

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

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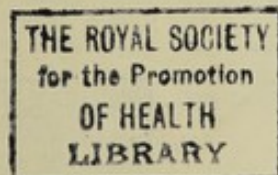
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QUEENSLAND

ANNUAL REPORT
OF THE
HEALTH AND MEDICAL SERVICES
OF THE
STATE OF QUEENSLAND
FOR THE
YEAR 1959-60

PRESENTED TO PARLIAMENT BY COMMAND



BRISBANE
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ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES

1959-60

The Honourable the Minister for Health and Home Affairs

SIR,—I have the honour to submit for your information the Annual Report of the Health and Medical Services Branch of the Department of Health and Home Affairs during the year ended 30th June, 1960.

ABRAHAM FRYBERG,

M.B., B.S. (Melb.), D.P.H., D.T.M. (Syd.),
Director-General of Health and Medical
Services.

STAFF

Dr. D. W. Johnson, Deputy Director-General of Health and Medical Services, was invited to represent Australia at the World Health Organisation's Seminar on the Education and Training of Sanitation Personnel in Tokyo from 21st October to 5th November, 1959.

Dr. E. M. Rathus, Director of Industrial Medicine, who was awarded an Overseas Traveling Scholarship by the National Health and Medical Research Council, returned in September, 1959, after a study tour of the United States, Canada, Britain, and Europe, where he studied the various aspects of industrial medicine, particularly radiation, air pollution, uranium and other mining, and the problems of the new insecticides. During his absence Dr. M. H. Gabriel was appointed as Acting Director of Industrial Medicine.

Dr. B. F. R. Stafford, Director of Mental Hygiene, returned to duty in November following a study tour in Britain, Europe, and the United States.

Dr. P. R. Patrick, Chief Medical Officer, School Health Services, was granted special leave of absence to attend the University of Sydney to study for the Diploma in Public Health. He is being relieved by Dr. M. H. Gabriel.

Dr. Beatrice Warner, who for many years was in charge of the Female Clinic, finally terminated her association with the Department in March.

Mr. D. W. J. Smith, Senior Bacteriologist, Laboratory of Microbiology and Pathology, who was awarded a World Health Organisation Fellowship to study in the United States, United Kingdom, and Europe, returned to duty in November.

With much regret the death is recorded of Dr. Ernest Silberstern, Chest Physician at Rockhampton. Dr. Silberstern had been medical superintendent at Westwood Sanatorium for some

twelve years prior to its closure on opening the new Chest Annexe in Rockhampton to which he transferred in January, 1959, and had endeared himself to many patients during that period. His successor has not yet been appointed.

It is with regret that I report the death of Mr. S. Thompson, Microscopist in Charge of the Section of Hookworm Control, following a long illness. He has given long and efficient service and he will be difficult to replace.

Appointments

Miss M. Whiley was appointed Senior Social Worker. Miss Whiley is a graduate of the University of Melbourne and has had wide experience in social work in Melbourne and England.

Dr. O. E. Orford and Dr. R. H. G. Apel were appointed to the Brisbane Mental Hospital and Dr. J. A. Gorst to the Toowoomba Mental Hospital.

Miss Reiser was appointed Occupational Therapist, Toowoomba Mental Hospital.

Transfers

Dr. B. Nurcombe was transferred from Brisbane Mental Hospital to the Welfare and Guidance Clinic.

Dr. R. J. B. Anderson was transferred from the Chest Clinic, Brisbane, to the position of Chest Physician, Cairns.

Resignations

Dr. T. G. Paxon resigned from the position of Chest Physician, Cairns.

Dr. R. N. Gooch, Dr. B. V. Burke, and Dr. B. B. Eldred resigned from the staff of the Brisbane Mental Hospital.

Mr. C. Proctor, Psychologist, Toowoomba Mental Hospital, resigned during the year.

Retirements

Dr. E. L. Thomas retired from the staff of School Health Services at the end of 1959.

INTRODUCTORY REMARKS

Although the first Health Act was passed in Queensland in 1872 the Department of Health did not come into being until after the passage of "The Health Act of 1900" which provided for the appointment of a Commissioner of Public Health. We are, therefore, celebrating our Diamond Jubilee this year.

The first Act passed provided for regulations to be issued when an outbreak of communicable disease occurred in a particular area. This was followed by a comprehensive Act of 1884 which aimed at securing the drainage of houses, the sewerage of towns, regulation of living conditions in lodging-houses, meat inspection, and isolation of persons suffering from infectious disease. It also provided for the compulsory appointment of Medical Officers of Health and Health Inspectors.

The 1900 Act was similar to that of 1884 but contained added powers for the prevention of disease. Dr. Burnett Ham was appointed Commissioner of Public Health in 1901 and it was he who laid the foundation of the State Health Department as it is today.

New fields in preventive medicine have been opened up when a need has been demonstrated and when the necessary knowledge has been available. The effect of trachoma on the eyes, resulting often in blindness, was responsible for the establishment of the School Health Services in 1911. The needless waste of infant and maternal life was responsible for the establishment of Maternal and Child Welfare Clinics in 1918. As a result of immunisation campaigns, the common communicable diseases present no problem while advances in diagnosis and treatment of tuberculosis should eliminate this disease within the next ten to twenty years.

Our thoughts are now directed to "social medicine." We see the worker as an important factor in our economy and as a breadwinner; so the Division of Industrial Medicine was established to prevent disease in industry. We see the handicapped child as a source of special anxiety for his parents; the delinquent child a source of anxiety to the community generally; so the Guidance Clinics were established. We are appreciating society has responsibilities in the care of the aged and that the prevention of alcoholism is a community responsibility, and the Department is expanding to accept these responsibilities.

Queensland can be proud of its achievement in the field of preventive medicine over the past sixty years.

VITAL STATISTICS

The estimated population of Queensland at 31st December, 1959, showed an increase of 22,380 (or 1.6 per cent.) as compared with 23,391 (or 1.7 per cent.) in 1958. The increase in population in the Greater Brisbane area was 12,000 as compared with 12,500 in the previous year but the population living there in relation to the whole population of the State increased from 39.2 per cent. to 39.5 per cent. It has always been the Government's policy to decentralise and, although there has been an increase in population density in the metropolitan area from 1,452 to 1,483 persons per square mile, this compares more than favourably with other States of the Commonwealth.

As in previous years diseases of the heart are the leading cause of death with cancer as the second principal cause. For the second year in succession there have been no deaths from diphtheria. This is due to the active immunisation campaigns carried out by Local Authorities which

are deserving of the highest commendation. Most infants are immunised in the first six months of life. Health education, the co-operation of Local Authorities, and the appreciation of the value of immunisation are such in this State that I cannot imagine any relaxation of campaigns.

More than 49 per cent. of the total deaths in the State were caused by diseases of the circulatory system together with vascular lesions affecting the circulatory system. Although the discovery of new drugs has improved methods of treatment, little is known of the prevention of these conditions. It is for this reason that an appeal is to be launched in all States by the National Heart Foundation of Australia to raise £1,500,000 to establish research units and research scholarships.

COMMUNICABLE DISEASES

There were no major epidemics during the year. The number of notifications of proven poliomyelitis received was 3 as compared with 3 and 5 for the two previous years. The vaccination campaign against poliomyelitis started in 1956 and it is my opinion that the low incidence of this disease in 1958 and 1959 must be attributed to this. The last epidemic commenced in 1950 and ended in 1952, so that another outbreak would have been anticipated this year. The high rate of persons vaccinated has produced a high degree of immunity in the community. The duration of the immunity conferred is not known but research work in the United States, where vaccination commenced in 1954, should indicate when the booster dose should be given so as prevent the degree of immunity falling to an extent where protection is lost.

Since the commencement of the Salk Vaccination Campaign 466,764 persons, that is 86.62 per cent. of the under 19 years age group have received one injection; 80.88 per cent. two injections; while 75.1 per cent. have been fully immunised. It is disappointing that vaccination of children has not been fully completed but no doubt this is due to the complacency on the part of some parents because of the low incidence of poliomyelitis during the past two years. I cannot emphasise too strongly or too often that there must be no relaxation of any of the immunisation procedures. A higher percentage rate of completed courses should be obtained with the introduction of quadruple antigen later in the year.

There is no age limitation in regard to immunisation and at least 56 per cent. of the over 19 years age group have received at least one injection.

Poliomyelitis vaccine is to be made available to private practitioners as soon as arrangements can be made for its distribution.

Diphtheria

No notifications were received for this disease from the metropolitan area during the past year, while six were received from the extra-metropolitan area. Brisbane was free of diphtheria in 1958 and this also is an indication of the value of immunisation. It is estimated that over 90 per cent. of children in the Greater Brisbane area have been immunised against diphtheria.

Tetanus

An analysis of the ages of persons notified from tetanus again shows the value of immunisation. Forty notifications were received for 1958-59 of whom 10, or 25 per cent., were under the age of 15. Thirty-six notifications were received

this year, 8, or 22 per cent., being under the age of 15.

Table I. shows the age incidence of notifications since the introduction of vaccination with triple antigen.

TABLE I
AGE DISTRIBUTION OF NOTIFIED CASES OF TETANUS FOR THE EIGHT YEARS 1952-53 TO 1959-60

Age Group	1952-53		1953-54		1954-55		1955-56		1956-57		1957-58		1958-59		1959-60	
	Bne.	C.	Bne.	C.	Bne.	C.	Bne.	C.	Bne.	C.	Bne.	C.	Bne.	C.	Bne.	C.
0-1	..	1	..	..	1	1	..	..	..	..	..	2	..	..	..	1
1-4	1	3	2	1	1	3	1	2	1	1	1	..	2	..	..	..
5-9	3	4	3	3	3	..	4	4	4	3	1	7	1	4	2	..
10-14	1	2	4	1	..	3	2	1	2	..	3	2	..	3	..	5
15 plus	6	12	8	10	3	7	4	4	4	22	5	6	8	22	12	16

Bne. = BRISBANE

C. = COUNTRY

I am informed by the Chief Health Officer of the Brisbane City Council that none of the patients notified in his area had been immunised against tetanus, but I have been unable to ascertain the number of country notifications who had been immunised. The value of tetanus immunisation was proven during the war. The results obtained by the Brisbane City Council supports this.

Immunisation with triple antigen was commenced in 1952-53. The Brisbane City Council and country Local Authorities have been active in their campaigns and the value of immunisation should continue to be reflected by a further decrease of notifications of tetanus under the age of fifteen years.

Infective hepatitis

There was an increase in notifications of this disease from 572 to 740, the increase being in the extra-metropolitan area. The greatest incidence is amongst school children. Very little is known about the spread of infective hepatitis and the only control that can be practised is personal hygiene.

HANSEN'S DISEASE

As the result of Biblical teachings an attitude has developed in the community that Hansen's Disease is a disease which is highly communicable when, in fact, its communicability is low, far less than tuberculosis, the causal organism of which belongs to the same group as Hansen's Disease. This condition is just another communicable disease, the causal organism of which is of low grade virulence, just as mental illness is just another physical disease which affects the brain instead of another organ. The acceptance of these facts has enabled much to be done for those patients afflicted by these illnesses.

Approval was given for the relaxation of restrictive conditions which had been in force over the years. Patients suffering from Hansen's Disease are now treated at Princess Alexandra General Hospital where the patients are hospitalised until they are stabilised on modern drugs,

after which they are treated as outpatients even though bacteriologically positive.

SECTION OF FOOD AND DRUGS

It would appear that adulteration of milk is no longer a problem. A few years ago adulteration of milk with water and fat separation were common but in the past year, out of 2,160 samples taken, it was only necessary to take legal action in two instances for the adding of water and in one for a deficiency of butter fat. This improvement is due to an extension of the sale of heat treated milk to areas where it had previously been unobtainable; and the enterprise of the milk pasteurisation companies in supplying milk to residents in the Far West is deserving of the highest commendation.

Despite warnings of past years butchers still continue to add preservative to mincemeat this resulting in 63 prosecutions being successfully taken. It is true that salts of sulphurous acid improve the appearance of meat which is not fresh, but it would appear that butchers do not realise that the purpose of the regulation preventing the addition of these chemicals is to ensure that the mincemeat is made from fresh meat as it is eaten extensively by infants and invalids. The increase in the fines to a maximum of £50 for a first offence, to £100 for a second, and £200 for a third offence should act as a deterrent.

The controversial "clean glass" legislation has now been clarified as a result of an amendment of the Health Act. Generally the law was being observed and a clean glass given with each drink despite the fact that legal action could not be taken to enforce it. In future, prosecution will follow breaches of the Regulations.

ENVIRONMENTAL SANITATION

Typhoid Fever

Seven cases of typhoid fever were notified from the metropolitan area, an increase of four, and three cases from the country, a decrease of two. The most important steps in the control of this disease are a pure water supply, pure milk supply, and sewerage. Brisbane has a pure

water supply even if it is hard; 98 per cent. of the milk supplied is heat treated but as each year passes there is a further lag in sewerage extensions. No blame can be attached to the Brisbane City Council as it is unable to get a greater share of loan funds to expand the sewerage works programme.

In an endeavour to find another method of disposal other than the "pan" system, the Brisbane City Council sought approval of an ordinance making septic tanks compulsory at all new houses and making full use of storm water drains for the disposal of the effluents from many of the tanks.

This was objected to by the Department as these storm water drains often empty into watercourses. The soil of Brisbane generally is not suitable for absorption of effluent so it would be inevitable that sooner or later a nuisance would be created in the dry season. Further discussions are to take place to find ways and means as to how the effluent could be discharged without creating a nuisance.

The Health Act was again amended to prohibit the use of lead as a constituent of paint used on houses. In 1904 Dr. Lockhart Gibson put forward his opinion that painted railings and painted walls of rooms were the source of lead which was poisoning children, but it was not until 1922 that an amendment of the Health Act was introduced limiting the amount of lead in paint within reach of children to 5 per cent. White lead was totally abolished as a pigment by a further amendment in 1955 and all lead was prohibited in 1959. The value of this legislation is shown by the fact that chronic nephritis in Queensland for young adults is now the same as the rest of Australia.

FLUORIDATION OF WATER

The question of fluoridation of water supplies is still the subject of controversial discussion despite the fact that the National Health and Medical Research Council has recommended this as a prophylactic measure against dental caries. Fluoridation is not the complete answer to dental caries, a condition in which diet plays an important part. I am however, of the opinion that it will reduce the incidence of the disease by half and will prevent it in one-third of children.

A referendum was held at Chinchilla as to whether the public water supply should be fluoridated, the decision being against fluoridation. This was understandable as the seeds of fear were sown by a small but vociferous number of people.

The Fluoridation Committee appointed by the Minister following the resolution of the National Health and Medical Research Council fully discussed the question and, following investigations of Professor W. V. Macfarlane who was Professor of Physiology at that time, supported the views of the Council.

Despite the evidence put forward by leading authorities in favour of fluoridation backed by scientific facts, despite statements made by doctors and dentists who have studied these facts, the opponents of fluoridation refuse to accept these scientific recommendations, nor will they, no matter how authoritative the opinion.

Likewise, the protagonists of fluoridation refuse to accept statements, mostly unscientific, put forward by their opponents.

This was the position in New Zealand and the New Zealand Government, therefore, decided to appoint a Commission of three who, it was felt, were capable of sifting the evidence and furnishing an unbiased report. It consisted of a Judge, a Professor of Biochemistry, and a merchant. After considering the evidence presented, the Commissioners reported—

- (1) Benefits to dental health could be expected by fluoridating public water supplies;
- (2) No harmful effects on health will follow the fluoridation of water supplies;
- (3) Fluoride is beneficial in proper amounts;
- (4) No distinction can be drawn between the fluoride naturally in water and the fluoride proposed to be added to it by the fluoridation process. (In Queensland the teeth of children who drink water containing natural fluoride show a lower incidence of dental caries than those of children drinking water not containing fluoride.)

The Banana Shire Council is at present considering the question of fluoridating its water supply and it is hoped that it will reach its decision on the scientific evidence available for its consideration, not on the statements without scientific backing made by persons, no matter how sincere. One pamphlet which I have read was put forward by a supposed naturopath whose qualifications were discussed in Parliament in 1955.

It is hoped that the Banana Shire Council will agree with the findings of the New Zealand Royal Commission and accept its responsibility as a Local Authority of fluoridating its water supply in the interests of the citizens of Biloela, particularly the children of the town.

TUBERCULOSIS

The number of patients notified as suffering from tuberculosis was approximately the same this year as for 1958-59. The number notified decreased from 362 in the metropolitan area for the previous year to 313, while the country notifications increased from 427 to 474. The increase in the country was not unexpected as the compulsory mass X-ray survey commenced in north Queensland in November and this has resulted in the unknown case being discovered. A comparison of the notifications for the past two years in the Local Authority areas which have been surveyed is as follows:—

Town	1958-59	1959-60
Atherton	..	7
Cairns	22	58
Cardwell	4	5
Douglas	1	2
Eacham	1	1
Herberton	4	6
Johnstone	11	28
Mareeba	7	19
Mulgrave	9	16
Total	59	142

The death rate has continued to fall, being 5.4 per 100,000 population as against 19.8 in 1950. This is due to the use of streptomycin and other drugs which were made available during this period and to more efficient surgical procedures.

The best way of controlling tuberculosis is to find the "missed" case as it acts as a focus of infection from which spread takes place. The early case can be found by X-ray long before it can be diagnosed clinically and early discovery not only reduces the time it takes to cure the patient but shortens the period during which the disease might be spread.

The survey in north Queensland has already justified chest X-ray being made compulsory and every endeavour will be made to find those persons who have failed in their obligations to be X-rayed. Another opportunity will be given to them to attend but, should they fail to report, legal action will be taken to compel them to do so.

DIVISION OF INDUSTRIAL MEDICINE

The activities of the Division of Industrial Medicine play an important part in the preservation of industrial peace in the community. Although the Health Act provides for the making of regulations to secure and safeguard the health and well-being of employees in industry generally, or in any particular industry, no action has been taken in this regard as it is desired that officers in their approach to problems should be considered as unbiased advisers. They, therefore, act as consultants only and are available to make investigations at the request of employer and employee. Recommendations to control industrial hazards are usually accepted by industry as it is appreciated by so doing employer-employee relations are improved, absenteeism is reduced, and accidents and disease are prevented. Should recommendations not be implemented necessary action is taken by the Department of Labour and Industry which possesses the necessary powers. Employees likewise accept any decisions reached.

Regulations under "The Radioactive Substances Act of 1958" have been receiving consideration and it is hoped to submit them for gazettal in the near future.

DIVISION OF MATERNAL AND CHILD WELFARE

The increase in the maternal mortality rate from 0.47 in 1958, the lowest recorded in Queensland, to 0.59 per thousand live births is a matter of concern as it would appear on the surface that a majority of these deaths were avoidable. An investigation would probably find that most were due to the failure of the expectant mother to report for adequate ante-natal treatment, particularly as not more than one death occurred in any hospital outside the metropolitan area.

All maternal deaths in the public section of the Brisbane Women's Hospital are discussed at staff meetings to see if they could be avoided and it would appear that deaths occurring elsewhere might be well discussed by an expert committee. With this in mind I shall seek the British Medical

Association's co-operation to set up such a committee in the hope that its advice will be a help to the doctors of this State, not only in the prevention of maternal deaths, but in the prevention of maternal disablement.

The infant mortality rate increased from 19.4 in 1958 to 20.3 per thousand, there being 64 more deaths this year. The main reason for this was the increase by 42 of deaths from congenital malformations which are unavoidable, an increase of 10 from accidents and poisoning which, it would appear, could be avoided, and an increase of 11 deaths due to communicable diseases.

There has been a steadily rising toll of deaths from accidents under the age of fifteen and this is causing concern. The total of 106 last year was the highest in the State's history. The Queensland Health Education Council is doing excellent work in educating parents in regard to hazards but it would appear that many parents do not realise their responsibilities in the prevention of accidents resulting in the death of their children.

SCHOOL HEALTH SERVICES

The physical examinations of school children are carried out by specially trained nurses who have been trained to diagnose the more obvious physical defects. Conditions requiring particular skill or special examinations are referred to the school medical officer, the child's family doctor, or to the general hospital.

A recent advance was the training of nurses in audiometry. Children who suffer from unrecognised deafness have often been diagnosed as being mentally deficient when all that is needed is to bring the child to the front of the class. The nurses screen the children with an audiometer and any child who appears to have a degree of deafness is referred to a specialist for testing and treatment.

The School Dental Service continues to do excellent work in promoting the dental health of school children. Preference is given to children who live some distance from established dental services. The schools visited are situated not less than fifteen miles from a hospital dental clinic.

DIVISION OF MENTAL HYGIENE

Queensland has always followed advances in the care of the mentally ill and, as a result of the visit of the Director of Mental Hygiene overseas during the year, a new approach will be made to the hospitalisation of patients suffering from mental disorders. It has been the practice to send all patients who are certifiable, even though they are likely to require treatment only beyond a few weeks, to mental hospitals. It is inevitable that patients who require hospitalisation for any length of time become "institutionalised." This has been seen in those senile patients who have been transferred from our mental hospitals to "senile annexes."

Modern treatment, particularly the use of the tranquillising drugs, has shortened the stay of patients in hospital and has enabled patients who have been discharged to remain in the community. It was this desire to keep patients in the

community, and thus remove the stigma of having been certified for admission to a mental hospital, that prompted the passing of the "Mental Health Act, 1959," in England.

Under the new programme in England patients are classified into three types:—

(1) Short stay patients: It is thought that these patients are best treated as outpatients or if necessary as inpatients for a short period. In Queensland we have treated these patients in hospital wards if they could be managed. In future they will be treated in Lawson House where they will stay for three to six weeks, as outpatients at the North Brisbane Hospital or the Princess Alexandra Hospital, or as day patients at the Princess Alexandra Hospital where a new psychiatric unit incorporating a day hospital is to be established.

(2) Medium stay patients: These are patients who will require more active treatment which might require hospitalisation for six to nine months. They will be accommodated at the proposed Neuro-psychiatric hospital at Cherm-side. Such a hospital will require occupational and recreational facilities. If it is found that patients in this group require longer treatment they will be transferred to a mental hospital.

Patients admitted to these two hospitals will not be certified.

(3) The third type of patient—the long-stay patient—will be admitted to the present mental hospital. It is unfortunate that the present state of our knowledge is such that there are groups of patients for whom we can do little more than give custodial care and so mental hospitals will always be necessary. Long-stay patients who require treatment for over nine months will be treated at these hospitals.

It is pleasing to note that the stage is being reached where senile patients can be admitted direct to "senile annexes" of general hospitals instead of being first certified and admitted to a mental hospital. The mental disorder of many of these patients is due to a physical condition and the correct place for treatment is in a general hospital.

In the past year 28 per cent. of patients admitted to the Brisbane Mental Hospital were over the age of sixty years. This is lower than previous years due to aged patients being retained in general hospitals.

Under the new scheme all hospitals for the treatment of mental illnesses will be integrated. This will only be possible by co-operation between all members of the medical profession responsible for treating mental illness. The scheme will involve co-ordination of all services and this will be the responsibility of the Director of Mental Hygiene.

DIVISION OF WELFARE AND GUIDANCE

The first Guidance Clinic under the direction of Dr. B. J. Phillips was opened in August for the treatment of maladjusted children, who may be defined as "children suffering from any emotional or psychological disorder," and delinquents who may be defined as boys and girls who have committed an offence against the law.

The Clinic follows the pattern of those overseas. It is staffed by two teams each consisting of a psychiatrist, psychologist, and a social worker, and supported by ancillary staff. The tests to establish the diagnosis are time consuming and the Clinic has been forced to establish a waiting list.

The delinquents vary from normal boys who are just naughty and who only need a sharp lesson, preferably by the parent, to potential criminals. It is for this latter group that it is hoped to convert the Wilson Ophthalmic Hostel into a Youth Rehabilitation Hospital where a Children's Court will sit, working in co-operation with the staff of the Clinic. There will be provision for outpatients as well as inpatients. It is also hoped to provide inpatient treatment for the maladjusted child at Cherm-side.

The Clinic has been active in teaching Kindergarten psychology and social studies students the principles of child guidance but it is regretted that the medical students who, as practising doctors, will see the children early in their psychological illness have not been able to attend for clinical teaching.

The Clinic is fulfilling an important role in the field of social medicine as, by early ascertainment and treatment, many troubles in the child's later life which might lead to delinquency will be prevented.

ALCOHOL CLINIC

The acceptance of alcoholism as a disease has been followed by research into the cause and the establishment of clinics for its treatment. The ideal is for such clinics to be established in general hospital grounds of training hospitals for medical students, where patients can have the benefit of ancillary and specialist services and where, when under the influence of alcohol, they can be admitted to "drying-out" wards away from the clinic. Doctors, medical students, and nurses are enabled to obtain an insight into the disease and the various ways an alcoholic might react.

Outpatient and inpatient treatment should be available. Outpatient clinics are a necessity as the patient should attend regularly after his discharge as an inpatient. They also enable him to consult his medical adviser at all times after discharge, particularly when he feels he might break.

The Clinic at the North Brisbane Hospital is one of the few in the world which fulfils these requirements.

DIVISION OF LABORATORY SERVICES

Laboratory of Microbiology and Pathology

The progress of the Laboratory of Microbiology and Pathology continues, as does the high standard of work being carried out. As would be expected of a public health laboratory, it is concerned with problems of epidemiology and the work being done has been of great importance in determining sources of infection and method of spread of Q fever and leptospirosis. Meatworkers have been known to be a group affected with Q fever, particularly those associated with the sheep industry, and it was of

interest that two of the patients diagnosed by the laboratory were employed processing kangaroo meat.

The laboratory plays an important part in most of the Departmental activities. It carries out the bacteriological examination of food and water and other materials; it is responsible for the bacteriology of the communicable diseases; and it is now playing an active part in the investigation of staphylococcal infections in hospitals. Diagnostic facilities are provided for the patients of private doctors and all coronial post-mortems are performed by the medical officers of the laboratory. Its functions are only limited by accommodation and it is hoped that a start will soon be made on the new building in George Street to which the activities of this service will be eventually transferred.

Government Chemical Laboratory

The activities of the Government Chemical Laboratory are associated not only with the work of the Health and Medical Section of the Department but also with other State Government Departments and the Department of Customs and Excise.

The number of tests carried out was 1,129 more than in 1958-59. Here again the activities are limited by accommodation and it is unlikely that this will be relieved until the Laboratory of Microbiology and Pathology is transferred to George Street.

The analytical results of milk examinations indicate the milk supply of the State is of a high standard. The average fat content of the milks sampled was 4.01 per cent. and is an indication that milk is not interfered with before being sold.

DIVISION OF NURSING

The Adviser in Nursing, during the past year, continued her investigation into the wastage of student nurses. This has caused concern in England. In an endeavour to reduce this wastage the General Nursing Council of Britain has decided that in future they will only recognise training undertaken in hospitals of 300 beds with a daily average of 240 "thereby providing considerably more clinical experience than at present." As a result of this it is hoped that smaller hospitals will seek approval as assistant nurse training schools.

When I was in the United States two years ago I studied the nursing set-up. There are three types of nurses: University graduate nurses, State registered nurses, and assistant nurses. The graduate nurse does little bedside nursing in her course despite the fact that the first responsibility of a nurse is to nurse. These graduate nurses have been referred to as "armchair nurses." There are nurse-technicians who are more technicians than nurses; nurse-anaesthetists who administer anaesthetics and only incidentally nurse patients; and nurses in various specialties who do everything except nurse.

It is the State registered and assistant nurses who do the bedside nursing.

For some time past there has been a body of nursing opinion in England which desires to have

a training similar to that of the graduate in the United States. Medical opinion is opposed to this.

In Queensland the view has been expressed, particularly by tutors who have studied in England, that the answer to student wastage is the raising of the education standard, the raising of the minimum number of beds in a training school before it is recognised as such, and that an assistant nurse course be instituted. They base their suggestions on their English experience forgetting that the English pattern cannot be applied to Queensland with its large area and scattered population. The wastage due to girls failing or not completing their first or subsequent years is due to the fact that they have no desire to study, even though they desire to nurse, and if an assistant nurse course were started this group would not study for examinations.

The opinion was expressed by responsible senior nurses to Miss Bardsley when in England that an assistant nurse scheme was doomed to failure for this reason and because girls would not train for an inferior certificate in nursing. I am strongly of this opinion and I hope that, although the curriculum must be altered in Queensland, there will be no alteration in regard to our schools of nursing or types of nursing. Miss Bardsley informs me that Queensland nurses are highly thought of in England as good practical nurses and it is to be regretted that nursing reciprocity with the Mother Country is to be severed for most nurses training in Queensland.

DIVISION OF SOCIAL WORK

This departmental activity was established this year with the appointment of Miss M. Whitley as Senior Social Worker.

The changing concept of public health can be summed up in the definition of World Health Organisation, "Health is a state of complete physical, mental, and social well-being, and not merely the absence of disease or infirmity."

It is now appreciated that there are many factors involved in the prevention of disease as well as the recovery from disease. The financial position of the family, the living conditions at homes, and the relationship between members of the family, all play their part in the causation of disease, and if assistance is not given to the patient to help straighten out these worries, there is little the doctor can do to cure him. It is in "field work" that the social worker is valuable as a member of the medical team.

It is departmental policy to increase the number of social workers in the various divisions of the Department, and this will be done as graduates become available.

FLYING SURGEON SERVICE

In my last annual report I mentioned the appointment of the Flying Surgeon, who had begun operations a few weeks previously, was the most forward step made in giving security in health to the people living in the sparsely populated areas of North and Western Queensland since the Flying Doctor Service was established.

Apart from Mount Isa and Cloncurry, where the Flying Doctor is based, all the towns visited are "one-doctor" towns. Prior to the appointment of the Flying Surgeon these doctors, whose experience was mostly limited to twelve months' post-graduate experience, were compelled to undertake difficult emergency operations. It is to their credit and the credit of the Matrons of the hospitals who gave the anaesthetics that they did so with skill which was not expected in doctors so recently graduated.

