, M.R.C.S. (Eng.), L.R.C.P. (Lond.)

CHIEF INSPECTOR, SCHOOL DENTAL SERVICES: E. W. HAENKE, L.D.Q.

MATRON, WILSON OPHTHALMIC SCHOOL HOSTEL: F. G. WALPOLE.

Functions — Staff — Dental Section — Ophthalmic Section — Deafness—Epidemics—Cleanliness—Nutrition—Water Supplies—Sanitation—Swimming Pools—Playgrounds—Mental Defectives—Lectures—Seats and Desks—Gatton College—Medical Examination of Student-teacher Trainees—Diphtheria—Deaths from Scarlet Fever—Table of Findings—Dental Inspections in Schools—Operative Work—Report of Part-time Ophthalmic Officer, Wilson Ophthalmic School Hostel—Report of Matron, Wilson Ophthalmic School Hostel.

At the 31st December, 1938, there were 1,693 primary schools under the control of the Department of Public Instruction. These schools were giving service to 158,895 children. With the fall in the State's birthrate, the lag in the falling primary school enrolment has now become more evident. There were this year, according to figures, 3912 less children enrolled in the primary schools of the State than in 1938. This figure takes into account the enrolment in denominational schools also. It is evident, therefore, that the loss to the State's productive powers, both in human effort and wealth, must increase if the downward trend in population continues. It would appear that one way to offset this tendency is to ensure the greatest physical and mental health possible for every child, male and female, from birth, through school life, including, as that does, the critical years of puberty.

Money judiciously spent in ensuring the perfect health of the pre-school child and the school child must eventually cut down the need for excessive hospital accommodation—in other words, medical expenditure is, by such means, being turned by degrees from that now necessarily allocated to curative measures, to prophylactic or preventive measures. Indeed, this is already evident owing to the fact that health work in the schools has now been carried out for some twenty years and has undoubtedly left its mark for the better upon the younger generation of parents.

STAFF.

During the year the following staff has been actively on duty in the School Health Services, under the general directoin of the Chief Medical Officer:—

1 Whole-time medical officer.
1 Part-time medical officer.
1 Part-time ophthalmic surgeon specialist.
19 Medical practitioners carrying out ophthalmic treatment in country centres.
1 Chief dental inspector.
15 Dental inspectors.
1 Part-time dental officer.
2 Motor driver mechanics.
14 Trained hospital sisters.

Head Office—

1 Clerk-in-charge of General Office.
1 Junior clerk.
2 Typists.
1 Sorter.

The field staff is disposed as follows:—

Medical Officers—

1 Whole-time medical officer, Brisbane.
1 Part-time medical officer, Ipswich.

Ophthalmic Officers—

1 Part time ophthalmic surgeon, Brisbane.
19 Medical practitioners carrying out ophthalmic treatment at Alpha, Jericho, Aramac, Barcaldine, Blackall, Boulia, Camooweal, Charleville, Cloncurry, Cunnamulla, Dirranbandi, Goondiwindi, Hughenden, Isisford, Jundah, Mount Isa, Muttaburra, Quilpie, Richmond, St. George, Surat, Thargomindah, and Winton.

Dental Inspectors—

The official homes of these inspectors are at the following centres:—Ipswich, Brisbane (2 officers), Toowoomba (2 officers), Gympie, Maryborough, Bundaberg, Rockhampton, Mackay, Townsville, Cairns (2 officers), Charleville, Longreach, and 1 reserve officer with official home in district in which he is working.
1 Part-time dental officer, Brisbane.
2 Motor driver mechanics for the Road Dental Clinics.

School Sisters—

Five stationed in Brisbane; and 1 at each of the following centres:—Ipswich, Southport, Toowoomba, Townsville, Rockhampton.

In addition to these, 4 members of the nursing staff are stationed in the Hookworm area—2 at Cairns, 1 at Ingham and 1 at Innisfail. These officers, in addition to their hookworm duties, supervise health work in the schools from Ingham to Cooktown.

The actual school medical and dental health inspection work which the various officers have carried out during the year is set out in the attached table.

In addition, examinations respecting lighting, ventilation, garbage disposal, sanitary services, are carried out and reported upon.

In all areas where a member of the nursing staff is stationed, schools have been visited immediately upon a case of infectious disease being notified as having occurred among children attending such schools, and swabs have been taken to limit the spread of disease. During the year 107 visits of this nature were made. The School Nursing Staff also made preliminary arrangements to ensure immunisation against diphtheria for as many children as possible upon the visit of the local authority's medical officer for the purpose. The response in this direction has been gratifying.

Much valuable work has been done by the School Nursing Staff during the year in finding neglected children, cases of malnutrition, and skin disease, and reporting these to Head Office. As a result, many children have been properly cared for; in some instances, actual removal from parental control by the State Children Department was necessary. The parents of others have been warned; and conditions of the children's health have materially improved.

The constant work of the School Nursing Staff among the children at the schools has brought about a happy relationship. Formerly, the nurse was dreaded by the pupils. They did not understand why she was there, and they were fearful that something was being prepared for them which "would hurt." Now all that has been changed. There is none of the old fear of the members of the nursing staff, and the children are willing and happy to co-operate, a state of affairs which makes the work much easier.

There appears to be a general improvement in the clothing, cleanliness, and nutrition of the primary State school children. There are, of course, instances of malnutrition and neglect, but, taken on the whole, there is a definite upward trend which would suggest that the gradual trend of the population to constant employment is having its good effect upon the children.

The Pre-school Child.—The increase of the popularity of immunisation against diphtheria, has brought the pre-school child into greater prominence, because, in many instances, the parents bring these children to the school to be immunised along with their older brothers and sisters. This is considered a valuable advance. Further expansion of such work so as to embrace general medical and health examinations and early dental attention would be most helpful to the pre-school child and would ensure his entering the primary school with less risk to himself or his young companions than at present.

Dental Section.

A large field has been covered by the dental section, and their work has, as shown by the report of the Chief Dental Inspector, been very satisfactorily performed. It is hoped that, at no far distant date, the possibility of extending the services so as to enable one dental inspection per year for all eligible children will occur. By this means, there would be an assurance in most cases that the work already performed by the dentist had not been damaged before his subsequent return visit to the school. This has been one of the great difficulties in the past and, when teeth have passed beyond a certain stage of destruction, only two courses are left—

1. To extract;
2. To institute a long course of pulp treatment.

The latter, of course, is manifestly impossible in the case of the visiting school dentist. The natural corollary is, if possible, to find means of dealing with the dental caries before it has reached such a serious stage. The Chief Dental Inspector's report is attached herewith.

Ophthalmic Section.

This important section of the School Health Services work is being satisfactorily attended to at the Wilson Ophthalmic School Hostel, and the reports of the part-time Ophthalmic Officer, Dr. E. O. Marks, and the matron of the hostel are attached.

The magnificent new building leaves nothing to be desired, and it would not be possible to find a better nor a more efficiently run institution in Australia. The work of caring for the eyesight of trachomatous patients in this institution has resulted in the saving of the sight of a large number of children. Each year finds this school-hostel increasingly popular amongst the people of Western Queensland. In the beginning, they were inclined to regard it with suspicion

and a fear that their children would not receive the same care and attention that they did in their own home. This fear has now vanished, and the public realise the tremendous value of treatment, both to the eyes and to the general health of all children entering its doors.

The districts from which these children come extend from the borders of New South Wales, South Australia, and the Northern Territory to well beyond Dobbyn in the North-West. Gradually, the serious cases are being sorted out and dealt with, but trachoma will be, for many year to come, a serious problem unless some method of treatment revolutionises our present accepted ideas concerning this disease. The improvement in the health of all children admitted to the institution is phenomenal, and the development in physique most marked. The writer has had in mind for some years a scheme for centralisation of schools on a similar basis, where children would live in a series of houses each under the control of a house-master or mistress, and where so much could be done for their general health, physique, and nourishment, and where a greater uniformity of teaching could be carried out with healthy rivalry between the various houses both in sport and education.

The Wilson Ophthalmic Hostel, in many respects, shows what would be possible in such circumstances, and it is, therefore, a very interesting social experiment, enabling, as it does, some of the more unlucky members of the community to receive the goods things of life and to benefit to the full thereby.

Ophthalmic Diseases—Acute and Chronic.—The sight of the child is the light of its mind. There would, therefore, appear to be nothing more important for the school child's welfare than the preservation of sight. Unfortunately, two factors tend to produce adverse results in later life:—

1. The seriously insufficient illumination in some schoolrooms, and a similar insufficiency of illumination in the home where the child has to study;
2. The remarkable adaptability of the child's eye to many serious illuminating defects which, while involving grave strain to the eyes, are, in most cases, not discovered until damage has been done.

A survey of the lighting conditions of all schoolrooms in primary schools is now being carried out.

This investigation is made possible by the use of the "light-meter," working on the principle of the photo-electric cell. Floor areas of school rooms are measured into squares, 3 feet x 3 feet, and the lighting value of each square is plotted on a corresponding sheet in terms of "foot-candles," and those portions of the room unsuitable for carrying out visual duties such as reading, writing, are shaded. Surveys are conducted only during the middle of the day during the summer months under the best conditions of lighting obtainable. This ensures that, if the lighting is not good under optimum conditions it will certainly be very much worse under less favourable conditions. There would appear to be still a large field for investigation respecting the vision of school children. A stereosette, a recently acquired instrument for testing vision, is now to be used by a member of the nursing staff, and will be a further means of picking out those children needing attention.

In the far West, trachoma continues to remain a problem, but, as mentioned, all those cases which have been sent to the Wilson Ophthalmic Hostel have benefited enormously. A new drug—para-amino-benzene-sulphonamide—has been found valuable in controlling certain acute infections, and has been used with some success in the treatment of acute ophthalmia. This may be of assistance in western districts, where acute ophthalmia may be the forerunner of trachoma, as, possibly, the trachoma virus is inoculated into the eye along with the micro-organisms of acute conjunctivitis. Up to the present encouraging results have been obtained, but it is at present too early to make any further announcement.

Deafness.

The auditory acuity of many children in the schools has been found to be temporarily below normal as the result of throat infections, or inflammations such as those associated with tonsils or adenoid vegetation. These are liable to become permanent disabilities if attention is not directed to rectifying the cause. In the past, the following causes of deafness have been noted in addition to those already mentioned:—

Catarrh of the middle ear;
Cerumen;
Rhinitis;
Otorrhoea;
Sclerosis;
Old mastoid operation;
Polypus;
Nerve deafness;
Foreign bodies in the external meatus;
Congenital malformation;
Sinusitis;
Stenosis of the meatus.

Of these the greatest number were caused by old mastoid operation; catarrhal conditions of the middle ear; stenosis; cerumen; rhinitis; otorrhoea, in that order. It will be obvious that quite a large percentage of cases, with the exception, perhaps, of that very large class, namely, old mastoid conditions, could receive either complete benefit or great amelioration of symptoms.

Arrangements are being completed for testing all primary school children respecting their auditory acuity by means of the *audiometer*. This procedure will enable most accurate tests to be conducted, and will be the means of saving hearing in a large percentage of cases, and improving the hearing in many others. During the year the survey will commence in Brisbane schools, and will be gradualy extended through the State.

It is pleasing to find that members of the public have become inclined to have throat conditions attended to when such are notified as occurring in their children. This not only makes for the improved hearing of the child, but, in a very large number of cases, greatly improves the general health as well. The writer is certainly not in favour of the removal of enlarged tonsils merely because they are enlarged, but, where there is definite evidence of toxæmia from infection of the tonsil or of obstruction of the posterior nares as the result of adenoid vegetation, operation without delay appears to be the correct procedure.

Ten years ago many entrants to the Teachers' Training College were noted as requiring tonsil and adenoid operations. (All entrants to the Teachers' Training College are required to be medically examined by the Chief Medical Officer of Schools.) It is now uncommon to find such cases, as practically all entrants to the Training College have had any operations of this nature, which were found necessary, carried out during their early school life.

It is sometimes difficult to arrange for throat and nose operations to be carried out within a short time of the notification of the condition which requires such operation. With the greater growth of the hospital system throughout the State, this difficulty is being overcome.

Epidemics.

A few mild epidemics have occurrred in schools in different parts of the State. These have included measles, mumps, chicken-pox, and whooping cough. The child population does not appear susceptible to a widespread epidemic at the present juncture, though one of measles is anticipated in about two years' time. So far such epidemics have been local with the exception of chicken-pox, which has been fairly general during the last year. The problem of controlling such diseases in schools is a difficult one owing to the fact that so many children travel during vacations, and by this means, apparently, infection is spread all over the State.

Diphtheria.—The incidence of diphtheria appears to have been definitely influenced by the number of children immunised in the State, and parents are beginning to realise that this is a most valuable prophylactic measure which has caused an enormous falling-off in case incidence. It is, therefore, interesting to note that, with very few exceptions—almost countable on the fingers of a hand—those children who have developed diphtheria have not been given full immunisation treatment against the disease. A survey of all schools in the State has been made to discover the number of children attending them who have been immunised. Unfortunately, this only applies to State schools as, at present, there is no means of obtaining the information from denominational schools, but the figures below give a very fair indication of the extent to which this measure has been successful:—

The figures below show the percentage of cases of diphtheria occurring in the primary school population for the past 10 years. (During the year, 498 cases of diphtheria occurred in children of primary school age):—

1929	·46
1930	·52
1931	.74
1932	·59
1933	·54
1934	·43
1935	·31
1936	·39
1937	·24
1938	·36

During the year the pupils of 18 primary schools, numbering 2,933, were swabbed, and of these 166 children were found to be carriers, a percentage of 6·3; and of these only 34, or 1·3 per cent., were reported as virulent, not quite one-fifth of the carriers discovered.

Scarlet Fever.—Two hundred and four cases of scarlet fever have occurred among school children in the metropolitan and country districts. Of these 74 were in the metropolitan area and 130 in country districts. The disease has been of a mild nature and, in some cases, has been difficult to diagnose. Every care is taken respecting this disease as the after-effects may be so serious. Wherever possible, school sisters have visited the schools and made investigations to ensure that spread of infection does not occur.

Anterior Poliomyelitis.—Twenty-eight cases of anterior poliomyelitis occurred in the schools. These were sporadic in character. Every care was taken to warn the head teachers of the schools and see that every precaution was taken to prevent, as far as possible, any infection of other children.

Cleanliness.

A pleasing feature of the school health work is the great improvement in the cleanliness of children, especially in so far as *scabies* and *pediculosis* are concerned. In the past, apparently many parents were quite unaware of the life history of these parasites, and, though they endeavoured time after time to free their children from the infestations, they were badly beaten by the reinfestation as a result of the reinfected articles in the home. Now that the children are learning the cause they clamour for a proper cleaning up of bed linen, blankets, beds, and all articles which may be the means of conveying parasites from one member of the family to another.

Nutrition.

Much yet remains to be done to bring about a satisfactory change in the meals of children attending school. Examination reveals the fact that food is often of good quality but wrong type, and is prepared in a most unappetising manner. It would seem that this particular subject might well be taught through housecraft classes, which certainly should go hand in hand with Domestic Science. If all the girls of the schools had the opportunity to learn how to prepare food attractively and daintily, and if such food was of a type which would produce the best results from the calorie point of view, probably good would result later on when these children had to prepare lunches for their own offspring.

The amount of food wasted in the large schools is amazing. Such food is examined from time to time, and it is not to be wondered at that children find it unappetising. They prefer to go to the pie-man and obtain very unwholesome types of diet. It has been suggested by the writer that some arrangement would be useful whereby all the children reported as being below nutritional standard by members of the School Health Services would be provided with milk at the school daily.

Water Supplies.

Where water supplies depend upon the rain water tanks are, in some instances, still unsatisfactory owing to—

1. Inadequate tank capacity to allow for tanks to be emptied and cleaned alternately;
2. The absence of a routine scheme whereby tanks shall be emptied and cleaned at regular intervals.

Recently, the writer inspected one of the tanks at a large country school at the time that the water was being emptied. Bacteriological tests by a Commonwealth laboratory near at hand were reported upon as being unsatisfactory and to be regarded with suspicion bacteriologically.

It is submitted that much greater supervision is needed in this respect so that tanks may be cleaned out at regular intervals and a schedule drawn up showing the amounts to be taken and at what intervals. The difficulty appears to be largely the variable amounts of dust and bird contamination which occur in different districts. It would not be necessary, in all cases, to clean at such short intervals as would be necessary in those places where contamination was greatest.

In many schools the objectionable habit of the children putting their mouths to the tap is still noted. This is a difficult problem to deal with. A simple means of producing the desired result consists in placing a board at an angle above the taps, allowing the tap handle to project through it, but covering up the mouths of the taps. The water would then have to be obtained either by cupping the hands or in some utensil.

It is interesting to note from statements made from time to time by members of the School Health Services that there appears to be a growing interest in the subject of public health and hygiene, both among teachers and pupils.

Sanitation.

Each successive year sees some improvement in the sanitation of those schools in districts where the Local Authority has installed a sewerage system or an ample water supply, and where there is either good sewerage or suitable means of disposing of effluents from septic tanks. Compared with the situation existing ten years ago, the sanitary conditions of schools have improved most markedly. This improvement makes for the better sanitary conscience of the children and their health in general. Many cases were once known where children absolutely refused to use the sanitary convenience at a school, as they were acustomed to better conditions in their own homes.

The practice now appears to be to instal water-borne sewerage systems in all schools where conditions permit. Some E.C. installations still leave much to be desired but, with the assistance of the health inspector to keep an eye on these conveniences and report any breach of the nightsoil disposal regulations, improvement is taking place all the time. The assistance of these officers is gratefully acknowledged.

A new type of E.C. was recommended recently following upon some cases of vulvo-vaginitis occurring in a school, and it is anticipated that its adoption will greatly minimise such happenings in the future. The same principle is adopted in all pedestals of the water-borne system.

Swimming Pools.

During the year, swimming pools at the various large schools have been inspected. They are not entirely free from defects—sometimes serious defects. There is undoubtedly much to be said for the teaching of swimming and life-saving (and, in fact, every child might well be taught to swim as part of the school curriculum, but the limited quantity of water in the swimming bath and the large numbers who use the bath, often without adequate safeguards for ensuring bodily cleanliness, make swimming instruction in such circumstances of debatable value. The cost of water renewal is heavy, and it is, therefore, not sufficiently frequently resorted to. The cost of a chlorinator and filtration plant is even greater, and, therefore, has to be left out of the question.

It is submitted that the question of construction of future baths should be referred to the Director-General of Health and Medical Services for decision as to whether the specifications conform so far as bath construction and purification plant are concerned to the best standards of public health.

Playgrounds.

In the larger centres of population, school medical officers have noted that the area of playgrounds is, in some instances, rather restricted or, if the area is sufficient, the surface conditions leave much to be desired.

It is suggested that this matter of sufficient playing area should always be borne in mind in the construction or alteration of school buildings and other encroachments on present playgrounds. These open spaces are, in some instances, the only lungs of the densely over-built areas. They might be made into rather pleasant night playgrounds for children during the warm months of the year if arc electric illumination were installed and suitable supervisors could be found to put in charge of the grounds during the time that the children were occupying them. It it suggested that all plans and specifications of every new school and playground area should be submitted to the Director-General of Health and Medical Services for inspection and approval. In this way, the suitability of the site and its drainage problems could be assessed on a health basis.

Mental Defectives.

From time to time backward children are noted by officers of the School Health Services in the course of the routine medical examination of school children. Such children may be either retarded as the result of the absence of facilities for normal progress in primary education, or they may be actually suffering from neuron defects which make school progress beyond a certain mental age impossible. No amount of teaching will take them beyond that particular mental age in which their particular case falls.

The first group, normal in every other respect, rapidly make up lost ground and are absorbed into the grade for the age to which they are suited, but the latter can never reach a proficiency which enables them to rise, in due course, to other grades for the completion of primary education. These unfortunate children would be better entirely segregated from normal children, both in their own interests and in those of the normal children. Owing to their mental limitations they find it impossible to adapt fully to the environment of the normal and, if able to reason at all, develop a greater and greater inferiority complex.

Opportunity schools in Brisbane, Toowoomba, and Rockhampton have performed splendid service in dealing with the problem of the mentally retarded child. There is still very much of a pressing nature to be carried out in this direction and a rich field for investigation.

The officers of the School Health Services have frequently expressed the hope that, at some not far distant date, an institution will be built at which these people can live permanently and receive instruction first of all in the children's section, primary school section, and, later on, carrying out such work as pig-raising, poultry farming, bee-keeping, vegetable-growing, &c., for the State hospitals, or marking linen, or mending clothes, or growing flowers &c., &c., The new "Backward Persons Bill" should be a great advance in this regard.

Lectures and Simple Rules Relating to Safe Handling of Domestic Electrical Apparatus.

Noting the number of accidents which occur from time to time as a result of carelessness and ignorance in dealing with all domestic electrical apparatus, and, in view of the fact that injury from such may be produced, it would appear that this matter definitely falls within the ambit of the School Health Services work.

Many schools are now connected with lighting and power systems, and the majority of homes utilise electric current or power in some form or other in the cities and towns. It appears advisable that school children in the middle and upper grades of a primary school might with profit, receive instruction in the simple rules of safe handling of all domestic apparatus, such as smoothing irons, electric jugs, electric toasters, water immersion heaters, washing machines, wireless apparatus, electric fans, electric lights, electric vacuum cleaners, electric soldering irons and radiators, and also might receive instruction as to the safe way of removing a person from the circuit accidentally in contact and of applying restorative methods until medical assistance could be obtained.

Simple explanations also might be given respecting the dangers associated with these live wires, fuses, switches, &c.

Seats and Desks.

The seats and desks in some of the more modern schools have been improved, but there is room for even greater improvement in this direction from a medical point of view. For years the same types have been in use, and a suggestion is put forward that the whole question of correct seating and desk accommodation might be brought forward at a conference between the medical and educational authorities to enable the best type of desk and seat to be agreed upon.

There is evidence that eyestrain, skeletal defects, and incorrect carriage are produced in some instances by unsuitable seating and desk accommodation. This could be largely obviated by scientific approach to the subject. Many children have been noted walking to school with very heavy loads of books. It is pleasing to find that there is an ever-increasing practice amongst parents of providing their children with a knapsack type of bag, enabling the books to be placed in the bag and strapped to the back. This tends to brace the shoulders backwards. The carriage of heavy weights on one side of the body is definitely detrimental for growing children. On occasion, the weight of such bags has been ascertained and, in some instances, has amounted to anything from 10 to 13½ lb. (nearly a stone weight) carried by a child of nine.

Gatton College—Medical Examination of Student Entrants.

The annual medical examination of more than 100 new students at Gatton College was carried out as usual.

Generally speaking, these boys were of good stamp and physique, and, in nearly every case free from any physical defects. Those few requiring medical treatment have since been attended to.

The students of the College were given the annual lecture, with lantern slides, on the subject of venereal diseases.

Medical Examination of Student-Teacher Trainees.

During the year 193 teacher trainees were medically and dentally examined by the staff of the School Health Services.

The types new presenting themselves for such examination show, in general, a remarkable improvement on those of ten years ago—physique, general health, and teeth are 75 per cent. better. The candidates are notified of any remediable defects discovered, and correction of such is the *sine qua non* of acceptance and enrolment as a member of the superannuation scheme.

The last three years have produced some exceptionally fine types of young man and womanhood.

TABLE SHOWING DEATHS FROM DIPHTHERIA IN THE 5 TO 14 AGE GROUPS FOR THE YEAR 1938-39.
TOTAL FOR THE STATE OF QUEENSLAND FOR THE RESPECTIVE QUARTERS.

Quarter.	Male.	Female.
July–September, 1938	3	2
October–December, 1938	5	3
January–March, 1939	3	1
April–June, 1939	4	2
Total	15	8
Grand Total	23 deaths.	

This represents ·0017 per cent. of the primary State school population of the State.

Of the number stated above, the following deaths occurred in the metropolitan area:—

Quarter.	Male.	Female.
July–September, 1938	2	..
October–December, 1938	2	2
January–March, 1939	1	1
April–June, 1939	2	1
Total	7	4

DEATHS OCCURRING FROM SCARLET FEVER IN THE 5 TO 14 AGE GROUP.

Only one (1) death from scarlet fever occurred among children in the State of Queensland during the year July, 1938, to June, 1939.

I append reports as usual, and, in conclusion, I would like to state that all members of the School Health Services have given of their best during the year's work, and that such work has shown good results, and that, each year, the improvement in the health of the school children continues. An increase in the staff would be welcome when finances warrant such an expenditure.

TABLE XXXIV.

TABLE OF FINDINGS, SCHOOL HEALTH SERVICES, 1938–39.

Number of Children examined by Medical Officers	4,143
Number of children notified as defective	1,962
Number of children treated by private medical practitioners	1,184
Diseases of tonsils and adenoids overgrowth	1,829
Other diseases of nose and throat	13
Defects of vision	212
Diseases of eyelids	6
Squint	17
Hearing	20
Otorrhoea	23
Heart	2
Skin diseases	13
Hernia	56
Number of children examined by School Nurse—	
Metropolitan	16,443
Country	15,333
Number of children referred to private medical practitioners by country nurses	1,188
Number of children treated by private medical practitioners	948
Number of homes visited by School Nurses	2,400
Apparent physical defects discovered by Country School Nurses and recommended to private medical practitioners for diagnosis and treatment—	
Tonsils and adenoid overgrowth	747
Vision	303
Affections of eyelids	16
Squint	24
Hearing	10
Otorrhoea	9
Skin diseases	127
Scabies (referred to City Health Officer for treatment)	93
Number of children found to be vaccinated—	
In Australia	47
Out of Australia	102
Number of cases of diphtheria in school children	498
Number of schools swabbed	18
Number of pupils swabbed	2,933
Number of pupils found to be carriers	166
Percentage of carriers	6·3
Number of virulent carriers	34
Percentage of virulent carriers	1·3
Number of cases of scarlet fever in school children—	
Metropolitan	74
Country	130

DENTAL INSPECTION IN SCHOOLS.

A summary of the findings revealed at the different examinations of the full staff of School Dental Officers is detailed hereunder:—

Number of Children Examined.	Number with Sound Mouths.	Condition of Mouth.			Use of Toothbrush.			Permanent Teeth.			Carious Teeth.		Permanent Carious Teeth.		Percentage of Children with Dirty Mouths.	Total Number of Carious Teeth.	Average Number of Carious Teeth per Child.
		Clean.	Fair.	Dirty.	A	B	C	Lost or Extracted.	Nine-year Molars Extracted.	Filled.	Permanent.	Temporary.	Savable.	Unsavable.			
29,724	4,102	8,451	18,272	3,001	7,864	17,873	3,987	10,287	8,416	43,782	46,594	34,373	39,770	6,824	13%	46,594	1·5

Operative Work.

The total amount of treatment resulting from the different clinical activities connected with the service is set out in the subjoined table:—

Number of Children Treated.	Total Operations Performed.	Number of Extractions.	Number of Fillings.	Number of Other Treatments.
17,597	104,724	31,143	59,886	13,695

WILSON OPHTHALMIC SCHOOL HOSTEL.