The Flying Surgeon has relieved them of the worry of these operations, and his added skill has given the patients a better chance of recovery.

In addition to attending emergency calls, the Flying Surgeon visits the hospitals monthly to carry out elective surgery and to discuss medicine generally and specific patients in particular with the doctor.

The Flying Surgeon is accompanied by an anaesthetist and when required a nurse to assist at the operation.

The map of Queensland gives an indication of the extent of the territory supervised by the Flying Surgeon. Visits are only made to hospitals where there is no Medical Superintendent when the Flying Doctor, who is responsible for the general medical care of the residents of this area, is of the opinion the patient should not be moved.

VITAL STATISTICS

Population

The estimated population of Queensland at 31st December, 1959, was 1,447,198, an increase of 22,380 (or 1.6 per cent.) for the year. The estimated population living in the Greater Brisbane area was 571,000, an increase of 12,000 (or 2.1 per cent.) during 1959.

The population density per square mile is 2.17 persons for the whole of Queensland, 1.483 persons in the greater Brisbane area, and 1.31 persons for the rest of the State; 39.5 per cent. of the population of the State reside in the Metropolitan area.

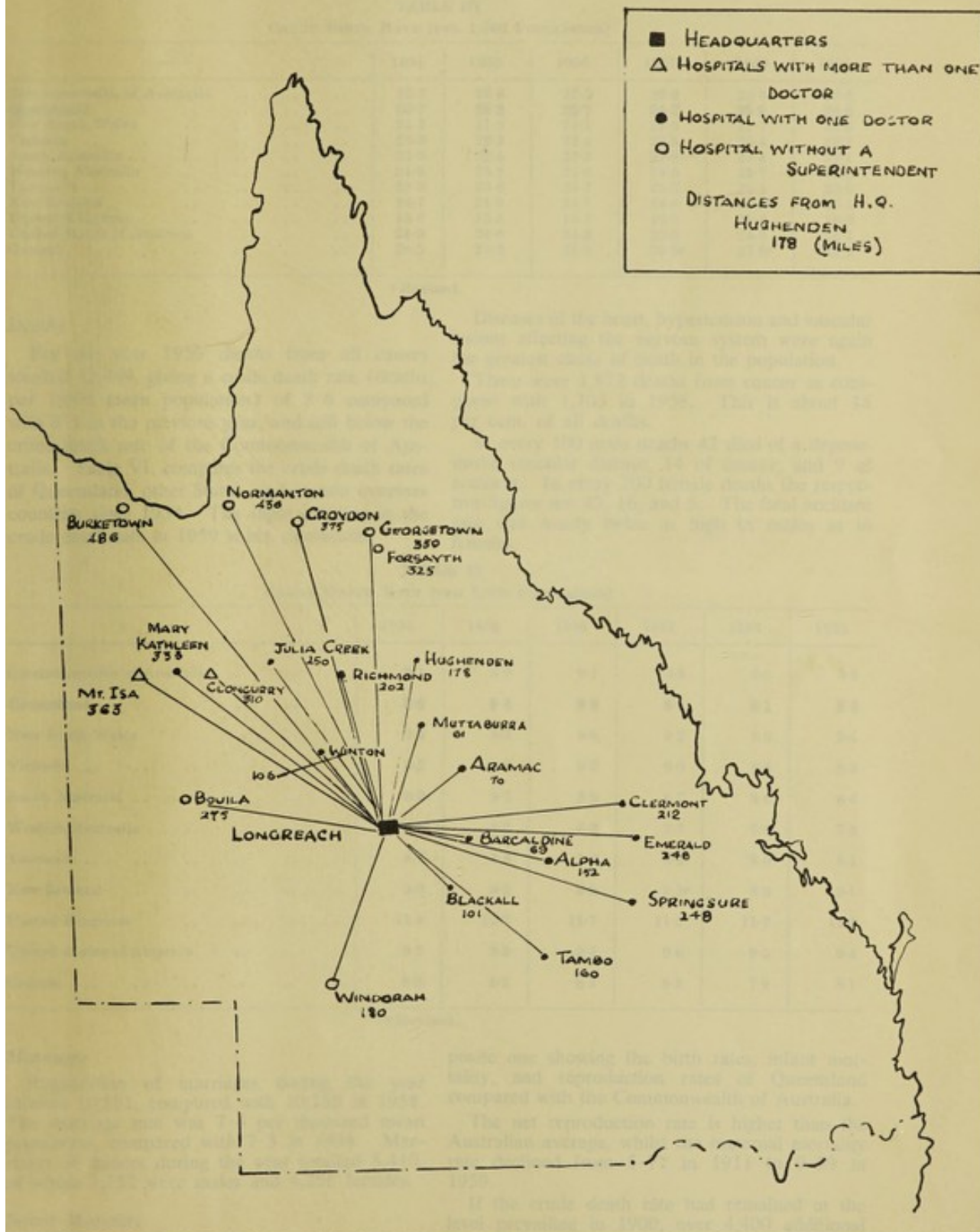
It is often said that Queensland's population growth is not as high as in some of the other States, and that this is due to industries passing us by, or to too small a share of migrants. Table II. shows the population of various States and of Australia in certain years since 1935 and also the percentage of the Australian population living in each State. Compared with 1935, the percentage of Australian population living in each State in 1958 is: New South Wales (decline of 1.9 per cent.), Victoria (+ 0.5 per cent.), Queensland (- 0.1 per cent.), South Australia (+ 0.6 per cent.), West Australia (+ 0.7 per cent.), and Tasmania (unchanged). Up till the end of 1958, at any rate, there was no significant decline in the percentage of people living in Queensland. The position is similar to Tasmania. West Australia, South Australia, and Victoria have increased their percentages in that order, but the increases have been mainly at the expense of New South Wales. The position may have changed in 1959, but significant changes are unlikely in any one year.

TABLE II.

SHOWING POPULATION OF AUSTRALIAN STATES AND THE PERCENTAGE OF ESTIMATED AUSTRALIAN POPULATION RESIDENT IN EACH STATE DURING CERTAIN YEARS (AT 31ST DECEMBER), SINCE 1935

Year	New South Wales		Victoria		Queensland		South Australia		Western Australia		Tasmania		Australian Capital Territory		Australia	
	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.	Number	Per Cent.
1935	2,658,672	39.3	1,841,595	27.3	971,297	14.4	586,762	8.4	449,623	6.6	233,623	3.5	14,890		6,755,662	
1940	2,790,048	39.4	1,914,918	27.1	1,031,452	14.6	599,056	8.4	474,076	6.7	244,002	3.5	23,134		7,077,586	
1945	2,932,968	39.5	2,015,107	27.1	1,084,864	14.6	630,882	8.5	490,088	6.6	250,280	3.4	25,978		7,430,197	
1950	3,240,057	39.0	2,237,182	28.1	1,205,418	14.5	722,843	8.7	572,649	6.9	290,333	3.5	37,999		8,307,481	
1955	3,525,923	37.9	2,555,021	27.4	1,350,684	14.5	834,035	9.0	670,750	7.2	325,801	3.5	40,477		9,313,291	
1958	3,725,686	37.4	2,770,919	27.8	1,424,818	14.3	907,922	9.1	713,583	7.2	346,545	3.5	62,075		9,951,618	

MAP SHOWING AREA SUPERVISED BY FLYING SURGEON



Births

During 1959 births registered in Queensland totalled 35,599, an increase of 1,727 on the previous year, which was the highest number on record. The crude birth rate was 24·8, compared with 23·9 in 1958. The births comprised 18,295 males and 17,304 females, giving a masculinity rate of 105·7.

The natural increase (excess of births over deaths) was 23,250, being equal to an increase of 1·6 per cent. of the population.

The birth rate in Queensland remains relatively high, and the rate of natural increase is very satisfactory.

TABLE III
CRUDE BIRTH RATE (PER 1,000 POPULATION)

	1954	1955	1956	1957	1958	1959
Commonwealth of Australia	22·5	22·6	22·5	22·9	22·6	22·6
Queensland	23·7	24·2	23·7	24·2	23·9	24·8
New South Wales	21·3	21·3	21·3	21·9	21·7	22·5
Victoria	22·3	22·3	22·4	22·6	22·4	22·1
South Australia	22·9	22·5	22·3	22·3	22·4	22·1
Western Australia	24·9	25·2	25·0	24·5	23·7	23·8
Tasmania	25·0	25·6	25·2	25·5	25·4	25·0
New Zealand	24·7	24·9	24·7	24·8	25·2	25·1
United Kingdom	15·6	15·5	16·1	16·5	16·8	16·9
United States of America	24·9	24·6	24·9	25·0	24·3	24·1
Canada	28·5	28·2	28·0	28·3 _r	27·6 _r	27·9

_r Revised.

Deaths

For the year 1959 deaths from all causes totalled 12,349, giving a crude death rate (deaths per 1,000 mean population) of 8·6 compared with 8·1 in the previous year, and still below the crude death rate of the Commonwealth of Australia. Table VI. compares the crude death rates of Queensland, other States, and certain overseas countries since 1954. The slight increase in the crude death rate in 1959 is not significant.

Diseases of the heart, hypertension and vascular lesions affecting the nervous system were again the greatest cause of death in the population.

There were 1,872 deaths from cancer as compared with 1,703 in 1958. This is about 15 per cent. of all deaths.

In every 100 male deaths 42 died of a degenerative vascular disease, 14 of cancer, and 9 of accident. In every 100 female deaths the respective figures are 43, 16, and 5. The fatal accident rate was nearly twice as high in males as in females.

TABLE IV
CRUDE DEATH RATE (PER 1,000 POPULATION)

	1954	1955	1956	1957	1958	1959
Commonwealth of Australia	9·1	8·9	9·1	8·8	8·5	8·9
Queensland	8·6	8·4	8·9	8·4	8·1	8·6
New South Wales	9·5	9·3	9·6	9·2	8·8	9·4
Victoria	9·2	8·9	9·2	9·0	8·6	8·9
South Australia	9·0	9·2	8·9	8·7	8·6	8·6
Western Australia	8·4	8·2	8·2	7·7	7·9	7·6
Tasmania	8·7	7·9	7·8	8·1	8·0	8·1
New Zealand	9·0	9·0	9·0	9·3 _r	8·9	9·1
United Kingdom	11·4	11·7	11·7	11·5	11·7	11·7
United States of America	9·2	9·3	9·4	9·6	9·5	9·4
Canada	8·2	8·2	8·2	8·2	7·9	8·1

_r Revised.

Marriages

Registration of marriages during the year totalled 10,581, compared with 10,255 in 1958. The marriage rate was 7·4 per thousand mean population, compared with 7·3 in 1958. Marriages of minors during the year totalled 5,410, of whom 1,152 were males and 4,258 females.

positive one showing the birth rates, infant mortality, and reproduction rates of Queensland compared with the Commonwealth of Australia.

The net reproduction rate is higher than the Australian average, whilst the maternal mortality rate declined from 5·77 in 1911 to 0·59 in 1959.

Infant Mortality

The infant mortality rate of Queensland and other States and certain overseas countries is shown in Table VII., while Table VI. is a com-

If the crude death rate had remained at the level prevailing in 1900, over 4,400 additional deaths would have occurred in Queensland during 1959. In addition, the expectation of life has been increased by 17 years during that period.

The causes of death to residents of Queensland during 1959 are shown in Table V.

TABLE V
SHOWING CAUSES OF DEATH OF RESIDENTS OF QUEENSLAND, 1956-1959

Causes of Death	Males	Females	Total 1959	Persons		
				1958	1957	1956
Tuberculosis of Respiratory System	65	9	74	80	88	76
Tuberculosis, other	2	2	4	3	4	5
Diphtheria	..	..	..	..	1	3
Whooping Cough	..	1	1	1	4	..
Tetanus	9	4	13	9	12	15
Acute Poliomyelitis	..	..	..	..	1	5
Measles	2	1	3	1	..	10
Other Infectious and Parasitic Diseases	47	22	69 ^a	93 ^a	62	98
Malignant Neoplasms	1,054	818	1,872	1,703	1,725	1,696
Neoplasms, Benign and Unspecified	19	20	39	56	31	44
Hay Fever and Asthma	31	27	58 ^a	41 ^a	79	80
Diabetes Mellitus	50	91	141	156	116	133
Other Allergic, Endocrine System, Metabolic, and Nutritional Diseases	19	21	40	35	42	43
Pernicious and other Hyperchromic Anaemias	3	4	7	10	15	18
Other Diseases of the Blood and Blood-forming Organs	16	22	38	44	45	45
Mental, Psychoneurotic and Personality Disorders	57	22	79	64	73	87
Vascular Lesions affecting the Central Nervous System	737	852	1,589	1,416	1,475	1,567
Other Diseases of the Nervous System and Sense Organs	122	81	203	203	197	194
Diseases of the Heart	2,288	1,330	3,618	3,243	3,202	3,450
Hypertensive Disease	259	238	497	491	494	533
Other Diseases of the Circulatory System	189	162	351 ^a	327 ^a	304	271
Influenza	56	36	92	12	51	38
Lobar-pneumonia	70	39	109	92	119	123
Broncho-pneumonia	82	73	155	177	170	237
Other and Unspecified Pneumonia	84	42	126	70	141	122
Bronchitis	154	31	185 ^a	138 ^a	125	149
Other Diseases of Respiratory System	126	55	181	199	228	218
Diseases of Stomach and Duodenum	70	29	99	97	105	107
Appendicitis	14	10	24	16	26	26
Diseases of Liver, Gallbladder, and Pancreas	63	53	116	120	123	140
Other Diseases of Digestive System	107	77	184	176	183	174
Nephritis and Nephrosis	106	104	210	237	279	301
Diseases of Male Genital Organs	102	..	102	83	76	90
Other Diseases of Genito-Urinary System	51	64	115	117	110	103
Deliveries and Complications of Pregnancy, Childbirth, and Puerperium	..	21	21	16	21	29
Diseases of the Skin and Cellular Tissue	15	11	26	26	37	28
Diseases of the Bones and Organs of Movement	14	26	40	51	44	47
Congenital Malformations	108	90	198	148	169	193
Intra-cranial and Spinal Injury at Birth	45	21	66	68	69	47
Other Birth Injury	23	17	40	40	38	45
Post-Natal Asphyxia and Atelectasis	39	29	68	61	58	61
Infections of Newborn	14	15	29	25	32	25
Immaturity Unqualified	62	56	118	139	163	188
Other Diseases Peculiar to Early Infancy	38	37	75	69	71	73
Senility without mention of Psychosis	46	77	123	131	174	197
Symptoms Referable to Systems or Organs	4	1	5	10	16	13
Ill-defined and Unknown Causes	14	10	24	23	41	31
Motor Vehicle Traffic Accidents	281	73	354	354	312	316
Accidental Falls	90	122	212	208	186	180
Accidental Drowning and Submersion	55	17	72	73	58	73
Other Accidents	204	50	254	268	264	276
Suicide and Self-Inflicted Injury	147	50	197	212	199	145
Homicide and Injury Purposely Inflicted by Other Persons	23	10	33	23	21	18
Total from all Causes	7,276	5,073	12,349	11,455	11,679	12,186

^a Due to the introduction of the Seventh Revision of the International Stat. Classification of Diseases, Injuries, and Causes of Death, figures shown are not comparable with those of previous years.

TABLE VI

BIRTH, INFANT MORTALITY, MATERNAL MORTALITY, AND REPRODUCTION RATES, QUEENSLAND AND AUSTRALIA

	Crude Birth Rate		Infant Mortality Rate		Maternal Mortality Rate (1)		Gross Reproduction Rate (2)		Net Reproduction Rate (3)	
	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia	Queensland	Australia
1946	24.8	23.7	29.3	29.0	2.26	1.85	1.55	1.46	1.42	1.33
1947	25.6	24.1	30.8	28.5	1.62	1.87	1.64	1.49	1.54	1.36
1948	24.7	23.1	28.0	27.8	1.47	1.40	1.59	1.45	1.51	1.33
1949	24.0	22.9	24.7	25.3	1.44	1.21	1.56	1.46	1.48	1.33
1950	24.4	23.3	24.8	24.5	1.45	1.09	1.60	1.49	1.52	1.42
1951	24.2	23.0	25.7	25.2	1.18	1.05	1.62	1.49	1.54	1.21
1952	24.6	23.3	24.9	23.8	1.03	0.94	1.67	1.55	1.59	1.47
1953	23.9	22.9	25.0	23.3	0.71	0.62	1.65	1.56	1.57	1.48
1954	23.7	22.5	22.3	22.5	0.98	0.69	1.67	1.56	1.62r	1.50r
1955	24.2	22.6	20.3	22.0	0.62	0.64	1.71	1.59	1.65r	1.53r
1956	23.7	22.5	22.7	21.7	0.89	0.56	1.72	1.61	1.66r	1.55r
1957	24.2	22.9	21.6	21.4	0.62	0.63	1.78	1.66	1.72r	1.60r
1958	23.9	22.6	19.4	20.5	0.47	0.50	1.79	1.67	1.72	1.60
1959	24.8	22.6	20.3	21.5	0.59	0.46	1.87	1.68	1.80	1.61

r Revised rates based on 1953-55 Mortality experience.

(1) *Maternal Mortality Rate*.—Deaths from puerperal causes per 1,000 live births.(2) *Gross Reproduction Rate*.—Represents the number of female children born on the average to women living right through the child-bearing years if the conditions on which the rate is based continue.(3) *Net Reproduction Rate*.—Is the gross reproduction rate corrected for deaths of females from birth to the end of the child-bearing period. It is a more accurate index than the gross reproduction rate. Unless it exceeds unity the population is not replacing itself.

TABLE VII

INFANT MORTALITY RATES (DEATHS UNDER ONE YEAR PER 1,000 LIVE BIRTHS)

	1954	1955	1956	1957	1958	1959
Commonwealth of Australia	22.5	22.0	21.7	21.4	20.5	21.5
Queensland	22.3	20.3	22.7	21.7	19.4	20.3
New South Wales	25.3	24.9	23.5	22.7	21.3	22.7
Victoria	19.3	18.4	19.3	20.2	19.2	21.2
South Australia	21.3	23.3	19.9	20.6	22.4	20.7
Western Australia	22.5	22.4	22.7	21.1	21.5	20.2
Tasmania	23.9	23.4	22.0	20.2	19.5	23.4
New Zealand	20.0	20.1	19.4	20.0	19.4	19.9
United Kingdom	26.3	25.9	24.4	24.0r	23.4	*
United States of America	26.6	26.4	26.0	26.3r	26.9	*
Canada	31.9	31.3	31.9	30.9	*	*

* Not available.

r Revised.

DIVISION OF PUBLIC HEALTH SUPERVISION

Deputy Director-General of Health and Medical Services: D. W. JOHNSON, M.B., B.S., (Syd.), D.T.M. & H. (Syd.)
 Health Officer: M. H. GABRIEL, M.B., B.S., (Q'ld.)
 Chief Inspector of Food and Drugs: W. H. KELLY
 Chief Sanitary Inspector: W. D. PRYOR
 Secretary to Director-General of Health and Medical Services: R. WOODLEY
 Microscopist-in-Charge, Hookworm Control: Vacant

INSPECTORS IN CHARGE OF DISTRICT OFFICES

Townsville: H. P. LOWES	Cairns: W. T. JOHNSTON
Toowoomba: W. J. SHIELDS	Rockhampton: R. G. C. J. CUFFE
Mackay: R. A. BURKE	Bundaberg: C. V. JAMES

SECTION OF EPIDEMIOLOGY

This year a start has been made in a small way to carry out epidemiological surveys. It has not been possible to set up anything like an ideal organisation for this purpose, due to lack of accommodation. Nevertheless, a survey of staphylococcal infections in mothers and babies has been completed at the Brisbane Women's Hospital and another survey on the incidence of infection in selected types of "clean" surgery is now proceeding at the Princess Alexandra Hospital, but it is too early to report findings. For staphylococcal surveys it is necessary to determine the phage types of the organisms found on culture, and this can be carried out at the Laboratory of Microbiology and Pathology. During these surveys, the staff of the hospitals concerned have been most enthusiastic and co-operative. Indeed, nurses particularly have been made very conscious of the spread of infection in their wards, and this is one of the benefits of a properly conducted project.

Amongst the recent amendments of the Health Acts has been the inclusion of some new notifiable diseases. These are dengue fever, encephalitis (formerly only encephalitis lethargica), hydatid disease, neonatal infections (any staphylococcal or streptococcal disease in a baby within twenty-one days of birth), ornithosis (psittacosis), non-paralytic as well as paralytic poliomyelitis, puerperal infections (any infection of the genital tract occurring in a mother within twenty-one days of birth or miscarriage), and taeniasis (tape worm infestation). These were only made notifiable on 29th December, 1959, and it is not yet possible to determine what is the true incidence of any of the diseases listed. It seems to take a few years for doctors and hospitals to get into the habit of notifying regularly a newly gazetted disease.

Nevertheless, there are good reasons for making all of the above conditions notifiable. Dengue fever, for example, has probably occurred in North Queensland in isolated outbreaks for many

years, and was previously diagnosed as "coastal fever." The last State-wide epidemic was in 1942, and some believe it will never occur on the same scale again because of better mosquito eradication and because rain water tanks are gradually disappearing with the provision of reticulated water. It will be interesting to watch and record its advance or decline now that it is notifiable. Another disease about which too little is known is ornithosis. These are a group of antigenically related virus infections, which occur naturally in birds and animals, and the marked increase in budgerigars in the home during the last five years has made attacks of psittacosis more likely than ever. In addition, the Laboratory of Microbiology and Pathology, with its wide range of serological tests to which blood samples are submitted, from time to time encounters weak positive reactions to the psittacosis complement fixation test, and there is yet no adequate explanation as to the significance of this finding. Encephalitis of all types is now notifiable, and the recent identification of Murray Valley type virus in Queensland mosquitoes suggests that undiagnosed cases in humans may be occurring in the wet season.

Tables VIII. and IX. show the reported incidence of notifiable diseases during the year, while Table X. gives the number of notified cases during the calendar year 1959. For the fiscal year 1959-60 the number of notifications was 949 from the Greater Brisbane Area and 1,938 from the country districts, making a total of 2,887 compared with 3,006 in 1958-59. Decreases were for breast abscess (down 28 on 1958-59), infantile diarrhoea (31), bacillary dysentery (14), diphtheria (4), Q fever (93), rheumatic fever (128), rubella (18), scarlet fever (28), tetanus (4), and tuberculosis (2). Principal increases were infective hepatitis (up 168 on 1958-59), lead poisoning (36), leptospirosis (38), malaria (21), and meningitis (16). Some of these are referred to in greater detail later.

TABLE VIII
NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1959, TO 30TH JUNE, 1960
METROPOLITAN AREA (POPULATION AT 1ST JULY, 1959—567,000)

Diseases	Months												Totals 1959-60	Totals 1958-59
	1959						1960							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Anchylostomiasis	..	..	..	2	..	..	..	..	..	1	..	1	4	6
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	5	4	5	..	..	3	1	1	2	4	1	2	28	37
Brucellosis	..	1	..	..	..	..	..	..	..	..	..	..	1	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	12	12	9	8	15	6	16	4	6	6	6	5	105	136
Diphtheria	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery (Amoebic)	..	..	..	..	..	..	..	..	1	..	..	..	1	3
Dysentery (Bacillary)	..	..	..	..	..	5	9	6	3	1	..	1	25	31
Encephalitis	..	..	..	..	..	..	1	..	..	..	..	1	2	3
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis—														
(Infective)	10	8	9	14	12	8	19	19	24	9	4	13	149	156
(Serum)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Hydatid Disease	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lead Poisoning	1	1	..	1	1	1	..	..	..	1	..	1	7	6
Leprosy	..	..	..	..	1	..	..	..	..	..	..	..	1	2
Leptospirosis	..	1	..	1	2	2	1	2	..	..	2	4	15	15
Malaria	1	1	5	2	2	3	8	6	7	6	3	3	47	21
Meningitis	1	2	4	..	1	..	1	..	..	..	..	3	12	10
*Neo-Natal Infections	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Ornithosis (Psittacosis) ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polio-myelitis—														
Paralytic	..	..	1	..	..	..	..	..	..	..	..	..	1	..
Non-Paralytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections	1	..	..	..	..	..	..	..	..	..	1	..	2	10
Q Fever	10	7	5	4	25	4	1	2	5	6	15	19	103	185
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	5	8	4	9	2	2	2	5	2	1	1	5	46	89
Rubella	..	..	1	..	..	..	..	..	..	..	..	..	1	16
Scarlet Fever	5	7	17	8	2	7	3	2	1	2	3	5	62	66
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Taeniasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	1	1	1	..	..	1	2	1	2	3	1	1	14	11
Tuberculosis	5	21	22	50	21	26	23	12	26	29	18	60	313	362
Typhoid Fever	..	..	1	1	..	..	..	2	2	1	..	..	7	3
Typhus Fever—														
*Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	1	..	..	..	..	..	1	..	1	..	..	3	3
Scrub	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tick	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	57	75	84	100	84	68	87	63	81	71	55	124	949	1,171

* Declared a notifiable disease on 29th December, 1959.

TABLE IX
 NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1959, TO 30TH JUNE, 1960
 EXTRA-METROPOLITAN AREA (POPULATION AT 1ST JULY, 1959—873,998)

Diseases	Months												Totals 1959-60	Totals 1958-59
	1959						1960							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Anchylostomiasis	10	2	3	6	13	4	3	3	2	..	6	5	57	57
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	11	5	4	10	9	5	5	6	4	3	3	4	69	88
Brucellosis	1	..	1	..	..	..	..	..	..	..	..	..	2	5
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	1	9	4	8	13	3	3	3	7	4	3	..	58	58
Diphtheria	3	..	..	1	1	..	1	..	..	..	..	..	6	10
Dysentery (Amoebic)	2	..	..	5	..	..	..	..	..	..	..	..	7	8
Dysentery (Bacillary)	4	1	1	3	3	4	4	2	2	1	1	..	26	34
Encephalitis	..	1	..	..	..	..	..	..	1	..	..	..	2	2
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis—														
Infective	65	44	67	93	61	53	35	38	25	22	47	41	591	416
Serum	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Hydatid Disease	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lead Poisoning	2	..	1	2	1	2	..	10	9	7	3	1	38	3
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	6
Leptospirosis	17	13	18	3	4	9	7	10	10	12	14	6	123	85
Malaria	..	..	1	2	..	2	1	2	1	1	1	..	11	16
Meningitis	9	6	1	1	1	1	5	2	..	..	1	2	29	15
*Neo-Natal Infections	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Ornithosis (Psittacosis) ..	..	..	..	..	..	..	1	..	..	..	..	1	2	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis—														
Paralytic	..	1	..	..	..	..	1	..	1	..	..	1	4	5
Non-Paralytic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections	7	2	1	3	1	3	7	1	4	3	1	..	33	66
Q Fever	37	13	18	15	22	24	5	24	20	13	34	22	247	258
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	5	6	7	3	3	2	6	3	8	3	4	3	53	138
Rubella	..	..	..	..	..	1	2	..	..	..	..	..	3	6
Scarlet Fever	4	5	7	11	2	7	6	2	5	..	6	9	64	88
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
*Taeniasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	2	..	2	1	1	1	4	2	2	1	1	5	22	29
Tuberculosis	22	36	34	23	38	29	41	22	45	66	37	81	474	427
Typhoid Fever	..	1	..	..	..	..	..	..	2	..	..	..	3	5
Typhus Fever—														
*Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	3	..	..	1	..	..	..	..	..	..	4	2
Scrub	..	1	..	..	1	..	..	3	2	2	..	..	9	4
Tick	..	..	..	1	..	..	..	..	..	..	..	..	1	4
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	292	146	173	191	174	151	137	133	150	138	162	181	1,938	1,835

* Declared a notifiable disease on 29th December, 1959.

TABLE X

NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF VENEREAL DISEASES),
SECTION 29 OF "THE HEALTH ACTS, 1937 TO 1959," DURING THE CALENDAR YEAR 1959

Diseases	Metropolitan Area	Outside Areas	Totals for Queensland, 1959	Totals for Queensland, 1958
Ancylostomiasis	2	61	63	82
Anthrax	..	..	..	..
Breast Abscess	38	85	123	122
Brucellosis	1	3	4	10
Cholera	..	..	..	..
*Dengue	..	..	..	..
Diarrhoea (Infantile)	112	73	185	167
Diphtheria	..	7	7	10
Dysentery (Amoebic)	2	11	13	7
Dysentery (Bacillary)	21	30	51	78
Encephalitis	1	2	3	4
Filariasis	..	..	..	2
Hepatitis (Infective and Serum)	181	581	762	469
Hydatid Disease	..	..	..	..
Lead Poisoning	8	11	19	10
Hansen's Disease	1	5	6	8
Leptospirosis	16	118	134	88
Malaria	32	14	46	18
Meningitis	9	25	34	31
*Neo-Natal Infections	..	..	..	..
*Ornithosis (Psittacosis)	..	..	..	..
Plague	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	1	3	4	5
Puerperal Infections	1	59	60	51
Q Fever	220	375	595	50
Relapsing Fever	..	..	..	..
Rheumatic Fever	68	61	129	276
Rubella	5	2	7	27
Scarlet Fever	80	68	148	177
Smallpox	..	..	..	..
*Taeniasis	..	..	..	..
*Tetanus	7	22	29	32
Tuberculosis	345	404	749	764
Typhoid Fever	3	4	7	11
Typhus Fever—				
*Epidemic	..	..	..	..
Murine	1	5	6	8
Scrub	..	2	2	8
Tick	..	3	3	3
Yellow Fever	..	..	..	..
Totals	1,155	2,034	3,189	2,518

* Declared a notifiable disease on 29th December, 1959

ANCHYLOSTOMIASIS (HOOKWORM)

This disease is endemic in tropical Queensland but it is largely confined to the aboriginal population. As the report of Hookworm Control indicates, surveys were carried out at various places to determine the incidence of the disease. Officers then gave treatment (including iron) to all positives and reported on the sanitation of the areas concerned. When the surveys are carried out in places where sanitation is poor or non-existent, it is disappointing (but not surprising) to note that the infestation rate is practically unchanged.