REPORT OF DR. E. O. MARKS, OPHTHALMIC OFFICER (PART-TIME).

In September we went into the new building and were able to admit larger numbers of children. There were 33 on the roll on 1st July, 1938, and during the year 58 were admitted and 40 discharged, leaving 51 at the end of the period. Of these, one child has been in since February, 1935—four years and four months. His eyes have been for some time in the final condition, though the lids and cornea are scarred; his general health has prevented his being sent home. More than half of his time since coming to Brisbane has been spent in the Children's Hospital. The next oldest inhabitant came in February, 1936—three years and four months—and at last seems likely to be fit shortly to return home. Four other children have been between two years and three years in the hostel, and five between one and two years. Forty of those now on the roll have been in less than one year.

Of the 58 children admitted during the year, 17 have already been discharged, two of these at the insistence of the parents but against our advice, and one owing to the refusal of the parents to sign the necessary papers (he was subsequently readmitted on their consenting to do so). One child was discharged to the Blind School.

In regard to the eye conditions, we chiefly receive old standing cases. It is satisfactory to note a diminution in the number of cases with permanently impaired vision due to old corneal involvement.

During the year a method of treatment advocated by Dr. Gault, of Melbourne, was tried on a selected number of cases, but seemed to show little advantage over simpler methods.

Treatment by the new drugs of the sulphonilamide group has also been tried. This appears likely to prove of very great help in clearing up the secondary and more acute conjunctival infections often associated with trachoma, though its influence on the "granular" conditions seems doubtful. Much more experience is needed yet before any conclusions are made as to its place in treatment.

The main cure still seems to require reliance on local hygiene of the eyes, and attention to the general bodily health. To this latter there is no doubt that the beautiful building we now have will make a very large contribution.

REPORT OF MATRON WALPOLE ON WILSON OPHTHALMIC SCHOOL HOSTEL.

On 5th September, we moved from our temporary quarters at St. Paul's terrace to the beautifully equipped new hostel which had been built on the site of the old building. Since then the playgrounds have been levelled and spacious sheds for boys and girls have been built. The playgrounds were handed over to the children on 28th June, and from that date the boys have revelled in satisfying games of football.

Our daily average last year, 31·5, was the highest since the hostel opened. This year the daily average of children on roll was 42·2. As we could not start receiving large numbers of children until 10th November, this is a greater advance in numbers than at first appears.

The high daily average of children absent in hospital is owing to a case of acute rheumatism and one of osteomyelitis, and to five severe cases of whooping cough.

The immunisation figures are very interesting. The children come from outlying districts, and yet 34 out of 58 admissions had been immunised before admission to the hostel.

The State school now has two teachers. The domestic science school, opened in January, gives instruction in dressmaking and cookery two days weekly. The boys of eleven and twelve years still sole the shoes for all the hostel children. This has been done for eight years. This work was originally supervised by me, but, since his appointment as handyman, Thomas Clarke has taken the instruction into his own more capable hands.

Epidemics of whooping cough and chicken-pox during the year have caused various picnics and concerts to be cancelled, but, on two occasions, friends have given picture shows for the children, and there have been many other pleasant functions. The Christmas tree was a most happy occasion, and the Department of Health and Home Affairs played Santa Claus

later by presenting gifts for the Christmas stockings. With more than fifty children trying to discover the movements of Santa Claus, the nurses have to be very wary. Presents are piled on trollies behind locked doors, and, when in the grey dawn of Christmas morning the clamour in the dormitories becomes insistent, a nurse "discovers" the trolly and wheels it into the dormitory.

In closing, I wish to express again my warm appreciation of our new hostel and its modern conveniences.

Number of children on hostel roll 30th June, 1938	17 boys, 16 girls
Number admitted during year ended 30th June, 1939	31 boys, 27 girls
Number discharged during year 1938-39	22 boys, 18 girls
Number remaining on hostel roll at 30th June, 1939	26 boys, 25 girls
Daily average on roll	42·2
Daily average absent in hospital	1·1
Average length of stay in hostel since the opening of hostel, 14·5 months	

Cases admitted to hospital with the following—

Osteomyelitis	1
Acute rheumatism	1
Whooping cough	5
Chicken-pox	2
Otitis media	5
Septic toe	1
Septic jaw	1
Tonsillectomy	1
Squint	1
Bronchitis	1
Influenza	1
Diphtheria carriers	2

Sickness at hostel—

Whooping cough	11
Chicken-pox	19

Dental cases—

All the children

Immunisation 24

Out-patients at hospital—

Discharging ears	2
X-ray	2
Septic jaw	1
Anæsthetic for observation	1
Tonsils	2
Observation of skin	1

SECTION OF INDUSTRIAL HYGIENE.

OFFICER IN CHARGE: ABRAHAM FRYBERG, M.B., B.S., D.P.H., D.T.M.
(Assisted as required by Officers of the Mobile Unit.)

Lectures—Paint Spraying—Ipswich Workshops—Weil's and Paraweil's Disease—Arsenic Spray used as for Weed Destruction.

During the year three investigations were carried out under the terms of "*The Health Act of* 1937." They dealt in particular with the conditions operating in the industrial process of lacquer spraying, the matter of Weil's and paraweil's disease probabilities in the sugar industry, and the conditions operating at the Ipswich Railway Workshops. There was, moreover, an inquiry into the handling of arsenic for weed destruction on railway tracks.

As in infectious diseases, so in industrial diseases, it is better economy to prevent disease than to attempt to patch up sick workers. The aim of the Department is to further and maintain health among men in industry. The best results can only be achieved by co-operation between departmental officers, employers, and employees. Every effort is being made to achieve the fullest measure of such co-operation.

The Section of Industrial Hygiene is, at the present time, in course of development only. Assistance is being provided by the Section of Microbiology and Pathology, the Mobile Unit, and also by the Government Chemical Laboratory. As the work develops, it will be necessary, if it is to be carried out efficiently, to employ a specially trained staff.

As an indication of the type of inspection sought, the following example may serve:—During the past year, examinations of the blood and urine of four patients who were employed at duco spraying were undertaken to determine any evidence of lead poisoning. To be of real value large numbers of men from the same workshop should be examined at the same time. Routine examinations of blood and urine are really necessary for men employed wherever lead hazards constantly exist in spite of preventive action. In the same way examination of the atmosphere for dust and X-ray examination of workers from time to time, where dust is prevalent, are also periodically desirable.

It is hoped that a technician will be approved for this purpose at an early date.

It is similarly necessary to undertake minor modifications of the law to permit the drawing of regulations for industrial purposes. At present, although recommendations can be made, no such power exists in the Health Act.

LECTURES.

A lunch-hour talk on "Fatigue in Industry" was given at the request of the Rostrum Committee to the employees of the Railway Workshops, Ipswich. It is hoped that a number of these will be given during the coming year.

PAINT SPRAYING.

Arising out of complaints received from the Federated Furnishing Trade Society and the Australian Coachmakers Employees' Federation, an investigations was carried out with reference to lacquer spraying in the industries with which these unions are associated.

In 1926 a similar investigation was carried out and certain recommendations made, but there was no power to enforce the recommendations. The result is that conditions now are very little different to what they were then.

Samples of lacquers were taken from furniture factories and motor-body works and submitted to the Government Analyst. The solvents consisted mainly of butyl alcohol and butyl acetate. These substances are not toxic unless in massive doses. Toxic solvents, such as methyl alcohol and benzol, were found to be absent. Of the pigments used, the green and yellow colours contained high proportions of lead. The lead content of the green lacquer was shown to be 2·3 per cent. of the sample, but 33 per cent. of the pigment consisted of lead. The lead content of the yellow was 12·2 per cent. of the sample and 61 per cent. of the pigment.

It will be seen that the toxicity of the lacquers examined depends on two factors—

(*a*) The evaporation of the volatile factor;

(*b*) The lead content of the lacquer.

(*a*) Toxic effects of the volatile factor only occur if there is massive concentration of the vapours. These are easily removed by an efficient exhaust system.

(*b*) Investigation shows that pigment is expectorated for hours after the worker has used the spray "gun." This means that when a yellow or green lacquer is used lead must enter the body.

Clinically there were no cases of lead poisoning seen, but if a blood and urine examination were carried out definite evidence might be found. Efficient exhaust ventilation would be a factor in reducing the risk.

Another risk is that of fire. Extinguishers were provided in most shops. The investigation showed, except for the large firms, the precautions taken against industrial hazards in lacquer spraying were negligible. If the proper legislation is gazetted this will be changed.

Masks, although supplied, are not worn by the men, as they are too hot. It is regretted the employees do not try to help themselves.

Ipswich Workshops.

At the request of the Ipswich Railway Employees' Federation, and with the consent of the Commissioner for Railways, a visit was made to the foundry at the Ipswich workshops. The representative of the union agreed that the shop was as good as any, and better than most, he had seen. The men stated that the slag from the blast furnace, dust from the "tumbling" machine, and dust in the accumulator manufacturing department could be reduced.

Investigation showed the complaints to be justified, and the recommendations forwarded to the Commissioner were favourably received.

Weil's and Paraweil's Disease.

At the request of the Australian Workers' Union, an investigation was made, from the preventive aspect, of Weil's disease in canecutters. The first visit was made at the end of April, but wet weather prevented field work from being carried out. A general survey of the sugar areas between Ingham and Cairns was made, and the obvious thing noticed was the lack of co-operation between the various bodies connected with the industry. The Pests Boards of the various areas were poisoning rats in the field, but harbourages outside the farms were ideal for breeding. Despite the responsibility placed on the Local Authorities by "The Rat Prevention and Destruction Regulations," and despite a warning circulated by the Director-General, practically nothing was done in this regard by these bodies during the previous twelve months.

The fact that temporary inspectors were appointed for the purpose of regulating cane burning under "The Rat Prevention and Destruction Regulations" only during the actual period of canecutting was a matter that might be improved, since their time was then so fully occupied acting as arbitrators that little time could be spent on routine inspections, and, of course, none earlier than three or four weeks before actual canecutting commenced.

A second visit was made in June and the objects were:—

(1) To make contact with organisations concerned in rat destruction;

(2) To make contact with the men in the field and discuss Weil's disease prevention with them;

(3) To carry out a survey of areas where Weil's disease and endemic typhus fever had occurred.

(1) The representatives of the following organisations were interviewed:—

(*a*) The Australian Workers' Union.—The Secretary, Mr. P. Bushnell, placed the services of his organisers at the disposal of the investigator, and these gentlemen promised to discuss preventive measures against Weil's disease with the gangs with whom they made contact.

(*b*) Representatives of the cane farmers and mill authorities promised full co-operation. Field officers attached to the various Pests Boards were also interviewed. Excellent work is being carried out by them in the field. Their poison campaigns have been independently carried out, but in future the local authority and the State Health inspector will be notified when a drive is taking place. The local authority will institute drives on their lands at the same time.

(*c*) Local Authorities.—The shire clerks who were interviewed promised to bring before their councils the necessity for rat destruction, and to recommend the purchase of poison baits, poison machines, and mowers. They promised also to co-operate with the inspectors of this Department and the Pests Boards' officers.

(2) It is the practice of the gangs to go barefooted or to wear sandshoes in the fields. The feet are probably the main portals of entry for the organism in a great majority of cases, and efforts were accordingly made to impress upon the gangs the necessity for adequate footwear, as well as the importance of personal hygiene. The men are, on the whole, casual in their outlook in these regards, but the example set by the few who promised to wear boots may have good results. A higher standard of personal hygiene may also lead to an improvement in barrack conditions, which are not all they might be.

(3) The farms where cases of the disease have occurred in the past are low-lying and are adjacent either to scrub land or watercourses. In some instances, the costs of clearing for protective purposes would be so great as to be prohibitive. The Commissioner for Railways has renewed his offer of 1934 to co-operate with the Department in any suggestion for the clearage of harbourage along the sides of the main roads and railways. The general opinion held by all interested parties is that the appointment of the health inspectors has been a very valuable factor, and that their discretion as to when burning of cane is called for has been impartially and capably exercised, so that the scheme of control is working in an excellent manner.

I would like to take this opportunity of placing on record the esteem in which the chief of these inspectors (Mr. J. Kennedy) is held by the executives of the various organisations interviewed.

Arsenic Spray Used as for Weed Destruction.

At the request of the Commissioner for Railways, an investigation was made, in June, 1938, of the public health aspects of the arsenic process used in weed destruction along railway tracks. Complaints had been received that the present process was endangering the health of employees.

In consultation with the Medical Officer for the Queensland Railway Department, a report was drawn up. It was found that the health of the employees was not endangered but that dermatitis, due to arsenic dust, had occurred. A different method of loading arsenic into the poison train was suggested, together with a few improvements in protective clothing. There was evidence that some of the men handling arsenic had not observed departmental instructions as regards protective clothing.

SECTION OF ENTHETIC DISEASES.

OFFICER FOR VENEREAL DISEASES: GEOFFREY HAYES, M.B., Ch.M.

PART-TIME MEDICAL OFFICER (FEMALE): BEATRICE WARNER, M.B., B.S.

Definition—Incidence—Summary of Notifications—Incidence of Notified Venereal Disease for past Six Years—Ratio of Notified Venereal Disease Infections for past Six Years—Sources of Notification—Stated Sources of Infection—Defaulters—Clinics—Prostitutes—Observations.

The following particulars indicate the work carried out in connection with the control of venereal disease for the fiscal year 1938-39 under the relevant sections of "*The Health Act of* 1937."

Definition.—For the purposes of this Act the term "venereal disease" includes gonorrhœa, ophthalmia neonatorum (gonorrhœal), syphilis (all stages), soft chancre, ulceration granuloma, and venereal warts.

Incidence.

Notifications.—During the twelve months under review 1,147 persons were notified (anonymously) as suffering from venereal disease, as compared with 1,256 for the previous year. As some of these patients had two co-existent infections this represented 1,153 distinct infections with venereal disease as compared with 1,263 during 1937-38.

Syphilis.—One hundred and ninety-eight of these infections were syphilitic, as compared with 184 in 1937-38. Early syphilis accounted for 59 of these, as compared with 56 for the previous year.

Gonorrhœa.—Nine hundred and twenty-seven of the infections were gonorrhœal (excluding ophthalmia neonatorum), as compared with 1,042 in 1937-38.

Other Forms of Venereal Disease.—These accounted for 28 as follows:—

Venereal warts	10
Ulcerative granuloma (*G. venereum*)	7
Chancroid (*ulcus molle*)	5
Ophthalmia neonatorum (gonorrhœal)	6

The following table gives a dissection of the notifications received for the twelve months under review:—

TABLE XXXV.

SUMMARY OF NOTIFICATIONS.

Nature of Disease.	District.	Males.	Females.	Totals.	
Single Infections					
Gonorrhœa—					
Unspecified	Greater Brisbane	27	7	34	77
	Rest of State	39	4	43	
Acute	Greater Brisbane	409	101	510	682
	Rest of State	141	32	173	
Sub-acute	Greater Brisbane	27	32	59	82
	Rest of State	19	4	23	
Chronic	Greater Brisbane	17	28	45	58
	Rest of State	11	2	13	
Vulvo-vaginitis	Greater Brisbane	..	18	18	22
	Rest of State	..	4	4	
Ophthalmic Neonatorum	Greater Brisbane	2	4	6	6
	Rest of State	..	..	..	
Syphilis—					
Unspecified	Greater Brisbane	2	..	2	10
	Rest of State	4	4	8	
Primary	Greater Brisbane	29	5	34	37
	Rest of State	2	1	3	
Secondary	Greater Brisbnae	7	7	14	21
	Rest of State	4	3	7	
Tertiary	Greater Brisbane	18	1	19	46
	Rest of State	51	12	27	
Latent	Greater Brisbane	15	9	24	39
	Rest of State	5	10	15	
Neuro-syphilis	Greater Brisbane	18	..	18	19
	Rest of State	..	1	1	
Heredo-syphilis	Greater Brisbane	5	2	7	20
	Rest of State	5	8	13	
Soft Chancre (*Ulcus molle*)	Greater Brisbane	3	..	3	5
	Rest of State	2	..	2	
Ulcerative Granuloma	Greater Brisbane	..	..	..	7
	Rest of State	1	6	7	
Venereal Warts	Greater Brisbane	6	3	9	9
	Rest of State	..	..	..	
Double Infections—					
Gonorrhœa and Primary syphilis	Greater Brisbane	1	..	1	1
	Rest of State	..	..	..	
Gonorrhœa and Tertiary syphilis	Greater Brisbane	..	1	1	1
	Rest of State	..	..	..	
Gonorrhœa and Latent syphilis	Greater Brisbane	..	3	3	3
	Rest of State	..	..	..	
Venereal Warts and Syphilis	Greater Brisbane	..	1	1	1
	Rest of State	..	..	..	
Totals	Greater Brisbane	586	222	808	1,147
	Rest of State	248	91	339	
	Whole State	834	313	1,147	

The following table gives the incidence of notified venereal disease infections per 10,000 of population. Actually the incidence would be greater as many cases are not seen and reported by medical men.

TABLE XXXVI.

INCIDENCE OF NOTIFIED VENEREAL DISEASE FOR PAST SIX YEARS.

Year.	Total Cases Notified.	Individual Groups.			Mean Population.	Rate per 10,000 Mean Population.		
		Syphilis.	Gonorrhœa.	Other V.D.		Syphilis.	Gonorrhœa.	Other V.D.
1933–34	1,606	366	1,216	14	950,351	3·85	12·79	0·14
1934–35	1,293	246	1,016	31	960,859	2·56	10·57	0·32
1935–36	1,130	124	994	12	972,190	1·27	10·22	0·12
1936–37	1,214	187	1,011	16	992,091	1·87	10·29	0·16
1937–38	1,263	184	1,042	37	1,004,150	1.38	10.37	0.37
1938–39	1,153	197	927	28	Not available.	..	..	..

RATIO OF NOTIFIED VENEREAL DISEASE INFECTIONS FOR PAST SIX YEARS.

Year	Ratio of Males to Females.		Ratio of Gonorrhœa to Syphilis (Both Sexes).
	Gonorrhœa.	Syphilis.	
1933–34	2·74	1·45	3·31
1934–35	3·14	1·59	4·1
1935–36	3·14	1·64	3·01
1936–37	3·13	1·8	5·3
1937–38	2·69	1·72	5·66
1938–39	2.95	1.97	4.72

Sources of Notification.—Of the total notifications received, 26·4 per cent. were by private practitioners, as compared with 22.5 per cent. last year. The actual figures are shown in the table:—

TABLE XXXVII.

Treatment Centre.	Greater Brisbane.	Rest of State	Totals.
Clinics	432	138	570
Private practitioners	203	100	303
Hospitals (other than Clinics)	173	101	274
	808	339	1,147

Stated Sources of Infection.—The following table gives the sources of infection as stated by the patients:—

TABLE XXXVIII.

Infections ascribed to—	Area.				Totals.	
	Greater Brisbane.		Rest of State.			
	Males.	Females.	Males.	Females.	Males.	Females.
Brothel prostitutes	24	..	15	..	39	..
Clandestine prostitutes	51	..	30	..	81	..
Non-professionals	291	..	91	..	382	..
Husbands	..	4	..	1	..	5
Wives	5	..	3	..	8	..
Brother	..	..	..	1	..	1
Parents	4	4	3	8	7	12
Occupational (prostitutes)	..	27	..	15	..	42
Gins, half-castes, &c.	..	..	8	..	8	..
Extra-genital (accidental)	1	1	2	..	3	1
Homo-sexual	2	..	..	..	2	..
Unknown or unstated	208	186	96	66	304	252
Totals	586	222	248	91	834	313

Defaulters.—During the year there were 220 notifications of default from treatment, and, as a result of action, 134 resumptions of treatment to 30th June.

TABLE XXXIX.

Defaulters.	Male Clinic (Hope Street).	Other than Hope Street.		State Totals.
		M.	F.	
Notified to Department	*124	25	71	220
Resumed treatment	66	14	55	135
Not located	47	8	7	62
Left State	11	2	2	15
Not finalised	..	1	7	8
	124	25	71	220

* Includes 2 from 1937-38.

Clinics.

Under the terms of the Health Act all subsidised public hospitals are required to provide facilities for the treatment of venereal disease so that sufferers may seek and obtain treatment at any subsidised public hospital in the State, either as indoor or outdoor patients, according to their condition.

In Brisbane, however, the out-patient treatment is taken over by two *ad hoc* centres—males at Hope street and females at William street, these centres being staffed and controlled directly by the Department. This arrangement has definite advantages on the administrative side as the clerical work, and follow-up work is simplified, but on the clinical side there is the definite disadvantage that patients requiring hospitalisation pass from the control of the clinics and the advantages of continuity of interest and records are lost, as well as the lessons and experience so essential to a proper medical understanding of a case.

Also the benefit of collaboration with other departments is made difficult. The advantages of close contact with the hospital departments of Gynæcology and Urology (in gonorrhœa) and of Neurology and Cardiology (in syphilis) are too obvious to be dilated upon.

Another factor also has now to be considered. Medical students will get their clinical instruction at these *ad hoc* centres outside the hospital, but when they become resident medical officers of the hospital—a part of the course of training very properly stressed in Queensland—they will have no opportunity of seeing any more cases, much less of treating them, as the out-patient treatment of venereal disease is not in any way associated with the hospital.

Now that the control of hospitals and public health have been co-ordinated one would like to see some attempt made to remedy these defects. It should not be difficult to devise a scheme whereby the advantages of departmental control of the clerical and administrative work is retained, with at the same time more satisfactory facilities on the clinical side.

Male Clinic (Hope street), Brisbane.— During the year the irrigation room was renovated and more privacy is now possible. The advent of sulfanilamide therapy has lessened the use of the room but has certainly not made it superfluous.

The following table gives a fairly comprehensive dissection of activities at Hope street and William street clinics during the year:—

TABLE XL.

Male Clinic Activities, 1938-39.

Patients carried froward, 1937-38	332
New patients registered, 1938-39	663
Total patients attended to, 1938-39	995
Patients finalised during 1938-39	707
Remaining under investigation or treatment on 30th June, 1939	288
Cases diagnosed as venereal up to 30th June—	
Gonorrhoea—Acute	317
Sub-acute	13
Chronic	15
Syphilis—Primary	26
Early Secondary	3
Late Secondary	1
Tertiary	4
Latent	16
Neuro-syphilis	3

TABLE XL.—*continued.*

Venereal warts (C acuminata)	15
Chancroid (*Ulcus molle*)	2
Specific balanitis (4th venereal disease, not notifiable)	4
Total Venereal Disease cases (notifiable only)	415
Interviews and consultations with Medical Officer	7,631
Blood specimens submitted to Laboratories—	
W. R. and Kline (syphilis)	1,054
Comp. Fixation (Gonorrhoea)	538
Smears taken for submission to Laboratories	2,088
Dark ground examination (performed at Clinic)	34
Injections—	
(*a*) Arsenical	1,010
(*b*) Heavy metal (mostly Bi.)	1,017
(*c*) Others (Vaccines, non-specific, therapy, &c.)	338
Prescriptions dispensed (part time chemist)	2,347
Seamen (Brussels agreement) consultations and treatment	58
Personal cards issued	25

FEMALE CLINIC (WILLIAM STREET.)

Total visits (attendances)	3,561
New patients registered	106
Cases diagnosed as venereal	87
Injections—	
(*a*) Arsenical	415
(*b*) Bismuth	339
(*c*) Others	155
Local treatments	3,577

Both Hope street and William street clinics are to become centres for clinical instruction of medical students during 1939. As will be seen from the dissection of notifications at Hope street, practically all types and stages of these diseases are seen during the year, besides many pseudo-venereal and genital conditions in which the diagnosis has to be established, such as *tinea cruris*, genital scabies, *pediculi pubis*, *trichomonas* and *monilia* infections, *herpes genitalis*, cystitis and prostatism (non gonorrhœal), &c. Many such cases report each year fearing they have become infected with venereal disease, and they represent further instances where the advantages of a closer collaboration with other hospital departments would be so helpful. These facilities exist at the teaching centres in Adelaide, Melbourne, and Sydney, and it is most desirable that they should exist here also.

Prostitutes.

Examination.—Certain women known to the Department and to the Police as prostitutes, or convicted in the courts for loitering or soliciting, are examined regularly for evidence of venereal infection. It of course only touches the fringe of the problem as the clandestine reservoir is practically untapped.

TABLE XLI.

EXAMINATION OF PROSTITUTES.

Year.	Greater Brisbane.		Rest of State.	
	Examined.	Found Infected.	Examined.	Found Infected.
1934-35	524	46	826	32
1935-36	465	55	850	35
1936-37	401	29	798	13
1937-38	379	41	822	15
1938-39	412	32	809	17

Treatment of Prostitutes.—Lock hospital treatment is provided for those found infected at the Venereal Isolation Hospital in Park road. In a few of the more remote centres the patients are accommodated at the local hospital.

Certain prostitutes suffering from syphilis in a non-communicable form are treated as out-patients at the examination rooms—and provided they attend regularly for treatment are not required to enter a lock hospital.

Returns for Venereal Isolation Hospital, Park Road.—

Admissions 1938-39.		Dealt with 1938-39.	
Remaining from 1937-38	2	Discharged clean	32
Ex Country centres	..	Transferred to General Hospital	..
Ex Brisbane	33	In-patients, 30th June, 1939	3
	35		35

Anti-syphilitic Treatment at Examination Rooms.—

Arsenical injections	69
Bismuth injections	63

OBSERVATIONS.

Sulfanilamide Therapy.—The advent of this drug has made definite changes in the routine therapy of gonorrhœa. Many cases are cured very quickly with it, and to that extent much of the routine irrigation treatment has been curtailed. However, *there is a definite tendency for this drug in certain cases to convert an obviously infected patient into a symptomless "carrier,"* and this has entailed a far more rigorous standard of cure.

Most of the sulfanilamide preparations have been used at Hope street. Besides the ordinary sulfanilamide under various trade names, we have also used the combinations and variations of this drug, and our thanks are due to the representatives of the following proprietary lines for generous supplies of their preparations for trial and use in our clinics:—"Uleron" (Bayer), "M & B 693" (May and Baker), "Albucid" (Schering).

Following the favourable report of Hanschell and others in England of the use of sulfanilamide in chancroid infections, we were fortunate in being able to treat two cases at Hope street along these lines. The sores were definitely resistant to the usual therapy—Ducrey's bacillus was demonstrated—and the infection was cleared up within a few days—in every way confirming the favourable reports referred to.

The need for better hospital bed facilities has been mentioned elsewhere, but one may here point out that the number of cases of syphilis with resistant serology are accumulating, but in the absence of facilities for proper and adequate C.S.F. examinations it is not possible to do more than guess at many of the conditions.

During the year there was a considerable increase in the cases of early syphilis. At Hope street there were 29 as compared with 16 last year. Many of these cases were traced to certain clandestine prostitutes in Barry Parade, and the evidence suggested that it was one of these—a new arrival and apparently a most successful "business" woman—judging by her contacts, who started this minor epidemic. It was an excellent confirmation of the statement that syphilis is spread by a series of minor epidemics.

The fact that figures for early syphilis for the whole State do not show an increase would suggest that we were able to successfully localise the trouble by tracing and isolating three women whose descriptions were obtained.

Another fact brought to our notice during the year was the rather prevalent idea in the South, and even in Queensland itself, that brothels are "licensed" in this State and that a system of regular medical examination ensures a comparative freedom from risk to those who care to visit such places. In at least two instances it was a definite "tourist attraction" to holiday visitors from the South. The fact that they came under our notice is sufficient evidence that they have been made aware of the fallacy of such a belief.

Speaking generally the incidence rate is satisfactory as compared with other countries. Further decline is as much a matter of economics as of medicine. Until such time as social and economic maturity coincide, Venus will be worshipped no less ardently if surreptitiously. This is the reason for our constant advocacy of better and better treatment facilities. That prevention is better than cure is admitted, but when prevention is not a practical proposition, we must face up to our task of curing. Only by adequate and thorough treatment can this be done, and ultimately it is the road to prevention. In venereology curing is preventing, providing it is prompt and thorough.

SECTION OF MENTAL HYGIENE.

INSPECTOR OF ASYLUMS: JOHN COFFEY, F.R.C.S. (Ed.), L.R.C.P., D.P.H., L.M. (Rot), F.R.San.I.

MEDICAL SUPERINTENDENT, GOODNA: BASIL FREDERICK ROBERTS STAFFORD, M.B., B.S.

MEDICAL SUPERINTENDENT, WILLOWBURN: JAMES EDWARD FANCOURT McDONALD, M.B., B.S.

MEDICAL SUPERINTENDENT, IPSWICH: WILLIAM PATRICK HUGH PARKER, L.R.C.P. & S.

MATRON, RECEPTION HOUSE, TOWNSVILLE: M. O'BRIEN.

MATRON, EPILEPTIC HOME, ROCKVILLE: E. BOW.

Hospitals for the Insane, Goodna, Willowburn, and Ipswich—Admissions, readmissions, Discharges, and Deaths—Admissions, Discharges, and Deaths, with the Proportions of Recoveries and Deaths per cent.—Forms of Mental Disorders in Patients Admitted—Bodily Health and Conditions of Patients Admitted—Returned Soldier Patients—Wassermann Tests—District whence Patients were Received—Previous Occupations of Patients Admitted—Length of Residence in the Hospitals of Patients who were discharged or who Died during the Year and of those who remained—Epileptic Patients—Causes of Deaths—Farm and Garden Produce—Articles made up in the Workroom—Expenditure Table—Clinical Activities—Schizophrenia—Cardiazol Treatment, Willowburn—Malaria Therapy—Psychoses—Physical Condition—Other Therapeutic Measures—Pathology—Legislation—Additional Medical Appointments—Dental Treatment of Patients—Magisterial Inquiries—Births—Deportees—Escapes—Returned Soldiers—Patients' Library—Religious Services—Amusements—Official Visitors—Chiropodists—Honorary Visiting Staff—Toowoomba—Accommodation and Buildings—Obituary—Appointments—Townsville Reception House—Epileptic Home, Rockville, Willowburn.

Report on the State Hospitals for the Insane and the Townsville Reception House in Queensland for the twelve months from 1st July, 1938, to 30th June, 1939.

HOSPITALS FOR THE INSANE, GOODNA, WILLOWBURN AND IPSWICH.

TABLE XLII.

ADMISSIONS, READMISSIONS, DISCHARGES, AND DEATHS DURING THE YEAR ENDING 30TH JUNE, 1939.

GOODNA.

	Males.	Females.	Total.
On the books of the Hospital on 1st July, 1937	1,110	696	1,806
	Males.	Females.	Total.	
Admitted for the first time during the year	253	208	461	
Readmitted during the year	42	47	89	
Transferred from Toowoomba during the year	3	..	3	
Transferred from Ipswich during the year	1	..	1	
				299	255	554
Total under care during the year				1,409	951	2,360
Discharged, died, transferred—						
Discharged recovered	82	77	159			
relieved	31	34	65			
not improved	3	2	5			
Transferred to Toowoomba	..	..	..			
Transferred to Ipswich	27	6	33			
Died	109	65	174			
Total discharged, died, &c., during the year				252	184	436
Remaining on the books of the Hospital on 30th June, 1939				1,157	767	1,924
Average number daily resident during the year				1,088	676	1,764
On leave of absence on 30th June, 1939				50	59	109

TABLE XLII.—*continued.*

TOOWOOMBA.

——	Males.	Females.	Total.
On the books of the Hospital on 1st July, 1938	548	597	1,145
	Males.	Females.	Total.			
Admitted for the first time during the year	36	22	58			
Readmitted during the year	6	6	12			
Transferred from Goodna during the year	..	..	..			
Transferred from Ipswich during the year	..	..	..			
				42	28	70
Total under care during the year				590	625	1,215
Discharged, died, transferred—						
Discharged recovered	18	5	23			
relieved	5	2	7			
not improved	1	..	1			
Transferred to Goodna	3	..	3			
Transferred to Ipswich	..	..	..			
Died	29	28	57			
Total discharged, died, &c., during the year				56	35	91
Remaining on the books of the Hospital on 30th June, 1939				534	590	1,124
Average number daily resident during the year				526	577	1,103
On leave of absence on 30th June, 1939				21	10	31

IPSWICH.

——	Males.	Females.	Total.
On the books of the Hospital on 1st July, 1938	369	146	515
	Males.	Females.	Total.			
Admitted for the first time during the year	1	..	1			
Readmitted during the year	..	..	..			
Transferred from Toowoomba during the year	..	..	..			
Transferred from Goodna during the year	27	6	33			
				28	6	34
Total under care during the year				397	152	549
Discharged, died, transferred—						
Discharged recovered	5	1	6			
relieved	2	..	2			
not improved	..	..	..			
Transferred to Goodna	1	..	1			
Transferred to Toowoomba	..	..	..			
Died	18	8	26			
Total discharged, died, &c., during the year				26	9	35
Remaining on the books of the Hospital on 30th June, 1939				371	143	514
Average number daily resident during the year				367	143	510
On leave of absence on 30th June, 1939				1	2	3

TABLE XLIII.

ADMISSIONS, DISCHARGES, AND DEATHS, WITH THE PROPORTIONS OF RECOVERIES AND DEATHS PER CENT., DURING THE YEAR ENDING 30TH JUNE, 1939.

Admitted.			Readmitted.			Discharged.									Died.			Remaining on 30th June, 1939.			Average Number Daily Resident.			Percentage of Recoveries on Admissions			Percentage of Patients Relieved.			Percentage of Deaths on Average Number Resident.		
						Recovered.			Relieved.			Not Improved.																				
Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
GOODNA.																																
253	208	461	42	47	89	82	77	159	31	34	65	3	2	5	109	65	174	1,157	767	1,924	1,088	676	1,764	27·79	30·19	28·90	10·50	13·33	11·81	10·01	9·61	9·86
TOOWOOMBA.																																
36	22	58	6	6	12	18	5	23	5	2	7	1	..	1	29	28	57	534	590	1,124	526	577	1,103	42·85	17·85	32·85	11·90	7·14	10·00	5·32	4·85	5·16
IPSWICH.																																
*28	*6	*34	..	..	..	5	1	6	2	..	2	..	..	..	18	8	26	371	143	514	367	143	510	17·85	16·66	17·64	7·14	..	5·88	4·90	5·59	5·09

* Admissions by Transfer.

TABLE XLIV.

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1939.

	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
1. AFFECTIVE REACTION TYPES—							
(a) *Manic Depressive*—							
Mania—							
Acute mania	7	3	6	6	2	1	25
Chronic mania	2	..	..	..	..	..	2
Recurrent mania	3	1	..	..	..	..	4
Simple mania	..	..	1	..	..	..	1
Hypomania	29	21	..	..	..	..	50
Melancholia—							
Acute melancholia	2	4	4	6	..	..	16
Agitated melancholia	2	10	..	..	..	..	12
Chronic melancholia	1	..	..	2	..	..	3
Delusional melancholia	11	10	..	..	1	..	22
Hypochondriacal melancholia	5	6	..	..	..	..	11
Recurrent melancholia	2	4	..	..	1	..	7
Resistive melancholia	1	5	..	..	..	..	6
Simple melancholia	2	2	..	..	..	..	4
Alternating insanity	1	1	..	..	..	..	2
Recurrent insanity	..	2	..	..	..	..	2
(b) *Involutional Melancholia*	..	2	1	..	..	..	3
2. SCHIZOPHRENIC REACTION TYPES—							
(a) *Dementia Praecox*—							
Simple	3	1	..	..	..	..	4
Hebephrenic	27	31	4	1	4	..	67
Katatonic	10	13	3	2	1	3	32
Paranoid	27	17	7	1	5	..	57
(b) *Paraphrenia*	35	20	..	1	2	..	58
3. PARANOID REACTION TYPES—							
(a) *Paranoia*	1	..	..	..	1	..	2
(b) *Paranoid States*	1	..	..	..	..	..	1
4. EPILEPTIC REACTION TYPES—							
Idiopathic—							
Grand mal	6	14	3	2	1	..	26
5. ORGANIC REACTION TYPES—							
(a) *Acute Confusional and Exhaustion Psychoses*	2	12	1	..	..	..	15
(b) *Toxins*—							
Exogenous—							
Alcoholic hallucinosis	17	4	2	..	4	..	27
Alcoholic polyneuritis (Korsakow's)	2	..	..	..	..	..	2
Alcoholic dementia	1	..	..	..	..	..	1
Delirium tremens	1	..	..	..	..	..	1
Infections—							
Syphilis—							
Dementia paralytica	5	1	2	..	..	..	8
Neurosyphilis	10	2	..	..	..	..	12
Congenital neurosyphilis	1	..	..	..	..	..	1
Encephalitis—							
Post	..	1	..	1	..	..	2
Endogenous—							
Chronic nephritis	..	1	..	..	..	..	1
Uraemia	..	1	..	..	..	..	1
(c) *Degenerative Brain Changes*—							
Arteriosclerosis	13	7	..	..	..	..	20
Cerebral haemorrhage	..	..	..	1	..	..	1
Paralysis agitans	1	..	..	..	..	..	1
Senile dementia	33	37	5	4	1	..	80
(d) *Organic Brain Disease*—							
Disseminated sclerosis	2	..	..	1	..	..	3
(e) *Trauma*	2	..	..	..	..	..	2
6. PSYCHONEUROTIC REACTION TYPES—							
Obsessional	..	3	..	..	..	..	3
Compulsive	..	1	..	..	..	..	1

TABLE LXIV.—*continued.*

FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1939.

	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
7. MENTAL DEFICIENCY—							
(*a*) *Idiocy*—							
With epilepsy	..	..	1	..	..	..	1
Without epilepsy	2	2	..	..	2	1	7
(*b*) *Imbecility*—							
With epilepsy	2	3	1	..	..	..	6
Without epilepsy	12	6	..	..	3	1	22
(*c*) *Feeble-minded (Morons)*	10	5	1	..	..	..	16
(*d*) *Moral Deficiency*	1	2	..	..	..	..	3
Totals	295	255	42	28	28	6	654

TABLE XLV.

GOODNA, TOOWOOMBA, AND IPSWICH.

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING TWELVE MONTHS ENDING 30TH JUNE, 1939.

Bodily Condition.	Goodna.		Toowoomba.		Ipswich.		Grand Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
In apparently good health and condition	186	171	28	22	27	5	439
In indifferent health and reduced condition ..	72	69	9	2	..	1	153
In bad health and exhausted condition	37	15	5	4	1	..	62
Totals	295	255	42	28	28	6	654

RETURNED SOLDIER PATIENTS.

The following tables show the number of returned soldier patients who have been certified as insane and admitted or transferred from another mental hospital in the State to each of the institutions—A, during the past twelve months; B, from the commencement of the war to 30th June, 1939:—

TABLE XLVI.—GOODNA, TOOWOOMBA, AND IPSWICH.

	A.						B.					
	Admitted.	Transferred.	Total Admitted.	Discharged or Transferred.	Died.	Remaining.	Admitted.	Transferred.	Total Admitted.	Discharged or Transferred.	Died.	Remaining.
Goodna	26	..	26	8	1	17	654	4	658	420	111	127
Toowoomba	..	..	..	..	..	..	138	13	151	98	12	41
Ipswich	..	..	..	..	..	..	41	9	50	12	4	34
Totals	26	..	26	8	1	17	833	26	859	530	127	202

TABLE XLVII.

Wassermann Tests.

The percentage of positive Wassermann's to the admissions was as follows:—

—	Goodna.			Toowoomba.			Ipswich.		
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Decidedly positive	8·47	4·31	6·49	4·76	..	2·85	..	..	..
Positive	1·01	1·96	1·63	..	..	..	..	..	..
Slightly positive	4·74	2·35	3·63	..	..	..	..	..	..
Very slightly positive	1·35	1·17	1·27	..	..	..	..	..	..
On all degrees of positive reaction	15·57	9·79	13·02	4·76	..	2·85	..	..	..

TABLE XLVIII.

Districts whence Patients were Received during the Twelve Months ending 30th June, 1939.

Districts.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Northern and North-Western Districts	70	37	..	1	..	..	108
Central Districts	28	12	..	..	..	..	40
Southern and South-Western Districts	197	206	42	27	1	..	473
Totals	295	255	42	28	1	..	621

TABLE XLIX.

Previous Occupations of Patients Admitted during the Twelve Months ending 30th June, 1939.

Occupations.	Number.						Grand Total.
	Goodna.		Toowoomba.		Ipswich.		
	Males.	Females.	Males.	Females.	Males.	Females.	
Baker	1	..	..	..	..	..	1
Bank messenger	1	..	..	..	..	..	1
Barber	2	..	..	..	..	..	2
Barman	..	..	1	..	..	..	1
Blacksmith	1	..	..	..	..	..	1
Boot repairer	3	..	..	..	..	..	3
Builder	..	..	1	..	..	..	1
Bullock driver	2	..	..	..	..	..	2
Bushman	1	..	..	..	..	..	1
Butcher	..	..	1	..	..	..	1
Cable worker	1	..	..	..	..	..	1
Cane cutter	1	..	..	..	..	..	1
Cane farmer	1	..	..	..	..	..	1
Carpenter	8	..	..	..	..	..	8
Cellarman	..	..	..	..	1	..	1
Charwoman	..	1	..	..	..	..	1
Chemist	1	..	..	..	..	..	1
Child	2	3	2	1	1	1	10
Circus performer	..	1	..	..	..	..	1
Clay worker	1	..	..	..	..	..	1
Clerks	9	..	..	..	..	..	9
Commission agent	1	..	..	..	..	..	1
Cook	..	2	..	..	..	..	2
Cowboy	..	..	1	..	..	..	1
Crane driver	1	..	..	..	..	..	1
Departmental manager	1	..	..	..	..	..	1
Designer	1	..	..	..	..	..	1
Domestic duties	..	77	..	6	..	2	85
Dressmaker	..	3	..	..	..	..	3
Electrician	1	..	..	..	..	..	1
Engine driver	2	..	..	..	..	..	2
Engineer	3	..	..	..	..	..	3
Farmer	24	..	7	..	1	..	32
Farm labourer	9	..	..	..	..	..	9
Fireman	2	..	..	..	..	..	2
Fisherman	1	..	..	..	1	..	2

TABLE XLIX.—*continued.*

PREVIOUS OCCUPATIONS OF PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1939.

Occupations.	Number.						Grand Total.
	Goodna.		Toowoomba.		Ipswich.		
	Males.	Females.	Males.	Females.	Males.	Females.	
Fitter	4	..	..	..	..	..	4
Freezer	1	..	..	..	..	..	1
Fruiterer	3	..	..	..	..	..	3
Gardener	..	..	1	..	..	..	1
Grazier	2	..	..	..	..	..	2
Home missionary	1	..	..	..	..	..	1
Horsebreaker	..	..	1	..	..	..	1
Housekeeper	..	1	..	..	..	..	1
Housewife	..	107	..	17	..	1	125
Journalist	1	..	..	..	..	..	1
Labourer	97	..	14	..	16	..	127
Librarian	..	1	..	..	..	..	1
Licensed victualler	..	..	1	..	..	..	1
Messenger	1	..	..	..	..	..	1
Metal worker	1	..	..	..	..	..	1
Milkman	..	..	..	..	1	..	1
Miner	6	..	..	..	..	..	6
Motor mechanic	2	..	..	..	..	..	2
Music teacher	..	1	..	..	..	..	1
Nil	19	23	3	1	4	2	52
Nurse	..	4	..	..	..	..	4
Orchardist	1	..	..	..	..	..	1
Packer	1	..	..	..	..	..	1
Painter	2	..	..	..	..	..	2
Pensioner	24	11	..	..	..	..	35
Plumber	1	..	1	..	..	..	2
Policeman	1	..	..	..	..	..	1
Priest	..	..	1	..	..	..	1
Printer	1	..	..	..	..	..	1
Relief worker	5	..	1	..	1	..	7
Residential keeper	..	1	..	..	..	..	1
Rivetter	1	..	..	..	..	..	1
Road worker	..	..	1	..	..	..	1
Saddler	1	..	..	..	..	..	1
Salesman	4	..	..	..	..	..	4
Saleswoman	..	1	..	..	..	..	1
Sawyer	2	..	..	..	..	..	2
School girl	..	1	..	..	..	..	1
School teacher	..	2	..	..	..	..	2
Scientist	1	..	..	..	..	..	1
Seaman	1	..	..	..	..	..	1
Sheet metal worker	1	..	..	..	..	..	1
Shop assistant	4	2	..	..	..	..	6
Showman	1	..	..	..	..	..	1
Solicitor	1	..	..	..	..	..	1
Sports mistress	..	1	..	..	..	..	1
Station hand	1	..	..	..	..	..	1
Stockman	2	..	1	..	..	..	3
Tailor	2	..	..	..	1	..	3
Tailoress	..	2	..	..	..	..	2
Tanner	..	..	1	..	..	..	1
Taxi driver	1	..	..	..	..	..	1
Telegraphist	1	..	..	..	..	..	1
Tinsmith	1	..	..	..	..	..	1
Typiste	..	3	..	..	..	..	3
Truck driver	1	..	..	..	..	..	1
Unknown	9	7	2	1	..	..	19
Upholsterer	..	..	..	..	1	..	1
Waiter	1	..	..	..	..	..	1
Waitress	..	..	..	2	..	..	2
Waterside worker	2	..	..	..	..	..	2
Well borer	1	..	1	..	..	..	2
Wicker worker	1	..	..	..	..	..	1
Totals	295	255	42	28	28	6	654

TABLE L.

LENGTH OF RESIDENCE IN THE HOSPITALS OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR AND OF THOSE WHO REMAINED ON THE BOOKS OF THE HOSPITALS ON THE 30TH JUNE, 1939.

GOODNA.

Length of Residence.	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	6	2	8	..	2	2	12	10	22	29	16	45
1 month and under 3 months	16	13	29	3	6	9	16	10	26	33	26	59
3 months and under 6 months	20	16	36	9	7	16	12	11	23	58	53	111
6 months and under 9 months	14	18	32	4	8	12	5	3	8	59	52	111
9 months and under 12 months	3	9	12	2	4	6	4	5	9	39	30	69
1 year and under 2 years ..	18	7	25	10	7	17	14	8	22	118	90	208
2 years and under 3 years ..	1	6	7	1	1	2	5	2	7	74	60	134
3 years and under 5 years ..	1	3	4	3	1	4	5	3	8	148	96	244
5 years and under 7 years ..	2	..	2	1	..	1	6	3	9	80	80	160
7 years and under 10 years ..	1	1	2	1	..	1	5	4	9	102	73	175
10 years and under 12 years ..	..	..	..	..	..	..	2	..	2	59	43	102
12 years and under 15 years ..	..	1	1	..	..	..	6	3	9	64	34	98
15 years and under 20 years ..	..	1	1	..	..	..	4	..	4	105	58	163
20 years and over	..	..	..	..	..	..	13	3	16	189	56	245
Totals	82	77	159	34	36	70	109	65	174	1,157	767	1,924

TOOWOOMBA.

Length of Residence.	Discharges.						Deaths.			Remaining		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	2	..	2	..	..	..	4	1	5	5	4	9
1 month and under 3 months	3	..	3	1	1	2	2	..	2	3	4	7
3 months and under 6 months	5	..	5	1	..	1	1	2	3	5	6	11
6 months and under 9 months	2	..	2	1	..	1	1	..	1	9	7	16
9 months and under 12 months	4	2	6	..	..	..	1	..	1	3	2	5
1 year and under 2 years ..	..	2	2	2	..	2	1	2	3	16	30	46
2 years and under 3 years ..	..	1	1	..	..	..	2	1	3	20	26	46
3 years and under 5 years ..	1	..	1	..	..	..	2	3	5	44	88	132
5 years and under 7 years ..	1	..	1	..	..	..	..	..	..	52	50	102
7 years and under 10 years ..	..	..	..	..	..	..	1	4	5	47	44	91
10 years and under 12 years ..	..	..	..	..	..	..	2	..	2	27	30	57
12 years and under 15 years ..	..	..	..	1	..	1	4	1	5	43	42	85
15 years and under 20 years ..	..	..	..	..	..	..	2	3	5	110	90	200
20 years and over	..	..	..	..	1	1	6	11	17	150	167	317
Totals	18	5	23	6	2	8	29	28	57	534	590	1,124

IPSWICH.

Length of Residence.	Discharges.						Deaths.			Remaining.		
	Recovered.			Relieved and not Improved.								
	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.	Males.	Females.	Total.
Under 1 month	..	..	..	..	..	..	..	..	..	3	..	3
1 month and under 3 months	1	..	1	..	..	..	..	..	..	4	1	5
3 months and under 6 months	3	..	3	..	..	..	..	..	..	5	..	5
6 months and under 9 months	..	..	..	..	..	..	..	..	..	11	3	14
9 months and under 12 months	1	..	1	1	..	1	..	..	..	6	2	8
1 year and under 2 years ..	..	1	1	..	..	..	2	1	3	32	14	46
2 years and under 3 years ..	..	..	..	..	..	..	..	..	..	12	5	17
3 years and under 5 years ..	..	..	..	..	..	..	..	1	1	38	12	50
5 years and under 7 years ..	..	..	..	..	..	..	2	..	2	36	23	59
7 years and under 10 years ..	..	..	..	1	..	1	1	1	2	29	9	38
10 years and under 12 years ..	..	..	..	..	..	..	1	..	1	17	13	30
12 years and under 15 years ..	..	..	..	..	..	..	1	..	1	25	4	29
15 years and under 20 years ..	..	..	..	..	..	..	4	1	5	37	14	51
20 years and over	..	..	..	..	..	..	7	4	11	116	43	159
Totals	5	1	6	2	..	2	18	8	26	371	143	514

TABLE LI.

EPILEPTIC PATIENTS.

——	Goodna.					Toowoomba.			Ipswich.		
				Doubtful.							
	Males.	Females.	Total.	Males.	Females.	Males.	Females.	Total.	Males.	Females.	Total.
Remaining on 1st July, 1938	92	59	151	13	2	50	52	102	28	19	47
Admitted in the year	8	17	25	..	..	3	2	5	..	..	..
Admitted by transfer	..	..	..	..	..	..	..	..	2	1	3
Total under treatment during 12 months ended 30th June, 1939	100	76	176	13	2	53	54	107	30	20	50
Discharged during 1938-39	8	8	16	..	..	..	..	..	1	..	1
Transferred during 1938-39	..	..	..	..	..	..	..	..	..	..	..
Died during 1938-39	13	..	13	..	..	2	2	4	1	..	1
Total discharged, transferred, and died during 1938-39	21	8	29	..	..	2	2	4	2	..	2
Remaining on 30th June, 1939	79	68	147	13	2	51	52	103	28	20	48
Percentage of epileptics under treatment to total number of patients under treatment during 1938-39	7·09	7·99	7·46	..	..	10·01	9·34	10·60	7·55	13·15	9·10
Percentage of epileptics remaining on books to number of patients remaining on books on 30th June, 1939	6·83	8·87	7·64	..	..	9·55	8·81	9·16	7·54	13·98	9·33
Percentage of epileptics admitted	2·67	6·67	4·51	..	..	7·14	7·14	7·14	..	..	..

TABLE LII.—GOODNA, TOOWOOMBA, AND IPSWICH.

CAUSES OF DEATHS DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1939.

Causes.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
General Diseases—							
Malignant tumour of pelvis	1	..	..	..	..	..	1
Sarcoma of right humerus	1	..	..	..	..	..	1
Enteric fever	1	..	..	..	..	..	1
Diseases of Nervous System—							
Disseminated sclerosis	2	1	..	..	..	..	3
Encephalitis	..	1	..	..	..	1	2
Dementia paralytica	5	1	2	..	..	..	8
Exhaustion psychosis	..	2	..	..	3	..	5
Exhaustion of acute mania	4	1	..	..	..	..	5
Exhaustion of chronic mania	..	1	..	..	..	..	1
Exhaustion of acute confusional psychosis	1	1	..	..	..	..	2
Exhaustion of dementia praecox	2	..	..	..	..	..	2
Exhaustion of post encephalitis	2	..	..	..	..	..	2
Exhaustion of dementia	3	..	..	..	..	..	3
Exhaustion of imbecility	3	..	..	..	..	..	3
Status epilepticus	8	..	2	4	..	..	14
Huntingdon's chorea	..	..	..	1	..	..	1
Meningitis	..	..	1	..	..	..	1
Senile dementia	27	18	4	4	..	..	53
Diseases of Circulatory System—							
Arteriosclerosis	7	4	..	1	1	..	13
Myocarditis	4	6	2	..	2	1	15
Morbus cordis	11	1	..	..	..	..	12
Valvular disease of heart	1	..	..	..	..	..	1
Auricular fibrillation	..	..	..	3	..	..	3
Chronic pericarditis	..	..	1	..	..	..	1
Coronary occlusion	..	..	2	..	..	..	2
Cerebral haemorrhage	..	..	1	..	1	..	2
Cerebral embolism	..	..	..	1	..	..	1
Cerebral thrombosis	..	..	..	1	..	..	1
Anaemia	..	..	..	..	1	..	1
Diseases of Respiratory System—							
Pneumonia	6	..	..	..	2	1	9
Broncho-pneumonia	..	3	1	..	..	..	4
Pulmonary tuberculosis	9	1	..	1	..	..	11
Influenza	..	1	1	2	..	..	4
Influenza with pulmonary tuberculosis complications	..	..	2	..	..	..	2
Congestion of lungs	..	..	..	1	..	..	1
Asthma	..	..	..	1	..	..	1
Abscess of lung	..	..	2	..	..	..	2
Hypostatic pneumonia	..	..	..	..	..	1	1

TABLE LII.—GOODNA, TOOWOOMBA, AND IPSWICH—*continued.*

CAUSES OF DEATHS DURING THE TWELVE MONTHS ENDING 30TH JUNE, 1939.