The advent of the new drug "Alcopar" for treating hookworm disease has caused a critical eye to be passed over the findings of previous surveys. Here is a drug which will eliminate all worms in most cases treated—a vast advance on all previous treatments. Yet in places where sanitation is poor, the results with this drug will also be poor, because treated aboriginals will surely get re-infected again from the soil on which they walk, sleep, and work. It has therefore been decided to make the drug available free of cost only to those settlements and missions where sanitation is satisfactory. This will avoid wasting an expensive drug, and it is also hoped that refusal of the drug may stimulate the authorities in charge to do something to improve sanitation and thus reduce pollution of the soil with hookworm larvae.

BREAST ABSCESS

The decline in notified cases of breast abscess is seen in both the metropolitan and extra metropolitan districts. It is probable that this represents a real decline in the incidence of this infection. However, it is a temporary respite only, and a further wave of cases will occur again whenever a virulent type of staphylococcus is introduced into hospitals. Of ten breast abscesses at the Brisbane General Hospital last year, seven were due to epidemic phage type 80/81.

DIPHTHERIA

Six patients were notified as suffering from diphtheria. All were in country areas—two from Charleville, and one each from Beaudesert and Booringa Shires. The other two patients were reported from Cairns—a child of four and an eight months old baby. The other cases were aged 30, 23, 29, and 10 years. We must always be vigilant to prevent return of diphtheria to the levels present thirty years ago. The past should be remembered when the present is being reviewed.

INFANTILE DIARRHOEA, AND BACILLARY DYSENTERY

Although notifications rose in the spring months, cases occurred throughout the year indicating endemicity. However it is impossible to believe that only 214 patients had infantile diarrhoea and/or bacillary dysentery during the year. Every doctor in practice knows how common these infections are. The plain truth is that most infections are not being notified. Negotiations to encourage and ensure better notification of listed diseases are now proceeding with the Queensland Branch of the British Medical Association.

INFECTIVE HEPATITIS

During 1959-60, notifications from country districts reached 591 (increase of 175) and in the metropolis reached 149 (decline of 7) making a total of 740 notifications (increase of 168).

This disease continues to cause concern, because it seems to be increasing. However, so little is known about the disease—its cause and its method of spread, together with lack of a diagnostic test—that it is difficult to advise or to apply control measures that are not based on guesswork rather than on facts.

The age distribution of the 740 notified patients during the year, together with the age distribution of 858 patients notified in other years are set out in Table XI.

TABLE XI
SHOWING AGE DISTRIBUTION OF 1598 NOTIFIED PATIENTS WITH INFECTIVE HEPATITIS

Age Group	Previous Notifications	Notifications 1959-60	Totals	Percentage of Totals
0-4 years	33	34	67	4.2
5-14 years	304	315	619	38.7
15-24 years	154	122	276	17.3
25-39 years	244	172	416	26.0
40 years and over	86	86	172	10.8
Unstated	37	11	48	3.0
Totals	858	740	1,598	100.0

The 740 notifications showed a definite inclination to occur in the second half of 1959—the exact figures are 446 from 1st July to 31st December, 1959, and 294 from 1st January to 30th June, 1960. It is too early to state that this is significant.

Local Authority areas notifying more than five patients were: Greater Brisbane (149), Flinders

(77), Isisford (55), Inglewood (49), Rockhampton (33), Toowoomba (33), Eacham (27), Townsville (18), McKinlay (18), Balonne (17), Bundaberg (17), Cloncurry (17), Maroochy (16), Gold Coast (15), Monto (14), Chinchilla (14), Goondiwindi (14), Thursday Island (12), Winton (10), Nanango (10), Ipswich (10), Herberton (8), Booringa (7), and Banana (6). The relatively high incidence in some of the

sparsely populated areas should be noted. Some of the outbreaks were localised but infected a high proportion of the population. Yet Brisbane escaped rather lightly. Perhaps, like poliomyelitis, the virus of hepatitis is endemic in urban areas, so that most of the populations of our cities and large towns have some immunity to it. In country districts, natural immunity is presumably low, so more patients develop jaundice—the sole diagnostic sign of this interesting disease.

LEAD POISONING

Queensland leads the world in lead legislation, and most doctors practising here are well aware of the symptomatology of lead poisoning. No longer are foot drop and wrist drop commonly seen. Lead intoxication is diagnosed much earlier today—on estimations of lead in urine, on response to versenate, on the presence of stippled

red blood cells and on rather non-specific symptoms such as abdominal pain and colic. Age distribution in the 45 notified patients was as follows:—0-4 years—16 (35.6 per cent.); 5-14 years—18 (40 per cent.); 15-29 years—nil; 30-59 years—9 (20 per cent.); 60 years and over—1 (2.3 per cent.); and unknown—1. Those over 14 years of age came from industry, but about three-quarters of the patients were under that age. Rockhampton contributed 24 patients—and nearly all of these were children. Seven children lived in Brisbane, while four patients lived in Alpha.

Most houses in Queensland country are built of timber, and a surprising number of these do not appear to have been painted for many years. This old paint frequently contains a large amount of lead, and as it weathers it powders and peels, thereby making it a potent poison for curious children.

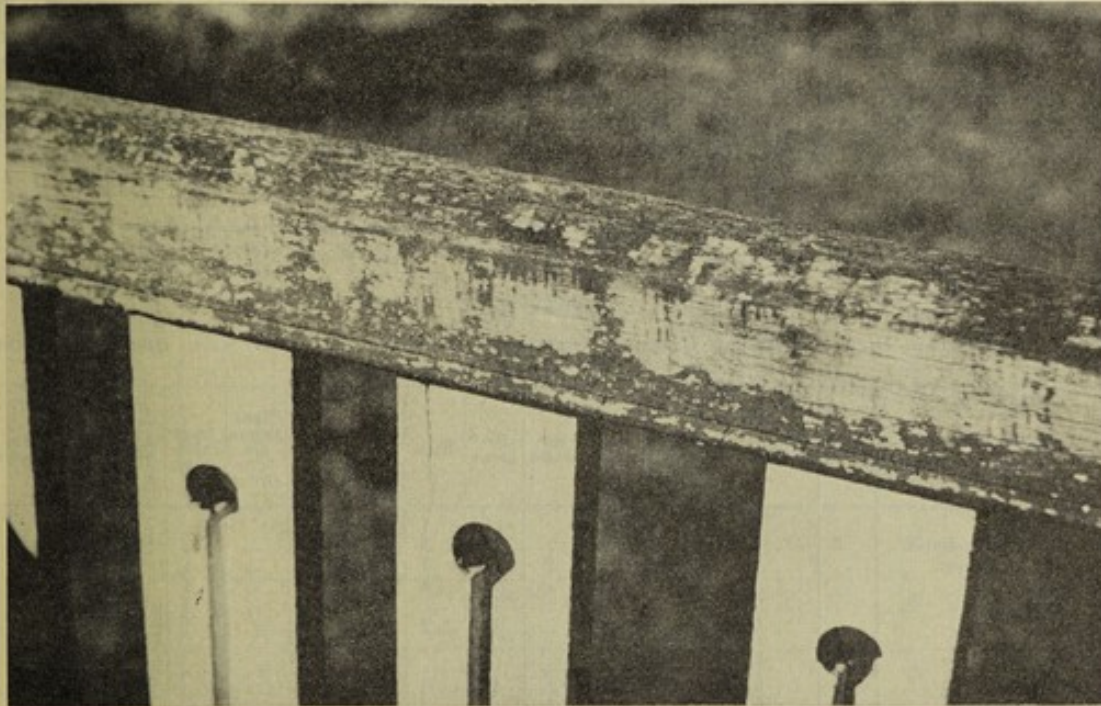


FIGURE 1.—Showing Chewed Verandah Rail at a Townsville Home Where a Child Developed Lead Poisoning.

Some people are openly sceptical that children eat enough old paint to develop lead poisoning.

Figure 1 is a photograph of the verandah railing of a house in Townsville where lived a child with lead poisoning. This boy of three years would stand on the bottom support of the verandah railing, and this enabled him to reach the top verandah rail. His teeth marks can be plainly seen—apparently he rested his upper teeth on the top of the rail, and removed the paint with his lower teeth. The house overlooked a sports field. There was no history as to when the paint was applied. However, it was old, powdered, and cracked, and the chocolate paint on the top rail contained 28 per cent. lead (27 per cent. soluble lead), the paint on the uprights contained

29.5 per cent. of lead, while the stone paint on the walls contained 39.1 per cent. of lead. A notice was issued requiring removal of the paint.

The child had clinical symptoms and excreted 0.15 m.g.m. lead per litre of urine (upper limit of normal in children is about 0.03 m.g.m.), rising to the high figure of 3.5 m.g.m. per litre after given a course of versenate.

It was the accumulation of instances of lead poisoning in children such as this that caused the medical profession in this State to move against lead paints. Today, lead is not permitted in paints for architectural use (other than on structural steel). Nevertheless, many old houses remain with peeling lead paint that is a constant temptation and danger to children.

LEPTOSPIROSIS

It is only twenty-six years ago that leptospirosis was first diagnosed in Queensland by Morrissey and Cotter. It was called Weil's disease, and most of the patients were jaundiced. The leptospirae isolated during this outbreak in the canefields around Ingham were later found to belong to two serological types—*L. australis* A and *L. australis* B—neither of which was identical with *L. icterohaemorrhagiae*. This latter type was not isolated until 1937, when a Brisbane sewer worker developed Weil's disease. In 1936, Derrick isolated *L. pomona* from a dairy farmer at Pomona, and this biotype has been shown to have a world-wide distribution. In 1942 Johnson isolated *L. hyos* from a timber worker at Innisfail. The establishment of a branch laboratory of the Queensland Institute of Medical Research enabled many more blood samples from fever patients to be forwarded to the Laboratory of Microbiology and Pathology in Brisbane. Here the identification of the strains isolated has been carried out unobtrusively every year until now there are eleven biotypes of leptospira found to occur in this State.

Tables XII., XIII., and XIV. show some of the features associated with leptospirosis in Queensland. During 1959-60, the number of

patients diagnosed was 194. (The number notified was 138, an increase of 38 over the previous year.) Of these, 24 (including one female) lived in the Greater Brisbane area, 27 (2 females) in the Moreton statistical division, 67 in Cairns (the cane-growing districts north of Townsville), and 26 lived outside the State. As to the biotype, *L. pomona* leads with 57 per cent. of all the infections diagnosed, with *L. australis* and *L. hyos* following next in order of frequency. Most infections occur in the first third of the year (January-April) which is the wet season. This is not unexpected, because leptospiras commonly infect man from mud or water. Leptospirosis affects those whose work brings them into contact with infected animals, either directly or through the medium of water. Thus meatworkers, dairy farmers, cattle industry employees, and sugar cane industry employees provide the majority of patients, and this has been evident also in previous years. Rather surprisingly, of the Queensland patients, 74 went to hospital while 94 appear to have stayed at home. Of the 26 patients who lived interstate, only one was admitted to hospital. Analysis of the age groups of the patients show that 60 per cent. of them were in the working years (i.e. 20-59), while 19 per cent. were in the 10-19 year group.

TABLE XII

SHOWING STATISTICAL DIVISIONS WHERE CASES OF LEPTOSPIROSIS LIVED, TOGETHER WITH BIOTYPE CAUSING INFECTION

Statistical Divisions	Ictero	Canicola	Zanoni	Robinson	Australis	Esposito	Pomona	Hyos	Celladoni	Grippo	Hebdomadis Sero Group	Dual Infections	Totals	Males	Females
Metropolitan Brisbane..	3	..	..	..	1	..	12	5	..	..	..	..	21	20	1
Brisbane Abattoirs ..	..	..	..	..	..	..	2	1	..	..	..	..	3	3	..
Moreton ..	..	..	..	..	..	..	22	4	..	..	..	1	27	25	2
Maryborough ..	..	..	..	..	1	..	14	..	..	..	..	1	16	15	1
Downs ..	..	..	..	..	..	..	10	2	..	..	..	..	12	12	..
Roma ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Western ..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	..
Rockhampton ..	..	..	1	..	..	..	11	2	..	..	..	..	14	13	1
Central Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Far Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay ..	..	..	..	..	..	..	3	..	..	..	..	..	3	2	1
Townsville ..	..	..	1	..	..	..	2	..	1	..	..	..	4	4	..
Cairns ..	1	1	12	2	23	..	11	3	3	..	9	2	67	66	1
Peninsula ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Outside Queensland ..	..	..	..	..	..	..	22	4	..	..	..	..	26	25	1
Totals ..	4	1	14	2	25	..	110	21	4	..	9	4	194	186	8
Percentage ..	2.0	0.5	7.2	1.0	12.9	..	56.7	10.8	2.1	..	4.6	2.1	100.0	95.9	4.1

TABLE XIII

SHOWING OCCUPATION OF LEPTOSPIROSIS CASES AND MONTH OF ONSET

Statistical Divisions	Meat	Dairy- ing	Cattle	Cane	Other	Un- known	Totals	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June
Metropolitan	13	..	2	..	4	2	21	2	1	..	4	..	2	2	..	2	4	3	1
Brisbane Abattoirs	3	..	..	..	..	..	3	1	..	..	..	..	..	..	..	..	1	1	..
Moreton	3	11	1	..	6	6	27	1	3	1	1	5	2	2	7	5	1	1	..
Maryborough	2	5	3	..	4	2	16	1	..	1	..	2	3	..	3	4	1	..	1
Downs	5	..	3	..	4	..	12	4	2	..	..	2	2	..	..	1	..	..	1
Roma	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
South Western	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	..	..
Rockhampton	..	3	2	..	6	3	14	1	1	..	3	..	..	1	..	4	1	2	1
Central Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Far Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	..	2	1	..	..	3	..	..	..	..	..	..	1	..	..	1	1	..
Townsville	1	..	1	..	1	1	4	..	..	1	1	..	..	1	..	..	1	..	..
Cairns	..	1	3	13	15	35	67	13	13	2	2	3	1	7	11	5	7	1	2
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Outside Queensland	7	9	..	1	5	4	26	2	1	1	2	1	4	3	1	6	3	1	1
Totals ..	34	29	17	15	46	53	194	25	21	6	13	13	14	15	22	28	20	10	7
Percentage ..	17.5	14.9	8.8	7.7	23.7	27.3	100	12.9	10.8	3.1	6.7	6.7	7.2	7.7	11.3	14.4	10.3	5.2	3.6
± Expected No.	+2	-1	-7	-8	+8	+11	..	-3	-5	-3	-9	-9	-9	-8	-5	-2	-6	-11	-12

TABLE XIV

SHOWING AGE DISTRIBUTION OF CASES, STATISTICAL DIVISION WHERE THEY LIVE AND WHETHER ADMITTED TO HOSPITAL OR NOT

Statistical Division	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and Over	Un-known	Totals	In Hospital	Not in Hospital
Metropolitan	..	7	6	3	2	1	1	1	..	21	12	9
Brisbane Abattoirs	..	..	1	1	..	1	..	..	..	3	3	..
Moreton	2	10	6	5	3	1	..	..	..	27	20	7
Maryborough	..	3	4	3	3	1	..	..	2	16	4	12
Downs	..	4	3	3	1	1	..	..	..	12	5	7
Roma	..	..	..	..	..	..	..	..	..	..	..	..
South Western	..	..	1	..	..	..	..	..	..	1	..	1
Rockhampton	..	2	3	5	3	1	..	..	..	14	2	12
Central Western	..	..	..	..	..	..	..	..	..	..	..	..
Far Western	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	1	..	..	1	..	..	..	1	3	2	1
Townsville	..	1	1	..	2	..	..	..	..	4	1	3
Cairns	..	3	13	7	5	1	..	..	38	67	25	42
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..
North Western	..	..	..	..	..	..	..	..	..	..	..	..
Outside Queensland	1	6	5	7	4	2	..	..	1	26	1	25
Totals	3	37	43	34	24	9	1	1	42	194	75	119
Percentage	1.5	19.1	22.2	17.5	12.4	4.6	0.5	0.5	..	100	38.7	61.3

MALARIA

The continued importation of malaria (mainly from New Guinea and the Pacific Islands) makes it imperative to continue mosquito eradication campaigns in the areas north of Townsville where malaria has occurred before. Three patients with imported infections were diagnosed in Cairns, yet there has not been a reported case of malaria naturally infected in that area for fifteen years, a tribute to the excellent malaria control exercised by Cairns City Council and Mulgrave Shire Council. Thirty-six of the patients reported were ex-servicemen.

Q FEVER

During 1959-60 notifications of Q fever totalled 350 (metropolitan 247 and rest of State 103)

compared with 443 in the previous year. This may be a spurious decrease but it is difficult to obviate this. It is often due to the fact that two and sometimes three samples of blood (weeks or months apart) must be tested to check rise in antibodies. The total diagnosed at the Laboratory of Microbiology and Pathology was 320 and this is a truer guide. As in the last three years, special inquiry was made into each of these 320 cases but some were difficult to locate owing to changes of address in seasonal workers such as shearers and meatworkers.

Table XV. shows the age distribution of 320 cases of Q fever, the statistical division where they lived, and whether or not they were admitted

TABLE XV

Q FEVER SURVEY, 1959-1960

SHOWING AGE DISTRIBUTION OF CASES AND STATISTICAL DIVISION WHERE THEY LIVE AND WHETHER ADMITTED TO HOSPITAL OR NOT

Statistical Division	Age Groups									In Hospital	Not in Hospital	Totals
	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 Years and Over	Age Un-known			
Metropolitan	..	10	5	10	11	11	2	..	1	25	25	50
Brisbane Abattoirs	..	13	7	15	3	7	2	..	..	26	21	47
Moreton	4	14	10	11	10	..	1	..	2	35	17	52
Maryborough	..	1	1	1	..	1	..	..	..	1	3	4
Downs	1	4	8	6	5	3	..	..	4	8	23	31
Roma	..	2	9	1	3	1	..	..	2	5	13	18
South Western	..	4	6	3	8	3	1	..	..	12	13	25
Rockhampton	..	2	3	7	3	..	..	..	2	5	12	17
Central Western	1	3	8	6	8	7	2	..	..	19	16	35
Far Western	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	..	..	..	..	1	..	..	..	..	1	1
Townsville	1	2	6	2	3	..	..	..	1	9	6	15
Cairns	..	1	..	2	2	2	1	1	2	7	4	11
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..
North Western	..	..	..	..	..	..	..	..	..	..	..	..
Outside Queensland	..	1	6	..	3	1	..	..	3	4	10	14
Totals	7	57	69	64	59	37	9	1	17	156	164	320

to hospital. The ages of the patients are interesting—64 (20 per cent.) were under 20 years of age, 133 (41·6 per cent.) were 20–39 years of age, 96 (30 per cent.) were 40–59 years of age, and only 10 were more than 60. (Last year, corresponding percentages in the above age groups were 25·1 per cent., 44·7 per cent. and 28·1 per cent.) No fewer than 97 patients came from the Greater Brisbane area, and 52 patients lived in the Moreton Shire which has meatworks and is principally a dairy area. The South Western and Central Western statistical areas contributed 60 patients, while 18 came from the Roma statistical area, a total of 70 patients. This reflects the rapid spread of Q fever in the sheep raising areas of the State. Last year (1958–59) the total number of cases from these areas was 36. Queensland is not the only State which produces wool, and it is imperative that the incidence and distribution of Q fever be known on a Commonwealth

wide basis. This State is doing the research work on this disease without any financial or other assistance from outside Queensland. The disease is too important to be continually overlooked in other States. This year three patients living in the Broken Hill district were diagnosed in this Department's laboratory, indicating that the disease already exists in sheep and kangaroos in New South Wales.

Table XVI. shows the months when patients became ill with Q fever. Peak months were March, April, July, August, and November, while months of lowest incidence were December and June. It will be noticed that in the Greater Brisbane and Moreton areas cases tended to occur throughout the year, whilst in the sheep growing areas the peak months were between November and March, which corresponds with the shearing season.

TABLE XVI
Q FEVER SURVEY, 1959–1960
SHOWING MONTHS OF ONSET OF ILLNESS AND STATISTICAL DIVISIONS WHERE PATIENTS LIVED

Statistical Division	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	March	April	May	June	Totals
Metropolitan ..	5	4	1	3	2	2	1	2	5	7	11	7	50
Brisbane Abattoirs ..	4	5	3	3	2	1	5	5	8	3	3	5	47
Moreton ..	6	6	4	4	1	..	4	4	6	9	3	5	52
Maryborough ..	..	1	1	..	2	..	..	..	..	..	..	..	4
Downs ..	7	3	4	3	7	2	2	..	1	1	..	1	31
Roma ..	..	1	..	..	4	1	5	6	1	..	..	..	18
South Western ..	..	2	3	2	2	4	2	4	4	1	1	..	25
Rockhampton ..	1	6	2	..	1	..	1	..	2	4	..	..	17
Central Western ..	6	..	1	3	5	1	4	2	8	3	2	..	35
Far Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay ..	..	..	..	1	..	..	..	..	..	..	..	..	1
Townsville ..	2	3	2	2	4	..	..	2	..	..	..	..	15
Cairns ..	..	1	1	1	..	..	..	..	3	4	..	1	11
Peninsula ..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Outside Queensland ..	2	..	2	1	3	..	..	..	..	2	4	..	14
Totals ..	33	32	24	23	33	11	24	25	36	32	28	19	320
Variation from Expected Number ..	+6	+5	-3	-4	+6	-16	-3	-2	+11	+5	+1	-8	..

TABLE XVII
Q FEVER SURVEY, 1959–1960
SHOWING OCCUPATION AND SEX OF PATIENTS AND STATISTICAL DIVISION WHERE THEY LIVED

Statistical Division	Sheep and Wool	Meat Industry	Dairying	Cattle	Other	Unknown	Totals	Males	Females	Totals
Metropolitan ..	..	32	2	2	13	1	50	50	..	50
Brisbane Abattoirs ..	..	44	..	..	2	..	46	46	..	46
Moreton ..	..	35	10	2	6	..	53	51	2	53
Maryborough ..	..	..	2	1	1	..	4	4	..	4
Downs ..	5	13	2	2	9	..	31	31	..	31
Roma ..	12	1	..	..	2	3	18	18	..	18
South Western ..	21	..	..	3	1	..	25	25	..	25
Rockhampton ..	..	7	2	2	5	1	17	16	1	17
Central Western ..	28	..	..	2	2	3	35	35	..	35
Far Western ..	..	..	..	..	..	..	..	..	..	..
Mackay ..	..	..	..	..	1	..	1	1	..	1
Townsville ..	..	12	..	..	2	1	15	14	1	15
Cairns ..	..	1	2	1	5	2	11	10	1	11
Peninsula ..	..	..	..	..	..	..	..	..	..	..
North Western ..	..	..	..	..	..	..	..	..	..	..
Outside Queensland ..	4	6	2	..	1	1	14	14	..	14
Totals ..	70	151	22	15	50	12	320	315	5	320
Percentages ..	21·9	47·2	6·9	4·7	15·6	3·8	100·0	98·4	1·6	100·0

POLIOMYELITIS

It is a pleasure to be able to report that only five notifications were received, the same as in the previous year. Of these, three were accepted by the Surveillance Committee as poliomyelitis. Only one of the patients (an 8 year old boy) lived in Brisbane. He had received three injections of Salk vaccine, and this indicates that Salk vaccine does not give complete protection to everyone, and has never claimed to do so. This boy had mild weakness in both legs. The country notifications were a baby aged eleven months (who had recently received two doses of vaccine and presumably had little immunity) and a 20 year old girl who had not received any vaccine.

The grim cripple of past years is not evident just now, and this is likewise true in every State. There is no doubt at all that Salk vaccine is largely responsible for this happy situation, but it is not yet possible to say how long it will last. If large numbers of people who had not had vaccine develop poliomyelitis, while vaccinated people do not get the disease, then we can be sure that the vaccine is responsible for the immunity in the vaccinated. This has not occurred in Australia since the vaccine was first used in 1956, and it is hoped that it will not occur. Just how long the immunity lasts is not yet quite clear, but no authority has yet advocated a fourth dose of Salk.

In the last few years, live virus vaccine has been extensively tested in South America, in U.S.S.R., and also in Florida (U.S.A.). Up to 13th April, 1960, no fewer than 413,000 people had taken the live virus in Dade County (Florida), which includes Miami. The vaccine under trial appeared to be safe and efficient, and the U.S. Public Health Service has recently issued several drug houses with licenses which will enable them to undertake commercial production subject to a very stringent schedule of precautions. Live vaccine is unlikely to be used in Australia unless it can be shown to be absolutely safe and unless it is definitely superior to Salk vaccine in conferring immunity to poliomyelitis. The National Health and Medical Research Council recently reviewed "live" polio virus vaccines, and has recommended that at present Salk vaccine only should be used in Australia.

STAPHYLOCOCCAL INFECTIONS

(A) *Brisbane Women's Hospital*

During the year the survey of the incidence of staphylococcal infections at the Brisbane Women's Hospital was completed. Detailed results are

set out in the report of the activities of the Laboratory of Microbiology and Pathology which carried out the bacteriological work for the survey team.

Briefly, the objects of the survey were as follows:—

(1) To ascertain how frequently mothers developed a nasal carrier state after confinement, and how many were nasal carriers on admission to the labour wards.

(2) To determine the frequency of staphylococcal infection in the nose and umbilicus of new born babies, by taking cultures from the second day of birth until discharged.

(3) To determine the efficacy of 3 per cent. hexachlorophene lotion ("PhisoHex") in reducing infection of the nose and umbilicus of new born babies from birth until discharged.

(4) To determine the nasal carrier rate in nurses at Brisbane Women's Hospital.

(5) To determine the efficacy of a nasal ointment in reducing the carrier rate in infected nurses.

The answers to these questions were fairly definite. (1) About 36 per cent. of mothers were found to have coagulase positive staphylococci by nasal culture when admitted. Of these, only 1 (2 per cent.) had 80/81 strain. When they were discharged, 46 per cent. carried coagulase positive staphylococci, of which 3 per cent. were 80/81 strain. There was thus a slightly increased risk of nasal infection with 80/81 strain while in hospital. (2) Babies quickly developed staphylococcal infection after birth as is seen in Table XVIII. Infection appeared by the second day in about 13 per cent. of babies, and the rate rose to 62 per cent. in the nose and 87 per cent. in the umbilicus by the fifth day. A few developed eye infections, some had pustules and some had obvious infections of the umbilical cord. (3) Babies treated from birth with hexachlorophene lotion ("PhisoHex") developed infections only about half as often as babies who were not so treated. (4) Of 948 nasal cultures taken from the nursing staff in three wards, 373 (39.5 per cent.) carried coagulase positive staphylococci and 64 (7 per cent.) carried phage type 80/81. (5) The trials of the antibiotic ("Naseptin") ointment are still incomplete, but the carrier rate appears to be lowered in nurses who are so treated.

TABLE XVIII

SHOWING RESULTS OF CULTURES ON BABIES AT BRISBANE WOMEN'S HOSPITAL, 1959-60

Day After Birth		Nasal					Umbilical				
		No.	C+	Per Cent.	80/81	Per Cent.	No.	C+	Per Cent.	80/81	Per Cent.
Second Day	P	127	4	3	..	..	127	28	2	2	2
	C	121	16	13	8*	7	125	51	41	13	10
Third Day	P	260	40	15	4	1.5	260	113	43	18	7
	C	261	83	32	19	7	260	201	77	40	15
Fourth Day	P	124	30	24	6	5	124	66	53	11	9
	C	122	60	50	11	8	122	110	90	25	20
Fifth Day	P	281	92	33	14	5	281	174	62	26	9
	C	276	172	62	29	11	276	244	87	49	18

* Six of these occurred in one week.
P = PhisoHex treated; C = Control.

C+ = Coagulase positive.
C- = Coagulase negative.

(B) *Princess Alexandra Hospital*

In May, 1960, a survey was commenced at the Princess Alexandra Hospital to determine the incidence of staphylococcal infections of wounds following specified clean operations. Secondary objectives were to ascertain the number of patients who were nasal carriers or skin carriers of staphylococci prior to operation, and to assess the incidence of nasal and skin infections in the staff who come in contact with the patients included in the study. The survey is so recent that results are not yet ready for publication.

When both these surveys are completed, valuable information will be available on the behaviour of staphylococcal infections in our hospitals. This organism deserves the fullest study both in the laboratory and in wards, operating theatres, nurseries, and labour rooms, because it is without doubt the most frequent cause of hospital infection and also because of its capacity to survive in this age of antibiotics.

TETANUS

This year 36 notifications of tetanus were received. Tetanus is well notified in Queensland, and I feel that every patient admitted to hospital is notified. I commented on a trend in tetanus which seemed to indicate that fewer children were infected than in the past. This year, there is an unmistakable trend in this direction. In 1958-59, children under the age of 15 years numbered 10 (or 25 per cent.) of notifications. This year, they number 8 (22 per cent.). Of 215 patients notified during the six years 1948 to 1954, 47 per cent. were under the age of fifteen. There is little doubt now that children are reaping the benefits of active immunity, and probably the most significant factor was the introduction of triple antigen in 1953.

Tetanus is one of the worst diseases that can infect man. It has a high mortality. It can be completely prevented by adequate immunization. Every person, irrespective of age, should be immunized against it.

HANSEN'S DISEASE

(1) HANSEN'S DISEASE IN THE WHITE POPULATION

Medical Supervision: M. H. GABRIEL, B.Sc., M.B., B.S. (Q'ld), A.R.A.C.I., Health Officer, Health and Medical Section.