Causes.	Goodna.		Toowoomba.		Ipswich.		Total.
	Males.	Females.	Males.	Females.	Males.	Females.	
Diseases of Digestive System—							
Acute intestinal obstruction	..	1	..	..	..	..	1
Colitis	..	12	..	..	..	1	13
Ankylostomiasis	..	1	..	..	..	..	1
Carcinoma of stomach	1	2	1	1	2	..	7
Carcinoma of liver	1	..	..	..	..	..	1
Carcinoma of colon	..	..	..	1	..	..	1
Carcinoma of stomach and intestines	..	..	..	..	..	1	1
Carcinoma of intestines	..	..	..	..	1	..	1
Subphrenic abscess	..	..	..	1	..	..	1
Cholecystitis	..	..	..	1	..	..	1
Terminal ileitis	..	..	..	1	..	..	1
Diseases of Genito-Urinary System—							
Nephritis	..	3	..	..	..	..	3
Chronic nephritis	1	..	2	..	2	..	5
Prostatitis	1	..	..	..	..	..	1
Acute cystitis	..	..	1	..	..	..	1
Pyelitis	..	..	..	..	2	1	3
Uraemia	..	..	..	..	1	..	1
Multiple fibromyomata of uterus	..	1	..	..	..	..	1
Acute parotitis	..	1	..	..	..	..	1
Syphilis	3	1	..	..	..	..	4
Toxaemia	..	1	..	..	..	..	1
Multiple infected ulcers	1	..	..	..	..	..	1
Suicide	1	..	..	..	..	..	1
Asthenia	2	..	3	3	..	..	8
Fracture of skull	..	..	1	..	..	..	1
Diabetes mellitus	..	..	..	..	..	1	1
Totals	109	65	29	28	18	8	257

FARM AND GARDEN PRODUCE.

The following table shows the quantities of vegetables and farm produce grown at each institution for the past twelve months:—

TABLE LIII.

—	Garden Vegetables.	Farm Produce.			
		Chaff.	Maize.	Ensilage.	Green Feed.
	T. C. Q. L.	T. C. Q. L.	T. C. Q. L.	Tons.	Tons.
Goodna	84 7 4 20	133 4 2 0	31 1 0 0	235	263
Toowoomba	102 13 2 10	..	..	176	167
Ipswich	29 7 1 9	36 13 0 0	..	..	85½
Totals	216 9 0 11	169 17 2 0	31 1 0 0	411	515½

—	Farm Produce.					
	Potatoes.	Pumpkins and Turnips.	Hay.	Barley.	Oats.	Wheat.
	T. C. Q. L.	T. C. Q. L.	Tons.	Tons.	Tons.	Tons.
Goodna	22 19 0 0	18 17 3 0	..	..	..	..
Toowoomba	..	..	171	½	14¾	14½
Ipswich	2 5 3 13	5 15 3 3	..	..	..	..
Totals	25 4 3 13	24 13 2 3	171	½	14¾	14½

TABLE LIV.

ARTICLES MADE UP IN THE WORKROOM OF EACH INSTITUTION DURING THE PAST TWELVE MONTHS.

Articles.	Number.			Total.
	Goodna.	Toowoomba.	Ipswich.	
Aprons, assorted	242	111	16	369
Bags, assorted	61	103	10	174
Bandages	..	36	..	36
Bibs	..	111	..	111
Blazers	..	66	..	66
Blinds	23	34	24	81
Bloomers	..	56	3	59
Blouses	350	..	..	350
Bonnets	36	..	..	36
Braces	..	..	24	24
Caps	..	6	..	6
Coats	139	2	82	223
Combinations	1,654	658	101	2,413
Covers, assorted	228	84	47	359
Curtains	24	28	2	54
Cushions	..	9	..	9
Drawers	62	34	226	322
Dresses	1,502	963	636	3,101
Gowns, Night	790	647	160	1,597
Gowns, Surgical, &c.	9	..	6	15
Handkerchiefs	48	..	..	48
Hats	..	2	..	2
Jackets, assorted	332	464	42	838
Mattress protectors	..	31	..	31
Mosquito nets	274	53	79	406
Overalls	156	73	4	233
Petticoats	643	262	436	1,341
Pillow cases	366	97	27	490
Pillow shams	20	35	..	55
Pillow slips	2,914	860	742	4,516
Pillows, canvas	..	6	..	6
Pyjama coats	210	292	151	653
Pyjama trousers	196	327	227	750
Quilts	196	38	58	292
Serviettes	30	..	6	36
Sheets, assorted	4,408	1,424	1,665	7,497
Shifts	142	58	238	438
Shirts, assorted	1,720	42	1,720	3,482
Shrouds	79	54	17	150
Tablecloths, assorted	958	302	188	1,448
Table-runners	110	14	..	124
Ticks	606	215	99	920
Towels, assorted	5,528	1,734	1,233	8,495
Trousers	..	13	51	64
Vests	47	..	408	455
Washers	..	66	..	66
Uniforms—				
Aprons	356	368	261	985
Belts	..	173	..	173
Caps	229	270	146	645
Collars	244	266	246	756
Dresses	331	358	212	901
Veils	12	27	..	39

TABLE LV.

EXPENDITURE TABLE.

AVERAGE NUMBER OF PATIENTS DAILY RESIDENT DURING TWELVE MONTHS:—
GOODNA 1,764; TOOWOOMBA 1,103; IPSWICH 510.

——	Goodna.	Toowoomba.	Ipswich.
	£ s. d.	£ s. d.	£ s. d.
Total expenditure	117,583 7 11	69,462 19 5	46,527 13 11
Maintenance collected by Curator	17,401 11 2	7,580 18 6	2,632 8 4
Sales	1,079 12 0	433 4 4	592 8 8
Net expenditure	99,102 4 9	61,448 16 7	43,302 16 11
Gross cost per patient per annum	66 13 2	62 19 6	91 4 7
Net cost per patient per annum	56 3 7	55 14 2	84 18 2
Gross cost per patient per week	1 5 8	1 4 2	1 15 1
Net cost per patient per week	1 1 7	1 1 5	1 12 8

CLINICAL ACTIVITIES.

A.—Schizophrenia.

As during last year intensive treatment of these patients has been continued, and very favourable results continue to be obtained, justifying the added expenditure in drugs and the time of medical and nursing personnel.

In 1937-38, 61 males and 35 females were treated with cardiazol shock therapy, and resulted in 16 recoveries and 15 improved (complete adjustment to hospital environment).

In 1937-38, 9 patients were treated with the insulin shock therapy, with 2 complete recoveries, and all showed remarkable improvement in physical condition.

In 1938-39 eight males and nine females were treated. Of these, 4 males and 3 females were discharged recovered. One male and 3 females were much improved, 1 male and 2 females showed a slight improvement, while there was no change in 2 males and 1 female.

Tables relating to the cardiazol therapy are appended. In assessing the value of the results it should be borne in mind that the cases treated have not been selected. In addition to recent admissions, old standing cases have been treated irrespective of mental deterioration, provided their bodily health was satisfactory.

Cardiazol Treatment, Willowburn.

During the year the use of cardiazol was continued in selected cases of dementia præcox, and in addition it has been used on certain depressed mania cases. In both groups the results have been encouraging and though it is obvious that the original claims for cardiazol cannot be sustained, still it is a drug which would not be willingly given up. It is quite possible that it will be more valuable in depressed mania depressive cases than in dementia præcox.

TABLE LVI.

Males.

Length of Residence.	Type of Psychoses.															
	Katatonic.				Hebephrenic.				Paranoid.				Simple.			
	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.
Under 6 months	3	..	1	4	3	1	2	6	..	..	..	6	..	..	1	2
6 months and under 12 months	..	..	1	1	..	..	1	..	..	..	..	1	1	..	..	..
1 year and under 2 years	1	..	2	1	..	..	1	..	..	1	..	..	..	..	..	..
2 years and unde 3 years	2	..	1	..	1	1	..	..	..	..	1	..	..	..	..	..
3 years and under 4 years	..	..	..	1	..	1	..	1	..	..	..	..	..	..	..	..
4 years and over	2	2	2	..	4	..	..	..	..	..	..	..	..	..	..	..
Total	8	2	7	7	8	3	4	7	..	1	1	7	1	..	1	2

Females.

Length of Residence.	Type of Psychoses.															
	Katatonic.				Hebephrenic.				Paranoid.				Simple.			
	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.	No Change.	Slightly Improved.	Improved.	Recovered.
Under 6 months	..	..	4	2	1	..	4	..	..	..	..	2	..	..	1	..
6 months and under 12 months	..	..	..	2	..	..	1	..	..	..	..	1	..	..	..	..
1 year and under 2 years	1	1	..	..	..	..	2	..	..	..	..	..	..	..	..	..
2 years and under 3 years	1	1	..	1	1	1	..	..	1	1	1	..	..	..	..	..
3 years and under 4 years	..	..	..	..	1	1	..	..	1	..	..	..	..	..	..	..
4 years and over	1	..	1	..	..	..	..	..	2	..	..	..	..	..	..	..
Total	3	2	5	5	3	2	7	..	4	1	1	3	..	..	1	..

In both insulin and cardiazol treatment it is felt that the general beneficial results have been improved by intensified occupational therapy. The specific therapy has been continued until a stable degree of improvement or remission is reached, and then interrupted by continuous occupational therapy. In certain cases occasional (weekly or bi-weekly) injections of cardiazol were found necessary to avoid retrogression.

B.—Malaria Therapy.

The malarial pyrexial treatment has been continued throughout the year.

During 1937-8, 52 cases were treated, showing complete arrest in 5 and incomplete arrest in 34. Of 21 with bad or indifferent bodily health, 15 were in good bodily health after treatment.

Tables for 1938-39 are appended.

TABLE LVII.

PSYCHOSES.

Result of Treatment.	Dementia Paralytica.	Neuro-syphilis.	Other Psychoses.	Total.
Complete arrest	1	..	6	7
Incomplete arrest	..	2	18	20
Improved	1	3	15	19
Died during treatment	1	2	..	3
Total	3	7	39	49

PHYSICAL CONDITION.

—	Before Treatment.			After Treatment.		
	Good.	Bad.	Indifferent.	Good.	Bad.	Indifferent.
Dementia Paralytica	2	1	..		1	..
Neurosyphilis	2	2	3	5	2	..
Other Psychoses	26	4	9	33	..	6
Total	30	7	12	40	3	6

Table showing the number of patients following similar occupations to those followed prior to admission.

TABLE LVIII.

—	Goodna.	Willowburn.	Ipswich.
MALES.			
Baker	1	..	..
Barber	3	..	..
Blacksmith	1	1	..
Bootmaker	2	1	..
Bricklayer	1	..	..
Bushworker	1	..	..
Cabinet maker	1	..	..
Carpenter	4	2	..
Carters	2	..	1
Clerk	2	2	..
Clock repairer	1	..	..
Cook	2	..	1
Dairy hand	2	..	..
Engineer	1	1	..
Farmer	8	10	2
Gardeners	2	..	2
Labourers	60	40	10
Painter	1	..	..
Plumber	1	1	..
Saddler	1	..	..
Sawyer	1	..	..
Signwriter	2	..	..
Tailor	1	1	..
Wood cutter	..	..	1
FEMALES.			
Cook	..	2	..
Domestic duties	97	68	5
Dressmaker	3	3	1
Housemaid	..	..	1
Housemaid	1	..	..
Laundress	1	..	..
Machinist	1	1	..
Tailoress	2	1	..
Typist	1	..	..

Other Therapeutic Measures.

Carefully controlled groups of epileptics have been placed under luminal, prominal, barbitone, and dilantin. Similar work is being carried out with benzedrine arsenical preparations, endocrine glandular products, and vitamin products. It is hoped to have more clinical data available for later reports.

Pathology.

The pathological laboratory has been finished, but is awaiting detailed equipment, and the appointment of a technician before it can give the vastly improved clinical service that is anticipated.

The services of Dr. D. W. Johnson have been available through the year as consultant pathologist.

During the year Dr. Derrick and Dr. Johnson succeeded in establishing a particularly irritating skin rash, that at times has been accredited to "scabies," as being a dermatitis caused by a fungus belonging to genus Melassezia of Dodge.

Legislation.

During the last financial year two notable Acts were passed. "*The Mental Hygiene Act of* 1938" and "*The Backward Persons Act of* 1938."

"*The Mental Hygiene Act of* 1938" inaugurates a new outlook, and is essentially a treatment Act. It repeals "*The Insanity Act of* 1884." It provides a new nomenclature, as a therapeutic approach made many of the previous names and terms not only inappropriate but meaningless. It provides machinery to facilitate the treatment of incipient psychoses by the sections relating to voluntary, temporary and private patients. It lays the foundation for the expansion of clinical activities, the co-ordination of State facilities and private practice, by permitting medical practitioners to visit the State Mental Hospitals as consultants to their patients.

The internal administration of mental hospitals required a considerable amount of reorganisation to fully comply with the purposes of the Act, and in consequence the proclamation has necessarily been delayed until revised Regulations could be prepared.

"*The Backward Persons Act of* 1938" should supply a much-felt want, for there was not legislation to deal directly with mental deficiency. This Act approaches the problem from a psychiatric angle, and establishes in the first place a Survey Board to evaluate the extent of the problem and to co-ordinate existing and proposed facilities. It also establishes a psychiatric clinic for investigation, research, and the training of teachers and officers in this field of psychiatry.

Additional Medical Appointments.

It is hoped that part-time consulting specialist medical officers, on a similar basis to the part-time staff at the Brisbane General Hospital will be appointed without delay. It is impossible to clearly separate mental sickness from physical sickness, and therefore the efficiency of the treatment in mental hospitals will be largely proportional to the efficiency of physical treatment.

Dental Treatment of Patients.

Goodna.—The Visiting Dentist to this hospital, Mr. W. G. Illingworth, has continued to carry out the dental treatment here. During the year under review, the increase in work was really marked as compared with past years.

In all, a total of 915 female and 876 male patients, making a total of 1,791, were inspected by him, as compared to a total of 1,125 the previous year. As is usual, extractions formed the major part of the work done.

Last year, 1,603 extractions were made. This year there were 3,093 extractions, 2,376 being made under general anaesthesia and 716 by local anaesthesia. During the year every patient admitted was inspected and all dental deficiencies rectified; a list of any peculiarities, *e.g.* impacted teeth, tightly packed arch, or any cases of advanced oral sepsis, being made, will be the subject of later reports.

Prophylactic treatment was performed in 36 cases, whilst 14 zinc oxide dressings were inserted for the alleviation of pain. Two amalgum filings and one gold inlay were inserted.

This year denture work was commenced, 32 new dentures being made and fitted. Sixteen patients were inspected and will be fitted with dentures in due course. Forty-one repairs to dentures were also effected.

The following table shows the increase in weight in 58 patients after having received dental treatment. Of 100 female patients whose teeth were removed under general anaesthesia, 80 per cent. showed an increase in weight, 15 per cent. decreased (some only temporarily), and 5 per cent. were stationary. Of the 51 males treated, 86 per cent. showed an increase, 4 per cent. a decrease, and 10 per cent. were stationary.

Amount of Increase.	Number of Patients.
Up to 5 lb.	4
6– 9 lb.	12
10–13 lb.	10
14–17 lb.	12
18–21 lb.	9
22–25 lb.	3
Over 25 lb.	8

Toowoomba.—The Visiting Dentist, Mr. J. E. B. McLean, L.D.Q., during the year examined 1,113 patients (711 males and 402 females), and performed 441 extractions from male patients and 259 from female patients. In addition, 32 male patients and 26 female patients were given prophylactic treatment.

During the year 1 male and 6 female patients were provided with artificial dentures at the Toowoomba General Hospital at the hospital's expense, and these dentures were of excellent quality, well fitting, and of very low cost.

Ipswich.—Mr. W. G. Illingworth, who was appointed as Visiting Dentist, attends regularly once a fortnight, his professional work being performed with care and skill to the benefit of the patients.

Magisterial Inquiries.

During the past twelve months there was one inquiry held at Goodna, into the death of a male patient who committed suicide. Two enquiries were held at Toowoomba, one into the sudden death of a male patient and the other into the fall of a male patient from a windmill tower after his escape from the hospital. No enquiries were held at Ipswich.

Births.

One male child was born at Goodna during the year, the mother being pregnant when admitted.

There were no births at Toowoomba or Ipswich.

Deportees.

There were no deportees from Goodna or Toowoomba during the year. One male patient was deported to Italy from Ipswich.

Escapes.

Fifteen male patients escaped from Goodna, thirteen being recaptured and the other two patients written off the books of the hospital.

Six male and two female patients escaped from Willowburn, all of whom were recaptured.

There were no escapes from Ipswich.

Returned Soldiers.

(Red Cross Society.)

The above society continues to give liberally and generously to the returned soldier patients, the presents being fully appreciated.

(Goodna Sub-Branch R.S.S.I.L.A.)

The above sub-branch periodically entertains those of the returned soldier patients who are fit, by an outing to the seaside, the patients being conveyed by motor buses and private cars. On arrival they are welcomed by the sub-branch at the seaside resort, and games and musical entertainment provided. The returned soldier patients at Ipswich are also entertained by the Ipswich sub-branch.

Patients' Library.

The majority of the books contained in the libraries at the hospitals have been donated, and the libraries are well patronised by the patients.

The library at Goodna is in the charge of a patient, who issues books twice weekly.

Religious Services.

Goodna.—Church of England, Presbyterian, and Methodist services have been held regularly in the recreation hall for patients who have wished to avail themselves of the opportunity, provided their mental states and general good behaviour permitted them to attend. The Roman Catholic patients, where possible, attend their church in the Goodna township.

The clergy of the various religions pay periodic as well as special visits to the patients in the hospital whenever required.

Toowoomba.—During the year, religious services have been held regularly in the hall by the Church of England, Roman Catholic, and Presbyterian denominations. In addition, clergymen from all the denominations have constantly visited members of their particular church among the patients.

Ipswich.—The clergy of the various denominations visit the sick patients as well as conducting services.

Amusements.

Goodna.—For the benefit of the patients, dances are held during the winter months, and these are enjoyed to the utmost by those who participate in them.

The dancing season, as in previous years, is concluded by a fancy dress ball. Talkies are provided weekly in the summer time and fortnightly in the winter.

The wireless sets provide a great deal of entertainment, as also do the concerts given by various visiting parties, and the band concerts given by the Salvation Army band.

As in previous years, cricket and football have been played on the recreation ground. On New Year's Day a very successful sports programme was held, to which many Brisbane firms kindly supplied prizes.

Toowoomba.—Talkies have been provided weekly during the summer months and fortnightly during the winter months. Each week a dance is held for the patients, those during the winter months being on a more elaborate scale, with the staff orchestra, and supper to follow.

Concerts have been given by various parties and these were much appreciated, band concerts also being provided quarterly by the Salvation Army band.

During the year, the patients enjoyed watching the various cricket matches, football, and tennis played on the recreation ground.

The wireless still gives entertainment which is much appreciated.

The patients' annual sports were held and were again an extraordinary success; the majority of the prizes being donated by Toowoomba firms and private citizens.

The Willowburn branch of the C.W.A. take an active interest in the female patients.

Ipswich.—Patients have been entertained throughout the year by dances, concerts, community singing, and talkies. The annual fancy dress ball was a success, and thoroughly enjoyed by patients and visitors.

The annual sports meeting was held and was an unqualified success. The staff orchestra has improved considerably, and affords great pleasure to the patients when playing for the dances and community singing. The Sunshine Club donated toys to the children's ward, which were appreciated.

Official Visitors.

Dr. F. G. Connolly and Mr. R. Curtis, P.M., continued to act as official visitors to the Goodna and Ipswich Mental Hospitals, while Dr. J. G. Hulme, of Toowoomba (who was appointed in place of Dr. G. V. Hickey), and Mr. J. Landy, P.M., acted in a similar capacity at Toowoomba.

Chiropodists.

During the year Messrs. B. Shay and E. J. Woolsley visited the Goodna, Toowoomba, and Ipswich Hospitals.

Honorary Visiting Staff—Toowoomba.

During the year, the Honorary Consulting Surgeon, Dr. A. W. L. Row, F.R.C.S., visited the hospital on two occasions, and saw several patients on each visit. The Honorary Consulting Physician, Dr. V. R. Woodhill, M.R.C.P., visited on three occasions, and saw several patients on each visit.

To the Brisbane and South Coast Hospital Board thanks are due for accommodation and radium treatment for various patients.

Accommodation and Buildings.

Overcrowding on Female Side, Goodna.—Although attention has been drawn in previous annual reports to the intense overcrowding in the female division, up to the present, no adequate scheme has been approved of to rectify this. For some years now, the female wards have been overcrowded, and with the annual increase in the number of patients, the position is becoming most acute.

Pending the establishment of a Northern mental hospital, endeavours are being made to improve the accommodation and conveniences provided in the transferring of the patients from Townsville Reception House to Goodna. It is also hoped that the time spent in the transferring of the patients will be shortened.

At the Ipswich Hospital the new nurses' quarters are nearing completion and will probably be ready for occupation towards the end of the year.

Automatic interphones have been installed and are a great improvement on the previous system.

A wooden shelter shed has been erected in the garden of Female Ward 1, which will make conditions for the patients more agreeable during the hot weather.

The main drive to the hospital grounds has been improved, the surface being covered with bitumen.

Obituary.

I regret to report the death of Mr. K. B. Nahrung, the steward at the Ipswich Mental Hospital. Mr. Nahrung was steward at that hospital for many years and gave very excellent service. He was a very efficient and capable officer.

Appointments.

Following the death of Mr. Nahrung, the steward at Ipswich, Mr. Gorman, was appointed to his position, Mr. McLaran being appointed senior clerk at Goodna, Mr. Mulkerin assistant steward at Goodna, and Mr. Carling assistant steward at Toowoomba.

TOWNSVILLE RECEPTION HOUSE.

—	Males.	Females.	Total.
On books on 1st July, 1938	4	1	5
Admitted and readmitted during the twelve months	53	21	74
Total on books and under treatment during twelve months	57	22	79

	M.	F.	T.
Discharged recovered ..	11	..	11
Transferred to Goodna ..	44	20	64
Died	1	1	2

Total discharged, transferred, and died..	56	21	77
Remaining on books on 30th June, 1939 ..	1	1	2
Average number daily resident during the twelve months	5	2	7

The following table shows the admissions, including readmissions, into the Townsville Reception House, for each of the past thirty and a-half years:—

TABLE LIX.

Year.	Males.	Females.	Total.
1909	62	19	81
1910	60	14	74
1911	66	24	90
1912	75	19	94
1913	78	26	104
1914	79	23	102
1915	59	26	85
1916	87	19	106
1917	83	26	109
1918	55	20	75
1919	74	19	93
1920	72	17	89
1921	59	26	85
1922	60	33	93
1923	59	30	89
1924	73	24	97
1925	79	23	102
1926–27*	120	21	141
1927–28	65	18	83
1928–29	55	16	71
1929–30	53	27	80
1930–31	52	18	70
1931–32	56	23	79
1932–33	38	19	57
1933–34	52	26	78
1934–35	50	21	71
1935–36	36	20	56
1936–37	44	19	63
1937–38	63	31	94
1938–39	57	21	78
Total for past 30½ years	1,921	668	2,589

* This period is for 18 months.

The following table gives the numbers of patients that have been transferred each year for the past thirty and a-half years from this reception house to Goodna Mental Hospital, together with the total numbers of transfers for the whole period:—

TABLE LX.

Year.	Males.	Females.	Total.
1909	58	14	72
1910	50	11	61
1911	50	19	69
1912	58	14	72
1913	62	23	85
1914	62	14	76
1915	45	19	64
1916 . ..	71	15	86
1917	58	24	82
1918	43	18	61
1919	49	14	63
1920	44	11	55
1921	50	25	75
1922	52	27	79
1923	43	21	64
1924	64	21	85
1925	64	18	82
1926–27*	94	16	110
1927–28	39	13	52
1928–29	41	15	56
1929–30	34	23	57
1930–31	41	13	54
1931–32	49	11	60
1932–33	30	11	41
1933–34	33	22	55
1934–35	48	17	65
1935–36	24	17	41
1936–37	33	9	42
1937–38	47	27	74
1938–39	44	20	64
Total for past 30½ years	1,480	522	2,002

* This period is for 18 months.

Deaths.

Two deaths occurred during the past year, one being a male and the other a female patient.

Escapes and Accidents.

There were no escapes or serious accidents during the past twelve months.

Expenditure Table.

(Average number daily resident during the twelve months, 7.)

	£	s.	d.
Total expenditure	2,134	18	11
Maintenance collected by Curator ..		—	
Net expenditure	2,134	18	11
Gross cost per patient for twelve months	304	19	10
Net cost per patient for twelve months	304	19	10
Gross cost per patient per week ..	5	17	4
Net cost per patient per week ..	5	17	4

EPILEPTIC HOME, ROCKVILLE, WILLOWBURN.

Occupation.

During the past year the sewing-room provided occupation for some of the female patients. All linen used throughout the institution was made by the patients, together with a large number of garments for the inmates. As there is no seamstress attached to the staff a nurse is placed in charge of the sewing-room on as many days as possible.

The male patients are provided with indoor occupation in the occupation room. Mattress-making, boot repairing, painting, and polishing, and repair work are carried out. Outdoor occupation consists of flower and vegetable gardening, under the supervision of a wardsman. Large quantities of vegetables and potatoes were grown.

Entertainment.

Concerts, pictures, band concerts, and the annual sports were popular entertainments for the patients throughout the year. The children attended a picnic organised by the Royal Automobile Club, and were also present at the Rockville State School annual picnic. The annual prizes were presented to those attending the Epileptic Home school. Most of the patients attended the Toowoomba Show. Members of the Methodist Church Guild gave a concert at Christmas time. Dancing and community singing is held in the female patients' dining room. Wireless programmes are appreciated by all.

Religious Services.

Religious services are held at the institution every Sunday, and sick patients are visited by the clergy of their own denomination. The Roman Catholic patients attend a divine service once every month at the mental hospital. A sacred concert was given by the Church of England at Easter.

Official Visitors.

Dr. J. E. F. McDonald, Visiting Medical Officer, visited the Institution twice weekly during the past twelve months, and Mr. J. E. Landy, P.M., continued to act as Official Visitor throughout the year.

Repairs to the sewerage system was were attended to by the Public Works Department; also a large number of leaking tiles were replaced.

School.

The Epileptic Home school was capably managed by Miss Dorothy King, who had the charge of 13 male and 10 female patients.

Medical Treatment.

During the autumn and winter months there was a large number of influenza cases, but no other cases of infectious diseases.

Two female patients were admitted to the Toowoomba Hospital, one for a major operation and the other for an X-ray.

All new admissions were inoculated with T.A.B. vaccine, and those under 12 years of age were immunized with diphtheria prophylactic serum.

Dental Treatment.

Dental treatment was given by Mr. J. E. McLean, and a few patients requiring dentures, &c., attended the dental clinic at the Toowoomba Hospital.

Tables showing the admissions, readmissions, discharges, and deaths; ages of patients admitted and readmitted; conjugal condition of patients admitted and readmitted; districts from which patients were admitted and readmitted; causes of death of patients during the twelve months ending on 30th June, 1939, together with a table showing admissions, readmissions, discharges, deaths, &c., during the past twenty-one years, are appended:—

TABLE LXI.

Admissions, Readmissions, Discharges, and Deaths, for the Twelve Months ending 30th June, 1939.

—	Males.	Females.	Total.
On books of Epileptic Home on 1st July, 1938	35	43	78
On leave from Epileptic Home on 1st July, 1938	3	1	4
In residence on 1st July, 1938	32	42	74
Admitted for first time during twelve months	8	12	20
Readmitted during the twelve months	..	2	2
Admitted and readmitted during the twelve months	8	14	22
Total number under treatment during the year	43	57	100
Discharged, and died during the year—			
Discharged—			
Recovered	..	..	..
Relieved	1	..	1
Not improved	3	7	10
Died	1	..	1
Total discharged and died during the year	5	7	12
Remaining on books of Epileptic Home, 30th June, 1939	38	50	88
On leave on 30th June, 1939	2	3	5
In residence on 30th June, 1939	36	47	83

TABLE LXII.

AGES OF PATIENTS ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1939.

—	Males.	Females.	Total.
1 year and under 5 years	..	1	1
5 years and under 10 years	1	2	3
10 years and under 15 years	4	2	6
15 years and under 20 years	..	2	2
20 yaars and under 25 years	1	4	5
25 years and under 30 years	1	..	1
30 years and under 35 years	1	..	1
35 years and under 40 years	..	..	..
40 years and under 45 years	..	1	1
45 years and under 50 years	..	1	1
50 years and under 55 years	..	1	1
Totals	8	14	22

TABLE LXIII.

CONJUGAL CONDITION OF PATIENTS ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1939.

—	Males.	Females.	Total.
Married	..	..	..
Single	8	13	21
Widowed	..	1	1
Divorced	..	..	..
Totals	8	14	22

TABLE LXIV.

DISTRICTS FROM WHICH PATIENTS WERE ADMITTED AND READMITTED DURING THE YEAR ENDED 30TH JUNE, 1939.

—	Males.	Females.	Total.
North and North-Western Districts	2	..	2
Central and Central-Western Districts	3	1	4
South and South-Western Districts	3	12	15
Northern New South Wales	..	1	1
Totals	8	14	22

TABLE LXV.

CAUSES OF DEATHS THAT HAVE OCCURRED DURING THE YEAR ENDED 30TH JUNE, 1939.

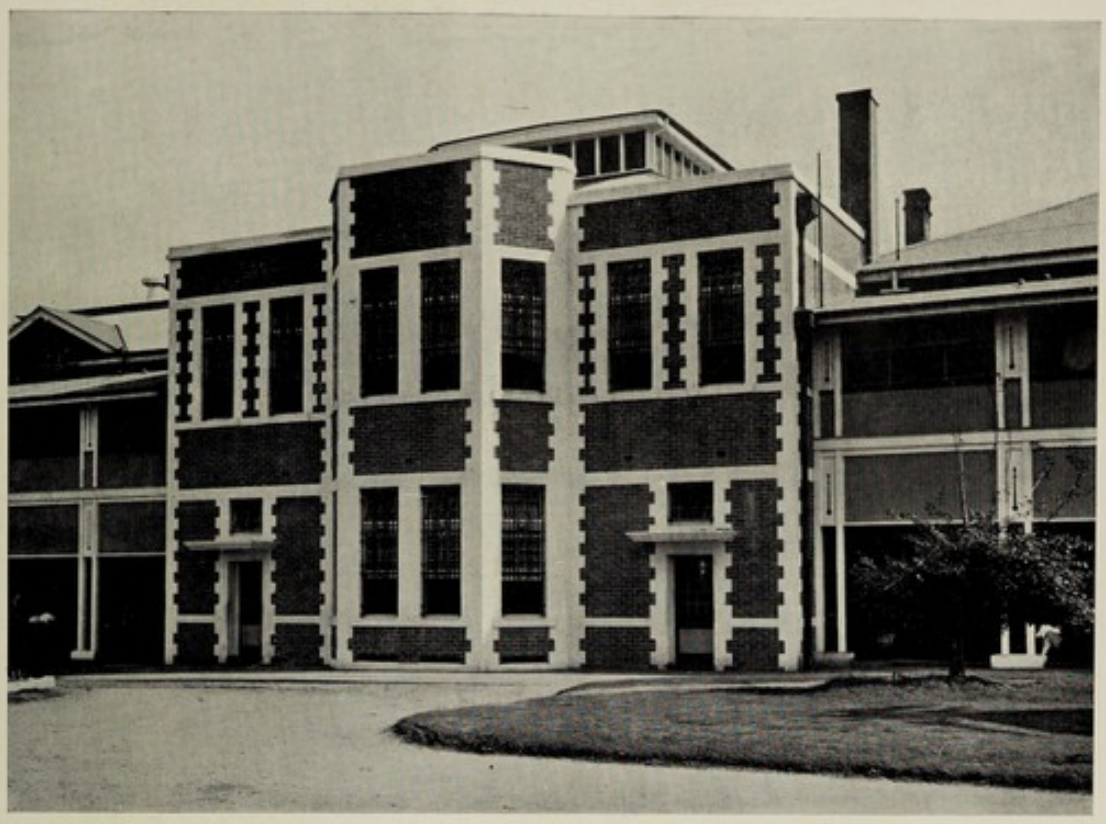
—	Males.	Females.	Total.
Cerebral thrombosis	1	..	1
Totals	1	..	1

NUMBER OF EPILEPTIC FITS THAT HAVE OCCURRED DURING THE YEAR ENDED 30TH JUNE, 1939.

Males	3,397
Females	2,877
Totals	6,274

New Gates and Cattle Grid at Entrance to Main Drive.

Workshop for Occupational Therapy.



New Female Block Built Connecting F. 3 and F. 5.

Dormitory in New Female Block.

TABLE LXVI.

EPILEPTIC HOME, WILLOWBURN.

Year from 1st July to 30th June.	On Books. 1st July.			On Leave. 1st July.			In Residence. 1st July.			Admitted and Re-admitted. During twelve months from 1st July to 30th June.			Total under Treatment. During twelve months from 1st July to 30th June.			Discharged.			Died.			Transferred to Willowburn Mental Hospital.			Transferred to General Hospital. June.			On Books. 30th June.			On Leave. 30th June.			In Residence. 30th June.		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
1918-19	..	..	..	..	..	..	..	..	..	19	33	52	19	33	52	3	..	3	..	..	..	..	..	..	..	..	..	16	33	49	..	..	..	16	33	49
1919-20	16	33	49	..	..	..	16	33	49	24	15	39	40	48	88	21	13	34	1	5	6	..	..	..	..	..	..	18	30	48	..	..	..	18	30	48
1920-21	18	30	48	..	..	..	18	30	48	8	10	18	26	40	66	4	3	7	2	..	2	..	..	..	..	..	..	20	37	57	..	..	..	20	37	57
1921-22	20	37	57	..	..	..	20	37	57	12	10	22	32	47	79	6	5	11	..	2	2	..	..	..	..	..	..	26	40	66	..	..	..	26	40	66
1922-23	26	40	66	..	..	..	26	40	66	12	7	19	38	47	85	9	4	13	2	..	2	..	..	..	..	..	..	27	43	70	..	..	..	27	43	70
1923-24	27	43	70	..	..	..	27	43	70	9	10	19	36	53	89	5	1	6	2	2	4	..	..	..	..	..	..	29	50	79	..	..	..	29	50	79
1924-25	29	50	79	..	..	..	29	50	79	5	9	14	34	59	93	1	4	5	..	1	1	8	6	14	..	..	..	25	48	73	..	..	..	25	48	73
1925-26	25	48	73	..	..	..	25	48	73	13	9	22	38	57	95	2	6	8	2	1	3	2	..	2	..	..	..	32	50	82	..	..	..	32	50	82
1926-27	32	50	82	..	..	..	32	50	82	9	5	14	41	55	96	9	5	14	..	1	1	3	6	9	..	..	..	29	43	72	..	..	..	29	43	73
1927-28	29	43	72	..	..	..	29	43	72	7	5	12	36	48	84	6	1	7	1	1	2	1	..	1	1	1	2	27	45	72	..	..	..	27	45	72
1928-29	27	45	72	..	..	..	27	45	72	12	6	18	39	51	90	3	2	5	1	1	2	5	7	12	..	..	..	30	41	71	..	..	..	30	41	71
1929-30	30	41	71	..	..	..	30	41	71	4	5	9	34	46	80	2	4	6	3	1	4	2	8	10	..	..	..	27	33	60	..	1	1	27	32	59
1930-31	27	33	60	..	1	1	27	32	59	8	13	21	35	46	81	4	4	8	1	1	2	..	1	1	..	..	..	30	40	70	..	1	1	30	39	69
1931-32	30	40	70	..	1	1	30	39	69	9	13	22	39	53	92	5	6	11	1	..	1	4	5	9	..	..	..	29	42	71	..	1	1	29	41	70
1932-33	29	42	71	..	1	1	29	41	70	9	7	16	38	49	87	2	5	7	1	..	1	6	5	11	..	..	..	29	39	68	1	2	3	28	37	65
1933-34	29	39	68	1	2	3	28	37	65	6	12	18	35	51	86	4	1	5	1	1	2	4	2	6	..	..	..	26	47	73	2	3	5	24	44	68
1934-35	26	47	73	2	3	5	24	44	68	9	11	20	35	58	93	3	3	6	1	2	3	1	6	7	..	..	..	30	47	77	2	2	4	28	45	73
1935-36	31	47	78	2	2	4	29	45	74	8	11	19	39	58	97	4	6	10	1	..	1	5	6	11	..	..	..	29	46	75	2	3	5	27	43	70
1936-37	29	46	75	2	3	5	27	43	70	8	6	14	37	52	89	2	2	4	..	2	2	1	1	2	..	..	..	35	48	83	6	6	12	29	42	71
1937-38	35	48	83	6	6	12	29	42	71	4	8	12	39	56	95	4	10	14	..	3	3	1	4	5	..	..	..	35	43	78	3	1	4	32	42	74
1938-39	35	43	78	3	1	4	32	42	74	8	14	22	43	57	100	4	7	11	1	..	1	2	1	3	..	..	..	38	50	88	2	3	5	36	47	83

Legislation, Movements of Staff, and Extra-Departmental Activities.

Legislation.

During 1936 the legislative emphasis was directed to local government (*The Local Government Act of* 1936) and hospital control and management (*The Hospitals Act of* 1936), and the particular delegations of authority involved in these two matters. In 1937 the remaining sections of the *Health Act* were re-arranged with some alterations and additional powers, and in the present year (1938-39) the main legislative activity has been in respect of the special problem of mental diseases. As mentioned more fully in the report upon that section, the *Mental Hygiene Act of* 1938 and the *Backward Persons Act of* 1938 received Parliamentary sanction and the Royal Assent, but, up to the present, these Acts have not been proclaimed.

Except for mental diseases, there was no broad activity among the medical services that demanded specific reorganisation on so wide a scale.

Routine activities for the correction of particular circumstances and the re-enactment of regulations that had expired by effluxion of time resulted in the following gazettals:—

Amendment of *Poisons Regulation* 39A.
Venereal Diseases Regulations of 1938 (to be in force for six months).
Milksellers' Regulations of 1938.
Notification of areas in which *Milksellers' Regulations* are to be in force.
Footwear Regulations of 1938.
Food and Drug Regulations, Amendment of *Regulation* 14.
Scarlet Fever Regulations, 1939.
Typhoid Fever Regulations, 1939.
Health (Food Supply) Regulations, 1939.
Venereal Diseases Regulations, 1939.
Poisons Regulations, Amendment—Benzedrine and sulphanilamide and their derivatives (except benzedrine inhaler) added to Poisons Schedule.
Rat Prevention and Destruction Regulations of 1939.

The amendment of *Poisons Regulation* 39A was in respect of crayons containing poisonous properties. The amendment of *Regulation* 14 of the *Food and Drug Regulations* made provision for the new flour, bread, and cereal products standards.

In the coming year, it is hoped to utilise the experience gained from the epidemic of anterior poliomyelitis last year to make better administrative provision against that dangerous disease. It is hoped also that it may be possible to revise the whole of the legislation affecting medical practice in this State, and possibly to include it in a new Medical Bill.

Under the powers contained in the *Health Act* it was considered desirable to draw a standard form as a basis for the annual report of each medical officer of health. This was accordingly done, and the form has been used for the first time to assist in the compilation of the present report.

A special form was also drawn for health inspectors' reports on licensed victuallers' premises. This is a very complete form, and provides all essential information in a way that prevents duplication, and at the same time directs the attention of the examiner to all points which should attract his notice.

These standard forms have already demonstrated their value.

Movements of Staff.

The Director-General (Sir Raphael Cilento) was honoured in March, 1939, by election direct to Fellowship of the Royal Sanitary Institute without previous membership, the Council of that body exercising their special powers under section 9.

The Director-General was also successful in the final Bar examination for the Supreme Court of Queensland, and on 27th April was admitted a barrister-at-law of that court.

The Deputy Director-General (Dr. John Coffey) continued to fill the position of Inspector-General of the Insane. During the occasional absences of the Director-General, the Deputy Director-General undertook the duties of that position in terms of the Act. He was also nominated by the Minister for Health to be departmental member of the Milk Board constituted under the *Milk Supply Act of* 1938.

In April, 1939, Dr. E. H. Derrick of this department, and Dr. F. M. Burnet, of the Walter and Eliza Hall Institute, Melbourne, were jointly awarded the Cilento Medal for their work on Q fever. The Cilento Medal was founded by the Director-General of Health at the time of his resignation from the Commonwealth Department of Health, and is a medal of the Australian Institute of Anatomy at Canberra. It is presented by the Commonwealth Minister

for Health to the scientist deemed to have accomplished the best practical work for the furtherance of tropical hygiene or aboriginal welfare in Australasia. The double award indicated the close association in which Drs. Derrick and Burnet have worked upon the elucidation of the problem of Queensland rickettsiosis—a disease unsuspected until an intimate analysis was being made of the coastal fevers of Queensland, which include several undifferentiated infections. Dr. Derrick also continued in an honorary capacity to assist in the lecture work in the Department of Social and Tropical Medicine of the Queensland Medical School under the Director-General.

Dr. D. W. Johnson and Mr. D. J. W. Smith, M.Sc., were appointed to be Honorary Demonstrators in the Department of Social and Tropical Medicine of the University of Queensland.

Dr. G. S. Hayes also assisted with a series of lectures on venereology.

Mr. R. H. Walsh, formerly acting secretary, was appointed Secretary Health and Medical Services, Department of Health and Home Affairs, from 1st July, 1938.

Mr. T. O'Shea was appointed Senior Clerk, Health and Medical Services, Department of Health and Home Affairs, from the same date.

Mr. G. E. Cook was appointed Clerk (Records), Health and Medical Services, Department of Health and Home Affairs, from 28th July, 1938.

Mr. C. M. Cato was appointed Chief Inspector of Food and Drugs from 7th November, 1938.

Mr. S. Dudley retired on 31st December, 1938.

Mr. W. McNeil was appointed Chief Sanitary Inspector on 7th November, 1938.

Mr. L. J. Butts was appointed Senior Inspector from 7th November, 1938.

Mr. R. P. Sanderson was appointed Senior Inspector from 7th November, 1938.

Mr. C. J. Whitford was appointed Health Inspector, Townsville, from 7th November, 1938.

Mr. W. D. Pryor was appointed Health Inspector, Toowoomba, from 7th November, 1938.

Mr. W. H. Kelly was appointed Health Inspector, Cairns, from 7th November, 1938.

Mr. Colin J. Murray was appointed Health Inspector from 5th December, 1938.

Mr. A. W. Lowe was appointed Health Inspector from 1st January, 1939.

Mr. C. V. James was appointed Assistant Health Inspector from 1st November, 1938.

Mr. H. G. Beardmore died on 20th August, 1938.

Mr. F. H. Stamp was appointed Attendant, Section of Microbiology and Pathology, from 20th June, 1938.

In connection with the work of lazarets, several appointments were made during the year. Dr. D. W. Johnson was appointed Medical Officer, Lazaret, Peel Island, from 11th May, 1939. Dr. Geoffrey C. P. Courtney was appointed Medical Officer, Lazaret, Fantome Island, from 11th May, 1939. Miss Avonia O'Brien was appointed Matron, Lazaret, Peel Island, from 12th December, 1938. Mr. E. N. Goldsworthy retired on account of ill-health from 17th December, 1938. Mr. J. Carling, assistant, Lazaret, Peel Island, was appointed Assistant Steward, Mental Hospital, Toowoomba, from 18th May, 1939.

Extra-Departmental Activities.

During the year there were three outstanding and widely differing extra-departmental committees of importance. One of these dealt with the matter of the school leaving age; another with the question of the sewerage of the metropolitan area of Brisbane; and the third with air raid precautions problems. The lastmentioned has been adequately dealt with elsewhere.

The matter of the *school leaving age* was discussed with particular reference to the relative advantages and disadvantages of increasing the school leaving age to fifteen years. The matter was investigated by departmental officers, together with nominated delegates from outside, and from the British Medical Association, and a report was forwarded in due course to the Honourable the Premier.

The question of a joint committee for investigation of the sewerage problems of the Greater Brisbane area was first mooted by the Minister in August, 1938, but for various reasons no meeting of the committee was held until 1939. The subject of the sewerage of Brisbane has been a matter of considerable inquiry, and some controversy for many years. It was hoped that the joint committee might be a permanent body to which questions of general importance of this nature might be referred, and which might not only advise the Government and the City Council of current progress in so far as sewerage was concerned, but might lay down a plan for twenty to twenty-five years ahead. The first activity of the committee has been directed towards a survey of previous reports, of which there are several. These are being co-ordinated with the last of the reports, namely the 1935 report of Mr. C. E. Parkinson. The committee has considerable preliminary work to do before devoting its attention to the actual problem for which it was established.

Medical Faculty—University of Queensland.

Following the policy of close association between the Department, the medical student, and the teaching and practising moieties of the medical profession, every facility has been provided to the Medical School in respect of social and tropical medicine. As mentioned previously, Drs. Derrick and Johnson and Mr. D. J. W. Smith, M.Sc., have assisted the Director-General very markedly in the general preparation and provision of lectures and demonstrations. Lectures were continued through 1938 and 1939, the fifth year students receiving the second section of the lectures on preventive medicine and the hygiene of environment, and taking subsequently the course in forensic medicine, which is at present in train. The fourth year medical students took out the course in tropical medicine, together with the first part of the social medical programme.

The Medical School itself, which has been provided by the Government of Queensland in close association with this Department, is now almost completed, and will shortly be handed over to the University. It is a fine building and a monument to the desire of the Government to provide the best of facilities for the training of its medical students, with special reference to the specific tropical and social problems of the State.

An aerial photograph is shown facing page 126.

Commonwealth Co-ordinating Council for National Fitness.

In February, 1937, at the first meeting of the National Health and Medical Research Council of Australia, a resolution was passed with respect to the hygiene of childhood, particularly advocating better supervision of the bodily development of children before and during school age. Subsequent to the final report of the Commonwealth Advisory Council on Nutrition, which was considered eminently relevant, the National Health and Medical Research Council at its fifth meeting passed a further resolution. The Council, having regard to the increasing complexity of international relationships, expressed itself as "deeply concerned with the falling birth rate, particularly in Australian cities, and at the evidence presented from time to time of preventable defects affecting the general health, the bodily fitness, and the national efficiency of a large number of the young people of this nation." The Council recommended specifically the formation of a Commonwealth Co-ordinating Council for National Fitness, and subsidiary State Councils, and further elaborated the lines along which it was thought developmental work might proceed with a view to producing a more healthy nation.

The Director-General was the proposer of the resolutnon referred to above and was subsequently nominated by the Commonwealth as one of the representatives on the Central Co-ordinating Council which met for the first time at the Commonwealth Offices, Melbourne, on 5th and 6th January, 1939.

The issues having been defined at the first session, the second session was held at Canberra on 2nd May, 1939, and a considerable series of resolutions were taken as follows:—

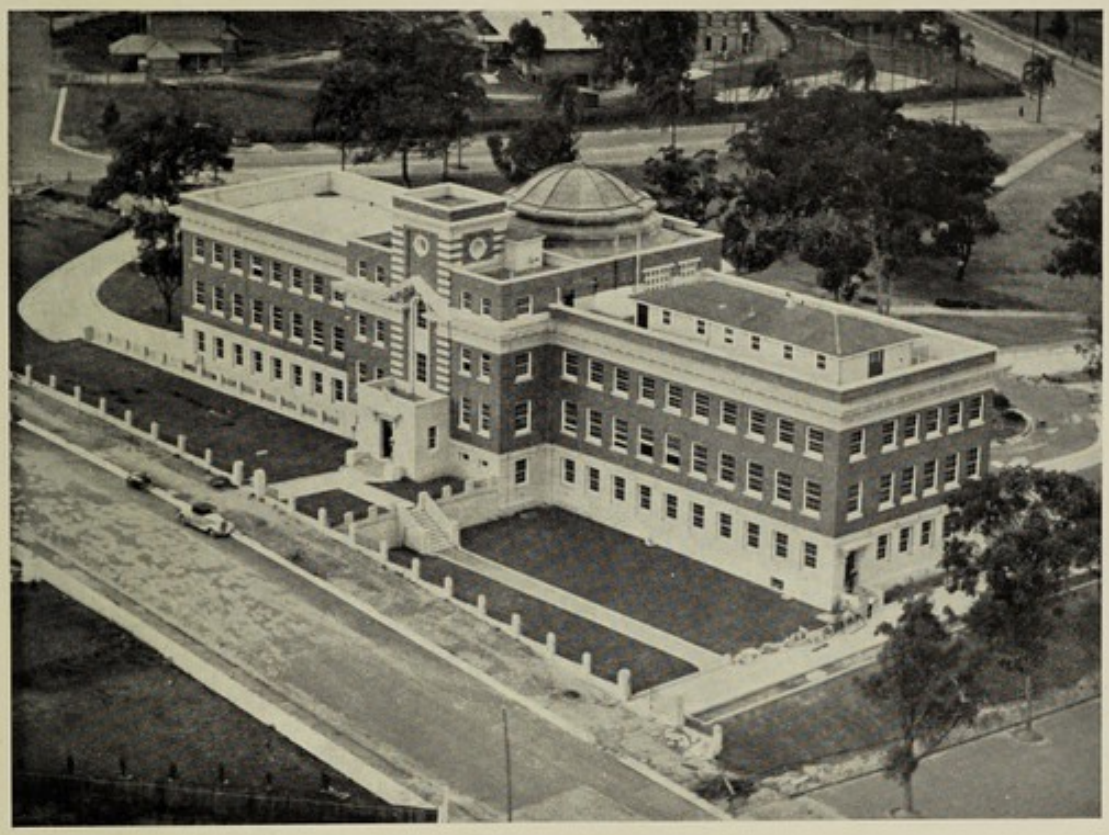
1. It is recommended that the name of the Council should be changed to "The Commonwealth Council for National Fitness."

2. In respect of ante-natal, post-natal, maternal care, infant welfare, and pre-school activities, it is known that much is being done through existing State and voluntary organisations. As the state of national fitness depends so fundamentally upon the success of this work, it is important that the State and voluntary machinery should be encouraged and extended as much as is possible. While this Council might, in association with the National Health and Medical Research Council, make a survey of the situation with the object of defining the directions in which improvements might be made, it is not considered that the Commonwealth should, as part of the activities of the Council, provide any financial subsidy.

   It should always be recognised that the condition of the child during the pre-natal period and up to school age has great effect upon the physical condition throughout life.

3. For school ages this Council considers that physical education should be a normal part of the school curriculum (which should be rearranged as necessary) prescribed by the Department of Education in each State on a plan approved by the Department of Health in each State.

   The Council believes that it would be very much in the interests of national fitness if the medical, dental, and nursing services to school children were gradually extended.



Aerial View of Medical School, built by the Government of Queensland for the University of Queensland, 1938-39.

(Published by courtesy of the "Courier-Mail," Queensland Newspapers Pty. Ltd.)

4. The Council emphasises the necessity for supervision of the health of all persons engaged in industry, and particularly of adolescents and young adults. By education all employers of labour should be encouraged to provide systematic supervision of the health of employees.

   Additionally, every State Health Department might be requested to consider the advisability of establishing a Division of Industrial Hygiene where this does not already exist. The National Health and Medical Research Council should consider the general question of the preservation of health in industry.

   The Council invites State Councils to furnish a survey of industrial health schemes in operation in each State for the purpose of circulating such schemes as are approved to other States.

   For those adolescents and young adults who are continuing their secondary education, or are entering domestic or household life, due provision is also necessary. In Universities and secondary schools such provision is already partly made; for commercial colleges standards are often unduly low; and for domestic and household life need almost wholly to be initiated as a new departure. For these the assistance of local authorities is necessary and might be provided through increased playing grounds and similar facilities, adequately adapted to these necessities.

5. It is considered that any scheme for national fitness will fail of its full purpose unless the mothers of the country are given consideration, first for their own sake as individuals, and second for that of the welfare and happiness of their families. The Council suggests that means should be found to give women for a fortnight in each year change and rest from family and household cares.

6. The state of individual nutrition determines the state of individual fitness. The question of nutrition is not directly a function of the Council, but it is noted with satisfaction that the National Health and Medical Research Council is now giving active attention to this matter.

   Note.—With regard to resolutions 2, 3, 4, 5 and 6, all of these are matters of general public health for the supervision of which machinery is already in existence. The National Health and Medical Research Council will be kept informed of the work of this Council, and it is considered proper that State Councils should bring under the notice of State Health authorities, or—through the medium of this Council—of the National Health and Medical Research Council, any directions in which it is considered that action might profitably be taken for the improvement of national fitness.

   The Council earnestly requests State Councils to furnish a summary of the activities already in existence, or to be put into operation, on the headings above mentioned. The Council should then prepare for the information of each State a précis of the various schemes after consideration has been given by the Research Council.

7. The Council considers that the amount of £1,000 per annum, limited to three years, is not sufficient to meet the known needs for University instruction, and recommends that the amount provided should be £2,000 for the first year and £1,500 for each of the next nine years. This work should include instruction up to diploma standard and supervision of the bodily health of undergraduates.

   The expenditure of this grant must be in accord with a plan submitted to and approved by the Commonwealth Minister for Health.

8. In the opinion of the Council an organiser in each State is essential, and it is considered that the Commonwealth should make a grant of £1,000 per annum to each State to be applied to the salary of such organiser and other administrative expenses of the State Council. The appointment in each case should be approved by the Commonwealth Minister for Health.

   The question of a Commonwealth organiser should be left over until a later meeting.

9. It is considered that an amount of £2,500 annually should be provided under the control of the Commonwealth Minister for Health for the purpose of general publicity and education work in connection with this campaign.