This has been another eventful year in the history of Hansen's disease in Queensland. Patients were removed from Peel Island on 5th August, 1959, and housed in a specially converted building in the Chronic Diseases Section of the Princess Alexandra Hospital in South Brisbane.

Each patient has a private room and all are treated, as far as possible, as ordinary hospital patients. Amenities provided are of a high standard and the patients have settled in very well. Provision has been made at this annexe not only for accommodation and treatment of newly detected cases but also for temporary

re-admission of discharged patients for any special investigation or treatment which may be considered necessary or desirable. This facility has been and will be of special benefit to ex-patients who live outside the Brisbane area. During the past year, two ex-patients, both living in North Queensland, have taken advantage of this facility. In addition, out-patient treatment is given to discharged patients, a clinic being held once a week at the annexe; this has been very much appreciated by ex-patients, many of whom previously preferred to journey to Peel Island for advice and treatment rather than attend private practitioners or public hospitals.

TABLE XIX

COMPARISON OF STATISTICS FOR THE FINANCIAL YEARS 1957-58-59-60

	1957-58			1958-59			1959-60		
	Male	Female	Total	Male	Female	Total	Male	Female	Total
Population at 1st July ..	14	6	20	14	5	19	11	3	14
Admitted	4	..	4	4	3	7	1	1	2
Discharged	3	1	4	6	5	11	3	..	3
Allowed Home Isolation ..	..	..	..	..	..	..	5	..	5
Died	1	..	1	1	..	1	1	1	2
Population at 30th June ..	14	5	*19	11	3	*14	3	3	*6

*These totals include three patients given special permission to remain in hospital although eligible for discharge.

ADMISSIONS

During the year one aged male patient and one female patient were admitted for the first time. Both showed moderate advancement of the disease and had apparently remained undiagnosed for many years. The male had suffered a cerebral vascular accident before admission and was bed-ridden. He died after five months as the result of another cerebral vascular accident. The female patient is making fair progress.

RELEASES

(a) *Discharges*.—Three (3) male patients were discharged after obtaining three (3) consecutive negative smears taken at monthly intervals. They were all clinically very well and all have been required to give undertakings that they will faithfully continue treatment, that they will not accept employment, and that they will not make unnecessary contact with other persons, particularly children, until such time as twelve (12) consecutive negative smears, taken at monthly intervals, have been obtained.

(b) *Home Isolation*.—Five (5) male patients were allowed home isolation although positive smears were still being obtained from them. All

were clinically well, all had suitable homes to go to, and all had been under effective treatment for periods varying from thirteen months to several years. They have all made excellent progress since returning to their homes. These patients have given similar undertakings to those given by the discharged patients mentioned above and all appear to have honoured their promises.

DEATHS

In addition to the death of the aged male patient recorded above, one aged female patient died of an acute coronary occlusion. She had fairly advanced Hansen's disease and had just suffered a moderately severe lepra reaction so that she was in a weakened condition to survive the coronary attack.

DRUG TREATMENT

Dapsone (one of the sulphone drugs) remains the principal specific drug in use and continues to give good results. The newer drugs "Etilsul" and "Ciba 1906" are still undergoing small-scale therapeutic trials. Chloroquin has been tried in a number of cases of "lepra" reaction and has given very promising results.

OCCUPATIONAL THERAPY

The Red Cross Society has continued its interest in the patients and handicrafts are still taught and materials supplied. In addition, it has been possible for some of the patients to spend some time in the Red Cross Workshop to learn woodworking, &c.

SPECIALIST SERVICES

Now that patients are accommodated in an annexe to the Princess Alexandra Hospital the specialist services of the hospital are readily available and have been made use of quite extensively. The services of the Pathology, Orthopaedic, X-ray, Ear, Nose and Throat, Eye, Optometrical and Dental Departments have all been called on.

The only specimens now routinely submitted to the Laboratory of Microbiology and Pathology are the tissue smears to be examined for *M. leprae*.

GENERAL

As a result of the transfer of the patients from Peel Island many links with the past have been broken. The Rev. Canon W. P. B. Miles (Anglican) and Rev. Fr. G. Nolan (Roman Catholic) have visited patients at Peel Island for many years and continued their visits and their interest to the last.

After the removal of the patients, much remained to be done to close down an institution that had been in operation since 1907. Consequently, the services of most of the male staff were retained until the end of September, 1959, when the Department of Public Works took over the buildings and equipment which were their property. It is pleasing to be able to note that a large proportion of the staff were absorbed into other sub-departments and sections of the Department of Health and Home Affairs. Those not so absorbed obtained employment by their own efforts and no case is known where unemployment resulted from the closing of Peel Island.

Report on "Etisul" (I.C.I.) (diethyl di-thio-isophthalate)

In October, 1958, Imperial Chemical Industries (Pharmaceutical Section) made available a quantity of Etisul percutaneous for clinical trial on patients with Hansen's disease at Peel Island and Fantome Island Leprosoria. A further supply was made available during 1959.

At first, two (2) white patients and two (2) coloured patients were treated and an interim report on these was made in June, 1959.

At the present time, four (4) coloured patients are under treatment and a total of four (4) white patients have been treated for various periods.

In every case the treatment has been carried out by inunction into the skin of the thighs and buttocks twice a week using 2.5 or 5 grams for each inunction.

White Patients

In October, 1958, two (2) white patients E.R.C. and K.J.B. were selected for a clinical trial on Etisul. Both were under treatment with Dapsone orally and both showed a mixed type of leprosy with a preponderance of lepromatous signs. In both cases leg and foot ulcers showed marked improvement after only two (2) weeks. Encouraged by this development a trial was made of applying the cream directly to the ulcers. Progress continued but the improvement was no greater than when the cream was applied elsewhere. Both refused further inunctions after one (1) month.

In April, 1959, a female patient M.B. with gross lepromatous lesions, especially marked on the buttocks and thighs, the trunk and the arms, was treated orally with Dapsone and also with Etisul. The lesions on the forearms, buttocks and thighs and one area of the back consisted of indurated areas of confluent nodules up to seven (7) inches across. Within a matter of weeks these areas has softened and in three (3) months those on the back, buttocks and thighs had virtually disappeared. Those on the forearms persisted for several months and were subject to considerable secondary infection of the broken-down nodules. The overlying pigmentation in these areas also faded to a marked degree. Unfortunately, this patient, who was 64 years of age, died as the result of an acute coronary episode in February, 1960, so that her long-term progress could not be followed but the clinical progress she had made in ten months was greater than similar patients have made in two (2) or three (3) years.

The results of smear examinations of this patient did not show the same improvement over this period but this is not unusual. The results of smears were:—

Date	Ear Lobe	Eye Brow
1959—		
April	++	++
May	+	+
June	+++++	+
July	+++++	++
August	+++++	+++++
September	..	+++++
October	+++++	..
November	+++++	..
December	+++++	++
1960—		
January	+++++	+++++
February	++++	++++

The fourth white patient was admitted in September, 1957, and had made good progress on oral Dapsone but in October, 1959, he had been at a standstill for several months and he was commenced on Etisul. After only six (6) weeks' treatment he developed a moderately severe lepra reaction which persisted for about three (3) weeks and then slowly subsided. He has made very good progress since that time. In this case it appears as if the use of Etisul provoked further progress.

Coloured Patients

Patient T.H.—Australian aboriginal, male, admitted 19-1-56; present age 23 years. In this patient the lower thirds of both legs showed heavy subcutaneous induration and scaling of the skin. Etisul was commenced in October, 1958. Clinical improvement has been marked, the induration of the legs is much reduced, the skin is softer and hair has begun to grow again. The patient claims he feels much better.

Patient N.M.—Australian aboriginal, male, admitted 5-7-47; present age 31 years. This patient showed very indurated skin of both hands, especially the palms. The skin tended to crack into slit ulcers. There were many large nodules on the face and ears and chronic ulceration of the left lateral malleolus. Etisul was commenced in October, 1958, and all of the above features have shown marked and continued improvement paralleled by a general improvement in his health.

Patient G.C.—Half-caste aboriginal, male, re-admitted in December, 1958, in a state of reaction and showing extensive pigmented macules and sub-cutaneous induration. He made little progress until commenced on Etisul in July, 1959. Since then there has been a steady disappearance of the pigmentation and induration and his general health is much improved. The change in smear results is quite impressive.

Patient J.M.—Three-quarter-caste aboriginal, male, admitted in February, 1958. He had minimal signs—consisting of a few pigmented macules on the brow and cheeks, small nodules in the ear lobes and nose, slight paresis and anaesthesia of the left little finger. He was commenced on Etisul in July, 1959, because of lack of improvement in the smear results. Since that time he has improved clinically and there appears to be a commencing improvement in the smear results.

General

From experience so far gained with Etisul it appears that it is an extremely useful drug and it will be used more widely in the future. It appears to be especially useful in the early stages of treatment in conjunction with one of the oral drugs but it has given good results when it is used at any stage of the treatment. It is felt that the use of Etisul has considerably reduced the time required for clinical improvement to be apparent and for a negative phase of the disease to be reached.

It is intended to make a trial of treatment using Etisul for three (3) months, ceasing it for three (3) months and then repeating this procedure, since improvement appears to taper off after about three (3) months. Oral treatment will be given for the whole period.

TABLE XX
SHOWING DETAILS OF COLOURED PATIENTS TREATED WITH ETISUL

Type of Patient	Australian Aboriginal		Australian Aboriginal		Half-Caste		Three-Quarter-Caste	
Identification	TH		NM		GC		JM	
Other Treatment	Sulphetrone		Dapsone		Thiacetozone		Dapsone	
Commenced Etisul	October, 1958		October, 1958		July, 1959		July, 1959	
Smear Results	Ear	Eye	Ear	Eye	Ear	Eye	Ear	Eye
1958—								
February	—	—	++	++				
March	—	+	not submitted					
April	—	—	not submitted				++	+
May	—	—	++	++			+	+
June	—	—	not submitted				++	++
July	—	+	not submitted				not submitted	
August	+	—	not submitted				—	+
September	not submitted		not submitted				—	—
October	—	—	not submitted				—	—
November	—	—	not submitted				++++	+
December	—	—	—	++	Readmitted		++++	+
1959—								
January	+	—	not submitted		—	—	+	+
February	—	—	—	—	+	+	+++	—
March	—	—	—	—	+	—	—	+
April	+	—	—	—	+	—	—	—
May	—	—	—	—	+	+	++	—
June	—	—	—	—	+++	++	+	++
July	—	—	—	—	—	+	+	—
August	—	—	—	—	—	—	—	+
September	—	+	—	—	—	—	—	++
October	—	—	—	—	—	—	+	++
November	—	—	—	+	+	—	++++	+
December	—	—	—	+	—	—	—	+
1960—								
January	—	—	—	—	—	+	—	+
February	—	—	—	—	—	—	+	—
March	—	—	+	—	—	—	—	+
April	—	—	—	—	—	—	+	—
May	—	—	—	—	—	—	—	+
June	—	—	—	—	++	—	—	—

(2) HANSEN'S DISEASE IN THE ABORIGINAL POPULATION

TABLE XXI
STATISTICS 1959-60

—	Males	Females	Totals
Population at 1st July, 1959	18	5	23
Admitted	1	..	1
Discharged	5	1	6
Died	1	..	1
Population at 30th June, 1960	13	4	17

The one new male admission was a very early case with signs restricted to the right forearm and hand. Five males and one female were discharged and all were well at the time of discharge. The one death was of a male patient aged 84 years who had been at Fantome Island for many years.

The small number of patients has resulted in only a fraction of the available accommodation being occupied and in addition only a small work force can be recruited for the many duties carried out by patient labour. Nevertheless the grounds and buildings have been maintained in a very creditable condition.

Nursing and general management of the hospital remain in the capable hands of the Franciscan Missionaries of Mary. The Medical Officer from Palm Island continues his weekly visits and can be readily contacted by radio-telephone in emergencies.

Now that the hospital at Palm Island is an annexe of the Townsville General Hospital, specialist treatment of patients from Palm and Fantome Islands has been greatly facilitated and many patients are temporarily transferred to the Townsville Hospital for such specialist treatment.

SECTION OF ENTHETIC DISEASES

There were 1,021 cases of Venereal Disease notified for the 1959-60 fiscal year as compared with 965 last year—an incidence rate of 0.705 per 1,000 population.

The following table gives a dissection of these figures:—

TABLE XXII
NOTIFIED VENEREAL DISEASES IN QUEENSLAND, 1959-60

—	Metropolitan		Outside Centres		Whole State		Total
	Males	Females	Males	Females	Males	Females	
Gonorrhoea—							
Unspecified	..	..	10	2	10	2	12
Acute	480	54	158	16	638	70	708
Sub-acute	1	..	1	3	2	3	5
Chronic	..	6	4	35	4	41	45
Ophthalmia	..	..	..	..	..	..	..
Vulvo-vaginitis	..	..	..	2	..	2	2
	481	60	173	58	654	118	772
Syphilis—							
Unspecified	..	..	..	1	..	1	1
Primary	57	3	23	1	80	4	84
Secondary	3	14	4	5	7	19	26
Tertiary	1	1	..	1	2	2	4
Latent	4	1	2	2	6	3	9
Neuro	2	..	2	..	4	..	4
Pre-natal (congenital) ..	..	..	..	1	..	1	1
	68	19	31	11	99	30	129
Soft sore	11	..	1	..	12	..	12
Venereal warts	107	..	..	..	107	..	107
Ulcerative granuloma ..	..	..	..	1	..	1	1
	667	79	205	70	872	149	1,021
	746		275		1,021		
	1,021						

There was a slight drop in the number of cases of gonorrhoea—772 as compared with 813 last year—but syphilis notifications showed a very definite increase—129 as compared with 59 last year, and 110 of which were represented by the early infectious stages (primary and secondary).

Table XXIII. shows the centres from which notifications were received, and the striking difference between seaport towns from Brisbane to Cairns as compared with country towns is worth pointing out.

TABLE XXIII
CENTRES OF NOTIFICATION OF VENEREAL DISEASES
OUTSIDE METROPOLIS

Centre	Males	Females	Totals
Atherton	1	..	1
Ayr	2	..	2
Barcaldine	..	1	1
Blackall	4	1	5
Cairns	45	3	48
Charters Towers ..	1	..	1
Chinchilla	3	2	5
Cloncurry	5	1	6
Coolangatta	1	1	2
Cunnamulla	6	1	7
Dalby	1	..	1
Emerald	1	..	1
Gladstone	2	1	3
Goondiwindi	3	..	3
Gordonvale	3	1	4
Gympie	1	1	2
Ipswich	3	1	4
Laidley	..	1	1
Longreach	1	..	1
Mackay	10	5	15
Mareeba	8	3	11
Maroochydore	1	..	1
Maryborough	1	..	1
Mount Isa	11	..	11
Murgon	1	..	1
Pittsworth	1	..	1
Proserpine	1	..	1
Rockhampton	7	..	7
Stanthorpe	1	..	1
St. George	7	..	7
Thursday Island ..	24	39	63
Townsville	45	7	52
Tully	1	..	1
Winton	1	1	2
Wondai	2	..	2
Total	205	70	275

Table XXIV. shows the varying incidence for the past 20 years.

TABLE XXIV
SHOWING NUMBER OF NOTIFICATIONS OF
VENEREAL DISEASES FOR PAST 20 YEARS

Fiscal Year	Notifi- cations	Mean Population	Incidence per 1,000 Popula- tion
1938-39	1,147	1,008,207	1.127
1939-40	1,091	1,021,426	1.077
1940-41	1,328	1,032,122	1.286
1941-42	1,207	1,036,690	1.164
1942-43	3,101	1,040,433	2.98
1943-44	2,718	1,054,810	2.576
1944-45	2,391	1,068,630	2.24
1945-46	1,309	1,084,125	1.207
1946-47	1,373	1,097,303	1.251
1947-48	1,000	1,114,634	.897
1948-49	846	1,140,816	.742
1949-50	731	1,173,232	.623
1950-51	626	1,207,194	.519
1951-52	627	1,239,868	.506
1952-53	757	1,272,244	.595
1953-54	740	1,300,464	.569
1954-55	741	1,325,336	.559
1955-56	807	1,352,650	.597
1956-57	995	1,380,700	.721
1957-58	1,018	1,403,400	.726
1958-59	965	1,426,019	.676
1959-60	1,021	1,448,100 ^r	.705

(^r) Subject to revision.

Tables XXV., XXVI., and XXVII. show alleged sources of notification, marital status, and age groups of notified cases.

TABLE XXV
SOURCES OF INFECTION

Non-professional	766
Professional	95
Not stated	89
Unknown	53
Wife	11
Husband	3
Congenital	2
De facto wife	1
De facto husband	1
Total	1,021

TABLE XXVI
MARITAL STATUS OF PATIENTS

	Males	Females	Total
Married	111	40	151
Single	725	63	788
Separated	11	4	15
Widowed	17	5	22
Divorced	3	3	6
De Facto Wife	..	1	1
Not Stated	5	33	38
Total	872	149	1,021

TABLE XXVII
SHOWING AGE GROUPS OF NOTIFIED CASES

Age Group	Males	Females	Total
Under 1 year	..	..	..
1-5 years	..	..	..
6-10 years	..	..	..
11-15 years	..	1	1
16-20 years	198	39	237
21-25 years	256	24	280
26-30 years	133	14	147
31-35 years	85	17	102
36-40 years	90	5	95
41-45 years	43	6	49
46-50 years	27	8	35
51-55 years	8	1	9
56-60 years	13	..	13
61-65 years	6	..	6
Over 65 years	5	..	5
Unknown	3	1	4
Not Stated	5	33	38
Total	872	149	1,021

Table XXVIII. shows sources of notification—12.4 per cent.—coming from private practitioners as compared with 7.6 per cent. in the previous year. The remainder come from ad hoc clinics and public hospitals.

TABLE XXVIII
SHOWING SOURCES OF NOTIFICATION

	Males	Females	Total
Private Doctors—			
Brisbane	18	2	20
Outside Centres	89	19	108
Total	107	21	128
Clinics—			
Brisbane	634	73	707*
Outside Centres	32	5	37
Total	666	78	744
Hospitals—			
Brisbane	15	4	19
Outside Centres	84	46	130
Total	99	50	149
Total all sources	872	149	1,021

AD HOC CLINICS—BRISBANE

There are two of these in Brisbane—one for males at South Brisbane and one for females in William Street, City.

The special rooms for examination of prostitutes were discontinued early in the fiscal year consequent upon police action in officially banning the recognised "tolerated" houses.

Following is a summary of the activities of the Male and Female Clinics:—

Male Clinic—Colchester Street—Summary of Activities, 1959-60

New Cases—	
Total for Year	1,339
Highest Month—September ..	140
Lowest Month—November ..	93
(Average per Month)	111.58
Visits—	
Total for Year	11,758
Highest Month—December ..	1,119
Lowest Month—April	842
(Average per Month)	979.83
Notifications—	
Early Syphilis—	
Primary	55
Early Latent	4
Total	59
Late Syphilis—	
Nil	0
Acute Gonorrhoea	456
Venereal Warts	107
Soft Sore (Chancroid)	11
Total	633

Injections—	
Bismol	3
Penicillin	1,030
Total	1,033

Investigations—	
Dark-ground Tests	80
Smears Examined at Clinic ..	4,532
Smears Submitted to Laboratory ..	786
Blood Tests Submitted to Laboratory ..	1,756
Total	7,154
Prophylactic Treatments	1,234

Female Clinic—William Street, City, 1959-60

This clinic has a threefold function—

- (1) Treatment of patients.
- (2) Periodic examination of certain known prostitutes and treatment if necessary.
- (3) Examination for venereal diseases of prisoners in female wing of H.M. Prison.

Notifications from these three (3) sources totalled 72, made up as follows:—

Acute Gonorrhoea ..	52	
Chronic Gonorrhoea ..	6	
		58
Primary Syphilis ..	1	
Secondary Syphilis ..	13	
		14
Total ..		72

The various contributions are dissected in the Table below:—

	Women's Clinic	Examination of Prostitutes	Examination of Prisoners	Total
Acute Gonorrhoea	29	13	10	52
Chronic Gonorrhoea	2	1	3	6
Treated Gonorrhoea	..	..	..	..
Primary Syphilis	0	1	..	1
Secondary Syphilis	7	1	5	13
Treated	..	..	..	..
Total	38	16	18	72

Women's Clinic

Total Interviews	445
New Cases	167
Notifications	72
Penicillin injections	181
Smears taken	409
Cultures taken (representing 135 patients)	270
Bloods taken for S/T. Sy.	178

Examination of Prostitutes

Total Examinations	670
Total Interviews	670
Smears taken	1,323
Bloods taken for S/T. Sy.	101

SECTION OF AIR POLLUTION

The survey of air pollution in the Greater Brisbane area and in Ipswich which commenced on 1st March, 1959, concluded on 29th February, 1960. The technical data from the findings of this survey are to be found in the report of the Government Analyst. Generally speaking the deposit of solids is about half that found in the recent survey of Sydney. The highest readings were obtained from Woolloongabba in the inner city area (average of 22 metric tons/square mile/28 days), from Grange (11.9 metric tons) in the middle residential area, and Eagle Farm (12.9 metric tons) in the outer zone. The Ipswich findings were lower, being 7.3 metric tons in Ipswich city and 7.1 metric tons at the gauge at Silkstone. There was more soluble matter deposited in the wet months of the year.

A large proportion of the combustible matter deposited in the gauges in Brisbane appears to be rubber which has been scraped from vehicle tyres and blown into the air.

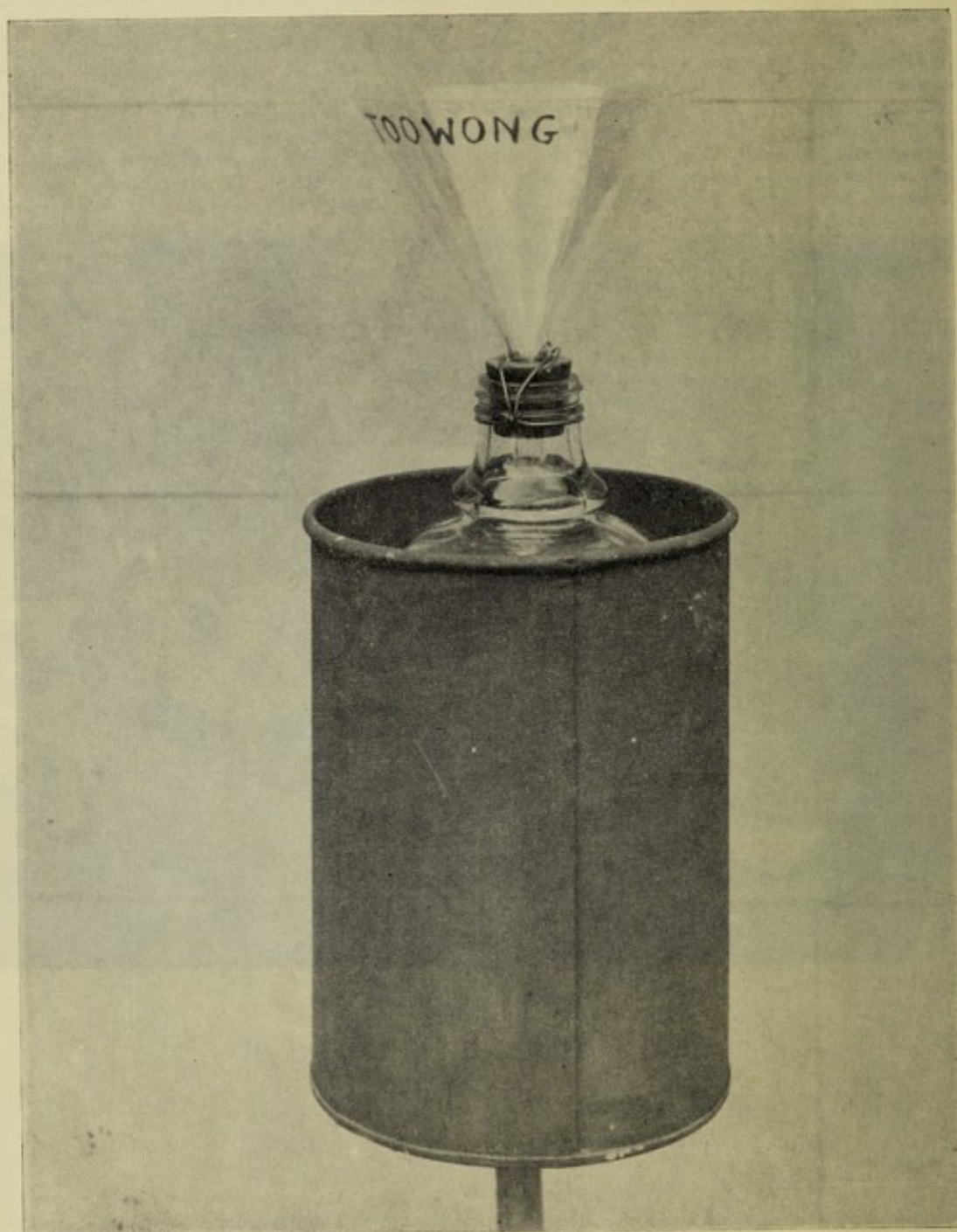
In some of the outer suburbs, e.g. Mitchelton and Geebung, relatively high ash fall was probably due to dusty roads in the vicinity of the gauges.

Smoke measurements were carried out from May, 1959, to June, 1960. These measurements were recorded on a filter one inch in diameter through which approximately 50 cubic feet of air was drawn over a period of 24 hours. The filters were changed daily and one instrument changed the filter automatically every hour. The smoke values are recorded as co-efficient of haze units (COH units) per thousand linear feet. There is a general increase in the winter months in the smoke values of central and southern Brisbane, but this was not seen in the gauges to the north, e.g. at Chermside. This was probably due to the low level night temperature inversions in the low areas to the south of the river. At South Brisbane there was a distinct increase in smoke values between 6 and 9 a.m. and again between 5 o'clock and 8 o'clock at night, and this is probably due to traffic and to smoke from power houses and industry.

It will take several months to record and evaluate all of the data from this survey. When this has been done, however, a draft report will be circulated to the members of the Air Pollution Committee who will then make any recommendations considered necessary to control air pollution in Brisbane and Ipswich.



Air-Pollution Laboratory



Air-Pollution Survey Deposit Gauge

SECTION OF FOOD AND DRUGS

This section administers the food and drug sections of the Health Acts: the Food and Drug Regulations, the Milk-seller's Regulations, the Health (Food Supply) Regulations, the Poisons Regulations, and the Insecticide Regulations. This legislation covers a wide and important field in public health work. Its implementation has meant a very busy year for this section and activities are briefly recapitulated below.

MILK

Special attention has been paid to this most important food. A particularly high standard is provided for pasteurised milk and the consistent achievement of this standard by pasteurising plants throughout the State is a most gratifying one. Regular sampling of the milk from these plants is a feature of this section's work and results indicate a high degree of efficiency. The very close co-operation by factory personnel with our officers has been no small factor in the maintaining of this high degree of efficiency, and the work has been appreciated by all associated with the factories.

It is again pleasing to record the continued success of the scheme whereby milk, subjected to a pasteurising heat at coastal and near coastal factories, is railed in bulk to far western towns, where it is bottled for sale at small bottling

plants for distribution to the public. Much of this milk is transported several hundred miles and samples of the final product are regularly obtained. The excellent analytical results obtained are clearly indicative of both efficient production at the pasteurising plant and proper hygienic handling at the bottling plants in the western towns. The availability of a good quality milk must surely be a boon in areas where the vagaries of climate and pastures militate against the production of consistently good milk.

Although the percentage of pasteurised and heat-treated milk sold in this State is exceptionally high, there is still a proportion of "raw" milk sold and this has not escaped attention. Such milk is also sampled and tested for compliance with the legal standards, whilst close attention has been paid to the requirements of the Milk-sellers' Regulations.

Details of samples obtained may be seen in the respective reports of the Government Chemical Laboratory and the Laboratory of Microbiology and Pathology.

Whenever Court action has been found necessary in regard to sub-standard milks or breaches of the Milk-sellers' Regulations, such action has been successfully taken and results are as shown in Tables XXX. and XXXI. here-with.

TABLE XXX
PROSECUTIONS FOR ADULTERATED MILK—1959-60

Date	Place	Basis of Prosecutions	Fines	Costs
1959—			£ s. d.	£ s. d.
August 28	Nambour	Added Water—5 per cent. ..	5 0 0	2 16 0
1960—				
June 23	Augathella	Deficiency in Butter Fat—69.7 per cent.	30 0 0	2 16 0
June 23	Laidley	Added Water—8 per cent. ..	8 0 0	4 18 0
			43 0 0	10 10 0

TABLE XXXI
PROSECUTIONS FOR BREACHES OF MILKSELLERS' REGULATIONS, 1959-60

Date	Place	Basis of Prosecution	Fines	Costs
1959—			£ s. d.	£ s. d.
August 3	Toowoomba	Unsuitable milk delivery vehicle	3 0 0	0 14 0
August 13	Ingham	Carrying pig food on milk delivery vehicle	20 0 0	0 14 0
1960—				
January 29	Ipswich	Unlicensed milk-seller	2 0 0	0 14 0
January 29	Ipswich	Bottling milk for sale by hand ..	0 0 0	0 14 0
April 22	Pittsworth	Use of measures without lids ..	4 0 0	0 14 0
April 22	Pittsworth	Unsuitable milk delivery vehicle	4 0 0	0 14 0
April 22	Pittsworth	No name and address on milk vehicle	0 10 0	0 14 0
			33 10 0	4 18 0

HOTELS, LIQUOR TESTING, &C.

Liquor testing was regularly carried out at hotels during the year and as a result of such activities, prosecutions for adulterated liquors were successfully undertaken, resulting in fines totalling £34, with costs of £17 10s. (see Table XXXII.).

Close attention has been paid to bar hygiene and officers have been active in policing regulations. One licensee was prosecuted for failure to denature waste beer, whilst action is pending against four others. Officers have also required the installation and use of approved glass-washing machines supplied with hot water at a temperature of not less than 165 degrees Fahrenheit, wherever electric power and a permanent water supply under pressure have been available.

A weakness in the law militated against a full enforcement of the requirement of giving a clean glass for each drink, but the necessary corrective amendments to the Health Acts were made during this year and steps were immediately taken to implement this desirable legislation. A good measure of co-operation has been afforded by licensees but it has been found necessary to institute legal proceedings against several offenders. During the year, seven persons in various parts of the State were successfully prosecuted for breaching this requirement, whilst other cases are pending. Details of prosecutions may be seen in Table XXXVIII. (Miscellaneous Prosecutions). The campaign for full compliance with this law will continue.

TABLE XXXII
PROSECUTIONS FOR ADULTERATED LIQUOR—1959-60

Date	Place	Basis for Prosecution	Fines	Costs
1959—			£ s. d.	£ s. d.
December 1 ..	Dalby	Rum falsely described	5 0 0	0 14 0
December 4 ..	Oakey	Adulterated Rum—5.2 per cent. added water	5 0 0	2 16 0
December 4 ..	Oakey	Adulterated Rum—15.2 per cent. added water	5 0 0	2 16 0
December 4 ..	Oakey	Adulterated Rum—16.7 per cent. added water	5 0 0	2 16 0
December 4 ..	Oakey	Adulterated Rum—17.0 per cent. added water	5 0 0	2 16 0
December 4 ..	Oakey	Adulterated Rum—5.8 per cent. added water	5 0 0	2 16 0
December 17 ..	Warwick	Adulterated Rum—6.7 per cent. added water	4 0 0	2 16 0
			34 0 0	17 10 0

MINCED MEAT, SAUSAGES, &C.

Minced meat and sausages form a big part of our meat consumption, and particular attention has been paid to the sampling of these lines in an endeavour to ensure their full compliance with the legal standards. Despite a continuing campaign over a number of years, there are still many traders prepared to persist in the illegal use of chemical preservatives and a very vigorous

campaign by the officers of this section and by district officers resulted in sixty-three butchers being mulct the sum of £568 3s. in fines and costs for the offence of selling minced meat containing preservative, whilst seventeen butchers paid £159 3s. for excess preservative in sausages, excess fat in sausages, excess starch or meat deficiency in sausages. Details of these prosecutions are shown in Tables XXXIII and XXXIV.

TABLE XXXIII
PROSECUTIONS FOR ADULTERATED SAUSAGES—1959-60

Date	Place	Basis of Prosecution	Fines	Costs
1959—			£ s. d.	£ s. d.
August 3	Toowoomba	Excess Preservative	7 0 0	2 16 0
September 11 ..	Goondiwindi	Excess Fat	7 10 0	2 16 0
November 26 ..	Killarney	Excess Preservative	5 0 0	2 16 0
1960—				
April 22	Pittsworth	Excess Fat	1 0 0	3 3 0
May 25	Brisbane	Excess Preservative	7 0 0	2 16 0
May 25	Brisbane	Excess Preservative	10 0 0	2 16 0
May 25	Brisbane	Excess Fat	2 0 0	2 16 0
June 1	Brisbane	Excess Preservative	5 0 0	2 16 0
June 8	Brisbane	Deficient in Meat	5 0 0	2 16 0
June 15	Brisbane	Excess Preservative	3 0 0	2 16 0
June 15	Brisbane	Excess Preservative	6 0 0	3 3 0
June 15	Brisbane	Excess Preservative	3 0 0	2 16 0
June 15	Brisbane	Excess Preservative	4 0 0	2 16 0
June 15	Brisbane	Excess Preservative and Starch ..	3 0 0	2 16 0
June 28	Kileoy	Excess Preservative	20 0 0	10 3 0
June 29	Brisbane	Excess Preservative	10 0 0	2 16 0
June 29	Brisbane	Excess Preservative	5 0 0	2 16 0
			103 10 0	55 13 0

Total Fines and Costs—£159 3s.

TABLE XXXIV
PROSECUTIONS FOR ADULTERATED MINCED MEAT—1959-60

Date	Place	Basis of Prosecution	Fines			Costs		
			£	s.	d.	£	s.	d.
1959—								
July 7	Wallangarra	Preservative added	10	0	0	2	16	0
August 3	Toowoomba	Preservative added	4	0	0	2	16	0
August 7	Oakey	Preservative added	6	0	0	2	16	0
September 7	Toowoomba	Preservative added	4	0	0	2	16	0
September 7	Toowoomba	Preservative added	4	0	0	2	16	0
September 11	Goondiwindi	Preservative added	5	0	0	2	16	0
October 21	Warwick	Preservative added	5	0	0	2	16	0
December 7	Toowoomba	Preservative added	5	0	0	2	16	0
1960—								
February 4	Brisbane	Preservative added	9	6	0	2	16	0
February 11	Brisbane	Preservative added	7	10	0	2	16	0
February 24	Brisbane	Preservative added	5	0	0	2	16	0
March 16	Brisbane	Preservative added	4	0	0	3	3	0
March 16	Brisbane	Preservative added	4	0	0	3	3	0
March 16	Brisbane	Preservative added	4	0	0	2	16	0
March 16	Brisbane	Preservative added	2	0	0	2	16	0
March 16	Brisbane	Preservative added	7	10	0	2	16	0
March 21	Brisbane	Preservative added	8	0	0	2	16	0
March 21	Brisbane	Preservative added	10	0	0	2	16	0
March 22	Kilcoy	Preservative added	5	0	0	2	16	0
March 22	Kilcoy	Preservative added	5	0	0	2	16	0
March 23	Brisbane	Preservative added	15	0	0	2	16	0
March 30	Brisbane	Preservative added	8	0	0	2	16	0
April 6	Brisbane	Preservative added	5	0	0	3	3	0
April 6	Brisbane	Preservative added	5	0	0	2	16	0
April 6	Brisbane	Preservative added	7	10	0	2	16	0
April 8	Brisbane	Preservative added	5	0	0	2	16	0
April 8	Brisbane	Preservative added	5	0	0	2	16	0
April 8	Brisbane	Preservative added	5	0	0	2	16	0
April 8	Brisbane	Preservative added	5	0	0	2	16	0
April 11	Mackay	Preservative added	3	0	0	0	14	0
April 11	Mackay	Preservative added	3	0	0	0	14	0
April 13	Brisbane	Preservative added	3	0	0	2	16	0
April 13	Brisbane	Preservative added	5	0	0	4	18	0
April 13	Brisbane	Preservative added	5	0	0	2	16	0
April 20	Brisbane	Preservative added	5	0	0	2	16	0
April 22	Pittsworth	Preservative added	2	0	0	2	16	0
April 27	Brisbane	Preservative added	5	0	0	2	16	0
April 27	Brisbane	Preservative added	3	0	0	2	16	0
April 27	Brisbane	Preservative added	7	10	0	4	18	0
April 27	Brisbane	Preservative added	3	0	0	3	3	0
April 27	Brisbane	Preservative added	3	0	0	2	16	0
April 27	Brisbane	Preservative added	3	0	0	2	16	0
May 19	Redcliffe	Preservative added	4	0	0	2	16	0
May 25	Bundaberg	Preservative added	20	0	0	7	7	0
June 8	Boonah	Preservative added	2	14	0	3	10	0
June 8	Boonah	Preservative added	3	0	0	3	10	0
June 17	Ingham	Preservative added	10	0	0	3	17	0
June 20	Southport	Preservative added	4	0	0	2	16	0
June 20	Southport	Preservative added	3	0	0	2	16	0
June 20	Southport	Preservative added	6	0	0	2	16	0
June 20	Southport	Preservative added	10	0	0	2	16	0
June 20	Southport	Preservative added	6	0	0	3	3	0
June 20	Southport	Preservative added	15	0	0	2	16	0
June 20	Southport	Preservative added	4	0	0	2	16	0
June 20	Southport	Preservative added	8	0	0	2	16	0
June 20	Southport	Preservative added	4	0	0	2	16	0
June 20	Southport	Preservative added	6	0	0	2	16	0
June 22	Brisbane	Preservative added	2	0	0	2	16	0
June 24	Bundaberg	Preservative added	20	0	0	2	16	0
June 24	Charters Towers	Preservative added	10	0	0	2	16	0
June 24	Charters Towers	Preservative added	10	0	0	2	16	0
June 27	Cairns	Preservative added	5	0	0	2	16	0
June 27	Brisbane	Preservative added	5	0	0	2	16	0
			383	0	0	185	3	0

Total Fines and Costs—£568 3s.

FRUIT, VEGETABLES, &c.

Inspections have been made of fruit and vegetables appearing on the local market in connection with poisonous spray residues, and action taken in connection with offending lines. During the year, some artificially coloured citrus fruits appeared on the local market. Although the dye used was a harmless one, such colouring

contravened our law and quick steps were taken to stop the practice. In other parts of the world, colouring of citrus fruits is allowed and is used for such fruits as do not, because of climatic conditions, achieve the traditional colour, even though they are completely matured. The question of allowing the colouring of citrus fruits is under consideration.

BREADS, FLOURS, &C.

Continual sampling of breads and flours used in their production has been carried out and all steps taken to ensure that both bread and flour meet all the legal requirements.

ICE-CREAM, &C.

Checks have been taken of ice-cream, flavoured ices and similar products at the various factories throughout the State and corrective steps taken, when samples were found not complying with the standard. Inspections of factories have been carried out and the necessary measures taken to secure the high standard of hygiene necessary in such factories.

SOFT DRINKS

There is a considerable sale of soft drinks in this State and every endeavour has been taken to ensure that such drinks meet the required legal standards and that they are correctly labelled to prevent misleading of the purchaser. Factories have been inspected and it is pleasing to report an improvement in both premises and hygiene. Several new factories of modern design have been completed or are nearing completion.

FOOD FACTORIES, &C.

Inspections have been made of food factories and food packing premises and, as a result, many desirable improvements have been effected in premises. Opportunity was also taken to improve the hygiene of food production, whilst products were sampled and tested and labelling defects corrected.

RACECOURSES, SHOWGROUNDS, &C.

Bar sanitation at the above premises, because of the very nature of concentrated crowds of customers, poses a very difficult problem but, over the past few years, a constant improvement has been sought and obtained. Further major improvements have been effected or are in the course of completion in the metropolitan area, whilst district officers are also not losing sight of such premises in their areas.

SAMPLING AND LABELLING

Apart from sampling of foods for legal purposes, this section continually secures check samples of food for examination in regard to their compliance with the provided standard and in regard to their proper labelling. This work was no small feature of the year's activities.

Close co-operation with traders has been maintained during the year and the advice of officers of this section has been constantly sought and readily given in the public interest and to the advantage of the consumer.

FISH

Our officers at the South Brisbane Fish Markets have inspected all fish offered for sale at those premises and have condemned any fish found to be unfit for human consumption. Details of such condemned fish may be found in Table XXXV. They have made periodic inspections of fish being offered for sale in fish shops and have taken any corrective action found necessary.

TABLE XXXV

FISH CONDEMNED AND DESTROYED AT THE FISH MARKETS
1959-60

Variety of Fish	Weights			
	T.	C.	Q.	L.
Barramundi	0	2	0	10
Bass	0	0	0	3
Black Bream	0	0	3	4
Bream	3	8	0	20
Catfish	0	1	2	9
Cod	0	0	3	12
Cuttlefish	0	1	0	12
Dart	0	1	1	11
Dory	0	0	3	3
Flathead	2	16	2	21
Flounder	0	1	1	19
Gar	0	1	2	17
Hussar	0	0	1	19
Jew	0	1	3	1
Kingfish	0	0	0	15
Lobster	0	8	3	20
Mackerel	0	15	2	22
Miscellaneous	0	11	2	7
Mixed fish	1	5	3	24
Morwong	0	0	3	5
Mullet	20	0	3	9
Parrot	0	2	2	20
Perch	0	1	0	1
Pike	0	13	1	6
Prawns	8	19	2	22
Ray	2	7	0	25
Red Emperor	0	0	2	17
Salmon	0	0	2	19
Saw Fish	0	1	2	14
Schnapper	0	4	1	24
Shark	0	4	3	19
Sole	0	0	0	2
Squid	0	1	0	22
Squire	0	8	2	12
Sweetlip	0	6	0	13
Tailor	0	6	1	6
Trevally	0	0	0	27
Trout	0	1	1	4
Trumpeter	0	2	1	12
Turrun	0	0	0	9
Whiting	0	7	2	13
Yellowtail	0	11	0	13
Total	45	4	0	1
425 Bottles of Oysters 893 Sand Crabs				

District officers are called upon to inspect fish for sale at country centres and during this year have carried out this work. As a result of their activities, quite an appreciable quantity of unsound fish was condemned and destroyed. Details of such condemned fish may be found in Table XXXVI.

TABLE XXXVI.

SHOWING QUANTITIES OF UNSOUND FISH CONDEMNED
BY DISTRICT OFFICERS DURING YEAR 1959-60

Variety of Fish	Quantity			
	T.	C.	Q.	L.
Barramundi	0	4	2	3
Bream	0	6	0	6
Coral Trout	0	1	2	0
Fish Cutlets, sticks	0	11	3	12
Grunter	0	1	1	16
Mackerel	5	2	0	3
Mixed fish	0	7	2	17
Prawns	1	9	2	22
Schnapper	0	1	0	20
Sweetlip	0	2	3	15
Turtle Meat	2	11	1	10
Total	11	0	0	12

UNSOUND FOODS, &c.

A close watch has been kept on the quality of foods offered for sale to the public and the necessary steps have been taken to ensure that any unsound food was removed from sale and destroyed. As a result of these activities, nearly forty-three tons of unsound food was so dealt with. (For details, see Table XXXVII).

In addition to this food, a quantity of wine, tobacco and cigarettes was also withdrawn from sale and destroyed.

TABLE XXXVII.

SHOWING QUANTITIES OF UNSOUND FOOD DESTROYED
DURING YEAR 1959-60

Food	Quantity				
	T.	C.	Q.	L.	OZ.
Breakfast foods	0	0	2	6	8
Cakes, Cake Mixtures	0	3	2	6	0
Cheese	0	7	1	17	0
Coconut	0	12	1	6	0
Coffee	1	1	0	0	0
Confectionery	3	10	3	8	8
Custard Powders	0	0	1	8	0
Dessert Mixtures	0	1	0	20	0
Fish (tinned)	0	0	1	19	8
Flour	0	3	0	23	0
Fruit (fresh)	10	17	2	22	0
Fruit (tinned)	4	7	1	11	0
Hams	0	3	2	7	0
Jams and Preserves	0	0	1	3	0
Macaroni	0	0	1	3	0
Meat (cooked)	0	0	0	11	0
Meat (smallgoods)	0	5	0	16	0
Meat (tinned)	0	1	2	6	0
Milks (condensed)	0	8	2	14	0
Mushrooms (dried)	0	0	0	17	8
Nuts	1	4	0	27	0
Oils, fat, &c.	0	17	2	20	0
Olives	1	6	0	1	0
Rice	0	0	2	0	0
Sago	0	2	3	12	0
Salt	0	1	2	23	0
Sausages (pork)	0	2	2	8	0
Soft drinks	0	1	2	7	0
Spices	0	10	0	0	0
Spreads	0	0	2	16	0
Sugar, Icing sugar	0	0	2	16	0
Tea	0	1	4	0	0
Vegetables (fresh)	15	15	0	16	0
Vegetables (tinned)	0	6	3	6	8
Total	42	17	3	13	8

BACTERIOLOGICAL

A wide range of samples was submitted to the Laboratory of Microbiology and Pathology for bacteriological examination. These included milks, creams, ice-creams, oysters, disinfectants, cosmetics meats and sausages, and butters, together with all manners of foods subject to bacteriological infections. An outbreak of food poisoning was investigated and all suspected foods were submitted for bacteriological examination.

MISCELLANEOUS PROSECUTIONS

There were eighteen prosecutions for various breaches of the Health Acts and Regulations and these resulted in fines of £72, together with costs of £22 8s. Details of these prosecutions are shown in Table XXXVIII.

TABLE XXXVIII
MISCELLANEOUS PROSECUTIONS—1959-60

Date	Place	Basis of Prosecution	Fines		Costs	
			£	s. d.	£	s. d.
1959—						
August 3	Toowoomba	Sale of unlabelled sausage meat	3	0 0	0	14 0
September 18	Tully	Saccharin in soft drink	1	0 0	2	16 0
September 18	Tully	Saccharin in soft drink	1	0 0	2	16 0
November 26	Killarney	Failure to instal glasswasher in bar	5	0 0	0	14 0
November 27	Mackay	Dirty cafe premises	5	0 0	0	14 0
November 27	Mackay	Food premises infested with vermin	5	0 0	0	14 0
December 15	Brisbane	Sale of adulterated honey	20	0 0	2	16 0
1960—						
January 18	Mackay	Failure to supply clean drinking glasses	1	0 0	0	14 0
April 5	Rockhampton	Sale of meat pie containing cockroach	5	0 0	0	14 0
April 20	Brisbane	Failure to supply clean drinking glass	5	0 0	0	14 0
April 27	Brisbane	Failure to supply clean drinking glass	3	0 0	0	14 0
May 10	Kuranda	Failure to denature waste beer	3	0 0	0	14 0
May 18	Brisbane	Failure to supply clean drinking glass	5	0 0	3	17 0
May 19	Redcliffe	Failure to supply clean drinking glass	3	0 0	0	14 0
May 24	Marreeba	Failure to supply clean drinking glass	1	0 0	0	14 0
May 24	Marreeba	Failure to supply clean drinking glass	1	0 0	0	14 0
May 25	Brisbane	Sale of unlabelled sausage meat	2	0 0	1	1 0
June 20	Southport	Failure to supply clean drinking glass	3	0 0	0	14 0
Totals			72	0 0	22	8 0

LEGISLATION

An important amendment of the Health Acts clarified the whole position in regard to employer and employee responsibility in regard to the "clean glass" legislation. Another amendment provided for increases in penalties for offences. Generally the penalties had not altered from pre-war days and were inadequate for offences in these days of lessened money value. The increased fines now provided, especially for second and third offences, should provide an effective deterrent for the persistent offender.

Amendments of a minor nature were made to the Cafe Regulations whilst amendments to the Food and Drug Regulations have been prepared and submitted for consideration.

GENERAL

During the year, the Chief Inspector paid two visits to Sydney for conferences as a member of the Food Standards Committee, which body is steadily proceeding with the task of preparing uniform food standards for adoption by all States of the Commonwealth. The value of this work is readily apparent and it should do much to remove a lot of the difficulties suffered by manufacturers in packing foods for different States.

POISONS AND DRUGS

This has been a very busy year in the control of poisons and drugs. The gazettal of new Poisons Regulations in 1958, with entirely new schedules and new labelling requirements, posed a problem both for the trade and for administration. It was not a problem of ready solution and breathing space was afforded the trade to allow of the disposal of existing stocks and to prepare the new labelling. The trade was informed of the need for expedition in complying with new labelling requirements and co-operated in every way. Consequently a very big

task devolved on the staff in advising traders of requirements and in checking and screening draft labels and proposed containers. It is pleasing to report that there has already been a good measure of compliance and every day provides evidence of an extension of such compliance. It is all the more pleasing, because this State is the pioneer in the new principles of labelling, as no other State has yet legislated for the form of labelling agreed upon in the uniform poisons schedules proposed for adoption by all States.

The information obtained during this work has all been recorded and a register has been prepared containing full details of practically every commercial poison sold on the Queensland market. It is proposed to use this information in the preparation of poisons information cards for location at key points in the State, for ready use in the event of cases of poisoning. Material for the cards is on hand and such cards will be prepared when a satisfactory lay-out is decided upon. In view of the wide-spread use of poisons both industrially and agriculturally, the ready availability of this information should prove of inestimable value.

This wide-spread use of poisons involves many avenues of sales and distribution and the Regulations, in the interest of public safety, make provision for the effective control of their storage, handling and sale. The policing of these regulations was no small feature of this section's work and regular inspections were made of all dealers in poisons and drugs. There is a very great measure of co-operation by the trade but it has been found necessary to prosecute several offenders and the details of these prosecutions may be found in Table XXXIX. herewith. Such inspections have included medical practitioners, veterinary surgeons, chemists, dentists and licensed dealers in poisons.

TABLE XXXIX
PROSECUTIONS FOR BREACHES OF POISONS REGULATIONS—1959-60

Date	Place	Basis of Prosecution	Fines	Costs
1959—			£ s. d.	£ s. d.
December 1 ..	Brisbane	Illegal possession of cyanide ..	20 0 0	2 16 0
December 17 ..	Warwick	Selling poison without a license ..	5 0 0	0 14 0
1960—				
February 17 ..	Townsville	Sale of restricted drug without prescription	10 0 0	1 15 0
March 30	Brisbane	Sale of falsely described lysol ..	5 0 0	2 16 0
April 12	Miles	Failure to endorse date of dispensing on dangerous drug prescription	5 0 0	0 14 0
April 12	Miles	Failure to cancel dangerous drug prescription	5 0 0	0 14 0
April 12	Miles	Failure to keep records of dangerous drug transactions	5 0 0	0 14 0
		Totals £	55 0 0	10 3 0

All complaints in regard to the illegal use of poisons have been investigated and, where remedial action was indicated, such action has been taken.

The usual close attention was paid to the composition, labelling and advertising claims of proprietary medicines, cosmetics, &c., and corrective

measures taken where necessary. Advertisers do tend to exaggerate the virtues of many lines but restrictive legislation provided in the Food and Drug Regulations enables a good measure of control to be kept. However, difficulty does stem from nationally advertised lines over radio and television and it is very pleasing to note that

such advertising, the control of which on a national scale lies with the Commonwealth, has come under review with the idea of a widening of the Commonwealth power in that direction.

Disinfectants and insecticides were submitted to both the analyst and the bacteriologist for testing for their efficacy or for confirmation of the claims expressed on their labels. Where necessary corrective action has been taken in regard to their composition or the labelling.

Many samples of pencils, pastels, crayons, &c., were submitted for analysis, and all steps taken to prevent such articles with a poisonous content coming on to the local market. It is pleasing to report a high measure of co-operation from the trade in this effort to eliminate any hazard

from contact, especially by children, with these widely used articles.

The regulation requiring the forwarding by chemists to the Director-General of all cancelled dangerous drug prescriptions enables this section to be fully apprised of any misuse of these drugs. Such misuse receives ready attention and it is felt that this action has a very strong deterrent action on the abuse in the use of dangerous drugs. Regular inspections of all persons dealing in dangerous drugs have been carried out in all parts of the State, and corrective action taken where necessary.

Amendments of the Poisons Regulations were designed to correct certain weaknesses in administrative sections of the regulations, to cure anomalies in the schedules and to include new drugs.

SECTION OF ENVIRONMENTAL SANITATION

Local Authorities are given all the necessary powers and authority for the superintendence, enforcement and execution of the laws relating to environmental sanitation in this State.

The Director-General, who, subject to the Minister, is responsible for the administration of the Act, exercises a supervisory power over these Local Authorities, through his own officers who travel throughout the State and submit reports to him based on actual inspections in various Local Authority areas.

These reports indicate that Local Authorities are aware of their responsibilities regarding environmental sanitation and generally maintain a satisfactory standard of service in this respect.

However, much remains to be done and even the maintenance of present standards requires constant vigilance. Any improvement usually costs money and councils quite rightly exercise considerable care in expending the money available to them, with the result that progress in this field as in others, has to be gradual.

Local Authorities have the services of a Medical Officer of Health and health inspectors to assist and guide them in the administration of the health laws within their areas. The Medical Officer of Health, with his much greater scientific knowledge is the officer to direct, where necessary, the activities of the field workers—the health inspectors who by constant regular inspections should find and cause to be remedied most of the troubles which arise.

A review of the employment and distribution of health inspectors in Local Authority areas throughout the State shows that there has been an increase in the number employed during the year. They are distributed as follows:—

	1958-59	1959-60
Brisbane	34	40
Cities and Towns	38	42
Shires (not in Joint Areas)	33	33
Joint Areas (one or more L.A.'s)	28	29
Totals	133	144

Some years ago it was realised that there were some joint areas which were of too great an area for effective control by the staff employed, and that some of the more densely populated areas required more inspectors. Nothing could be done to remedy this, because of a shortage of qualified men. At that time Local Authorities in the more remote parts of the State were unable to attract qualified men to their areas.

Last year it was possible to report that all these vacancies were filled and that the only vacancies at the end of the year were those normally occurring due to retirements and men changing from one Local Authority to another. The position is the same this year.

It would appear that the general increase in the number of inspectors is due to an awareness by the Local Authorities of the need to increase staff to meet the demands of the increasing populations and the additional responsibilities which have been delegated to them.

NIGHTSOIL DISPOSAL AND REMOVAL

There are still many areas in the State where the collection, removal and disposal of nightsoil, by some means other than sewerage, is necessary. Advances are being made slowly in the installation of sewerage systems in country towns, and by the extension of sewerage areas in places where sewerage presently exists.

Some Local Authorities are taking advantage of the provision in the Local Government Act which allows them to put in septic tanks on each premises and the owners repay the cost of installation over a period of years.

This practice, while providing a water carriage system for the body wastes of the community, does not take care of the waste waters, and in this respect is not as good as sewerage. These waste waters require to be disposed of in such a manner that neither mosquitoes nor flies can breed, often a difficult task on small areas of land. It is to be regretted that these Local Authorities do not make greater efforts to finance a complete sewerage scheme.

In those areas where there is no water carriage system and nightsoil is collected and removed by a pan system, reports indicate that this essential service generally receives satisfactory attention. But faults, such as not using watertight lids on pans and overfilling trenches at the disposal area still occur despite efforts to prevent them. These practices are generally caused by the contractor trying to save time to reduce labour costs and thus increase his profit.

REFUSE COLLECTION, REMOVAL AND DISPOSAL

Most Local Authorities appear to attend to the collection and removal of refuse very satisfactorily but too many appear to hold the view that, having removed the refuse from the premises, its disposal is of no importance.

It is, perhaps, in this field of environmental sanitation that most improvement is necessary and the one in which least improvement has been made. With few exceptions the refuse is disposed of by depositing it in a place which is considered to be sufficiently isolated to make it harmless.

The community refuse tip is now recognised in many parts of the world as being the most prolific fly breeding source known, unless it is properly conducted. It has been proved that flies travel considerable distances from such breeding places.

Covering the refuse with soil or other suitable covering material at the end of each day's tipping will greatly reduce the fly breeding but too often the covering is left until a bulldozer is in the vicinity, often leaving the refuse for flies to breed in for months at a time.

Until better practices are generally adopted these open refuse tips will continue to breed flies prolifically to the possible danger to the communities creating them.

PLAGUE PRECAUTIONS

Although it is very many years since bubonic plague has occurred in this State, and it would appear that the highly efficient and effective Commonwealth Quarantine Service has prevented its entry from overseas, a constant watch is kept at the principal seaports, in case the unexpected should happen. These Local Authorities employ rodent control officers to wage a continual war of destruction to rats, and a percentage of those killed is examined for the presence of bubonic plague. The table shows the number of rodents killed:—

TABLE XL
SHOWING NUMBER OF RODENTS DESTROYED IN
COASTAL CITIES

City	Rats	Mice
Brisbane	44,019	5,839
Bundaberg	370	..
Cairns	1,713	506
Gympie	138	..
Ipswich	548	..
Mackay	1,958	977
Maryborough	426	..
Rockhampton	1,525	..
Townsville	1,513	..
Total	52,210	7,322
Total all rodents 1959-60	..	59,532
Total all rodents 1958-59	..	56,572
Total all rodents 1957-58	..	62,382

In addition to these activities a survey of the waterfront was made this year by officers of this department and where evidence of rat infestation and harbourage was found it was referred to the controlling authority for attention.

Rats are the hosts of diseases other than bubonic plague and the implementation of The Plague Prevention Regulations of 1958 by the Local Authorities is a very necessary measure of disease control. Reports indicate that by attention to the ratproofing of buildings to deny rats a harbourage, the provision of suitable refuse containers to deny them food, and the supply of poisonous baits for killing rats, many Local Authorities are active in this respect.

MOSQUITO ERADICATION

It can be accepted that in most parts of the State this pest will be with us for many years. The complete eradication of mosquitoes often involves expensive drainage and/or filling in works combined with a very intensive survey to locate the breeding places which are more numerous, smaller and more difficult to locate. Having found and removed all possible breeding places constant supervision is necessary to ensure that man-made breeding places are not created.

Certain species are known to be vectors of disease, and a Local Authority can do much to prevent the occurrence of dengue, malaria and filariasis by the control of these known species.

Reports indicate that Local Authorities are implementing The Mosquito Prevention Regulations in that rainwater tanks are screened against the ingress of mosquitoes and that as far as possible household breeding places are removed.

But control of *C. fatigans* the recognised vector of filariasis is difficult, because this species prefers polluted water to breed in. The disposal of household waste waters presents a problem in many parts of the State and pollution of streams frequently occurs.

Many Local Authorities use larvicides on known breeding places under their control, and some are taking advantage of the subsidy paid by the Government on works which will permanently eradicate mosquito breeding. The following table shows the subsidy paid during the year under review:—

TABLE XLI
STATEMENT SHOWING TREASURY SUBSIDIES GRANTED
TO LOCAL AUTHORITIES FOR MOSQUITO
ERADICATION PURPOSES DURING THE
FINANCIAL YEAR, 1959-60

Local Authority	Amount
	£
Brisbane City Council	100,550
Cairns City Council	10,200
Gold Coast City Council	1,061
Redcliffe City Council	59,929
Rockhampton City Council	1,431
Townsville City Council	4,461
Dalby Town Council	3,400
Bowen Shire Council	35
Isisford Shire Council	47
Johnstone Shire Council	120
Mareeba Shire Council	400
Pioneer Shire Council	270
Redland Shire Council	100
Total	£ 182,004

CAMPING AREAS AND SEASIDE RESORTS

Officers of the department made inspections at the principal seaside resorts over this period and their reports indicate that Local Authorities, who are in most instances the owners of the land used for camping, are providing all that is required of them.