Note.—The Council considers that the campaign now being initiated for the improvement of national fitness can best be organised and directed by adopting as the two first moves the establishment of a University course on physical education and the organisation by means of a salaried organiser of the activities under the control of State Councils. At the same time some money should be available for the expenses of special activities of an educational nature designed to further the present campaign. A fund for this purpose should be established under the control of the Commonwealth Minister for Health.

Resolutions 7, 8, and 9 give expression to these principles.

10. It is not considered that at this stage subsidies should be provided by the Commonwealth for—
    (*a*) activities of unofficial bodies;
    (*b*) activities under control of Local Authorities, such as playgrounds, swimming pools, &c.

11. In any scheme contemplated by State Governments for improvements of tourist resorts, it is considered that provision should be made for hostels and camps providing satisfactory accommodation of a simple kind at sufficiently low rates.

12. The Council suggests that the Defence Department be asked to supply particulars of the grounds for rejection of volunteers for the Militia Force, in order that remedial steps may be considered for the prevention or cure of the recurrence of defects.

13. The Council considers that—
    (*a*) The necessity for playing areas and cheap transport is an urgent factor of the physical education scheme in the field of sport. The fields must be supplied with adequate dressing accommodation and showers.
    (*b*) Municipal councils should be encouraged to set aside playgrounds for children in the congested areas and to have trained supervisors.

14. The Council considers that a general meeting, to which each State Council should send one representative, should be held annually. This general meeting should be the next meeting held. This should be summoned at the time and place determined by the Commonwealth Minister for Health.

These resolutions are now before the Commonwealth for discussion and have been referred also to the States. What action will be taken in the matter depends largely upon what allocation of funds, if any, is made.

National Health and Medical Research Council.

The National Health and Medical Research Council of the Commonwealth of Australia, which was constituted towards the end of the year 1936 to replace the Federal Health Council formerly existing, held its fifth and sixth sessions on 15th and 16th November, 1938, in Canberra, and 24th and 25th May, 1939, in Adelaide, respectively.

Reference has already been made to the resolution taken at the fifth session regarding physical fitness.

From the point of view of Queensland, the resolution of importance was Resolution No. 3 on the subject of leprosy, as follows:—

"Leprosy.

"The grant as requested by Sir Raphael Cilento is approved; the money to be used for the establishment of a research station at Palm Island with the object of—

(*a*) Establishing more precisely than is known at present the course of leprosy in aboriginal sufferers and the factors in the spread of leprosy;

(*b*) Improving the treatment of leprosy;

(*c*) Defining humane but efficient measures for the control of leprosy, especially amongst aborigines. The peculiar difficulties presented by the conditions under which aborigines live have not yet been adequately met by present measures of control.

"The annual renewal of the grant is dependent upon an annual report to the Council by Sir Raphael Cilento showing reasonable progress in the inquiries being made."

In terms of this grant, Dr. Graham Croll, who had been engaged upon an inquiry into lead and nephritis (to which prominence is given in an earlier section of this Report), was appointed Leprosy Investigation Officer, and after an intensive test in all clinical aspects of the work at Peel Island Lazaret, Dr. Croll left for North Queensland to investigate in detail all collections of aboriginals above the 20th degree of South Latitude. He is actively engaged upon that work and his researches have already resulted in the detection of several lepers.

In March, 1939, the Director-General was instructed by the Minister to visit Palm Island and to select there a suitable site for a leprosarium. It is intended to transfer to the selected area all coloured lepers. This will represent a considerable advantage for several reasons, apart from the provision that it will make towards the investigation and treatment of the disease in the North.

The Commonwealth, moreover, granted funds for the provision of an investigation centre, and arrangements have been made to erect this building in immediate association with the new native leprosarium.

On 13th May, 1939, by Executive Minute, the whole of Fantome Island, in the Palm Island group, was proclaimed under section 51 (2) of the Health Act to be a leprosarium.

At the sixth session of the National Health and Medical Research Council held in the same month, a progress report was provided, and the whole subject of the health of aboriginals was discussed by a sub-committee, of which the Director-General was one. Upon the report of the sub-committee, the following resolution was taken:—

"Health of Aboriginals.

"The Council resolved that—

(*a*) Complete investigation of the health of aborigines and associated environmental circumstances throughout the areas recognised as the aboriginal districts of Australia should be a definite objective of the Council.

(*b*) The type of investigation in Queensland and Western Australia should be extended into the Northern Territory and such areas of Central Australia and South Australia as are immediately accessible.

(*c*) In the whole work it is essential that there should be full co-operation of Commonwealth and State administrations controlling the area.

(*d*) It is estimated that this preliminary investigation will require a period of two years.

(*e*) On completion of the investigation, the Council should review the situation with the object of recommending some form of permanent organisation to better the health of the aborigines and to promote their general welfare.

(*f*) For the purposes above outlined—

(i.) An additional medical officer should be appointed to the Health Administration of the Northern Territory to devote himself continuously to the programme of investigation, and his work shall be linked with that proceeding in Queensland and Western Australia.

(ii.) The investigation of aboriginal health in Central and South Australia along the lines proposed by Professor Cleland should be introduced, where economically practicable.

(iii.) The investigation should be undertaken for a period of two years in the first instance, and it should be continued as long as, in the opinion of the Council, the results justify.

(*g*) The final objectives should be the health and welfare of the aborigines and the most satisfactory system of administration to ensure uniformity throughout Australia."

Acknowledgments.

The work done during the year has been up to the high standard of previous years, and I desire to express my gratitude to all members of the staff, particularly the officers in charge of sections, for their unfailing and conscientious attention to duty. The Department has also been materially assisted by the ready co-operation of other Government Departments and by outside bodies. To all of these I express my hearty thanks.

RAPHAEL W. CILENTO,
Director-General of Health and Medical Services.

30th June, 1939.

Appendix A.

STATE NUTRITIONAL ADVISORY BOARD.

YEAR 1938-39.

This Board was constituted by Executive Minute, dated 18th February, 1937, published in the *Government Gazette* of 20th February, 1937. The membership is as follows:—

Sir Raphael West Cilento, Kt., M.D., B.S., D.T.M. and H., F.R.San.I., Director-General of Health and Medical Services; and Professor of Social and Tropical Medicine in the University of Queensland, Brisbane; (Chairman);

Edward Holbrook Derrick, M.D., Director, Division of Laboratories of Microbiology and Pathology, Department of Health and Home Affairs, Brisbane;

Leslie St. Vincent Welch, L.R.C.P., M.R.C.S., Chief Medical Officer, School Health Services Branch, Department of Health and Home Affairs, Brisbane;

Aubrey David Dick Pye, M.B., Ch.M., F.R.C.S., F.R.A.C.S., General Superintendent, Brisbane and South Coast Hospitals Board, Brisbane;

Leon Alexander Meston, A.A.C.I., Analyst, Government Chemical Laboratory, Brisbane; and

Douglas Harry Kedgwin Lee, M.B., B.S., D.T.M., Professor of Physiology in the University of Queensland, Brisbane.

In accordance with Paragraph (9) of the Schedule, the following members were co-opted for the period under review:—

Clarence Murrell Cato, Chief Inspector of Food and Drugs, Department of Health and Home Affairs, Brisbane;

Phyllis Dorothy Cilento, M.B., B.S., Specialist Lecturer in Mothercraft in the University of Queensland, Brisbane;

Colin Clark, M.A., Director, Bureau of Industry, Brisbane;

Thomas Henry Reeve Mathewson, M.B., Ch.B., Acting Director of Infant and Maternal Welfare, Department of Health and Home Affairs, Brisbane;

Paul Wanostrocht Mitchell, M.B., Ch.M., D.T.M., Chief Quarantine Officer (General), Commonwealth Department of Health, Brisbane.

Norma Lilian Sachs, B.A., Instructress in Domestic Science, Brisbane.

Under Paragraph (10) of the Schedule, the following is submitted for the information of the Minister:—

Four meetings of the Board were held during the period January to June, and attention was directed to recommendations respecting proposed modifications of the Food and Drug Regulations, and careful consideration was also given to all diets which have governmental or quasi-governmental sanction.

Diets.

In particular, the diets of infants and children to the ages of 2 and 5 years, as included in "The Queensland Mothers' Book" were studied, with the assistance of departmental officers. As the result of these deliberations, the whole of the infant diets were standardised, and now appear in "The Care of Mother and Child," one of the two publications that have taken the place of the former "Queensland Mothers' Book." This volume is available at all baby clinics, or an application to the Acting Director of Infant and Maternal Welfare, Training Centre, Alfred Street, Valley, N.1, Brisbane.

In respect of the diet of children from 2 to 5 years, various diets recommended were examined, and finally that in use by the Mothercraft Association of Queensland was adopted with slight modifications. The diet in question is as follows:—

DIET OF THE PRE-SCHOOL CHILD (2-5 Years Inclusive).
QUEENSLAND COASTAL DISTRICTS.
(Adopted at the Session of Thursday, 1st December, 1938.)
For a balanced meal, choose one item from each column.

On Waking.—Drink of water, and/or piece of fruit.

Breakfast.—

Milk.	*Cereals and Bread.*	*Second course.*	*Fruit.*
Scalded fresh milk or pasteurised milk 8 oz. to drink 2-4 oz. with cereal.	Wheatmeal Dry wheaten cereals Oatmeal porridge Rolled oats Groats Ground barley Boiled unpolished rice Wheatmeal or wheat germ bread, or Toast with butter and yeast products like marmite, vegemite, peanut paste, sometimes honey or jam.	Egg— coddled lightly boiled poached scrambled omelette Brains Fish (fresh or roe) Sometimes bacon for older child Tomato Sweet corn Lamb's fry Kidney.	(If not taken earlier.) (Carefully peeled with no seeds or pips.) Orange Mandarin Grapefruit Pawpaw (papaia) Mango Banana (mashed) Pineapple (grated) Stewed prunes or other stewed fruit sometimes Finish with piece of apple.

10.30 a.m.—Drink of fruit or tomato juice or piece of fresh fruit.

Dinner: 12.30 p.m.—

First course.

Soup.	*Vegetables.*
Pea soup Vegetable and bone soup (puree).	Two or more vegetables—one green
Meat.—1-2 oz. grilled, roasted, or freshly stewed, 2-3 times a week.	Potato Pumpkin Young cabbage Brussels sprouts Artichoke Cauliflower Marrow, boiled Cucumber, boiled Onions, boiled Asparagus Swede turnips (mashed) Spinach Silverbeet Turnip tops Beetroot tops Tomatoes Lettuce leaves Sprouted beans and peas. Carrot, raw or cooked Haricot beans Fresh peas.
Fish—1-2½ oz. 2-3 times a week, boiled, steamed, grilled, or baked.	
Poultry— Rabbit Tripe Heart Egg Steak and kidney Liver (fry).	

At 3 years.

Raw vegetables and salads every day
Lettuce
Tomato
Grated carrot
Shredded cabbage heart.

Second course.

Dessert.	*Milk.*
Fresh uncooked fruits Grated apple and orange juice Diced pawpaw Apples stewed or baked Stewed prunes Stewed rhubarb Peaches, fresh or tinned Banana, mashed Jellied fruit Fruit salad Banana custard Sometimes in cold weather, lightly steamed suet pudding Home-made shortbread or pastry.	6-8 oz. up to 3 years. After this, drink of water only. *Milk puddings.* Milky rice Boiled or baked custard Sago custard Macaroni custard Rice custard Junket—plain or flavoured Cream or top milk Ice cream.

Piece of apple to conclude meal, or nuts for children over 3 years.

3.30 p.m.—Drink of water or orange or lemon, or other fruit juice, or tomato juice (fresh or tinned), or home-made lemon syrup and water.

Light Evening Meal, 5.30 p.m.

First course.

Soup—
Pea soup
Mutton and barley broth
Liver soup
Strong beef tea
Tomato puree
Spinach puree
Vegetable puree
Milk pudding and fruit (if not taken for dinner).
Cereal (as for breakfast) for younger child.
Egg
Fish.

Second course.

Rusk or toast of wheatgerm or wheatmeal bread with butter or dripping.
Oat cake
Plain cake
Wheatmeal or oatmeal biscuits.

Sandwiches.

Egg
Yeast products
Peanut paste
Tomato
Lettuce
Cheese
Honey
Sardine
Baked beans
Grated carrot.

Milk.

8-10 oz. plain or flavoured with cocoa or other patent flavourings.

Finish with a piece of apple.

There are several simple rules to bear in mind when cooking for children:—

1. Good quality food is not an extravagance, but an economy as it usually contains more nourishment and is better digested.
2. The food must be as fresh as possible.
3. Steaming, boiling, baking, or grilling are the best means of cooking children's food. Fried foods are not suitable for little children.
4. Children's food should not be flavoured, except with a little salt. Pepper, sauce, spice, herbs, &c., are harmful; children should not know the taste of them. Unless the family is willing to have their food simply cooked without condiments, the children's meals should always be cooked separately.
5. The value in the diet of skim milk—liquid and dry—is not generally appreciated. The addition of a spoonful of dried milk to meat loaf, milk puddings, bread, soups, and other dishes, increases their nutritive value without noticeably altering their flavour. (The same may be said of evaporated or unsweetened condensed milk.)

The diet for children from 5 to 10 years was similarly modified from the diets put forward by Lady Cilento, and is as follows:—

FOOD FOR THE SCHOOL CHILD.

5-10 *Years.*

Note.—Most school children have the big meal of the day in the evening instead of at midday. Should a midday dinner be possible, transpose lunch and dinner.

The food should be thoroughly chewed and masticated, mixed freely with the saliva, and should be in a liquid form when swallowed.

Breakfast.

Wheatmeal, wheatgerm meal, or oatmeal porridge, or occasionally one of the proprietary dry cereals, with milk (4 oz.), and sugar or honey or syrup or fruit (fresh, stewed, tinned, or dried).

Eggs three times a week; or fried tomato; or pineapple; or banana and bacon; or brains; lamb's fry; sweet corn or young corn cobs (boiled or baked); or cheese dish (preferably grated cheese).

Note.—Liver (whether sheep's or calf's) is such a splendid food for growing children that it should be given at least once a week, preferably twice. It is very palatable if well cooked, but a badly-cooked liver dish can permanently turn a child against it. The attached recipes are good suggestions.

Wholemeal bread, toast, or rusks, with butter and marmite or vegemite, or other approved yeast products, peanut paste, honey, jam, or syrup.

Milk (fresh, dried or skim milk) plain or flavoured with cocoa, or one of the proprietary flavoured foods for a change, or weak tea at least two-thirds milk—1 full breakfast cup or tumbler.

Lunch.

Sandwiches made of wholemeal or wheatgerm meal bread.

Suggested Fillings.—Egg, brains, left-over vegetables (spread thickly) tomato, marmite or vegemite and lettuce, cucumber, peanuts, grated carrot, dates, cheese and lettuce, or nuts; peanut paste, meat, sardines, prunes, currants (minced), raisins, apple bacon, bananas; anchovy and cheese, veal and carrot, cheese and celery; mince and rice, macaroni, baked beans, tinned corn, apple and chopped ham, apple and ginger, egg and lettuce.

Note.—Nuts contain valuable food elements. They should be well masticated, and are best taken at the end of a meal as they are then well digested and serve to clean and polish the teeth.

Children often prefer whole tomato, lettuce leaves, or a whole carrot, a hard-boiled egg or slab of cheese with plain bread and butter, as a change from sandwiches. In winter a thermos of tomato puree, pea soup, vegetable soup or stew, makes a welcome change; in summer a bottle of fruit juice—orange, lemon, pineapple, or tomato juice. This is the real juice, not cordial. In the city fresh milk or pasteurised milk can be obtained in paper containers and bottles at most schools. If not, all school stores stock milk. A quarter to half a pint for lunch each day makes a big difference to the child's nutrition.

Oat cake, wheat cake, or crisp bread and butter, wholemeal cake, crusty and crisply baked, nutty biscuit or sponge, or fruit cake.

Piece of fruit or whole tomato. Our Queensland fruits, mango, pawpaw (papaia), pineapple, banana, are even richer in vitamins than southern fruits. Half a pineapple eaten with a spoon is popular.

Afternoon.

Piece of fruit or rusk or baked bread and butter or dripping, and milk to drink (6-8 oz.); or fresh fruit juice drink, or handful of dried fruits and nuts (see note). In winter soup or marmite or vegemite soup may be given when children arrive home from school instead of at dinner time. No sweets or sweet things should be given at this stage.

Dinner.

Soup in winter (pea, tomato, onion, potato, or carrot or vegetable soup may be made on a milk basis). Dried vegetables may be used where fresh are not procurable. It is advisable to carefully wash all fresh vegetables before using. Soups with a basis of bones and meat such as sheep head's broth as in the attached recipe may be used. A spoonful of marmite added to soups and gravies after they are cooked improves their flavour.

Meat grilled, baked, stewed, minced (not fried). Liver, tripe, kidney, rabbit, brains, heart, should be given frequently whenever procurable; fresh fish at least once a week—when not procurable tinned or dried fish, sardines, herrings, salmon can be used. Cold meat is better than twice cooked meat.

Cheese dishes made with grated cheese or cream cheese are *good for children.*

Vegetables.—Potato (cooked in jacket) or sweet potato daily, pumpkin, onion (boiled), beans, silver beet, spinach, turnip tops, beetroot tops, outside leaves of lettuce, peas (fresh or dried), germinated peas, beans, or grain, cauliflower, cabbage, carrots, swede turnips, young corn cobs; lima or haricot beans sometimes.

Salads and Uncooked Vegetables whenever possible—a dish of fresh lettuce leaves on the table as a regular part of the evening meal is eaten eagerly by children Besides lettuce, tomato, and cucumber, use grated carrot, grated turnip, and shredded cabbage heart, endive, chopped parsley, and mint. All uncooked vegetables should be carefully washed before use, as many have been sprayed or dusted with an arsenic solution to destroy leaf-eating pests during growth.

Chopped up fruit and cold vegetables (better than twice-cooked vegetables), orange, pineapple, banana, apple, pawpaw, and mango, if added to salad, improve the taste and nutritive value.

Salad Dressing of olive oil and lemon juice or vinegar; or of dried or condensed milk, egg, salt, olive oil, and lemon juice (or vinegar). A little marmite may also be added to dressing.

When fresh vegetables are not procurable, tinned tomato, tinned beans, &c., are excellent (heat before opening the tin to preserve the vitamins).

Puddings.—Custards made with fresh eggs or dried egg (*not* egg powder, which is mostly cornflour); milk puddings made with fresh milk or skimmed milk and butter or unsweetened condensed milk (evaporated) (not with sweetened condensed milk, which is 40 per cent. sugar). For a change from milk pudding evaporated milk may be served as it is with chopped fresh fruit or stewed fruit. Once the tin is opened, the milk does not keep well.

Fresh fruit rather than stewed fresh fruit; tinned fruit rather than stewed dried fruit (cost much the same); steamed or baked puddings and custard sauce sometimes; wholemeal or wheatgerm flour should be used when possible; or salad and cheese and wholemeal bread and butter.

Note.—Dried fruits should be soaked well before they are eaten to dissolve out the preservative, which may upset the child's digestion, and to allow them to swell to normal size.

The following method of preparation is recommended:—

The Preparation of Evaporated Peaches for the Table.

Select a good brand. This is very essential. Place amount required in a basin, wash with cold water and drain. Cover with cold water and place in the refrigerator for two days. Place in saucepan, bring to the boil, remove from the fire, replace in basin, and when cold return to refrigerator for a third day. Complete stewing. Peaches now ready to serve hot or cold. Do not add sugar when cooking.

Water to drink.

Supper.

After homework and before bedtime, a glass of milk, plain or flavoured, or in summer a fruit drink, can be taken with advantage.

For Western Families.

In the dry inland districts there are many hardy greens which can be utilised instead of the conventional spinach, silver beet, and cabbage of the more fertile areas; and mothers should not neglect to use every green that is procurable.

New Zealand spinach, for instance, will grow well in the West, and thrives with very little water; the succulent green leaves are more appetising than silver beet. Pig-weed is commonly cooked as a vegetable. The young leaves of the native hibiscus are eaten as salad, and the leaves of the "fat hen" or wild Amaranth are frequently used as a vegetable.

Bushmen will tell you that "old-man salt-bush" is quite palatable (cooked for young children, of course, and raw for school children and adults), and they will often break off a few leaves and eat them as they pass by a bush. I have known "lamb's tails" (Madeira-vine or Boussingaultia) to be used as greens when all else fails. Where there is any doubt, a specimen of the plant should be sent to the Agricultural Department, asking for an opinion of its edibility.

Sweets.

Note.—Children love sweets, and it is difficult to forbid them entirely. Too much sugar, however, upsets the food balance and upsets the appetite for good wholesome meals as well. Moreover, lime is very necessary for the body: too much sugar or starchy foods makes it difficult for the body to absorb it properly. Since lime is necessary for the teeth and bones, this is most important during the growing years when the bones are lengthening and the second teeth—the teeth that must last a lifetime—are being cut.

Sweets should be given in strict moderation. They should form part of the meal, and are best given at the end of it—never between meals—and when eaten should be followed by toothbrush drill or by a piece of apple to clean the teeth. The best kinds are those made up mainly of fruit and nuts; but chocolate or barley sugar or plain boiled lollies are also quite suitable.

RECIPES.

Sheep's Head Broth.

A sheep's head, 3 or 4 Brussels sprouts, or silver beet leaves or cabbage leaves, 1 turnip, 2 oz. pearl barley, 2 quarts cold water, 2 carrots, 1 onion, 1 dessertspoonful parsley, pepper, and salt, 1 tablespoonful sauce.

Method.—Wash head well and remove slimy part, also soft part of nostrils. Put in pan with water and barley, allow to boil and remove scum. Add carrot, turnip, and onion, which should be cut into small pieces, and simmer four hours. About twenty minutes before dishing, add shredded Brussels sprouts or cabbage leaf shredded. Take out the head, add sauce and serve broth with chopped parsley on top.

Liver Paste for Sandwiches.

Twice mince ¼ lb. cooked liver and two rashers of bacon. Melt 1½ oz. butter, add mince and dessertspoonful grated onion. Cook gently, sprinkling with salt. Put in pots and cover with melted butter.

Liver and Bacon.

½ lb. sheep's or lamb's liver, ¼ lb. bacon. Gravy, ½ oz. flour, salt, ½ pint cold water.

Method.—Warm frying pan and fry bacon. Mix flour and salt in a paper, toss sliced liver in this, and fry in the hot fat when the bacon is cooked. Cook liver slowly. Put on hot dish with bacon and gravy.

To Make Gravy.—Pour away near all the fat, leaving about 1 tablespoonful in pan, add flour, and allow to brown. Then add cold water and salt. Stir till boiling, and use.

Liver a l'Italienne.

½ lb. sheep's liver, 1 tablespoonful chopped onion, pepper, and salt, 1 oz. butter, 4 tomatoes, ½ oz. flour, ½ pint warm water.

Method.—Rub the liver with a clean cloth and cut into neat pieces. Put the flour, pepper, and salt into a piece of paper, toss the liver in this, melt the butter in a pan, fry liver a golden brown, and also fry the onion. Remove the skins from the tomatoes and cut into slices. Add the tomato to the liver, &c., also remaining flour and water. Bring to boil and simmer thirty minutes, or put into a casserole in a slow oven and cook thirty minutes. Serve in the casserole.

Creamed Liver.

Ingredients—¼ lb. ox or sheep's liver. 1 tablespoonful butter, 1 teaspoon flour, ¼ cup milk, ¼ teaspoon salt, 6 small thin slices of bacon 2 inches x 1 inch.

Method.—Slice the liver and fry quickly on either side in butter for a few minutes and mince and return to the pan and cook slowly till brown, stewing gently. Sprinkle with flour and salt and stir again till flour brown. Add milk, and bring to the boil for a minute or two. Meantime roll the bacon and thread a skewer and cook in the oven or under griller for a few minutes. Serve with liver.

Baked Liver.

½ lb. ox or sheep's liver; 2 slices bacon with dessertspoon butter.

Method.—Cut liver in ½-inch slices, butter the baking tin and lay the slices on it; place the bacon on top and cook for 15 to 20 minutes in a fairly hot oven about 350 deg. F.

The question of a diet desirable for children suffering from poliomyelitis was made the subject of careful investigation by a sub-committee convened by Dr. Mathewson, which finally, with the assistance of representatives of the Brisbane General Hospital, including the Hospital for Sick Children, arrived at a satisfactory schedule. This diet is now under examination practically in the wards, and appears to be giving very satisfactory results.

It is the intention of the Board to give consideration to diets for all ages and particularly, in the near future, to investigate the question of school lunches, and diets for adolescents both at schools or colleges, and in industry.

The Board has always recognised that the standardisation of diets, unless multiple alternatives are also mentioned, is a process subject to very ready error. To a large extent, therefore (except in regard to infant diets where absolute accuracy is important) the recommendations have been in general terms.

Western Plants.

In February, representations were made to the Honourable the Minister for Agriculture and Stock (F. W. Bulcock, Esq., M.L.A.), suggesting that it might be desirable to publish for the benefit of people in Western Queensland literature regarding the palatability and food value, of plants growing wild in those areas where vegetables of the usual types fall to thrive. Mr. Bulcock immediately agreed to the proposal, and arrangements were made to publish a series of articles, with illustrations, in the *Agricultural Journal*. Unfortunately, up to the present, these articles, though prepared, have not appeared. It is understood that publication will commence at an early date.

Dr. L. St. Vincent Welch, Chief Medical Officer of Schools, submitted to the Board the diet used at the Wilson Ophthalmic Hostel. The Board was very appreciative of this action and suggested several modifications which will serve, it is hoped, to make a good diet better, without additional cost.

Legislative Action Following Recommendations.

Bread.—The bread standards arrived at by the Board were submitted to further examination by departmental officers, discussed with the Associated Bread Manufacturers of Queensland, and finality having been reached, were accepted by the Minister and published in the *Government Gazette* of 17th December, 1938, No. 163, folio 2,626-7.

Cheese.—A very close study was made of the standards for cheese available in Queensland. As the result of expert examination and recommendations, inter-departmental discussion, and a study of local and other regulations, finality was reached upon the matter, and the following standards for cheese were recommended for inclusion in the amended Food and Drug Regulations under discussion.

PROPOSED REGULATIONS REGARDING CHEESE.

General Standard for Cheese.

(22) (*a*) Cheese is the solid or semi-solid product obtained by coagulating the casein of milk, skim milk, cream, or any mixture of these with approved rennet, pepsin, or acid. It may contain approved ripening ferments, special moulds, emulsifying agents, salt seasoning, and vegetable colouring:

Providing that the proportion of emulsifying agents shall not exceed three-parts per centum.

(*b*) Cheese shall not contain any fat other than milk fat.

(*c*) For the purpose of this Regulation, "milk" shall be deemed to be milk of any domestic animal.

Cream Cheese.

(23) Cream cheese shall contain not less than sixty-five parts per centum of milk fat in the water-free substance and not more than fifty parts per centum of water.

Full or Whole Milk Cheese.

(24) Full or whole cheese shall contain not less than fifty parts per centum of milk fat in the water-free substance, and not more than forty parts per centum of water.