The greatest difficulty being experienced is the provision of an adequate safe water supply.

The most common defect found is the state of repair of the sanitary conveniences which are provided for the use of the campers. Vandals in most cases are responsible for defects.

WATER SAMPLING

Local Authorities are availing themselves of the opportunity to have their water supplies examined at frequent intervals to see if they are chemically and bacteriologically pure. Special outfits are sent on request and the samples are collected immediately on arrival.

HOTEL LICENSING

At the request of the Licensing Commission inspections are made of hotel, wine and club premises and reports furnished on the standard of hygiene. Action is taken by the Commission when necessary. The views of the Department are also obtained when plans and specifications for new premises and alterations to existing premises are submitted for approval.

PAINT

"The Health Acts Amendment Act of 1959" amended section 127 to give officers power to sample paint while a house is being painted. This very desirable amendment enables officers to find the person who actually commits the offence of putting paint containing lead on a house at the time of its application, rather than having to wait until evidence of plumbism in a child gives reason to suspect the paint on the house contains lead.

In the past the innocent householder who had paid for a lead-free paint is put to the expense of removing the paint, but under the new legislation it is the painter who will be responsible for its removal. It is pleasing to learn that most painters, realising the import of the prohibition of lead in paint, are co-operating with the Department. The problem of old premises still remains and, each year, sampling of paint on these houses produces evidence on which the Director-General requires that lead paint be removed.

The labelling of paint receives continuous attention and manufacturers generally readily remedy any defects drawn to their attention.

TOYS

The inspection and sampling of toys as a source of lead has continued. It is pleasing to report stores generally have observed the law as is evidenced by the large number of private analyses made by private analysts. The few toys seized were placed on the market inadvertently and were not sold.

FOOTWEAR

A survey made during the year showed that no deliberate breaches of the law regarding the

labelling of footwear were made. The defects noted consisted mainly of the omission of the words "manufactured by" preceding the name of the manufacturer or the required brand was not on the part of the shoe specified by law. Manufacturers readily complied with the law when defects were drawn to their attention.

SWIMMING POOLS

Water in swimming pools is examined regularly for free chlorine and analyses showed that the residual amount was between 0.2 to 0.5 parts per million.

DISTRICT OFFICERS' REPORTS

Toowoomba District

The removal of nightsoil and refuse from premises was found to be carried out in a satisfactory manner. Sanitary surveys of the area revealed major and minor faults in several sanitary depots and refuse disposal areas. These were due to the manner in which the depots were conducted and the failure to properly supervise tipping and rubbish disposal areas.

The sewerage section of the city was extended by the installation of new sewerage lines and the connection of many premises.

Duplication of the main sewer between the city and the treatment works has commenced, and the treatment works is being extended to meet the increased demand. The sewerage scheme at Roma is well on the way towards completion, and work is progressing on the St. George scheme. Sewerage schemes are proposed for Dirranbandi, Bollon, and Stanthorpe, and several other centres are investigating the possibility of sewerage.

Reticulated water supply undertakings have been completed at Jandowae, Cecil Plains, and Warra, and several more are proposed throughout the district.

Bundaberg District

There has been improvement in the collection of nightsoil in some Local Authority areas and in the use of lids on sanitary pans, while further improvement in the disposal of nightsoil might be expected by the actions of the Shires of Gooburru and Woongarra, who are taking steps to establish new sanitary depots.

Some improvement generally has been noted in the conduct of refuse tips, but apart from the cities, covering is not applied as tipping occurs, though tips are cleaned up at intervals.

The cities of Bundaberg and Maryborough continue to extend sewerage installations to keep pace with development. Mundubbera is proceeding with a sewerage scheme, but it is regretted that Biggenden has deferred the installation of sewerage.

Kolan Shire has installed a water supply at Wallaville, and Eidsvold is proceeding with such a scheme.

The shires of Gooburru, Woongarra, Burrum, and Gayndah and also the City of Bundaberg have indicated an awareness of the desirability of good public conveniences at sports grounds and public resorts by applying for loan/subsidy approvals in these matters in order

to erect new amenities with water carriage systems of disposal.

Rockhampton District

Inspections in this district show that the only essential service being conducted in reasonable conformity with recognised standards was the disposal of nightsoil. The disposal of refuse appears to be "uncontrolled" rather than "controlled" tipping.

The Barcaldine sewerage scheme has been completed and the West Rockhampton sewerage installation, which is in progress, is keeping the sewerage of the city abreast with residential development. Investigatory surveys for the purpose of installation of sewerage schemes for the townships of Capella and Muttaborra give promise of a satisfactory solution to an existing unsatisfactory state of affairs.

Schemes have been proposed for the reticulation of water supplies in the townships of Isisford, Goovigen, and Thangool, and improvement of the existing reticulation services in Gladstone and Jericho.

Townsville District

The removal of nightsoil was in most instances performed in a satisfactory manner. The City

of Townsville has obtained finance for the installation of pan washing and pan tarring machines, and the City of Charters Towers has replaced its horse-drawn vehicles with motor trucks.

Sewerage connections continue to be carried out to premises within the reticulated areas of Townsville. At Mount Isa action is contemplated in the extension of the present system.

Cairns District

The collection, removal, and disposal of nightsoil throughout the area has been conducted without nuisance. The Mareeba Shire Council have plans in hand for a new sanitary depot at Mount Molloy. At Babinda, in the Mulgrave Shire, the area of land available at the sanitary depot is becoming restricted. It is anticipated that the pan system of removal will be replaced with sewerage within two to three years.

The removal and collection of refuse has been satisfactory where such services exist. Disposal of this refuse at tips is highly satisfactory in three shires, while in other shires the picture remains of wastes being unprotected through lack of covering material.

Progress is being made on the sewerage of the City of Cairns.

SECTION OF HOOKWORM CONTROL

The staff responsible for hookworm control comprises two qualified health inspectors trained in microscopy and one full-time trained sister.

During the year 5,347 specimens were examined from all areas and 1,171 (21.8 per cent.) found to be positive. The positive specimens were from 52 whites and 1,119 aborigines. 623 (11.08 per cent.) specimens contained ova of *Enterobius* and *Hymenolepis nana*. Total re-examinations revealed 300 cured, but no returns are available of cured cases at missions, &c. Surveys were carried out at schools, missions, Government settlements, and aborigines reserves.

Mass treatments of aborigines took place at Daintree Gorge, Cairns and Upper Murray areas, Normanton reserve, cattle stations Normanton district, Mona Mona Mission, Church Missions, Bloomfield River, Lockhart River, and Mitchell River.

Examinations and treatments were extended to the Torres Strait Islands of Murray, Darnley, and Stephen. This completes the survey of Torres Straits with the exception of Warrabee and Maghir

Islands. The population of both islands would not exceed 100.

Inspectorial and advisory duties have been carried out by both health inspectors to all Department of Native Affairs settlements and Church missions.

The installation of motion picture equipment in a number of Torres Strait Islands has provided the means of showing health films which can play an important part in the education of the Islanders.

Thanks are given to the medical superintendents and matrons of all hospitals, to superintendents and spiritual heads of all missions and settlements, and the health inspectors of all the Local Authorities who have assisted in eradication of the disease. Without them the task of eradicating hookworm would be impossible.

Dr. Josephine Mackerras has carried out research into the treatment of hookworm by a drug marketed under the trade name of Alcopar (bephenium hydroxynaphthoate). One dose only is needed. It produces a clearance rate of 94 per cent., which is far superior to any other drug so far used in the eradication of hookworm.

TABLE XLII

HOOKWORM CONTROL

SHOWING NUMBER OF PERSONS EXAMINED, AND RESULTS OF EXAMINATION AND TREATMENT—1959-1960

Persons, Location	Number Examined	Number Positive		Per cent. Positive		Results of Treatment		
		Hook-worm	Other Worms	Hook-worm	Other Worms	Cured	Not Cured	Unspecified
A. White Population—								
Pre-School Children—								
Cairns	19	..	..	..	..	..	..	..
Innisfail	29	..	3	..	10.3	..	..	..
Mossman	45	..	1	..	2.4	..	..	..
Hope Vale Mission	1	..	..	..	..	..	..	..
Cooktown	8	..	..	..	..	..	..	..
Lockhart River Mission	2	..	..	..	..	..	..	..
Bloomfield River Mission	3	..	..	..	..	..	..	..
Mitchell River Mission	2	..	..	..	..	..	..	..
Kalinga Station	2	..	..	..	..	..	..	..
Lotus Vale Station	1	..	1	..	100.0	..	..	..
Coen	1	..	..	..	..	..	..	..
Normanton	6	..	..	..	..	..	..	..
Mt. Molloy	21	..	2	..	9.5	..	..	..
Ravenshoe	1	..	..	..	..	..	1	..
Oak Forest	3	..	..	..	..	..	..	..
Mirriwinni	12	..	..	..	..	..	..	..
Woopan Creek	2	..	..	..	..	..	..	..
Murray Upper	14	..	1	..	7.1	..	..	..
Kennedy	17	2	2	11.7	11.7	2	..	..
Cardwell	3	..	..	..	..	..	..	..
Bartle Frere	5	..	..	..	..	..	..	..
Total (Pre-School)	197	2	10	1	5.0	2	1	..
School Children—								
Cairns	49	..	3	..	6	1	..	..
Innisfail	88	..	7	..	7.9	..	..	..
Mossman	529	8	38	1.5	7.1	9	2	..
Port Douglas	26	..	2	..	7.6	..	..	..
Cooktown	152	6	15	3.9	9.8	..	..	6
Hope Vale Mission	5	..	..	..	..	..	..	..
Lockhart River Mission	5	2	2	40.0	40	..	..	2
Lakefield Station	2	..	..	..	..	..	..	..
Bloomfield River Mission	6	..	1	..	16.6	..	..	..
Mitchell River Mission	1	..	..	..	..	..	..	..
Kalinga Station	4	1	..	25.0	..	2	..	..
Normanton	56	..	7	..	12.5	..	..	..
Ravenshoe	4	2	..	50.0	..	1	1	..
Mt. Molloy	50	..	12	..	24.0	..	..	..
Mona Mona Mission	3	..	..	..	..	..	..	..
Oak Forest	6	..	1	..	16.6	..	..	..
Tully	12	..	..	..	..	..	..	..
Mirriwinni	69	..	3	..	4.3	..	..	..
Bartle Frere	36	..	1	..	2.7	..	..	..
Woopan Creek	14	..	1	..	7.1	..	..	..
Murray Upper	34	8	2	23.5	5.8	12	2	..
Kennedy	64	8	7	12.5	10.9	3	4	..
Total (School)	1,125	35	102	2.8	8.3	28	9	8
Other Persons—								
Cairns	43	..	1	..	2.3	..	..	..
Innisfail	22	..	..	..	..	..	..	..
Mossman	17	..	..	..	..	..	..	..
Cooktown	2	..	..	..	..	..	..	..
Hope Vale Mission	7	..	2	..	28.5	..	..	..
Lockhart River Mission	1	..	..	..	..	..	..	..
Bloomfield River Mission	12	2	2	16.6	16.6	..	..	..
Mitchell River Mission	5	1	..	20	..	..	..	1
Coen	1	..	..	..	..	..	..	..
Ravenshoe	2	2	..	100.0	..	..	1	..
Marceba	2	..	..	..	..	..	..	..
Mt. Molloy	4	..	..	..	..	..	..	..
Mona Mona Mission	9	..	..	..	..	..	..	..
Oak Forest	5	..	..	..	..	..	..	..
Tully	16	2	..	12.5	..	..	..	..
Mirriwinni	2	..	..	..	..	..	..	..
Bartle Frere	10	..	..	..	..	..	..	..
Woopan Creek	2	..	..	..	..	..	..	..
Murray Upper	51	6	2	11.7	3.9	6	1	..
Kennedy	10	2	1	20.0	10.0	1	..	..
Cardwell	2	..	..	..	..	..	..	..
Murray Island	2	..	..	..	..	..	..	..
Total (Other)	227	15	8	6.6	3.5	7	2	1
Total (All Ages)	1,639	52	120	3.2	7.3	37	12	9

TABLE XLII—continued

HOOKWORM CONTROL—continued

SHOWING NUMBER OF PERSONS EXAMINED, AND RESULTS OF EXAMINATION AND TREATMENT—1959-1960—continued

Persons, Location	Number Examined	Number Positive		Per cent. Positive		Results of Treatment		
		Hook-worm	Other Worms	Hook-worm	Other Worms	Cured	Not Cured	Unspecified
B. ABORIGINAL POPULATION—								
Pre-School Children—								
Cairns	27	13	1	48.1	3.7	1	6	..
Innisfail	2	1	..	50.0	..	..	..	1
Mossman	10	3	..	30.0	..	3	1	..
Daintree Mission	51	19	5	37.2	9.8	..	..	..
Gorge Settlement	42	3	..	7.1	..	..	..	..
Cooktown	4	..	..	..	..	..	..	..
Hope Vale Mission	84	21	11	25.0	11.9	8	..	..
Lockhart River Mission	73	38	20	52.0	27.3	7	15	..
Bloomfield River Mission	30	11	13	36.6	43.3	3	1	..
Mitchell River Mission	36	26	2	72.2	5.5	..	..	26
Aurukun Mission	49	26	6	53.0	12.2	..	..	26
Weipa Mission	8	..	2	..	25.0	..	..	..
Coen	2	..	..	..	..	..	..	..
Normanton Reserve	2	..	..	..	..	..	..	..
Normanton Cattle Stations	7	1	..	14.2	..	..	..	1
Pinnacle Settlement	6	..	..	..	..	1	..	..
Marceba Reserve	18	..	..	..	..	..	..	..
Marceba, D.N.A.	8	..	2	..	25.0	..	..	..
Mona Mona Mission	68	3	25	4.4	36.7	2	1	..
Oak Forest	3	..	..	..	..	..	..	..
Murray Upper	10	8	..	80.0	..	5	9	..
Kennedy	2	..	..	..	..	..	..	..
Darnley Island	48	2	3	4.1	6.2	..	..	2
Stephen Island	6	..	..	..	..	..	..	..
Murray Island	71	2	2	2.8	2.8	..	..	2
Total (Pre-School)	667	177	92	26.6	13.7	30	33	58
School Children—								
Cairns	41	15	4	36.5	9.7	..	..	..
Innisfail	16	1	..	6.2	..	..	..	1
Mossman	29	2	1	6.8	3.4	1	1	..
Daintree Mission	48	7	14	14.5	29.0	1	..	6
Gorge Settlement	29	4	..	13.7	..	2	..	..
Cooktown	22	5	1	22.7	4.5	..	2	..
Hope Vale Mission	115	44	32	28.3	27.8	47	10	..
Lockhart River Mission	75	49	25	65.3	33.3	35	25	..
Bloomfield River Mission	54	26	34	48.1	62.9	12	8	..
Laura	..	..	..	..	..	..	..	1
Mitchell River Mission	90	57	27	63.3	30.0	..	..	57
Weipa Mission	13	..	4	..	3.7	..	..	..
Aurukun Mission	117	14	26	11.9	22.2	..	..	14
Coen	2	2	..	100.0	..	..	..	2
Normanton	13	..	2	..	15.3	..	..	..
Normanton Reserve	19	6	7	31.5	36.8	..	..	6
Normanton Cattle Stations	17	11	4	64.7	23.5	1	..	10
Lotus Vale Station	1	..	..	..	..	6	2	..
Pinnacle Settlement	12	1	..	8.2	..	8	..	..
Marceba Reserve	24	1	4	4.1	16.6	..	..	1
Marceba, D.N.A.	10	..	3	..	30.0	..	..	..
Mona Mona Mission	94	12	39	12.7	41.4	8	..	..
Oak Forest	4	..	..	..	..	..	..	..
Murray Upper	39	22	1	56.4	2.5	16	12	..
Kennedy	3	..	..	..	..	..	..	..
Darnley Island	82	33	11	40.2	13.4	..	..	33
Stephen Island	17	1	1	5.8	5.8	..	..	1
Murray Island	154	65	6	42.2	3.8	..	..	65
Total (School)	1,140	378	246	33.1	21.5	145	68	146

TABLE XLII—continued
HOOKWORM CONTROL—continued

SHOWING NUMBER OF PERSONS EXAMINED, AND RESULTS OF EXAMINATION AND TREATMENT—1959-1960—continued

Persons, Location	Number Examined	Number Positive		Per Cent. Positive		Results of Treatment			
		Hook-worm	Other Worms	Hook-worm	Other Worms	Cured	Not Cured	Un-specified	
B. ABORIGINAL POPULATION—continued—									
Other Persons—									
Cairns	72	19	3	26.3	4.1	4	..	..	
Innisfail	7	2	..	28.5	..	..	..	..	
Mossman	5	1	..	20.0	..	..	2	..	
Daintree Mission	33	7	8	21.2	24.2	3	..	..	
Gorge Settlement	5	..	..	..	..	..	..	..	
Cooktown	8	1	..	12.5	..	..	..	..	
Hope Vale Mission	197	36	27	18.2	13.7	31	1	..	
Lockhart River Mission	145	48	10	33.1	6.8	1	..	48	
Bloomfield River Mission	71	28	37	39.4	52.1	19	8	..	
Laura	..	..	..	..	..	..	1	1	
Mitchell River Mission	241	86	19	35.6	7.8	..	..	86	
Aurukun Mission	231	38	20	16.4	8.6	..	..	38	
Weipa Mission	15	2	..	13.3	..	..	..	2	
Coen	6	..	..	..	..	..	..	..	
Normanton Reserve	58	7	5	12.0	8.6	..	..	7	
Normanton Cattle Stations	90	25	7	27.7	7.7	..	..	25	
Lotus Vale Station	..	..	..	..	..	3	..	..	
Batavia Downs Station	2	1	..	50.0	..	1	..	..	
Pinnacle Settlement	10	..	..	..	..	6	..	..	
Mareeba Reserve	40	4	..	10.0	..	1	..	1	
Mareeba, D.N.A.	20	2	1	10.0	5.0	..	..	2	
Mona Mona Mission	103	5	10	4.8	9.7	1	..	..	
Oak Forest	21	..	1	..	4.9	..	..	..	
Murray Upper	49	20	..	40.8	..	18	13	..	
Kennedy	1	..	..	..	..	..	..	..	
Darnley Island	147	48	12	32.7	5.1	..	..	48	
Stephen Island	18	1	1	5.5	5.5	..	..	1	
Murray Island	306	183	4	59.6	1.3	..	..	183	
Total (Other)	1,901	564	165	29.6	8.6	88	25	342	
Total (All Ages)	3,708	1,119	503	30.1	13.5	263	126	546	
Grand Total (White and Coloured Population)	5,347	1,171	623	21.8	11.08	300	138	555	
A AND B—									
Re-examinations—									
White—									
All Areas	49	12	..	24.4	..	37	12	..	
Aborigines—									
All Areas	418	158	..	38.2	..	260	158	..	
Total	467	170	..	36.4	..	297	170	..	
Mass Treatment—									
White—									
All Areas	7	..	..	..	..	..	..	..	
Aborigines—									
All Areas	1,910	..	..	..	..	..	..	..	
Total	1,917	..	..	..	..	..	..	..	
Haemoglobin—									
White—									
All Areas	23	..	..	..	..	..	..	..	
Aborigines—									
All Areas	245	..	..	..	..	..	..	..	
Total	268	..	..	..	..	..	..	..	

DIVISION OF TUBERCULOSIS

Director: E. W. ABRAHAMS, M.D. (Melb.), M.R.C.P. (Lond.)

Assistant Director: CYRIL EVANS, M.B., B.S., D.T.M., M.R.C.P. (Lond.)

Chest Physician, Thursday Island: G. HALES, M.B., Ch.B., T.D.D. (Wales)

Chest Physician, Cairns: R. J. B. ANDERSEN, M.B., Ch.B., T.D.D. (Wales)

Chest Physician, Townsville: I. DICKSON, M.B., Ch.B., C.P.H., R.C.P., R.C.S. (Eng.)

Chest Physician, Rockhampton: ERNEST SILBERSTERN, M.B., B.S.

Chest Physician, Toowoomba: GWYN HOWELLS, M.D., M.R.C.P. (Lond.)

BUILDING

With completion of building activity at Brisbane Chest Hospital, Chermide, there are no building operations in hand for any institution at the present time. The major buildings on this site were handed over by the Commonwealth Minister for Health, Dr. D. A. Cameron, to the State Minister for Health, Dr. H. W. Noble, in September, 1959, completing the provision of chest units at the major Queensland centres.

The prefabricated section of Brisbane Chest Hospital has been transferred from the sanatorium to other uses. When the chest surgical unit is transferred from Princess Alexandra Hospital, as is shortly anticipated, the further development of the Chest Hospital as a self-contained unit for the investigation and treatment of chest diseases will be possible.

Plans have been approved to considerably enlarge the Chest Clinic in Brisbane. However, no immediate relief of the congestion in this building is in sight, as it is anticipated that the building of which this forms a part will take up to three years to complete.

Plans for the provision of a ward for tuberculosis patients at the Toowoomba Mental Hospital are also well advanced.

MASS RADIOGRAPHY

The launching of the first compulsory mass radiography campaign in Queensland was undertaken in November last, when the Mayor of Cairns, Mr. W. Fulton, M.H.R., and the late Mr. Wordsworth, M.L.A., at that time member for Mulgrave, officially opened the survey.

Results of the survey to the end of 1959 are given in Table XLVI. and the results of the voluntary survey preceding it in Table XLV. The survey itself has now completed the area from Mossman to Townsville, including the Atherton Tableland, and from Townsville to Mount Isa, 123,436 films being taken to the end of June, 1960. Analysis of results is recorded in Table XLVI. to the end of December, 1959, only, because of the time-lag required to investigate and assess those persons found to have chest abnormalities.

Results of the survey so far are very gratifying. There has been complete acceptance of the principle of universal X-ray of adults by the public, and the major difficulty is to make the survey wide enough to meet public request. It is with real regret that small centres of population in inaccessible areas are by-passed, and every effort is made to make the survey as complete as possible.

The number of active cases found (2.4 per 1,000 for Cairns and surrounding districts) is not unduly high for a first survey on this basis.

Unfortunately, considerable operating difficulty has been experienced with this equipment, and the technical co-operation in its servicing of the Cairns and Townsville Regional Electricity Boards and of Mount Isa Mines Ltd. is gratefully acknowledged.

The follow-up and investigation of cases found has very greatly increased the amount of work thrown upon officers in Cairns and Townsville, and film interpretation in Brisbane has been possible only with the co-operation of many radiologists and physicians working on a sessional basis.

COUNTRY CLINICS

No new country clinics have been commenced this year, as staff is not available to supply them. The clinics visited from Brisbane every second month are at Cherbourg Aboriginal Settlement, Maryborough, Bundaberg, Gympie, and Nambour. In addition, the Chest Physicians at Cairns, Townsville, and Toowoomba visit Innisfail, Atherton, Babinda, Mareeba, Ingham, Charters Towers, Ayr, Cloncurry, Mount Isa, Dalby, and Warwick at varying intervals. The follow-up of cases found by mass radiography has necessitated visits to many towns not usually visited. The benefit of these visits to local hospitals and practitioners continues.

Torres Straits Survey.—As transport and staff have permitted an island by island tuberculin and X-ray survey has been made of the Torres Straits and North Queensland mainland aboriginals. During this dry season Aurukun, Edward River, Mitchell River, and Lockhart River Missions have been visited. All persons have been Mantoux tested, the positive reactors X-rayed, and the negative reactors B.C.G. vaccinated. (Table LV.)

4,290 X-rays have been taken in this area during the year, of which 1,301 were taken in the field with the transportable generator-powered unit under extremely difficult survey conditions. As a result, 39 cases of tuberculosis were admitted to Waiben Sanatorium during the year, an incidence of just under 1 per cent. of those X-rayed. As in general these are all persons reacting positively to tuberculin tests, and include those with clinical symptoms, the number is not excessive.

TUBERCULIN TESTING

The problem of non-specific sensitisation by organisms other than human type *M. tuberculosis* has continued to attract attention, and Table LIV sets out results of further tuberculin tests undertaken. The differences between the various towns tested are striking, particularly between Brisbane and Rockhampton. The high "S" reactor rate in Rockhampton, at its face value, implies widespread infection with either human or bovine type *M. tuberculosis*, of which other evidence is notably lacking.

In contrast, however, in Cairns a high reactor rate with old tuberculin is largely due to sensitisation with PPD-B. Basic knowledge of the behaviour of various mycobacteria with regard to sensitisation is still inadequate, and the interpretation of results such as these is not yet clear—it is not possible to say if cross-reaction to various antigens or infection with many different strains is the more likely explanation.

If one could regard the crude tuberculin rate with old tuberculin as being composed of fractions due to other individual organisms the problem would be relatively simple. However, obviously PPD. preparations from various organisms are not specific in their antigenicity, and much overlapping occurs.

It is possible to say that sufficient evidence is available to suggest that widespread infection with true *M. tuberculosis* cannot be held to be the case of the sensitisation of Queensland school children and that further experimental and investigational work is needed.

The question of the type of tuberculin to use in routine clinical practice is as yet unsolved. It has for many years been a standard veterinary practice to test with two antigens in cases where the results were not clear cut, one a standard mammalian PPD. and one an Avian PPD. If the Avian PPD. produces a significantly larger reaction than the mammalian it is assumed that

the infection is non-specific. A similar two-antigen test or two-strength test of one antigen may prove useful in Queensland, but so far insufficient information is available to decide this point.

During this year also a further study has been made of cases presenting with pulmonary disease in all ways resembling pulmonary tuberculosis from whom no true tubercle bacilli can be recovered but from whom "atypical" mycobacteria have been found. Laboratory investigations do not so far help the clinician to decide in which cases these bacteria are significant and in which they may be dismissed as saprophytes. In several cases where a lobectomy or resection was done bacteria were recovered from the lung and the histological picture was that of tuberculosis and yet the organisms were, by all laboratory tests, not pathogenic.

Any tuberculin test which excluded persons infected with these organisms from, for example, X-ray surveys would hardly be suitable for general use.

TUBERCULOSIS ALLOWANCES

The State Director of Tuberculosis acts as Commonwealth Medical Referee for tuberculosis allowance payments. This benefit continues to be of great help in making it possible for those who are discovered to be tuberculous to stop work and undergo treatment by providing a living allowance for their dependents. (Table LVII.)

It is not a permanent pension, but is subject to review, and a majority of those drawing the benefit ultimately return to work. In the case of aged persons, after treatment many are transferred to the age pension, and some, permanently incapacitated though non-infectious, to the invalid pension.

TABLE XLIII
SHOWING NUMBER OF HOSPITAL BEDS IN QUEENSLAND
EXCLUSIVELY AVAILABLE FOR TUBERCULOSIS
PATIENTS

Chest Hospital, Chermiside	412
Rockhampton Thoracic Annexe	50
Townsville Thoracic Annexe	60
Cairns Thoracic Annexe	50
Toowoomba Thoracic Annexe	50
Thursday Island	92
Repatriation Hospitals—	
Greenslopes	86
Kenmore	76
Total	876

TABLE XLIV
SHOWING NUMBER OF X-RAY EXAMINATIONS CARRIED OUT, 1959-60

	Chest Clinic	Mobile Unit	North Brisbane Hospital	Princess Alexandra Hospital	Rock- hampton	Too- woomba	Cairns	Town- sville	Thurs- day Island	Total
Micro Films	44,747	130,160	13,734	19,747	5,534	3,330	3,024	3,520	..	223,796
Micro Re-rays	3,138	4,417	415	847	101	61	3,827	308	..	13,114
Other large films	10,959	1,169	..	..	920*	4,832		3,088	4,290	25,198
Total	58,844	135,686	14,149	20,594	6,555	8,223	6,851	6,916	4,290	262,108

* Complete record of outside films not available.

TABLE XLV
SHOWING RESULTS OF MOBILE X-RAY SURVEY—1ST JANUARY, 1959, TO 24TH OCTOBER, 1959

Locality	Number of Micro Films Taken	Number of Active Cases Found	Number of Cases per 1,000 Micro Films	Number of Inactive Cases	Old Cases Rediscovered	Heart Lesions Noted	Carcinoma Noted	Benign Tumour Noted	Other Lung Conditions	Bronchiectasis Noted	Pneumococcal Noted	Under Investigation
Toowoomba Health Week	4,983	1	0.2	8	..	11	..	1	182	6	..	..
University	785	..	..	1	..	..	..	..	..	8	..	..
Brisbane Mental Hospital	2,583	11	4.26	15	..	28	..	..	99	1	..	7
Eventide, Brisbane	931	4	4.29	20	..	1	1	2	44	..	..	..
Wagon Repair Depot, Wacol	84	..	..	4	..	1	..	..	3	..	..	..
Unilever	98	..	..	..	..	..	..	..	1	..	..	..
Teachers' College	1,112	..	..	..	..	..	..	..	31	2	..	..
Tickle Industries	142	..	..	..	..	..	..	..	6	..	..	..
Brisbane City Council, Coorparoo	382	1	2.62	4	..	..	..	..	8	..	..	..
Roma Street Police	385	..	..	..	..	..	..	..	8	..	..	..
Hancock and Gore	361	..	..	4	..	..	..	..	20	..	..	..
S.E.A. Power House	363	..	..	4	..	12	..	..	13	1	..	..
Woolloongabba Police	133	..	..	..	..	..	..	..	..	..	..	..
B.C.C. Water Supply and Sewerage	296	..	..	2	..	..	..	..	11	1	..	..
B.C.C. Department of Electricity	431	..	..	2	..	..	..	1	13	1	..	..
Valley Police Station	173	..	..	1	..	..	..	1	7	..	..	..
Dalby	2,135	..	..	9	..	..	..	..	53	8	..	..
Miles	1,013	..	..	3	..	..	..	..	19	3	..	..
Canungra Civilian Personnel	9	..	..	..	..	..	..	..	..	..	..	..
Cherbourg Aboriginal Settlement	982	7	7.13	8	..	4	..	..	65	1	..	..
State Government Departments	519	..	..	..	..	1	..	..	21	..	..	..
Butter Marketing Board	108	..	..	..	..	..	..	..	7	..	..	..
English Electric	575	..	..	8	..	..	..	..	54	1	..	..
Rheem	193	..	..	..	..	..	..	..	11	..	..	..
A.P.M., Petrie	290	1	3.45	2	..	..	..	..	11	..	..	..
Freemasons' Home	59	..	..	4	..	..	..	..	5	..	..	..
Moreton Freezing Works	..	..	..	..	..	..	..	..	..	..	..	..
Queensland Meat Industry Board	1,180	1	0.85	2	..	3	1	1	50	2	..	..
Pauls Ice Cream and Milk Ltd.	301	1	3.32	2	..	..	..	..	10	..	..	..
Department of Civil Aviation	273	..	..	..	..	..	..	..	4	..	..	..
Garden Settlement, Cherm-side	261	..	..	3	..	3	..	1	16	1	..	..
Northgate Cannery	1,065	1	0.94	1	..	..	1	..	30	12	..	..
H. M. Prison, Brisbane	506	4	7.91	4	..	12	..	..	20	1	..	..
Trial for Mass Chest X-ray Survey, Brisbane	140	..	..	1	..	1	..	..	16	1	..	..
City Hall, Health Week	4,119	4	0.97	32	..	25	1	1	329	8	..	..
Total	26,970	36	1.33	144	..	92	4	8	1,167	48	..	7

TABLE XLVI
SHOWING RESULTS OF THE COMPULSORY MASS CHEST X-RAY SURVEY OF PERSONS OVER 14 YEARS OF AGE FROM 9-11-59 TO 31-12-59

Locality	Estimated No. of Persons Over 14 Years of Age	No. of Micro Films Taken	No. of Active Cases Found	No. of Cases per 1,000 Micro Films	Inactive Cases	Old Cases Rediscovered	Non-Specific Fibrosis	Heart Lesions	Carcinoma	Benign Tumour	Sarcoidosis	Bronchiectasis	No significant abnormality	Pneumococcal	or Intercurrent Pneumonic	Other Lung Conditions	Under Investigation
Cairns	16,660	18,715	46	2.46	140	4	139	162	3	..	..	20	321	9	21	183	6
Edmonton	1,120	800	1	1.25	6	..	5	3	..	..	..	..	8	..	1	3	..
	17,780	19,515	47	2.41	146	4	144	165	3	..	..	20	329	9	22	186	6

TABLE XLVII
SHOWING SOURCES OF NOTIFICATIONS OF TUBERCULOSIS, 1958-1959-1959-1960

	1958-59	1959-60
Hospitals	187	145
Chest Clinic	449	456
Private Practitioners	42	85
Death Certificates	4	..
Sanatoria	63	49
Repatriation Department	24	39
Thursday Island Hospital	4	4
Post Mortem	9	9
Cherbourg Aboriginal Settlement	3	..
Palm Island Aboriginal Settlement	4	..
	789	787

TABLE XLVIII

SHOWING INFORMATION FROM CASE REGISTER, 1959-60

	Brisbane			Country			State		
	M.	F.	P.	M.	F.	P.	M.	F.	P.
Notifications, 1959-60 ..	215	98	313	337	137	474	552	235	787
Cases on Register 1-7-59 and still on Register ..	1,845	1,082	2,927	1,921	1,048	2,969	3,766	2,130	5,896
**Cases added to Register 1959-60 ..	217	97	314	354	138	492	571	235	806
On Register 30th June, 1960 ..	2,062	1,179	3,241	2,275	1,186	3,461	4,337	2,365	6702

M.—Males ; F.—Females ; P.—Persons.

**Represents net increase after deaths and other removals from Register.

TABLE XLIX

SHOWING BACTERIOLOGICAL STATUS OF PATIENTS WHEN NOTIFIED

	Brisbane	Country	State
Pulmonary—			
Positive—			
Smear	54	73	127
Culture	58	123	181
Animal Inoculation	37	12	49
Negative—			
Smear	18	18	36
Culture	10	78	88
Animal Inoculation	8	6	14
Not Stated—Results Pending	103	141	244
Death Notifications	1	1	2
Total Pulmonary	289	452	741
Non-Pulmonary—			
Positive	..	1	1
Negative	3	6	9
Not Stated	21	15	36
Death	..	..	..
Total Non-Pulmonary	24	22	46
Total All Forms	313	474	787

TABLE L

SHOWING DETAILS OF TUBERCULOSIS IN MIGRANTS, QUEENSLAND

	British			Non-British			Total		
	M.	F.	P.	M.	F.	P.	M.	F.	P.
Cases prior to 1st July, 1959 ..	128	74	202	206	99	305	334	173	507
Cases, 1st July, 1959, to 30th June, 1960 ..	62	23	85	60	21	81	122	44	166
Total	190	97	287	266	120	386	456	217	673

TABLE LI

SHOWING NUMBER OF DEATHS FROM TUBERCULOSIS
AND DEATH RATE FROM TUBERCULOSIS (PER 100,000
MEAN POPULATION), QUEENSLAND

Year	Deaths	Death Rate
1950	236	19.8
1951	226	18.4
1952	216	17.2
1953	162	12.6
1954	140	10.6
1955	137	10.2
1956	81	5.7
1957	92	6.6
1958	83	5.9
1959	78	5.4

TABLE LII

SHOWING NUMBER OF CASES ON REGISTER
AND PREVALENCE RATE (PER 100,000 POPULATION),
QUEENSLAND **

Year Ending	Cases on Register	Prevalence Rate
30th June, 1952 ..	1,942	154
30th June, 1953 ..	2,569	198
30th June, 1954 ..	3,201	243
30th June, 1955 ..	3,746	279
30th June, 1956 ..	4,263	311
30th June, 1957 ..	4,731	343
30th June, 1958 ..	5,371	378
30th June, 1959 ..	5,983	398
30th June, 1960 ..	6,702	462

** Total known cases on register per 100,000 population.

TABLE LIII

SHOWING TUBERCULIN TESTS AND B.C.G. VACCINATIONS, 1959-60

	Tuber- culin Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		Refused B.C.G. Vaccination	
	No.	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Chest Clinic	6,480	313	4.8	1,274	20.7	1,682	27.3	3,211	52.1	1,518	47.3	1,491*	46.4	202	6.3
Schools—Brisbane ..	9,481	158	1.7	1,918	20.6	432	4.6	6,973	74.9	6,866	98.5	..	..	107	1.5
Schools—Ipswich ..	804	23	2.9	168	21.5	14	1.8	599	76.7	596	99.5	..	..	3	0.5
National Service Trainees	182	..	..	51	28.0	33	18.1	98	53.8	98	100.0	..	..	..	..
Teachers' Training College	1,419	..	..	749	52.8	450	31.7	220	15.5	207	94.1	..	..	13	5.9
Gatton College	454	..	..	260	57.3	101	22.2	93	20.5	93	100.0	..	..	..	..
University	1,210	201	16.6	556	55.1	317	31.4	136	13.5	129	94.8	..	..	7	5.1
Thursday Island ..	1,653	37	2.2	1,065	65.9	..	..	551	34.1	719†	..	6	1.1	..	..
Cairns	1,049	3	0.3	602	57.5	105	10.0	339	32.4	363†	..	..	..	..	..
Townsville	7,054	69	1.0	3,505	50.2	..	..	3,480	49.8	3,133	90.0	337	9.7	10	0.3
Rockhampton	3,974	84	2.1	2,817	72.4	249	6.4	824	21.2	673	81.7	151	18.3	..	..
Woorabinda Aboriginal Settlement	200	8	4.0	142	73.9	28	14.6	22	11.5	22	100.0	..	..	..	..
Toowoomba	5,985	462	7.8	1,832	33.2	334	6.1	3,350	60.7	3,136	93.6	203	6.1	11	0.3
Total	39,945	1,365	3.4	14,939	38.7	..	..	19,896	51.6	17,553	88.2	2,188	11.0	353	1.8

* Use of B.C.G. in young children is not advised in absence of contact.

† Includes aboriginal children given B.C.G. Vaccination without first having been Mantoux Tested.

‡ Includes 261 where Heaf Tests could not be read because of rain.

TABLE LIV

REACTIONS TO VARIOUS TUBERCULINS—QUEENSLAND TOWNS

Town	Percentage Positive Under Test						
	Heaf	PPD-S	PPD-B	PPD-F	PPD-N	PPD-Y	Avian
Brisbane	21.2	5.8	18.3	..	..	..	27.1
Cairns	63.1	8.6	21.2	13.8	0.8	14.1	..
Domagoo	31.9	8.6	34.1	..	..	..	..
Ayr	40.4	3.0	8.9	..	..	..	..
Roma	28.7	7.1	32.8	..	..	..	..
Rockhampton	92.9	51.9	7.5	..	..	..	..
All Districts Tested	41.7	8.6	18.7	13.8	0.8	14.1	27.1

Heaf.—Heaf method with undiluted tuberculin.

Remainder.—Mantoux method with 5 TU of Purified Protein Derivative of Tuberculin prepared from human type mycobacteria (S), Battey type (B), M. fortuitum (F), a nocardia species (N), Yellow bacillus (Y) and Avian type mycobacteria (A).

TABLE LV
THURSDAY ISLAND CENTRE

TUBERCULIN TESTS (MANTOUX 1-1,000 O.T. OR FOLLOWED BY 1-100 O.T. AS NECESSARY, AND B.C.G. VACCINATIONS (1-7-59 TO 30-6-6))

Place or Group	Number Mantoux Tested	Number Not Returned	Number Positive	Number Negative	Number B.C.G. Vaccinated	Refused B.C.G. Vaccination	Refused all Testing
Chest Clinic, Thursday Island ..	211	6	137	68	235*	6 (White babies)	..
Aurukun	199	15	124	60	74*	..	..
Mapoon	104	4	68	32	31	..	..
Weipa	65	2	46	17	26*	..	..
Edward River Mission	162	2	101	59	38	..	..
Mitchell River Mission	211	6	137	68	68	..	..
Lockhart River Mission	336	..	250	86	86	..	1
Hopevale Mission (Cooktown) ..	365	2	202	161	161	..	..
Total	1,653	37	1,065	551	719*	6 (White babies)	1

* Includes infants vaccinated without prior Tuberculin Test.

TABLE LVI
COMPLICATIONS FOLLOWING VACCINATIONS, 1959-60

Locality	Age Group	Given B.C.G. No.	Local Ulcer		Enlarged Glands		Incised Glands		Total Complications	
			No.	Percentage	No.	Percentage	No.	Percentage	No.	Percentage
Chest Clinic, Brisbane	0-2 years ..	413	2	0.5	9	2.2	2	0.5	13	3.1
	3-14 years ..	800	..	..	..	..	..	..	..	..
	Over 14 years ..	8,294	..	..	..	..	..	..	..	..
	Total ..	9,507	2	0.02	9	0.09	2	0.02	13	0.14
Thursday Island ..	0-2 years ..	370	13	3.51	7	1.89	5	1.35	25	6.76
	3-14 years ..	267	..	..	..	..	..	..	..	..
	Over 14 years ..	82	1	1.22	..	..	..	..	1	1.22
	Total ..	719	14	1.95	7	0.97	5	0.69	26	3.62
Cairns	0-2 years ..	..	..	..	..	..	..	..	..	..
	3-14 years ..	..	..	..	..	..	..	..	..	..
	Over 14 years ..	..	..	..	..	..	..	..	..	..
	Total ..	363	..	..	..	..	..	..	..	..
Rockhampton ..	0-2 years ..	42	..	..	1	2.38	1	2.38	2	4.76
	3-14 years ..	512	..	..	1	0.19	..	..	1	0.19
	Over 14 years ..	141	1	0.71	1	0.71	..	..	2	1.42
	Total ..	695	1	0.14	3	0.43	1	0.14	5	0.72
Townsville	0-2 years ..	48	3	6.25	..	..	3	6.25	6	12.5
	3-14 years ..	2,674	..	..	..	..	..	..	..	..
	Over 14 years ..	411	..	..	..	..	..	..	..	..
	Total ..	3,133	3	0.1	..	..	3	0.1	6	0.19
Toowoomba	0-2 years ..	15	..	..	1	6.67	..	..	1	6.67
	3-14 years ..	2,734	1	0.04	..	..	..	..	1	0.04
	Over 14 years ..	387	..	..	..	..	..	..	..	..
	Total ..	3,136	1	0.03	1	0.03	..	..	2	0.06

TABLE LVII
SHOWING NUMBER OF TUBERCULOSIS ALLOWANCES BEING PAID IN QUEENSLAND, AT 30TH JUNE, 1960

	Male	Female	Total
Number accommodated in tuberculosis institutions	214	52	266
Number not so accommodated	172	51	223
Total on Allowance	386	103	489

DIVISION OF INDUSTRIAL MEDICINE

Director of Industrial Medicine: E. M. RATHUS, M.B., Ch.B. (Cape Town)

Inspector in Charge—Weils Disease Control: D. KENNEDY, M.R. San.I.

The activities of this Division are generally applied towards the investigation of occupational health problems in industry. The approach adopted usually assumes two forms: (a) A relatively large-scale survey of an industry presenting a common problem where several firms or undertakings are involved, or (b) a specific investigation of a single firm presenting a known or suspected occupational health hazard. In both cases the collated information is used to provide a basis for recommendations within the industry aimed at mitigating the special health hazards disclosed. These may comprise recommendations for the installation of protective devices, systems for the removal or enclosure of toxic fumes, vapours, or dusts, provision of protective clothing, advice re special precautions in respect of personal hygiene, or the institution of regular environmental or medical supervision.

The Division undertakes such investigations often at the request of industry itself, and indeed welcomes such an approach. Where a firm intends using or installing a new process of known or unknown potentiality as far as worker exposure is concerned, it is felt that benefit may accrue to all parties if a preliminary appraisal is undertaken by the Division of Industrial Medicine. On the other hand, a small number of investigations eventuate as a result of the approaches made by responsible trade union organisations where reasonable grounds for complaint have been provided by their members within industry.

The Division itself exerts its own prerogative above these two sources, and engages in a sporadic but planned survey of industries with known occupational hazards. This is usually confined to the dusty trades, or trades where known irritants or toxic substances are in constant use.

It is gratifying to be able to report that full co-operation is always obtained from all sections (management, labour, &c.) during the conduct of such investigations. As a principle the Division exerts its full influence to dissociate itself from sectional interests.

1. ROUTINE EXAMINATIONS, &C.

During the year 103 examinations were conducted on workers for conditions such as methyl bromide intoxication, excessive lead absorption, silicosis, metal fume fever, and others.

Thirty-four (34) premises/processes were inspected and investigations arranged accordingly.

About 300 letters were directed to the State Government Insurance Office covering claims involving occupational diseases. The large majority of these are routine, but files are on occasion passed to this Division for opinion on issues involving claims where a clear association between the claim and the condition suffered is not apparent.

ENVIRONMENTAL INVESTIGATIONS

The Division is dependent on the Government Chemical Laboratory for the scientific basis on which conclusions are drawn and recommendations made. To this end, many estimations of atmospheric contamination of a toxic nature, both solid and gaseous, are undertaken. Dust counts are considered an integral part of the assessment of any industry where dusts are encountered and are an index of the degree of hazard.

3. RADIATION

A great deal of work has been done in collating information as a basis for the devising of Regulations under the Radioactive Substances Act. The Division is indebted to the Professor of Physics of the University of Queensland and his senior staff for advice and assistance in this regard. At present, as in the past, all investigations involving radioactive substances or radiation generally are carried out by the Department of Physics of the University. With the promulgation of the regulations it is anticipated that a physicist will need to be attached to the Division of Industrial Medicine in order to carry out the necessary inspections of irradiating apparatus and radioactive sources.

Inter alia it may be noted that the CAE 1020 B scintillation counter, which was originally purchased as an alpha-monitor for estimation of radon daughters in uranium mines, can be converted to a sensitive gamma-ray detector. This is done by fitting a combination of a Du Mont 6292 photomultiplier tube and a 3-inch sodium iodide crystal to the scintillation monitor in place of the similar combination of photomultiplier and zinc sulphide phosphor. The Department of Physics reports that this modification was used very successfully in the detection of a 1 milligram radium needle at Bundaberg which was missing.

5. Q FEVER

This is a well-recognised occupational infection in Queensland, and continues to pose a difficult problem. An officer of this Division is occupied on collecting details of cases and the investigation of outbreaks amongst groups of workers. For detailed comment refer to the reports of the Laboratory of Microbiology and Pathology for the years 1957-58, 1958-59, and 1959-60.

6. MOUNT ISA MINES

During October, 1959, the Director of the Division was appointed by the Industrial Court of Queensland to investigate all aspects of the effects on the health of employees of Mount Isa Mines Limited of mining for lead and the smelting of lead. A team of investigators proceeded to Mount Isa in November, 1959, and a detailed examination of the situation was undertaken. This comprised the taking of a large number of specimens for the assessment of environmental exposures, including lead in air concentrations, dust counts, air flow, wet and dry bulb temperatures,

and other relevant data. Medical examinations were conducted on a large number of workers aimed at assessing the effects of lead exposure and the whole picture interpreted in the light of these findings. In summary, it was found that a definite lead hazard did exist around the smelter, and recommendations have been made in a detailed report submitted to the Industrial Court. This report has been printed and made available for the information of the parties concerned.

7. NOISE IN INDUSTRY

A few surveys of foundries and engineering workshops have been undertaken with the co-operation of the Commonwealth Acoustics Laboratory, and recommendations made to the firms concerned re noise abatement and a hearing protection programme.

8. LEAD INDUSTRY

A continued supervision of workers in the lead trades is maintained. This includes firms engaged in battery manufacture, lead reclaiming, and railway bridge painters. Over 1,000 blood slides were examined for stippled cells, and an increasing use is being found for quantitative coproporphyrin excretion in urine.

An interesting case of lead poisoning occurred in a firm undertaking lead reclaiming where general supervision is good. This man developed an anaemia and high stippled cell count within six months. He was found to be an alcoholic, and therapy with versenate produced up to 5 mg. of lead excretion per day. The moral is obvious.

As an illustration of the kind of hazard that may occur, this Division has established that in the process of cutting up scrap railway boilers it is possible to get lead in air concentrations between 11.5 and 83 mg. per cubic metre (60 to 415 times the maximum allowable concentration) close to the operator. The firm concerned was advised of the extreme nature of the hazard, and a safe working procedure was recommended.

9. QUARRY WORKERS

A forward survey of quarry workers was commenced in 1958, and completed in May, 1960. About 200 men were X-rayed, and only 3 cases of silicosis attributable to quarry work were found. These men had had up to 30 years of exposure and were not disabled.

10. OTHER ACTIVITIES

X-ray surveys of brickwork employees, coke work employees, and others did not reveal significant findings.

The 2PAM acquired for organic phosphate poisoning found a use in restoring to health an acutely ill patient in Charters Towers.

A series of lectures was given on medical aspects of industrial safety at the Technical College, and an address was delivered to the Thoracic Society of Queensland on "Pulmonary Disease in Industry."

In addition, attendance has been required on the Medical Board constituted under the Workers' Compensation Acts for the examination of claims for pneumoconiosis.

11. WEIL'S DISEASE CAMPAIGN

The 1959 harvesting season commenced in all mill areas north of Ingham in mid-June following an almost continuous wet period since January of that year, when above average rainfalls were recorded. Wet and boggy field conditions were the rule, burning was impeded, and interruptions and delays to crushing resulted owing to inadequate cane supplies for economic crushing. Some cane was harvested green in an endeavour to maintain crushing rates. This position continued until August, when fine weather intervened and, although broken again by short periods of rain, prevailed until the cessation of crushing by all mills before Christmas.

Extensive lodging of cane was evident, which added to the problem of burning, but by co-operation by mill staff and farmers, fields were harvested according to the degree of health risk involved as conditions permitted. In some areas it was considered necessary to cordon off large known potentially dangerous sections, the controls thereon being revoked when conditions were considered compatible with safety. In spite of the adverse start, large tonnages were handled by the mills. However, in most areas some cane remained unharvested for various reasons, and a considerable amount was retained as "stand-over" for harvest in the 1960 season.

Fever cases admitted were prevalent early in the harvest, but tapered off with the development of dry field conditions. The usual sporadic case occurred in later months, but at no time did they assume minor epidemic proportions, despite the fact that almost 5,000 cutters passed through the industry in the control area during the season.

The protracted wet weather, which militated against effective rat harbourage eradication and rat baiting, allowed an increased rat population to develop in some areas, and burning for health reasons increased considerably. The reverse was the case during the "slack" season months, January to June, 1960, when, with the exception of the first part of the year, fine weather prevailed until mid-June on the eve of the harvesting for the 1960 season.

Harbourage eradication was given an added impetus. This effort, however, was nullified to some degree by the large amounts of "stand-over" cane maintained in some areas, which gave the rat a distinct advantage, despite warnings by various authorities to farmers advocating its immediate destruction at the close of crushing and before the onset of the normal monsoon rains. Retaining of stand-over crops for harvest is not considered to be a good practice from the health aspect.

Staff arrangements remained the same as in previous years—three field inspectors and the Officer in Charge. Since the issue of four-wheel-drive vehicles greater efficiency is claimed and an increase in the number of inspections carried out is recorded. Active control was carried out in the Tully, Innisfail, Babinda, and Mulgrave areas, with visits to the outlying areas of Ingham, Mossman, and Hambleton, where, in common with most other areas, mill staffs and farmers co-operate voluntarily in the implementation of the relevant Regulations governing the control of the disease.

PEST BOARD ACTIVITIES

An analysis of bait distributions reveals a variation in usage, with some recording an increase and others a decrease as compared with the 1958-1959 totals. Whilst it is considered that local conditions have indicated the various trends, to curtail usage on economic grounds could well prove to be false economy in the long run. The opinion is held that sustained regular control cannot fail to be advantageous when viewed from the long-term aspect.

HARVESTING

There was a large turnover of cutters throughout the areas, and many nationalities were represented. Once again the wearing of unsuitable clothing and footwear was all too evident. The usual choice of comfort to safety was preferred by many.

It is regretted that the knowledge of even elementary hygiene by many cutters is low, and the standard of barrack sanitation is far from satisfactory during occupancy. Despite the facilities provided, soil pollution and faulty refuse disposal account for the majority of complaints received and add greatly to the field control problem. In many cases the language barrier renders education difficult.

GENERAL

The mechanical harvesting of sugar-cane has entered another phase, that of the economics entailed. On this will no doubt depend the degree to which it will be implemented, and this in turn will give some indication of manpower requirements in the field. As a consequence this could have some bearing on the future activities of this section as at present constituted.

TABLE LVIII
ANALYSIS OF WEIL'S DISEASE CAMPAIGN

Mill Area	Area Harvested	Cane Crushed	Total Cane Burned		Burned under Health Regulations (Including 10 Tons per Acre and Under)		Standover Cane
			Acres	Tons	Acres	Tons	
South Johnstone	13,438	356,601	13,254	351,253	529	12,321	90
Goondi	10,612	285,647	10,293	276,898	700	17,500	12
Mourilyan	10,000	255,532	9,912	253,321	100	1,350	107
Tully	12,194	370,636	12,067	366,821	323	9,263	931
Babinda	13,544	359,441	13,229	351,048	1,886	49,979	16
Mulgrave	12,732	350,894	12,668	349,121	3,167	96,846	0
Hambleton	12,623	329,741	12,614	329,508	332	2,654	42
Victoria	20,237	601,144	20,226	600,940	61	540	1,182
Macknade	10,951	335,206	10,947	335,095	34	147	1,658
Invicta (Ingham Line Section only)	3,694	77,408	3,694	77,408	96	1,000	120
Totals	120,025	3,322,250	118,904	3,291,413	7,228	191,600	4,158

TABLE LIX
ANALYSIS OF WEIL'S DISEASE CAMPAIGN

Mill Area	Farms Inspected	Acres Inspected	Fields Inspected	Fields Burned	Canecutters Signed On	Duration of Crushing
						weeks
South Johnstone	601	4,534	613	77	599	24
Goondi	522	5,553	536	90	350	26
Mourilyan	157	1,389	157	4	360	24
Tully	112	498	112	18	641	24
Babinda	646	5,529	914	345	787	27
Mulgrave	33	257	33	..	633	24
Hambleton	..	..	..	..	417	25
Victoria	..	..	..	..	685	22
Macknade	..	..	..	..	405	23
Invicta (Ingham Line Section only)	..	..	..	..	88	19½
Totals	2,071	17,760	2,365	534	4,965	..

Last four mill areas not under resident control. Inspection carried out when requested by cutter, farmer, or miller.

TABLE LX
ANALYSIS OF WEIL'S DISEASE CAMPAIGN
BAITS DISTRIBUTED BY MILL PEST BOARDS FOR RODENT DESTRUCTION, NUMBER AND TYPE

Mill Area	Phosphorus on Bread	Thallium Sulphate (Wheat Medium) ¼ oz.*	Other
South Johnstone	..	1,210,000	..
Goondi	..	1,080,000	2 lb. Phosphorus (paste)
Mourilyan	10,000	1,714,330	..
Tully	20,000	340,000	..
Babinda	358,000	756,000	..
Mulgrave	..	361,800	..
Hambleton	..	1,030,144	..
Victoria	..	1,915,600	915 lb. "Ratsak" (Warfarin)
Macknade	..	1,008,000	..
Mossman	..	539,900	..
Invicta (Ingham Line Section only)	..	23,500	..
Totals	388,000	9,979,274	..

* Approximately 3 M.L.D.s per bait.

DIVISION OF MATERNAL AND CHILD WELFARE

Director: H. C. MURPHY, M.B., B.S.

Deputy Director: J. McFARLANE, M.B., B.S.

Part-time Pre-School Health Officer: A. E. PATERSON, M.B., Ch.M.

Superintendent: M. F. NIXON, A.T.N.A.

Deputy Superintendent: A. P. HERTWECK, A.T.N.A.

THE YEAR'S WORK

Throughout the State there are now 245 Centres and Sub-Centres, 68 being in the Metropolitan area and 177 in the Country.

The following Sub-Centres were opened during the year:—

- (1) Yarrabah Mission of 2nd October, 1959, serviced from Cairns.
- (2) Walkamin on 2nd November, 1959, serviced from Atherton.
- (3) Booval on 26th May, 1960, serviced from Ipswich.

On Saturday, May 14th, 1960, the new Clinic Building at Innisfail was officially opened by the Minister for Public Works and Local Government, the Honourable J. A. Heading.

Approval has been given for the establishment of Sub-Centres at Kallangur and Wulguru.

Cars have been allotted to the Mackay and Ipswich Centres, eliminating a great deal of long, uncomfortable travelling.

The total number of attendances for the year was 478,086, an increase of 14,587 on the previous year's figures.

VITAL STATISTICS

For the year 1959 the infant mortality rate has increased from the record low figure of 19.4 to 20.3, which is the second lowest figure recorded in the State. A glance at Table LXI will show that this increase is due almost entirely to a large increase in the number of deaths due to congenital malformations, and this now replaces prematurity, which until 1959 has always been the main cause of death in the first year of life. With the co-operation of the Professor of Obstetrics a retrospective survey of deaths due to congenital malformations will be carried out in the coming year.

Accidental deaths of children under 14 years of age show no sign of diminishing; in fact, the figure of 106 is the highest since these statistics were first tabulated in 1946. In the under 1 year group 24 children died as a result of accident, an increase of 10 over the previous year.

One very notable omission from the table of infantile deaths is diphtheria. Not a single death from diphtheria has been recorded in Queensland since 1956.

During the year 1959, 35,599 births were registered, an increase of 1,727 over the previous year. There were 18,295 males and 17,304 females

born, giving a masculinity rate of 105.7. The natural increase of 23,250 was equivalent to 1.6 per cent. of the population. The birth rate for 1959 was 24.8 per 1,000 mean population, compared with 23.9 in 1958.

MARRIAGES

Registration of marriages in 1959 numbered 10,581, giving a marriage rate of 7.4 per 1,000 mean population, compared with 7.3 in the previous year. Minors married numbered 5,410, comprising 1,152 males and 4,258 females.