Skim Milk Cheese.

(25) Skim milk cheese is cheese which contains less than thirty-six parts per centum of milk fat in the water-free substance and not more than forty-five parts per centum of water.

Soft Cheese.

(26) Soft cheese shall contain not less than fifty parts per centum of milk fat in its water-free substance and not more than forty-five parts per centum of water.

Processed Cheese.

(27) Processed cheese is cheese which has been subjected to a process of comminution and/or emulsification, and pasteurisation. It shall contain not less than forty-eight parts per centum of milk fat in the water-free substance and not more than forty-two parts per centum of water.

(28) Cheese spread is a pasteurised spreadable cheese with or without approved ingredients.

Cheese spread shall contain—

(*a*) Not less than forty-five parts per centum of milk fat in the water-free substance; and

(*b*) Not more than forty-five parts per centum of water.

Potted Cheese or Cheese Paste.

(29) (*a*) Potted cheese, or cheese paste is a paste or mixture prepared from cheese with or without approved ingredients. It shall contain not less than forty-eight parts per centum of milk fat in the water-free substance and not more than thirty-five parts per centum of water.

Preservative.

(*b*) To potted cheese or cheese paste there may be added sulphur dioxide in proportion not exceeding two grains to the pound.

Packing.

(*c*) Potted cheese or cheese paste shall be sold only in jars, or tins, or in similar containers, hermetically sealed.

Gruyere Cheese.

(30) Gruyere cheese is the cheese made by the Gruyere process from heated and pressed curd obtained by the action of rennet on whole milk or on partly skimmed milk, and is ripened by special gas-producing bacteria, causing characteristic "eyes" or holes. It shall contain not less than forty-five parts per centum of milk fat in the water-free substance and not more than forty parts per centum of water.

Australian Processed Gruyere.

(31) Australian processed Gruyere shall contain not less than forty-two and five-tenths parts per centum of milk fat in the water-free substance and not more than forty-two parts per centum of water.

Gouda Cheese.

(32) Gouda cheese is the cheese made by the Gouda process from heated and pressed curd obtained by the action of rennet on whole milk. It shall contain, in the water-free substance, not less than forty-five parts per centum of milk fat.

Other Varieties of Cheese.

(33) Cheese qualified by a varietal or descriptive name such as Edam, Gorgonzola, Stilton, or Parmesan, shall correspond thereto in respect of composition and character.

Cheese not Elsewhere Standardised in these Regulations.

(34) Cheese sold without designation or qualification shall be deemed to be whole milk cheese and shall conform with the standard prescribed therefore.

Aerated Waters.—The question of the amount and possible disadvantages of coal tar dyes used in the colouring of aerated waters, fruit drinks, &c., was the subject of discussion on several occasions. It was finally recommended that the following should be suggested for inclusion in the amended Food and Drug Regulations:—

Proposed Limitation of Permitted Colourings.

Where the addition to any food of any coal tar dye is permitted by these Regulations the proportion of the dye so added shall not exceed—

(*a*) One and five-tenths grains to the pint of any beverage (other than a cordial);

(*b*) Three grains to the pint of any cordial; nor

(*c*) More than two grains to the pound of any solid food.

Labelling of Permitted Colourings.

Coal tar dyes which are sold for the purposes of colouring food shall have on the label of the package containing the colour the number under which the colour is indexed in Rowe's colour index.

When more than one colour is contained in the package the index number of each colour in the mixture shall be placed thereon.

A recommendation that Rowe's colour index numbers should be shown against the words "Artificially coloured" on drink labels where applicable was made by the Board, but was not considered advantageous or necessary from a departmental viewpoint, and was therefore not included. Action in respect of fruit juices was pended on a report that the matter was to be investigated at an early date by the Commonwealth Committee for Scientific and Industrial Research.

Acid Phosphate.—With regard to suggestions respecting the labelling of foods containing acid phosphate, it was decided that the label should be in accordance with the contained constituents.

Other Proposed Investigations.

Butter Fat in Cakes.—A recommendation was made to the Board to investigate the question of butter fat in cakes, and to take action to increase the actual butter used by manufacturers. All manufacturers were circularised, and full discussion of the matter was undertaken, both from the point of view of food value, economics and general considerations. It was finally decided that an attempt to increase the amount of butter fat in cakes would probably lead to an increase in their price, might force small manufacturers out of business, and might, in any case, defeat the purpose of increasing the amount of butter fat consumed by the public by diminishing the actual quantity of cake sold. It was therefore decided to take no action in the matter.

As the result of this inquiry, however, two further matters were brought forward. The first was the question of advertisements containing false claims regarding butter content, and appropriate action was followed by correction of those instances; the second included various proposals regarding margarine, which remains before the Board for later discussion.

Vitamin C Survey.—It had been proposed and was recommended by the Board that there should be a survey of Queensland foods to determine their vitamin C content. A considerable amount of valuable work in this direction had already been done by the Queensland Nutrition Council, working in conjunction with the Physiology Department of the University of Queensland. It was hoped to extend this work, but no facilities for the purpose were forthcoming. The matter, therefore, is temporarily in abeyance.

Miscellaneous Proposals.

Matters carried forward for further discussion in the year 1939-40 include:—

(*a*) Proposals with a view to determining whether absence on sick leave of school teachers, particularly school teachers in country districts, is related to nutritional factors, and whether any suitable recommendations of a practical nature can be made in the direction of the nutrition of school teachers;

(*b*) Recommendations that means be sought to limit the distribution of deleterious drugs and propaganda for products worthless in a food sense, which are at present being distributed widely throughout Queensland by mail, and by being dropped in the household letter boxes;

(*c*) The question of the popularisation of domestic science, with particular reference to nutrition, based upon a recognition of the fact that domestic science in that sense is an important factor in health and national economics. A considerable amount of material has been provided by Mrs. Sachs in regard to the lastnamed and it is hoped that an opportunity will be provided at an early date to permit publication of this collected material.

For the Board,

RAPHAEL W. CILENTO, Chairman.

Appendix B.

X-RAY AND OTHER ELECTRO MEDICAL EQUIPMENT ADVISORY BOARD.

YEAR 1938-39.

The *Government Gazette* of the 4th May, 1935, published the Executive Minute of 1st May, 1935, which constituted this Board.

Membership is as follows:—

Sir Raphael Cilento, Kt., M.D., B.S., D.T.M. and H., F.R.San.I., Director-General of Health and Medical Services; and Professor of Social and Tropical Medicine in the University of Queensland, Brisbane; (Chairman);

Valentine McDowall, M.B., Ch.M., Senior Radiologist and Senior Radium Therapeutist, Brisbane and South Coast Hospitals Board, Brisbane;

Arthur Boyd, B.E., D.S.C., M.I.E.E., Assoc. M.Inst.C.E., Lecturer in Mechanical and Electrical Engineering, University of Queensland, Brisbane;

George William Watson, M.V.O., Under Secretary, Chief Secretary's Department, Brisbane.

The functions and duties of the Board are defined in the Schedule attached to the Executive Minute appointing the Board.

In accordance with Paragraph (3) of the Schedule, it is the duty of the Board to furnish an annual report to the Minister for Health and Home Affairs upon the work and activities of the Board. The Board has met consistently during the year and the following is accordingly submitted:—

X-Ray Plants.

During the financial year under review, tenders were called by the State Stores Board from time to time as requested by the X-Ray and Other Electro Medical Equipment Advisory Board. In accordance with the recommendations of this Board, the State Stores Board Board was requested to purchase, and the successful tenderers to instal X-Ray plants at the following hospitals:—

Mareeba Hospital (Mareeba Hospitals Board)	Mobile plant, 29th July, 1938.
Brisbane General Hospital (Brisbane and South Coast Hospitals Board)	Deep therapy plant, 28th March, 1939. Contact therapy, 28th March, 1939. Fluoroscopy plant, 28th March, 1939. Portable diathermy plant, 3rd April, 1939. (Approved but not ordered till June.) Electrocardiograph, 20th April, 1939.
Maryborough General Hospital (Maryborough Hospitals Board)	Single valve plant, 17th November, 1938.
Stanthorpe Hospital (Stanthorpe Hospitals Board)	Mobile plant, 2nd March, 1939.

Transactions originating in the previous financial year in respect of Wondai District Hospital (Wienholt Hospitals Board), Richmond District Hospital (Richmond Hospital Board), and the Mount Isa Hospital, were completed during the present financial year.

The most important transaction with which the Board has yet dealt was the question of the purchase of the deep therapy plant, to which reference is made above. This transaction, which involved a considerable sum of money, was felt to be important enough to justify the special attention of experts outside the Board, and by invitation, Dr. H. C. Webster, of the University of Queensland; Dr. E. W. Casey, of the Brisbane and South Coast Hospitals Board staff; Mr. John Nebe, of the Cancer Clinic of the Mater Misericordiae Hospital; and (with the courteous permission of the Commonwealth Department of Health) Dr. C. E. Eddy, Physicist-in-Charge of the Commonwealth Radium Laboratory, attended on several occasions and gave every assistance to the deliberations of the Board. The thanks of the Board are due to these gentlemen for their kind co-operation.

Diathermy.

Applications for diathermy apparatus have been received during the year from numbers of hospitals. The Board is still of the opinion that some of the recent short-wave apparatus on the market is too highly priced, and it has seen nothing to demonstrate that the higher price is justified by any essential increase in performance or service rendered to the clients of public hospitals. It has accordingly continued to refuse such applications, and will continue to do so while the price of short-wave apparatus and the service it renders to the public continue to be, in its opinion, disproportionate.

Applications for diathermy apparatus of earlier types were approved for:—

Mareeba Hospital (Mareeba Hospitals Board), 12th May, 1939.

Mossman Hospital (Mossman Hospitals Board), 13th February, 1939.

Apparatus was similarly approved for Cairns Hospital (Cairns Hospitals Board) and Richmond District Hospital (Richmond Hospitals Board), but quotations have not yet been obtained.

Applications in respect of Mount Morgan District Hospital (Mount Morgan Hospital Committee), Dalby Hospital (Dalby Hospital Committee), and Tully District Hospital (Tully Hospitals Board) are still under discussion.

Miscellaneous Equipment and Accessories.

An electrical sucker, and an intra-tracheal anæsthetic machine, which were the subjects of an application from the Stanthorpe Hospital (Stanthorpe Hospitals Board), were approved, and were referred to the State Stores Board on 13th April, 1939.

Accessories were provided in many instances, of which the outstanding were:—Kingaroy (Kingaroy Hospitals Board); Rockhampton General Hospital (Rockhampton Hospitals Board); Townsville General Hospital (Townsville Hospitals Board); Collinsville Hospital and Proserpine Hospital (Bowen Hospitals Board).

Applications for X-Ray Plants.

The Board has before it at the present time, applications for X-Ray plants from Chillagoe General Hospital (Chillagoe Hospital Committee), mobile plant; Hughenden District Hospital (Hughenden Hospital Committee), mobile plant; Beaudesert Hospital (Beaudesert Hospital Committee), mobile plant; Ingham Hospital (Townsville Hospitals Board), mobile plant; Gordonvale Hospital (Cairns Hospitals Board), mobile plant; and Biggenden Hospital (Biggenden Hospitals Board), accessory equipment.

These matters will receive the attention of the Board early in the next financial year.

Tenders were called at the instance of the Taroom Hospital (Taroom Hospital Committee) for a mobile plant, but as the cost of electricity installation exceeded the original estimate, the Taroom Hospital Committee expressed a request that no further action in regard to the X-ray plant be taken until further funds had been secured for the provision of electricity.

Service Reports.

Over the course of the last two years, the Board has built up a system of recorded information in respect of X-ray plants at public institutions. This has largely been possible through the kind offices of firms servicing plants in the State, to whom the Board desires to express its appreciation. In many instances, reports refer merely to routine measures for the care and maintenance of the plants concerned, but in some instances they bring out matters which it is considered desirable to make the subject of further inquiry in the interests of the institution concerned.

It has been possible as a result to improve existing arrangements or to suggest added precautions or time-saving alternative methods.

Service reports have been referred back for various of these reasons to Mundubbera Hospitals Board, Rockhampton Hospitals Board, Gympie Hospitals Board, Bowen Hospitals Board (Collinsville Hospital), and Isis Hospitals Board, Childers.

Advice.

Members of the Board have been encouraged, by increasing evidence of appreciation of their efforts, to develop and to standardise X-ray facilities throughout the State. From time to time problems are referred for consideration and advice, and these vary from such minor matters as leaks in developing tanks, and prices charged for screens, to such questions as the advisability of renovating old plants, or the whole question of X-ray provision in the locality concerned.


TYPES OF LAND TENURE
Alienated
Leasehold
Unoccupied


TYPES OF LAND TENURE
Alienated
Leasehold
Unoccupied

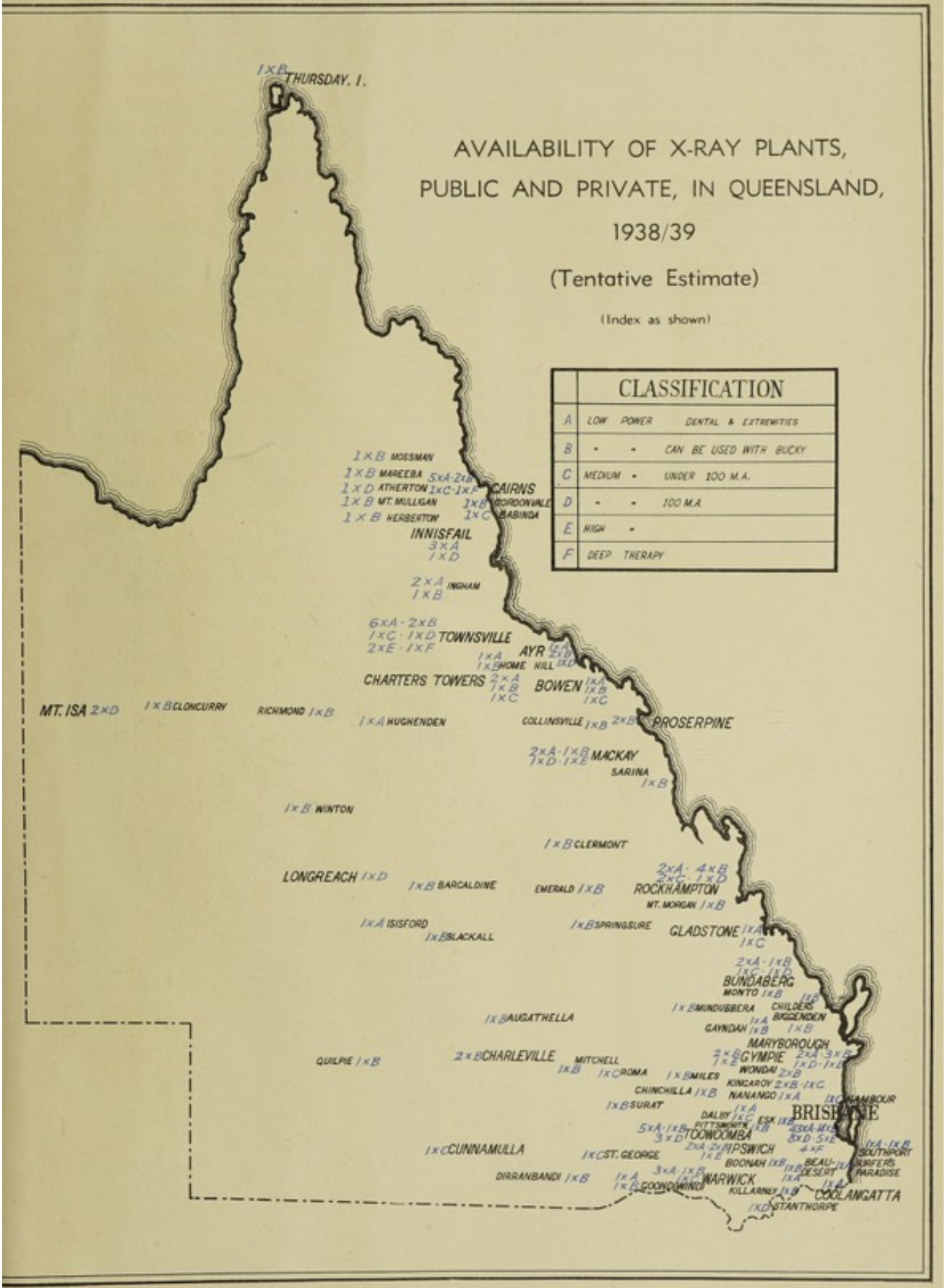


Fig.—Availability and type of X-ray plants, public and private, in Queensland (tentative estimate) shown in relation to density of population as estimated by land tenure.

During the year the Chairman was invited by the Maryborough Hospitals Board to open the up-to-date plant installed at that institution, and several invitations were received from more distant hospitals which, owing to pressure of official duties, it was unfortunately impossible to accept. Invitations have also been issued to various members of the Board to inspect installations from time to time.

As in the past, Dr. Val. McDowall has continued to give advice on the test skiagrams provided from different institutions in accordance with the procedures laid down by the Board. This has been of very great importance to the Board, which, to a large extent, has been dependent upon his reports, and is correspondingly indebted to him for them.

From time to time reference has been made to the question of reporting upon films from country hospitals. In several instances, this service has been rendered to them, and it has now been decided by the Board that it will continue to perform such service where the cases are *bona fide* general hospital patients, provided that sufficient postage is included to cover reply and return of films. In appropriate cases, it has been decided to add in future a note to this effect to the letter of advice issued to the hospitals, including a copy of letter of acceptance for new X-ray plants.

Distribution of X-ray Plants.

With the assistance of local firms, to whom again the thanks of the Board are due, it has been possible to prepare a map showing the distribution of X-ray plants, public and private, in Queensland, during 1938-39. The attached map indicates this distribution of X-ray plants graphically. Obviously, it is not complete, but it is considered to be approximately accurate, and demonstrates effectively that there are few material aggregations of population throughout the State which are not within reasonable reach of some public or private X-ray plant.

As mentioned previously, the increased availability of aeroplane transport has now made it possible to provide modern facilities for X-ray diagnosis with a minimum of disturbance of the patient, to every part of the State.

R. W. CILENTO (Chairman).
V. McDOWALL.
A. BOYD.
G. W. WATSON.

Appendix C.

DEPARTMENT OF HEALTH AND HOME AFFAIRS.

HOOKWORM CAMPAIGN.

ANNUAL REPORT, 1939.

General.

The staff working under Field Hookworm control at the beginning of July, 1938, comprised a microscopist, resident sister, and a sanitary inspector at Cairns, one resident sister at Innisfail, one resident sister at Tully, and one resident sister at Ingham. One sanitary inspector was attached to the campaign and was stationed in the Cairns area.

During October, 1938, the Tully centre was closed and the resident sister was transferred to Ingham to take over from the resident sister there, who was granted leave of absence to do her child welfare training in Brisbane.

During April, 1939, Sister Shield was appointed to the staff of the Hookworm Campaign.

The present disposition of officers is as follows:—Cairns, S. Thompson, microscopist, Sister C. A. Vincent, and Sister M. A. Shield; Innisfail, Sister E. D. Brennan, and H. Rodger, sanitary inspector; Ingham, Sister K. Bowder.

During the period under review, the sisters carried out general school (medical) together with hookworm duties.

The inspector attached to the Cairns centre carried out house to house intensive survey in the Gordonvale sub-area. Of the 863 specimens examined 23 were found positive hookworm.

The inspector attached to the Innisfail centre carried out house to house intensive survey in the Mourilyan sub-area. Of the 1870 specimens examined 77 were found positive hookworm.

All specimens were forwarded to Cairns for examination by the microscopist.

In all areas, 1,928 school children were examined and 75 were found positive hookworm. Most of these children had not been examined before and have just commenced school.

I would say that the percentage rate of hookworm infestation among the school children in the hookworm belt is now about 3 per cent.

Of the 6,722 specimens examined during the year under review, 752 were found positive hookworm. Also, 380 specimens contained ova of other parasitic worms—namely, *Oxyuris vermicularis, Trichuris trichiura, Ascaris lumbricoides, Hymenolepis nana, Trichostrongylus orientalis, Taenia solium,* and *Taenia saginata.* Only a few of the three latter ones were found.

In all areas 803 specimens were re-examined, and 334 showed negative results.

Altogether, 108 hookworm hosts were treated in hospital by medical officers.

From all areas, 74 school children who had previously been found positive and cured were re-examined. Six were found to be reinfested.

During the visit of the microscopist to Thursday Island, a hookworm school survey was carried out. From the three schools 227 children were examined and 14 were found to be harbouring hookworms. Twenty-seven were harbouring other parasitic worms.

The intensive survey in the Cairns area ceased at the end of December when Inspector Williamson resigned to take up another position.

Inspector Rodger was appointed in January and commenced an intensive survey of the Mourilyan sub-area in the Innisfail area.

A fair number of specimens have been received for examination from hospitals and local practitioners in all areas.

The inspectors attached to the anti-leptospiral campaign have assisted with the collection of re-exam and delinquent specimens in all areas.

From all areas 22 positive specimens were cultured for free living hookworm larvae. They were diagnosed as follows:—*Ancylostoma duodenale*, *Necator americanus*, and two mixed.

The microscopist visited each centre and discussed hookworm matters with the resident sisters, Inspector Rodger, and local authority inspectors. Also, gave lecture on hookworm disease to children at Long Pocket State School, and assisted with the mass treatment of hookworm hosts in the Ingham area.

The medical practitioners, school teachers, and local authority inspectors in the hookworm belt, have given all possible assistance to the Hookworm Campaign in helping to eradicate hookworm disease.

The sanitation at the homes of positive hookworm hosts is being closely watched by the inspectors.

Returns of sanitation and other works carried out by the inspector in the Cairns and Innisfail areas are attached.

Attached hereto please find tables giving figures of each area with headings to indicate the nature of the work done.

S. THOMPSON,
Microscopist in Charge.

The Director-General of Health and Medical Services,
Brisbane.

TABLE LXVII.

HOOKWORM CAMPAIGN.

ENDEMIC AREA UNDER RESIDENTIAL CONTROL.

Name.	Census.	Specimens.					Treatments.				
		Received.	Exam'd.	Re-exam'd.	Positive.		Notices.	Delivered	Posted.	Egg Counts.	Cured.
					H. W.	Others.					
Cairns Area—											
Schools	658	654	641	13	31	58	57	28	4	0	6
Thursday Island Area—											
Schools	229	238	227	11	14	27	27	0	14	0	11
Innisfail Area—											
Schools	585	610	580	30	27	21	28	20	8	17	21
Tully Area—											
Schools	164	188	173	15	15	5	5	2	11	15	9
Ingham Area—											
Schools	329	482	307	175	118	19	11	90	5	111	67
School Total	1,965	2,172	1,928	244	205	130	128	140	42	143	114
Intensive Survey—											
Cairns Area—											
Gordonvale Sub-area	694	625	625	..	10	22	21	11	..	..	..
Mulgrave Sub-area	263	238	238	..	13	9	9	13	..	..	..
Innisfail Area—											
Mourilyan Sub-area	1,891	1,886	1,886	..	65	130	116	57	1	..	..
Ingham Area—											
Trebonne Sub-area	48	47	47	..	7	2	..	..	..	..	..
Intensive Survey Total	2,896	2,796	2,796	..	95	163	146	81	1	..	..
Other Hosts in—											
Cairns Area ..	..	81	..	81	44	4	3	18	15	..	37
Mossman Area ..	..	37	..	37	26	..	..	15	9	..	11
Innisfail Area ..	..	70	..	70	42	..	..	11	3	39	28
Mourilyan Sub-area	..	49	..	49	26	..	2	14	3	21	23
Tully Area	..	13	..	13	7	..	..	5	2	7	6
Ingham Area ..	..	244	..	244	153	5	5	122	11	143	91
Other Hosts Total ..	..	494	..	494	298	9	10	185	43	210	196
Aborigines—											
Cairns Area ..	17	25	17	8	13	6	6	7	..	..	1
Innisfail Area ..	47	68	34	34	44	3	3	16	..	21	6
Mourilyan Sub-area	34	48	34	14	14	..	6	10	..	..	14
Ingham Area ..	2	11	2	9	6	..	..	3	2	4	3
Aborigines Total ..	100	152	87	65	77	9	15	36	2	25	24
Miscellaneous—											
Cairns Area ..	356	352	352	..	27	33	37	12	9	..	..
Mossman Area ..	111	111	111	..	22	14	14	9	8	..	..
Innisfail Area ..	368	329	329	..	14	11	11	16	13	12	..
Tully Area	61	69	69	..	..	5	5	..	..	..	..
Ingham Area ..	260	247	247	..	14	6	6	9	..	14	..
Miscellaneous Total	1,156	1,108	1,108	..	77	69	73	46	30	26	..
All Areas—											
Cairns Area ..	1,988	1,975	1,873	102	138	132	133	89	28	..	44
Mossman Area ..	111	148	111	37	48	14	14	24	17	..	11
Thursday Island Area	229	238	227	11	14	27	27	..	14	..	11
Innisfail Area ..	2,925	3,060	2,863	197	232	165	166	144	28	110	92
Tully Area	225	270	242	28	22	10	10	7	13	22	15
Ingham Area ..	639	1,031	603	428	298	32	22	224	18	272	161
Grand Total ..	6,117	6,722	5,919	803	752	380	372	488	118	404	334

Hookworm hosts treated in hospital :—Cairns 31, Mossman 29, Innisfail 33, Tully 2, Ingham 13.

HOOKWORM CULTURES.

Name of Area.	Received.	Ancylostoma	Necator.	Mixed.
Cairns Area	12	9	1	2
Mossman Area	4	4	..	..
Innisfail Area	5	5	..	..
Ingham Area	1	1	..	..
Totals	22	19	1	2

Table LXVIII.

SCHOOL-GOING CHILDREN.

Re-examinations after being Cured Six Months.

Name of Area.	Received.	Re-examined.	Reinfested.	Others.	Still Cured.
Cairns Area	12	12	..	..	12
Thursday Island Area	11	11	..	..	11
Innisfail Area	26	26	5	..	21
Tully Area	8	8	1	..	7
Ingham Area	17	17	..	..	17
Totals	74	74	6	..	68

Table LXIX.

ADDENDUM TO HOOKWORM REPORT.

Sanitation.

Cairns Shire (Gordonvale Sub-area).

—	Gordonvale Sub-area.
Number of places visited	653
Number of sanitary conveniences inspected	726
No action required	434
Number of defective cabinets	291
Action taken	73
No action taken	155
Number of places without sanitary conveniences	2
Number of septic tanks	32

Johnstone Shire (Mourilyan Sub-area).

—	Mourilyan.
Number of places visited	450
Number of sanitary conveniences inspected	462
No action required	240
Number of defective cabinets	218
Reinspections	74
Action taken	16
No action taken	16
Number of places without sanitary conveniences	11
Number of septic tanks	1

Lists of defective privies have been given to Local Authority Inspectors, who issue notices and make follow-up inspections to ensure compliance.

ANNUAL REPORT

OF THE

GOVERNMENT ANALYST AND CHIEF INSPECTOR OF EXPLOSIVES

(FRANK E. CONNAH, F.I.C., A.A.C.I.)

TO

30th JUNE, 1939.

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Report by Government Analyst and Chief Inspector of Explosives for the Year ended 30th June, 1939.

To the Director-General of Health and Medical Services, Brisbane.

SIR,—I have the honour to submit the following report on the work of the Government Chemical Laboratory for the year ended 30th June, 1939, including a report conforming to section 24 of "*The Health Act of* 1937."

Except for the transfer of one attendant, no alteration in staff has been made during the year, and there were at the close of the year nine analysts, five assistants doing analytical work, five attendants, two clerks, and one stenotypiste engaged on the work of the laboratory.

The number of samples analysed and reported during the year was 14,911. This is the second highest number recorded for the laboratory.

The past three years have shown—

—	1936–37.	1937–38.	1938–39.
Samples analysed and reported	15,421	14,447	14,911

The number of determinations is difficult to assess, but would be about an average of five per sample.

The following summary (Table LXX.) shows the analytical work for various Departments:—

TABLE LXX.

Department.	Number of Samples.
Customs (Commonwealth)	2,616
Health	7,510
Queensland Geological Survey	1,081
Main Roads Commission	824
Mines	46
Police	267
Portmaster	1,404
Railways	175
State Stores	327
Other Departments and Public	661
	14,911

In addition to the analytical work advice was given on many subjects where the chemical aspect of a problem was involved, such advice being either supplementary to or quite independent of analytical work.

HEALTH DEPARTMENT.

The number of samples examined was 7,510, an increase of 317 on the number examined last year.

TABLE LXXI.—SUMMARY OF SAMPLES.

Nature of Samples.	Number of Samples.	Passed.	Rejected.
Beer and stout	19	19	..
Beverages and cordials	112	26	86
Bread	39	7	32
Cake	12	12	..
Cereal products	13	10	3
Clay (modelling)	26	26	..
Cocoa	9	9	..
Coffee and coffee and chicory	26	26	..
Condiments	14	8	6
Confectionery	27	16	11
Crayons	1,018	873	145
Disinfectants	19	9	10
Drugs and medicines	87	46	41
Essences	23	14	9
Fish (tinned)	36	14	22
Fish (not tinned)	7	4	3
Fruit (fresh and dried)	101	59	42
Jelly crystals	16	3	13
Meat (fresh)	23	7	16
Meat (tinned)	13	8	5
Milk	2,830	2,387	443
Milk preparations	19	15	4
Miscellaneous	107	93	14
Paint	395	207	188
Soap	54	30	24
Spirituous liquors	97	80	17
Tobacco leaf	1,943	1,943	..
Toilet preparations	52	31	21
Toys	19	6	13
Vegetables (fresh)	15	6	9
	7,171	5,994	1,177
Pathological specimens	172	..	..
Soil	28	..	..
Water	139	..	..
	7,510	..	..

The rejected samples included samples not conforming with prescribed standards, falsely described, or incorrectly labelled. "Falsely described" implies exaggerated or false claims in relation to a foodstuff, drug, or medicine.

Of the total number of samples submitted 3,349 were legal samples taken by inspectors in accordance with the provisions of the Health Act. The results are shown in Table LXXII.

TABLE LXXII.

Samples.	Number.	Passed.	Failed.
Crayons	556	499	57
Ice cream and ices	6	2	4
Milk	2,574	2,201	373
Minced meat	17	5	12
Paint	164	123	41
Spirituous liquors	26	8	18
Miscellaneous	6	3	3
	3,349	2,841	508

TABLE LXXIII.—LEAD IN LEGAL SAMPLES OF CRAYONS.

Colours of Crayons.	Number containing Lead.	Percentage of Lead.	Average percentage of Lead—calculated as Pb.
Green	23	0·1–20·4	4·0
Yellow	19	0·1–14·0	2·6
Orange	7	0·2–13·0	5·4
Brown	4	1·4– 6·0	2·6
Red	4	0·2– 2·0	0·8

Some black coloured crayons also contained lead, the proportion ranging from 0·9 to 2 per cent. Most of the lead was soluble in an aqueous solution of 0·25 per cent. hydrochloric acid.

The green, yellow, orange, brown, and red coloured paint on the pencil crayons in many instances contained lead in quantity.

TABLE LXXIV.—PARTICULARS OF LEGAL SAMPLES OF MILK.

Place.	Number.	Passed.	Below the standard in Fat.	Below the standard in Total Solids and/or Solids not Fat.	Number Watered.
Greater Brisbane Area	2,109	1,797	26	250	36
Barcaldine	5	2	..	3	..
Beaudesert	24	24	..	..	..
Bowen	16	16	..	..	..
Bundaberg	20	19	..	1	..
Cairns	18	17	..	..	1
Cracow	4	1	..	3	..
Dalby	10	9	..	..	1
Gympie	27	26	1	..	..
Longreach	5	2	1	1	1
Mackay	58	54	1	2	1
Maroochydore	10	10	..	..	..
Maryborough	15	14	..	1	..
Mount Morgan	6	4	1	1	..
Proserpine	8	8	..	..	..
Rockhampton	112	96	4	7	5
Roma	10	10	..	..	..
Sarina	9	8	..	1	..
South Coast	22	12	..	9	1
Toowoomba	27	24	3	..	..
Townsville	32	28	2	2	..
Warwick	16	14	..	2	..
Yeppoon	11	6	2	1	2
	2,574	2,201	41	284	48

TABLE LXXV.—SUMMARY OF TABLE LXXIV.

—	Percentage of Total Samples.
Adulterated with water	1·9
Free of added water but deficient in fat	1·6
Below the standard in total solids and/or solids not fat	11·0
Passed the standard	85·5
	100·0

TABLE LXXVI.—MILK POSITION COMPARED WITH THE FOUR PREVIOUS YEARS.

Year.	Number of Legal Samples.	Deficient in Fat.	Watered Samples.	Average percentage of Added Water.
		Per cent.	Per cent.	
1934–1935	2,506	7·8	3·4	8
1935–1936	3,327	8·8	2·7	11
1936–1937	2,845	6·9	2·8	12
1937–1938	3,231	2·6	2·6	10
1938–1939	2,574	1·6	1·9	11

The proportion of adulterated milks last year was the lowest on record in Queensland. The proportion (11 per cent.), however, of naturally poor milks was still excessive.

Beverages and Cordials (112).—

Deficient in fruit juice	9
Contained excess of preservative	5
Preservative not declared	9
Contained saccharin	5
Contained zinc	1
Misdescribed and/or incorrectly labelled	57
Passed in all particulars	26
	112

One sample of horehound beer contained zinc at the rate of 5 grains to the gallon. The limit accepted by health authority for zinc in potable water is one-third of a grain to the gallon.

A sample of bottled apple juice claimed to be super-rich in vitamins contained about 50 per cent. of the vitamin C content of the juice of fresh apples.

Vitamin C Content of Navel Oranges and Lisbon Lemons.—The vitamin C content of market samples of navel oranges and Lisbon lemons averaged 17 and 10 milligrammes per ounce of juice respectively. Most observers overseas have found oranges and lemons nearly equivalent in vitamin C, but Bennett and Tarbert (Biochem. J. 1934, 28, 1038) have recorded great variation in lemons.

The juices of certain varieties of sound market apples recorded the results shown hereunder:—

TABLE LXXVII.

—	New York Pippin.	Jonathan.	Delicious.	Democrat.
Total solids .. .. (per cent.)	12·8	11·8	17·2	14·6
Ash .. .. .. (per cent.)	0·25	0·26	0·32	0·32
Phosphoric Acid (P_2O_5) .. (per cent.)	0·006	0·0103	0·011	0·0063
Average weights of apples .. (Oz.)	6·7	5·0	6·4	5·8

The vitamin C content in each case was less than half a milligramme per ounce of juice,

Fruit (Fresh and Dried) (101 samples).—The arsenic content of 53 samples of fruit imported from the south ranged from $\frac{1}{20}$ to $\frac{1}{10}$ of a grain to the pound.

Currants, Raisins, and Sultanas (35 samples).—

TABLE LXXVIII.

—	Currants.	Raisins.	Sultanas.
Number of samples	17	7	21
Water .. .. (per cent.)	15·5–23·5	13·7–19·6	15·8–20·5
Average water content.. .. .. .. (per cent.)	18	17	16
Ether extract .. .. (per cent.)	0·04–0·2	0·06–0·4	0·08–0·6

These fruits—raisins and sultanas chiefly—are coated in most instances with paraffin oil in order to prevent coherence. Any proportion of ether extract over 0·1 per cent. may be accepted as being due to added paraffin oil. A desirable limit for this oil on fruit might be placed at 0·1 per cent., whereas some of the samples contained much more. They were, however, free of preservative.

Fruit Cakes (11 samples).—Samples described as fruit cake gave the following results:—

Fruit (calculated as dried)	2·7 to 7·5 ounces to the pound
Fat (per cent.)	5·6 to 13·5
Butter fat (percentage of total fat)	13 to 47
Preservative and toxic metal	Nil

Three of the samples contained margarine only.

Bread (39 samples).—The bread standards gazetted during the year appear to cover or control every kind of bread. They include bread (general standard), whole-wheat bread, brown bread, white bread, barley, rye, and other grain breads, milk bread, germ bread, raisin loaf, currant loaf, or sultana loaf, diabetic bread, and bread not elsewhere standardised in the regulations.

The standard for fruit bread reads—

"(*a*) Raisin loaf, currant loaf, or sultana loaf shall be bread prepared from whole-wheat flour and/or white flour, with or without sugar.

(*b*) It shall include raisins, currants, or sultanas singly or in the aggregate, at the rate of not less than 2½ ounces to the pound. The fruit-free bread shall conform in all other particulars with the general standard for bread."

There follows hereunder results of a survey of fruit loaves:—

Fruit (Oz. to the pound.)	Number of Samples.
Below one	7
One to one and seven-tenths	24
Two and one-fifth	1
Three and one-fifth	1
Four and five-tenths	1
	34

The proportion of fruit is calculated on the water content of the fruit as purchased.

Coffee, Coffee and Chicory (26 samples).—Table LXXIX. shows the results from ten samples of "special" coffees sold by local coffee inns.

TABLE LXXIX.

—	Mocha.	Kenya.	Boengi.	Java.	Costa Rica.	Santos.	Mysore.	Queensland.	Columbia.	Blue Mountain Jamaica.
	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.	per cent.
Moisture	3·4	3·4	3·2	3·4	3·7	3·8	2·6	2·8	2·6	3·0
Caffeine	1·1	1·2	1·2	1·8	1·3	1·3	1·2	1·1	1·2	1·1
Ether extract	14·0	15·2	14·3	10·8	14·2	14·5	13·0	15·0	13·0	11·9
Crude fibre	13·2	12·4	12·0	12·3	12·4	12·7	13·2	13·6	12·7	13·4
Total ash	4·6	4·6	4·5	4·6	4·7	4·7	4·9	4·6	4·9	5·0
Water soluble ash	3·6	3·6	3·3	3·5	3·7	3·4	3·6	3·5	3·7	3·7
Alkalinity of water soluble ash (as K_2CO_3)	2·8	2·9	2·6	2·7	2·9	2·9	3·1	3·0	3·1	3·2
Cold water extract	21·2	20·8	20·8	21·4	21·7	21·1	19·6	18·2	21·0	20·5

The specific gravity of the cold water extract at 60 deg. F. ranged from 1·0093 to 1·0105, the average being 1·0097.

While these coffees were markedly similar to ordinary coffee in chemical characters they differed in some cases in aroma and flavour.

Cocoa (9 samples).—Table LXXX. records results from prepared tinned cocoa sold in Queensland:—

TABLE LXXX.

—	1.	2.	3.	4.
	Per cent.	Per cent.	Per cent.	Per cent.
Moisture	7·4	7·2	3·9	4·0
Fat	28·0	25·6	21·0	29·4
Alkaloids (theobromine and caffeine)	2·0	2·0	2·5	2·4
Total ash	6·2	6·1	7·8	8·8
Water soluble ash	5·7	5·6	6·1	7·2
Alkalinity of water soluble ash (as K_2CO_3)	2·8	3·0	4·1	5·0
Ferric oxide	0·1	0·1	0·1	0·1
Crude fibre	5·6	5·4	5·8	6·1

Beer (14 samples).—

TABLE LXXXI.—RESULTS FROM BEER.

—	Brisbane Draught.	Brisbane Bottled.	Sydney Bottled Lager.	Melbourne Bottled Lager.	Melbourne Bottled Beer.	Melbourne Straight Malt Beer.	Hobart Beer.
Proof spirit per cent.	8·1	8·7	8·6	8·8	9·0	10·3	9·5
Extract per cent.	3·9	3·7	4·3	5·0	4·5	5·8	5·3
Ash per cent.	0·16	0·16	0·14	0·13	0·12	0·2	0·14
Sodium chloride (grains per gal.)	14	13	5	5	6	16	17
Lovibond colour units (2" cell)—							
Yellow	22·5	21·0	31·5	23·5	26·5	30·0	26·0
Red	4·3	4·2	6·2	4·75	5·4	6·2	5

One sample of draught beer and two samples of bottled beer contained permitted proportions of preservative, benzoic acid, and sulphur dioxide respectively.

Stout (5 samples).—

TABLE LXXXII.—RESULTS FROM STOUT.

—		Brisbane Stout.			Sydney Stout.	Hobart Stout.
		1.	2.	3.		
Proof spirit	per cent.	10·7	10·6	12·1	9·3	11·6
Extract	per cent.	5·9	5·6	5·2	6·9	7·8
Ash	per cent.	0·16	0·18	0·25	0·2	0·2
Sodium chloride	(grains per gallon)	25	30	40	28	12

Both beer and stout were free of poisonous metals.

Confectionery (39 samples).—Of the confectionery examined twelve samples consisted of barley-sugar. The glucose content, which varied from 8 to 80 per cent., was, in ten samples, in agreement with the proportion declared in the label.

Crayons and Coloured Chalks (1,010 samples).—

Contained lead	143
Free of lead and arsenic	867

Toys (19 samples).—Thirteen samples were composed of a lead alloy or contained lead in the paint on the toys.

Tobacco Leaf (1,943 samples).—

Lead arsenate (grains to the pound)	Number of samples.
Less then one	967
Over one but less than two	21
Nil	955

Toilet Preparations (52 samples).—Ten solutions used in the non electric method of hair-waving consisted of aqueous solutions of ammonia and sodium sulphides.

The ammonia content varied from 3·9 to 9 per cent., six containing more than 5 per cent., thus coming within the scope of the poisons regulations.

The sulphide present, calculated as hydrogen sulphide, ranged from 0·45 to 2 per cent.

A solution containing 9 per cent. of ammonia would markedly reduce hair strength but the effect of solutions of 5 per cent. or less would probably be transitory.

In considering the position of operatives through use of these preparations it was calculated that if an ounce of solution (sufficient to treat the hair of two persons) of 9 per cent. ammonia and 2 per cent. of hydrogen sulphide was completely evaporated in a room 12 feet square and 12 feet high, the concentration of ammonia created would be ·007 per cent.—and that of hydrogen sulphide ·001 per cent.

Such concentrations, according to authority, are definitely non-poisonous although objectionable in odour. The process is noxious and, if not unhealthy, certainly vitiates air condition.

Wherever it is operated special ventilating devices should be used.

Macassar Oil.—In the age that produced the antimacassar, macassar oil apparently was obtained from the seeds of an oak tree indigenous to India and Malaya. In Indian villages it was used for lighting, cooking, and for the hair and medicinal purposes. There is no evidence available that it has any beneficial effect on the hair or prevents baldness.

The hair oil described as "Macassar" in Queensland was found to consist almost entirely of paraffin oil.

To claim, as one vendor does, that this oil (paraffin) is a scalp food suggests colossal ignorance of the metabolic processes of the human organism.

Pathological Specimens (172).—

Animal bones, livers, and kidneys	68 special investigation
Hair and nails	19 (6 contained arsenic)
Urine	80 (7 contained lead)
Miscellaneous	5

Lead in Bone.—During the year fifty-six specimens of human skull and rib bone were examined for the presence of lead.

A wet oxidation method was employed followed by extraction and estimation with dithizone.

Specimens from both normal and nephritic cases were received, and it is interesting to note that in no case was a quantity found of less than one milligram of lead per hundred grams, and also that on the average, the skull contained about twice the proportion contained in the corresponding rib.

Twelve specimens of liver, kidney, and bone from experimental rats were also examined for lead.

Cooking Powder.—A strange mixture described as cooking powder consisted of sodium bicarbonate, calcium phosphate, and Glauber's Salt.

Miscellaneous (107 Samples).—The miscellaneous samples included almonds, baking chemicals, brake fluids, cigarette wrappers, chestnuts, corn cure, compressed vegetables, "dopes" for racing animals, drink powder, dust, dyes, floor dressing, fuel tablets, hydrometers, junket tablets, metals, methylated spirit, mincing machine, mushrooms, peanuts, plaster of Paris, sodium alginate, rust inhibitor, solder, soap mixture, stink bombs, sugar, tartaric acid, textiles, toothbrushes, tripe bleacher, walnuts, weed-killers and zycal.

The 1928 food and drug standards and the 1924 poisons schedules were revised by this laboratory during the year. It has been long recognised that these standards and schedules were lacking in important particulars.

The large volume of routine work precluded the carrying out of special investigations relating to the analytical control of foods, drugs and poisons.

MINES DEPARTMENT AND QUEENSLAND GEOLOGICAL SURVEY.

TABLE LXXXIII.—SUMMARY OF WORK DONE.

Nature of Sample.	Number of Samples.	Purpose of Analysis.
Bore gases	12	Nature and whether petroliferous
Coal and coke	7	Usual analysis
Mine air, &c.	27	Gas analysis
Ores	909	Gold and silver only
Ores	64	Gold, silver, and other metals
Ores	67	Metals other than gold and silver
Shales, &c.	20	Oil yield, &c.
Miscellaneous	21	Clays, waters, &c.

The number of samples reported, 1,127, is less than the number (1,371) reported in the previous year. There continues to be a falling-off in the number of prospector's samples for gold assay; in 1931-32, when the increased price of gold led to increased prospecting, the number assayed was 1,859, in the year just closed 973.

Samples of ore were examined for estimation of copper, tellurium, cobalt, lead, tin, manganese, tungstic anhydride, arsenic, antimony, and chromium, &c.

With a view to the determination of the age of certain rocks in the Mount Isa area three samples of monazite were submitted through the Geological Survey to this laboratory for determination of lead, thoria and uranium. The lead precipitate collected in the assay has been forwarded to authorities in America for determination of the isotope of lead present. From the data obtained a pronouncement of the age of the rocks is to be made.

Thirty-nine samples of gas were analysed, the greater proportion being mine air samples taken during routine examinations.

POLICE DEPARTMENT.

The specimens and exhibits submitted by the police numbered 267.

As usual viscera and exhibits of a varied nature were examined throughout the year in connection with post-mortem cases where the cause of death was obscure.

In 32 cases of suspected human poisoning 61 specimens of viscera were examined and 53 other exhibits. Strychnine was found in 9 cases, arsenic in 3, cyanide in 2, morphine in 1, cresols in 2, and carbon monoxide in 1, while 14 cases were negative.

In 6 cases of suspected animal poisoning 9 exhibits were examined; cyanide, strychnine, arsenic, and phosphorus were found once each in 4 positive cases, while 2 cases were negative.

In 8 cases of suspected food poisoning 40 exhibits were examined, with the result that strychnine was found present in 2 cases.

In 7 cases connected with the Dangerous Drugs Regulations 36 exhibits were examined, opium being found present in 4 cases, morphine in 1, and cocaine in 2 cases.

There were also 46 exhibits in 26 cases classed as miscellaneous.

In connection with some of the police cases evidence was given in Police Court and Criminal Court trials.

Twenty-two small lots of explosives or poisons were destroyed for the police during the year.

PORTMASTER AND EXPLOSIVES.

The following table shows the number of cases of explosives imported into Queensland during the last three years:—

TABLE LXXXIV.

Explosive.	1936-37.	1937-38.	1938-39.
	Cases.	Cases.	Cases.
Nitro compounds	33,771	44,825	33,882
Blasting powder	3,800	4,498	1,975
	37,571	49,323	35,857

Of the 33,882 cases of nitro compounds, 29,882 were Australian, and 4,000 were from overseas.

LICENCES IN FORCE.

——	1937-38.	1938-39.
Bulk magazines	18	17
Retail magazines	575	614
Rackarock	22	14

The total fees received during the year amounted to £119 2s. 6d., as compared with £116 17s. 6d. last year.

RAILWAY DEPARTMENT.

An increase is again shown in the work of this Department, 175 samples being examined, against 166 in the previous year.

The samples examined were:—

TABLE LXXXV.

Nature of Sample.	Number of samples.
India-rubber hose	81
Textiles—	
Serge	33
Sheeting	32
Pillowslip	9
Overcoat material	5
Pocketting	2
Vest lining	2
Black Italian cloth	2
Hair carpet	7
Soya bean oil	1
Wooden chips	1
	175

The samples of textiles, hair carpet, and hose, were chiefly tender samples, the most economical propositions of which were pointed out. Subsequent delivery samples from the successful tenderers were also examined.

The sample of soya bean oil was for tariff classification, and the wooden chips for arsenical content in connection with a compensation claim.

An interesting problem concerned the transport and storage of washing soda ("soda crystals"), which is a cheap and much used commodity, but is liable to "weep" and cause damage to adjacent goods; it also becomes damp in wet weather. It contains only 37 per cent. carbonate of soda, the remainder being water. It begins to weep at about 90°F. and when its temperature rises over 95°F. it liquifies and becomes a watery solution of carbonate of soda. These temperatures are often reached in the Queensland climate, and the fact that more serious damage is not done by this commodity is probably due to a chilling effect in the mass as the water of crystallization is thrown off. Neither soda ash nor "bath salts" ("crystal carbonate") exude water in this way; they might be used as substitutes, both being carbonates of soda with much higher percentages. The carriage of "soda crystals" only in containers not liable to exude the watery fluid was recommended.

STATE STORES BOARD.

Three hundred and twenty-seven samples were examined for the State Stores Board, being an increase of 121 samples on last year's figures. This increase was due to the large number of tender samples of ink, which are submitted every second year only.

The samples examined were:—

TABLE LXXXVI.

Nature of sample.	Number of samples.
Ink and ink powder	136
Textiles	52
Disinfectant	51
Carbon paper	33
Office paste	14
Soap	14
Miscellaneous	27
Total	327

The textile samples included serge, blue denim, calico, moleskin, ticking, drill, duck, blanket, cotton print, and raincoat material.

The miscellaneous samples included jams, jellies, paints, spirituous liquors, tobacco, tincture of iodine, creosote, baby powders, deodorants, and tinned meats.

The standard of the delivery samples of ink, textiles, disinfectant, carbon paper, office paste and soap was satisfactory.

MAIN ROADS COMMISSION.

The samples of road making material tested during the year numbered 811, being of the same order as the previous year, the work being again heavy. The samples received were:—

TABLE LXXXVII.

Bitumen	480
Tar	107
Duratenax (tar-bitumen)	81
Bitumen emulsions	73
Flux oil	62
Creosote	8
Miscellaneous	13
Total	824

COMMONWEALTH CUSTOMS DEPARTMENT.

The work done for the Customs Department—2,616 samples analysed and reported—was the largest amount ever submitted.

As usual the bulk of the work was analysis for classification purposes, and a considerable amount under the provisions of the Excise Act. The work for this Department continues to increase in variety from year to year.

OTHER DEPARTMENTS AND PUBLIC.

The following is a summary:—

TABLE LXXXVIII.

Department.	Number of Samples.	Nature of Samples.
Brisbane and South Coast Hospitals Boards	49	Mostly urine
Home Affairs	32	Soap (16), water (2), sputum (4), serge (6)
Irrigation and Water Supply	240	Water (182), soil (38), concrete (4), thermometers (5)
Machinery	39	Petrol-alcohol (32), water (7)
Public Instruction	50	Disinfectant (33), ink and ink powder (4), sulphuric acid (11), water (1)
Forestry	44	Wood preserving solution (10), timber (16), water (7), piano keys (5)
Several other Departments	30	Miscellaneous
Public	177	Water (54), soil (35), crayons (42), coal (9)
Total	661	

A number of examinations of fuel tanks were made for the presence of explosive and toxic gases prior to repair of the tanks. All were found to be sufficiently ventilated or steamed to permit safe work therein.

An interesting instance of the rapid anodic pitting of stainless steel came under notice. In a workshop where the floor dust contained much iron oxide, and where spirits of salts was used for soldering, the stainless steel sheets pitted badly overnight. This was found to be due to ferric chloride formed by the action of the humid acid vapour of the spirits of salts acting on dust particles lying on the sheet. Similar anodic pitting of stainless steel was reproduced in the laboratory. The advisability of keeping spirits of salts away from stainless steel in such workshops is evident.

WATERS.

The following is a summary of the waters, soils, and the miscellaneous samples related to them:—

Four hundred and two samples of water were analysed during the year, a decrease on the previous year's receipts, but this was compensated by examination of 102 samples of soil for corrosive action or otherwise on water supply and sewerage pipe lines, together with 6 samples of "incrustation."

The problems to be faced in a water supply include the behaviour of the water carried inside the pipe line, and the behaviour of the soil on the outside of the pipe line. A first-class potable water low in mineral matter may cause much trouble and expense with lime cement pipe lines, by its demand for free lime. Soluble sulphates in the soil as well as soil of an acid nature are likewise—by their corrosive action on lime cement—a source of trouble.

One hundred and forty samples received from the Department of Health and Home Affairs were chiefly waters examined for potability.

The 219 samples received from the Department of Irrigation and Water Supply, of water, soil, &c., were examined for general domestic purposes, irrigation, and stock usage, and the 6 samples of water for the Machinery Department were for analysis and advice for rendering the waters suitable for steam raising purposes.

Forty-five samples from the public required analysis and advice as to suitability for domestic use, stock, irrigation, and water supply. It is not unusual to receive a bore water which is alleged to be of medicinal value; as most of our bore waters have an aperient effect on people unaccustomed to them, this action may be the medicinal value alleged.

The municipalities of Warwick, Roma, Townsville, Bundaberg, and Murgon submitted 11 samples of ground water and 63 samples of soil in connection with their water supply and sewerage activities.

The Forestry, Main Roads, and Mines Department, the Geological Survey, and Chief Protector of Aboriginals also forwarded samples.

GENERAL.

The supply of periodicals for the library was maintained during the year, and a number of useful books were obtained. A more satisfactory system for filing pamphlets under proper headings was also introduced and facilitates ready reference. The library is, of course, very necessary to allow the staff to keep touch with the progress of applied chemistry and with the published reports of investigation made elsewhere into problems commonly met.

I wish to acknowledge the cordial co-operation given throughout the year by the whole staff in handling the work of the laboratory.

Yours faithfully,

FRANK E. CONNAH,
Government Analyst and Chief Inspector of Explosives.

Price, 4s. 9d.]

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