DEATHS

Maternal

The maternal mortality rate was 0.59 per 1,000 live births compared with 0.47 in 1958, and was the second lowest ever experienced in Queensland. There were 21 deaths during the year, caused by diseases and accidents of pregnancy and child birth. Of these 11 were due to complications of childbirth and 6 were due to diseases and accidents of pregnancy (excluding four abortions). The causes of the 11 deaths due to diseases and accidents of childbirth were as follows:—

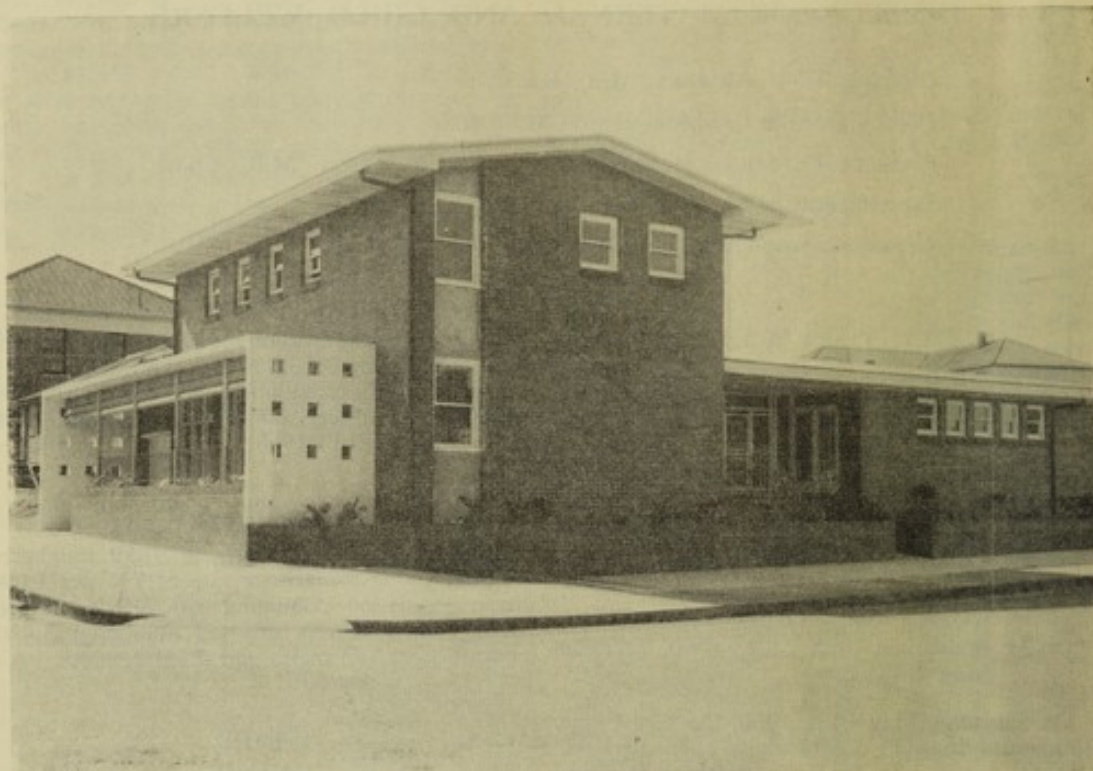
Placenta Praevia or Antepartum Haemorrhage	1
Retained Placenta	1
Disproportion or malposition of foetus	1
Delivery with other prolonged labour	1
Delivery with other trauma	1
Delivery with other complications	3
Sepsis of childbirth and the puerperium	1
Other complication or puerperium	2

The causes of the 6 deaths due to diseases and accidents of pregnancy were as follows:—

Toxaemias of pregnancy	4
Other complications of pregnancy	2

INFANTILE MORTALITY

Deaths of infants aged under one year numbered 721, comprising 413 males and 308 females, compared with 657 in 1958. The infant mortality rate increased from 19.4 in 1958, the lowest rate on record, to 20.3 in 1959, which, with 1955, was the second lowest recorded in Queensland. Compared with the previous year, the rate for the metropolitan area decreased from 17.8 to 17.2, whilst the rates for other areas of the State increased—the sub-tropical (non-metropolitan) area from 18.2 to 19.5 and the tropical area from 23.4 to 25.4 per 1,000 live births.



New Maternal and Child Welfare Centre, Innisfail



Innisfail Maternal and Child Welfare Centre—Interior of Waiting Room



Innisfail Maternal and Child Welfare Centre—Interior of Waiting Room

The total number of deaths due to prematurity (unqualified) was 118 compared with 139 in 1958. Deaths from prematurity since 1950 were as follows:—

1950	155
1951	153
1952	187
1953	145
1954	185
1955	137
1956	188
1957	163
1958	139
1959	118

The decrease of 21 deaths in the present year was due to improvement in the figure for the sub-tropical area of the State. Compared with 1958, the metropolitan area recorded 20 and the rest of the sub-tropical area 8 fewer deaths from immaturity (unqualified), whilst in the tropical area the number of deaths increased by seven.

Deaths of children aged one year and under five years

(a) Deaths of children aged one year and under two years during the year 1959, numbered 62, representing a death rate of approximately 1.9 per 1,000 children in that age group. There were 52 deaths in 1958.

The chief causes of death were:—

Accidents	16
Pneumonia—	
Bronchopneumonia	3
Other Unspecified	10
Gastroenteritis and Colitis	8
Congenital Malformations	5

Of the 16 deaths (8 males, 8 females) due to accidents, six were caused by accidental poisoning, six by traffic accidents, two by drowning, and two by fire and explosion of combustible material. Of the six deaths due to accidental poisoning, two were caused by drugs, two by petroleum products, and the remaining two by acids or caustic alkalis.

(b) The deaths of children aged two and under five years during the year numbered 96, representing a death rate of approximately 1.0 per 1,000 children in that age group. Deaths in 1958 were 91.

The chief causes of death were:—

Accidents	34
Malignant Neoplasms	14
Pneumonia (all kinds)	8
Bronchitis	5
Influenza	4
Gastroenteritis and Colitis	3

Of the 34 deaths due to accidents, twelve were caused by drowning, eight by motor vehicle accidents, five by accidental poisoning, three by fire and explosion of combustible material, two by machinery, one by burns and scalds, one by a cutting and piercing instrument, one by a firearm and one unspecified.

Accidental deaths of children aged one and under fifteen years

Accidental deaths of children in this age group numbered 106 in 1959, compared with 93 in 1958, an average of 90 in the ten years 1950 to 1959, inclusive. The total deaths of children in this age group from all causes were 298, of which 36 per cent. were caused by accident.

TABLE LXI
CAUSES OF DEATHS IN INFANTS UNDER ONE YEAR—QUEENSLAND, 1959

Cause	1958	1959				Increase or Decrease
		Metropolitan	Sub-Tropical (a)	Tropical	Total	
Immaturity (unqualified)	139	28	44	46	118	-16
Immaturity with mention of any other subsidiary condition	3	..	2	6	8	
Congenital Malformations	113	65	54	36	155	+42
Post-natal Asphyxia and Atelectasis	61	21	28	19	68	+7
Intracranial and Spinal injury at birth	68	17	31	18	66	-2
Other birth injury	40	12	19	9	40	..
Haemolytic disease of newborn (Erythroblastosis)	21	5	7	9	21	..
Pneumonia of newborn	17	6	7	5	18	+1
Haemorrhagic disease of newborn	11	8	4	4	16	+5
Neo-natal disorders arising from Maternal Toxaemia	9	2	..	5	7	-2
Diarrhoea of newborn	3	..	1	1	2	-1
Other diseases peculiar to early infancy	30	8	13	11	32	+2
Total Diseases of early infancy	515	172	210	169	551	+36
Bronchopneumonia, other and unspecified						
Pneumonia	37	7	15	12	34	-3
Gastroenteritis and Colitis	15	..	6	15	21	+6
Lobar Pneumonia	7	2	3	6	11	+4
Whooping Cough	..	..	..	1	1	+1
Meningitis, except Meningococcal and Tuberculous	6	4	2	3	9	+3
Accidents, Poisonings and Violence	14	..	15	9	24	+10
All other causes	63	27	25	18	70	+7
Total Deaths under 1 year	657	212	276	233	721	+64

(a) Excluding Metropolitan.

TABLE LXII

CAUSES OF DEATHS IN INFANTS UNDER ONE MONTH OF AGE—QUEENSLAND, 1959

Cause	1958	1959				Increase or Decrease
		Metropolitan	Sub-Tropical (a)	Tropical	Total	
Immaturity (unqualified)	137	28	43	46	117	- 14
Immaturity with mention of any other subsidiary condition	2	..	2	6	8	
Congenital Malformations	68	44	37	25	106	+38
Post-natal Asphyxia and Atelectasis	61	21	27	19	67	+ 6
Intracranial and Spinal injury at birth	64	17	30	18	65	+ 1
Other birth injury	40	12	19	9	40	..
Haemolytic diseases of newborn (Erythroblastosis)	21	5	7	9	21	..
Pneumonia of newborn	17	6	7	5	18	+ 1
Haemorrhagic disease of newborn	11	8	4	4	16	+ 5
Neo-natal disorders arising from Maternal Toxaemia	9	2	..	5	7	- 2
Diarrhoea of newborn	3	..	1	1	2	- 1
Other diseases peculiar to early infancy	25	8	12	11	31	+ 6
Total Pre-natal Causes	458	151	189	158	498	+40
All other Causes	8	5	13	4	22	+14
Totals	466	156	202	162	520	+54

(a) Excluding Metropolitan.

TABLE LXIII

CAUSES OF DEATHS IN INFANTS MORE THAN ONE MONTH, BUT LESS THAN TWELVE MONTHS OF AGE—QUEENSLAND, 1959

Cause	1958	1959				Increase or Decrease
		Metropolitan	Sub-Tropical (a)	Tropical	Total	
Immaturity (unqualified)	2	..	1	..	1	- 2
Immaturity with mention of any other subsidiary condition	1	..	..	..	..	
Congenital Malformations	45	21	17	11	49	+ 4
Post-natal Asphyxia and Atelectasis	..	..	1	..	1	+ 1
Other diseases peculiar to early infancy	9	..	2	..	2	- 7
Total Pre-natal Causes	57	21	21	11	53	- 4
Bronchopneumonia, other and unspecified Pneumonia	37	7	15	12	34	- 3
Gastroenteritis and Colitis	15	..	6	15	21	+ 6
Lobar Pneumonia	7	2	3	6	11	+ 4
Whooping Cough	..	..	..	1	1	+ 1
Meningitis, except Meningococcal and Tuberculosis	5	3	2	3	8	+ 3
Accidents, Poisonings and Violence	13	..	12	8	20	+ 7
All other causes	57	23	15	15	53	- 4
Total Deaths 4 weeks and under 1 year	191	56	74	71	201	+10

(a) Excluding Metropolitan

TABLE LXIV

CAUSES OF DEATHS OF PREMATURE (IMMATURE) INFANTS

	1957	1958	1959
Immaturity unqualified	163	139	118
Ill-defined diseases peculiar to early infancy, with immaturity	16	18	22
Post-natal Asphyxia and Atelectasis, with immaturity	34	31	45
Intracranial and Spinal injury at birth, with immaturity	14	26	22
Other birth injury, with immaturity	22	24	24
Neo-natal disorders arising from Maternal Toxaemia, with immaturity	7	7	5
Pneumonia of newborn, with immaturity	3	3	7
Haemorrhagic diseases of newborn, with immaturity	..	1	2
Haemolytic disease of newborn, with immaturity	1	6	8
Nutritional Maladjustment, with immaturity	1	..	..
Immaturity with mention of any other subsidiary condition	1	3	8
Umbilical Sepsis, with immaturity	..	1	..
Other Sepsis of newborn, with immaturity	..	..	..
Diarrhoea of the newborn, with immaturity	..	..	..
Totals	262	259	261
Total under one year, with immaturity	262	259	261
Total under one month, with immaturity	260	255	259

TABLE LXV
ACCIDENTAL DEATHS OF CHILDREN (AGED 1 AND UNDER 15 YEARS) IN QUEENSLAND

	1954		1955		1956		1957		1958		1959		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Road Accidents ..	18	11	15	9	14	9	20	9	18	13	24	11	171
Firearms ..	5	..	2	..	3	..	..	..	3	1	6	..	20
Drowning ..	10	4	17	1	21	5	16	6	13	13	19	7	132
Falls ..	3	..	1	..	5	2	1	1	1	1	1	2	18
Other Accidents ..	21	13	21	18	19	17	25	11	21	9	22	14	211
	57	28	56	28	62	33	62	27	57	37	72	34	552
Totals ..	85		84		95		89		93		106		552

In 1959, thirty-five deaths in this age group were caused by road accidents, 24 males and 11 females. The total number of deaths was 106—13 more than the previous year—and the ratio of males to females was about 2:1.

TABLE LXVI
MAJOR CAUSES OF DEATH IN FIRST YEAR OF LIFE (QUEENSLAND, 1950-1959). PERCENTAGE OF TOTAL INFANT DEATHS

Year	Pre-maturity	Congenital Mal-formation	Birth Trauma	Post-natal Asphyxia	Broncho-pneumonia	Erythro-blastosis	Pneumonia of the Newborn	Gastro-enteritis and Colitis	Neo-natal Diseases arising from Toxaemia	Accidents and Violence
	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.	Per cent.
1950 ..	21.5	15.0	16.0	9.0	5.1	3.4	3.0	1.3	2.0	1.5
1951 ..	20.0	13.8	17.0	7.7	5.0	4.3	4.3	5.3	3.0	2.1
1952 ..	24.2	16.1	14.6	10.5	3.0	3.0	3.1	3.5	1.8	2.7
1953 ..	18.9	18.9	16.0	10.5	4.1	3.5	3.7	4.2	3.3	1.8
1954 ..	27.0	18.8	15.5	9.6	2.6	1.7	2.4	3.5	3.3	1.4
1955 ..	21.5	19.5	16.3	10.0	4.3	3.5	3.3	3.2	2.1	1.5
1956 ..	25.7	18.3	12.5	8.4	7.7	3.4	2.2	3.1	2.0	1.8
1957 ..	22.4	18.0	14.6	7.9	6.3	3.3	3.7	2.4	1.4	3.0
1958 ..	21.6	17.2	16.4	9.3	5.6	3.2	2.6	2.3	1.4	2.1
1959 ..	17.5	21.5	14.7	9.4	4.7	2.9	2.5	2.9	1.0	3.3

STAFF

The staff position remains much the same as in previous years with the number of temporary staff exceeding those of the permanent staff. Permanent staff number sixty-two (62) whilst those employed as temporary staff exceed eighty (80).

In March, Miss Alma Jenkinson retired after thirty-four years with this Service, the last seven as Superintendent.

One staff member retired in December, two resigned to marry, and one for personal reasons. There were no appointments to the permanent staff.

Recruitment of temporary staff presents very little difficulty, some members being willing to remain "temporary" for years.

Miss A. P. Hertweck has been appointed Deputy Superintendent and Miss M. Nixon replaced Miss Jenkinson as Superintendent.

TRAINING SCHOOLS

A. Trained Nurses

During the year two courses were conducted at St. Paul's Terrace and in July, 1959, thirty-two (32) students gained their Maternal and Child Welfare Certificates, and in January, 1960, thirty-five (35) were successful.

B. Untrained Girls

The following results for the year were obtained at the various Homes:—

Clayfield, twenty-one (21) successful students.
Toowoomba, eleven (11) successful students.
Ipswich, eight (8) successful students.
Rockhampton, eight (8) successful students.

TABLE LXVII
MOTHERCRAFT HOMES

Homes	Attendances						Daily Average					
	Mothers			Babies			Mothers			Babies		
	1957	1958	1959	1957	1958	1959	1957	1958	1959	1957	1958	1959
St. Paul's Terrace ..	92	90	63	223	222	197	4.4	3.7	2.54	13.8	13.6	12.51
Clayfield ..	83	66	67	214	195	210	3.74	3.0	2.73	14.06	13.65	13.81
Toowoomba ..	54	55	65	134	168	160	1.73	1.57	2.16	12.39	13.87	13.08
Ipswich ..	99	91	106	141	143	151	3.8	3.57	3.98	7.9	7.58	7.93
Rockhampton ..	37	56	35	83	107	95	2.17	2.71	1.67	7.84	8.41	7.51

The following is the history of an infant suffering from cystic fibrosis of the pancreas, who was admitted to the Rockhampton Home on 25th August, 1959:—

M.S.—Birth weight, 7 lb. 11 oz.; age on admission, 12 weeks; weight on admission, 8 lb. 8½ oz.

This child was very undernourished with a depressed anterior fontanelle, a severe cough and poor muscle tone. She had an enormous appetite and was hard to satisfy. Pancreatin was commenced on 9-9-59, ½ tablet p.c. Up to this date there was no increase in weight. Pancreatin was increased on 13-10-59 and it was found necessary to gavage same as chin, mouth and tongue were being digested. This condition cleared within 3 days of gavage. On 20-10-59 a sweat test was carried out and this was positive. On 23-11-59 the mother was shown how to gavage and she continued to do this daily until 4-12-59 when the child was discharged weighing 12 lb. 11½ oz.

PHENYLKETONURIA

Phenylketonuria is a disorder characterised by various degrees of mental deficiency as a result of irreversible cerebral damage. This is the result of abnormal metabolism of the essential amino acid phenylalanine.

The usual metabolism of phenylalanine is a conversion to tyrosine by the enzyme phenylalanine hydroxylase. This enzyme consists of two protein fractions one of which is found only in the liver. In patients with phenylketonuria this liver fraction is absent, and phenylalanine is not converted into tyrosine but into phenylpyruvic acid, and abnormal amounts are built up in the body fluids and phenylpyruvic oligophrenia results.

The normal serum level of phenylalanine is 1–2 mg. per 100 mls. In phenylketonuria the range may be from 15–60 mg. per mls.

The incidence of phenylketonuria is one out of twenty to twenty-five thousand children, and it has been estimated that 1–2 per cent. of inmates of mental institutions are there because of phenylpyruvic oligophrenia. The sexes are affected equally.

This imbecility due to excess of phenylalanine can be prevented by the early detection of phenylketonuria and the administration of a diet low in phenylalanine. Most authorities are agreed that the best time for testing the urine is at, or near, three weeks of age and again at two months.

In a service such as the Maternal and Child Welfare Service which is a preventive service and contacts so many babies throughout the State, it is obligatory to carry out routine tests for this condition. Consequently, on 22nd January, 1960, instructions were issued that all infants attending Maternal and Child Welfare Centres should have their urine tested at three weeks, or as near to that as possible, and again at two months, using the simple ferric chloride test, a drop on to a wet napkin. Although the condition will fortunately be found in perhaps only one or two cases, the early detection of it will enable affected children to develop normally instead of being condemned to a life of imbecility.

The following history is of a child admitted to St. Paul's Terrace Home from the Brisbane Children's Hospital. This child who had been detected early and had responded to dietetic treatment was admitted for feeding management and nutritional education of the mother.

R.P. born 20-5-59 third child in the family. First child normal, second was found at 2 years to be suffering from phenylketonuria. He was an inpatient in the Brisbane Children's Hospital when the third child was born, and as he was grossly retarded a close watch was kept on the third child. This third child developed a positive ferric chloride test during the third week of life and he was admitted to the Children's Hospital at three weeks of age. He was an inpatient almost continuously since then until his admission to the St. Paul's Terrace Home on 31st December, 1959, his mother finding the care of this child beyond her. On his admission at the age of 32 weeks he had apparently made average progress and appeared normal both physically and mentally.

His treatment was dietetic, necessitating a restriction of all forms of protein. As a substitute for protein a charcoal treated casein extract Cymogran, low in phenylalanine but containing other amino acids, some minerals, starch and vegetable oil was used. Rice, which contains practically no phenylalanine, was one of the main articles of diet. Most fruit and vegetables, with the exception of potato and banana, were allowed. Only small portions of potato and banana were allowed. Milk was not allowed. All meats, tinned soups and vegetables, brown or white bread, eggs, cheese, dried fruits, nuts, peas, beans and ice-cream were excluded from the diet. The child was discharged on 27-1-60 having made good progress, and the mother, having had daily food demonstrations, felt quite capable of managing the child.

Since 22nd January tests have been carried out and one positive ferric chloride test was discovered at Murgon. The baby was admitted to the Children's Hospital where, fortunately, repeated serum tests were negative.

SANDGATE HOME

The year commenced with 51 children in residence. Admissions for the year were 788, made up as follows:—

Boys 1½ years to 5 years	210
Boys 5 years to 10 years	187
Boys over 10 years	32
Total boys	429
Girls 1½ years to 5 years	178
Girls 5 years to 10 years	155
Girls over 10 years	26
Total girls	359

Total number of days children spent in Home, 17,606. Average duration of residence for each child, 22.34. Daily average, 48.1. Total number of families admitted, 310. Number of children sent to hospital, 10; number of children returned from hospital, 6; families returned once during year, 18; families returned twice during year, 2.

A "Pope Motorola" television set was presented to the Home by the Channel 9 Appeal Fund, this has been greatly enjoyed by the children.

SANDGATE HOME—BABY WARD

The year commenced with 14 babies in residence. One hundred and sixty-four babies were admitted during the year, the daily average being 10.8, and the average duration of each child in residence was 24.2.

The babies and toddlers have progressed very well during the year.

It was found necessary to transfer ten (10) children to hospital mostly suffering from respiratory tract infection.

On January 26th, 1960, the Baby Home was vacated and the babies in residence transferred for residence in the Centre in Brighton Road. Accommodation has been made there for ten (10) babies as a temporary arrangement while the existing Baby Home is being altered and enlarged.

ANTE-NATAL SECTION

During the year there has been a marked increase in ante-natal attendances at the metropolitan clinics. At Woolloongabba there are now two (2) weekly afternoon clinics (Monday and Friday) at which the physiotherapist is present. This replaces the usual Monday clinic and two (2) Tuesday morning clinics per month which became necessary last year. It is better to have the physiotherapist at all clinics, as many mothers show a keen interest in this phase of the work, and in most cases the mothers who do regular exercises have better confinements.

The Sisters-in-Charge of the Woolloongabba and Fortitude Valley Centres conduct a course of six (6) lectures to expectant mothers during the Monday and Thursday ante-natal periods, and this is well attended by our own mothers and those sent along by other doctors.

A survey was made as to the time of occurrence of movements in primipara and multipara. Three hundred and thirty-two multipara and one hundred and sixteen primipara who were sure of the date of their last normal menstrual period and the onset of movements were questioned. The average time of occurrence of movements in the multipara was 18.5 weeks and in the primipara 17.8 weeks. The range was wider in the multipara than in the primipara.

Among the cases of special interest was one (1) maternal death. This patient was a multipara who developed bacterial endocarditis during her last pregnancy (her second) five years ago. She developed a recurrence when approximately 7 months pregnant. She was hospitalised and treated before delivery, which was normal. After the baby was born she showed a fluctuating temperature with negative blood cultures. Death occurred 2½ weeks after delivery from rupture of a mycotic cerebral aneurism. Two multipara developed a hydatidiform mole, one of which was suspected before delivery. The other mother exhibited a raised blood pressure and stated she felt foetal movements. Both are well.

Two multipara suffered an intrauterine foetal death of unknown etiology four weeks before term. Each was delivered at term of a macerated foetus. One multipara and one primipara had a missed abortion at approximately 16 weeks gestation. These were retained for 13 and 14 weeks respectively. The primipara has since become pregnant again.

Two prolapsed cords occurred in multipara during labour. The one who was in hospital being treated for pre-eclampsia was delivered of a live baby by Caesarean section. The other entered hospital with a dead baby, having laboured many hours at home. Three other Caesarean sections were performed—all in multipara, one for disproportion due to a 9-lb. baby, one for essential hypertension and foetal distress, and one as a repeat third section. The last two (2) babies died—the first from prematurity and a congenital heart, the second from hyaline membrane disease. It is interesting to note that three (3) of the babies who died within the first month of life did so because of congenital abnormalities. This reflects in a small way the general trend in the State as a whole as noted in the vital statistics.

Of the two (2) babies whose mothers showed Rh incompatibility, one died after an exchange transfusion, and the other was unaffected. It is interesting to note the large number of mothers whose blood pressure at the post-natal examination was higher than that recorded at the first ante-natal visit. This reflects the early tension suffered by the mother who leaves hospital still suffering from the effects of the delivery to return, immediately in most cases, to the pressure of household chores.

TABLE LXVIII
SUMMARY OF ANTE-NATAL CASES

	New Patients		Subsequent Visits	Post-natal Visits	Total	Talks to Mothers
	1958-59	1959-60				
Caboolture	36	38	217	26	281	} 618
Fortitude Valley	146	202	1,692	173	2,067	
Woolloongabba	343	433	3,278	348	4,059	

TABLE LXVIII—continued

	Woolloongabba				Fortitude Valley				Caboolture				Totals
	Multipara		Primipara		Multipara		Primipara		Multipara		Primipara		
	A	B	A	B	A	B	A	B	A	B	A	B	
Number	311	138	83	36	144	72	56	25	30	12	6	2	915
Haemoglobin under 13.0G	199	61	56	14	86	30	33	9	14	4	3	1	510
Haemoglobin under 10.8G	30	7	3	..	18	7	2	5	2	..	..	..	74
Toxaemia requiring home treatment	89	13	19	9	44	12	11	10	9	2	3	2	223
Toxaemia requiring hospitalisation ..	78	3	38	..	30	9	22	3	5	..	1	..	189
Morning sickness	60	56	27	15	35	25	12	6	5	1	..	1	243
Varicose veins	52	23	..	..	19	5	..	1	7	1	..	..	108
Vaginal discharge	33	4	17	1	12	2	8	1	8	..	1	..	87
Rh-ve (no antibodies)	32	14	10	6	15	8	13	3	1	1	2	..	105
Threatened miscarriage	16	11	1	..	2	6	..	3	1	..	..	..	40
Constipation	15	5	5	..	3	..	3	4	1	..	1	..	37
Post-maturity	15	2	6	..	7	..	2	..	1	..	..	..	33
Toxaemia superimposed on hyper- tension	13	2	..	..	5	2	2	..	..	..	..	..	24
Urinary tract infection	13	3	6	2	3	1	4	..	2	..	..	..	34
Hypertension	10	23	1	1	4	4	..	..	2	1	..	..	46
Cardiac murmur	9	4	2	..	3	2	2	..	1	..	..	..	23
Miscellaneous	77	13	15	..	30	12	12	3	8	4	1	..	175

A—Confined by 30th June, 1960 ;

B—Unconfined by 30th June, 1960.

TABLE LXIX
POST-NATAL EXAMINATIONS

	Woolloongabba		Fortitude Valley		Caboolture		Totals
	Multipara	Primipara	Multipara	Primipara	Multipara	Primipara	
Number	156	45	81	31	12	2	327
Hypertension	68	16	43	17	3	1	148
Retroversion	41	12	17	7	2	..	79
Subinvolution	24	4	15	3	..	..	46
Cystocele	12	..	1	..	2	..	15
Retained products	10	3	..	1	..	..	14
Vaginal discharge	5	1	3	1	..	..	10
Rectocele	4	2	3	..	..	..	9
Cystocele and Rectocele	6	..	2	1	..	..	9
Breast abscess	..	..	1	1	..	..	2
Pyosalpinx	..	1	1	..	..	..	2
Anal fissure	1	..	..	..	..	..	1
Haemorrhoids	..	1	..	..	..	..	1
Urinary tract infection	..	2	..	..	..	..	2

DIRECTOR'S CONSULTANT CENTRE

Attendances during the year ended June, 1960, were as follows:—

Number of children examined for admission to Sandgate Home ..	1,351
Number advised by 'phone ..	456
Attendance at Director's Consultant Centre for advice ..	2,034
Total number of children examined or advised at Centre ..	3,799

PRE-SCHOOL HEALTH CENTRES

The total number of examinations during the year was 5,220, of which 2,148 were first examinations and 3,072 were subsequent examinations. The total examinations during the previous year numbered 5,386.

Overall attendance during the year was below that of the previous year. Epidemics of measles, mumps, chicken pox and influenza from July,

1959, to November, 1959, and again in May and June, 1960, and the fact that Ipswich and Devoy Street, Ashgrove, kindergartens have arranged to have their children examined by a private doctor would account for the drop in attendance. The daily average attendance per Clinic was 16.7.

Because of poor attendance at West End Clinic, permission was granted in February, 1960, to close this Clinic and open at Everton Park, one of the newer suburbs. The first Clinic was held there on Monday, 8th February, 1960. To give the mothers of Inala a better service, it was thought advisable to hold a Clinic at Inala Heights as well as Inala. Arrangements were made accordingly. Commencing from Monday, 22nd June, 1960, a Clinic is now held at Inala on the second Monday and Inala Heights on the fourth Monday in the month.

COUNTRY CENTRES

The total number of examinations of toddlers at country centres is as follows:—

TABLE LXX

Centres	New Patients	Subsequent Visits	Total Visits	Number of Clinics	Average per Clinic
Cairns	207	144	351	31	10.3
Rockhampton	161	39	200	22	9.0
Toowoomba	29	30	59	17	3.4
Townsville	167	97	264	20	13.2

PRE-SCHOOL CENTRES

Summary of the main abnormalities found at half-yearly examinations in the Metropolitan Centres:—

TABLE LXXI

Enlarged tonsils	1,751
Knock knees	1,270
Flat feet	528
Adenoiditis	277
Bow legs	199
Carious teeth	138
Umbilical hernia	96
Skin rash	93
Tonsillitis	80
Cardiac murmur	60
Birth mark	44
Intoeing	26
Stained teeth	22
Allergy	20
Malocclusion	20
Miscellaneous	140

Summary of the main abnormalities found at half-yearly examinations at Country Centres:—

TABLE LXXII

Knock knees	33
Umbilical hernia	24
Flat feet	17
Enlarged tonsils	10
Intoeing	10
Allergy	6
Adenoiditis	5
Miscellaneous	30

GROWTH OF CHILDREN IN QUEENSLAND
1 YEAR TO 5 YEARS

Figures for 6,500 boys and 6,500 girls who attend the Pre-School Health Centres were obtained, and their heights, weights, and chest measurements were recorded for every two months from one year to five years. The percentile method of showing this graphically was used. The first five and the last five percentiles were omitted which left a range of ninety percentiles, and the fiftieth percentile or median was shown.

The actual figures for the various age groups are:—

TABLE LXXIII

SHOWING GROWTH OF CHILDREN IN QUEENSLAND

Age in Years	Weight in Pounds		Height in Inches		Circumference of Chest in Inches	
	Boys	Girls	Boys	Girls	Boys	Girls
1	23½	23½	29½	29	19	19
1½	26½	26	32	31½	19½	19
2	27	27½	34	33½	20½	19½
2½	30½	30½	35½	35½	20½	20
3	32½	32½	37½	37	20½	20½
3½	34½	34½	38½	38½	21	21
4	36½	36½	40	40	21½	21
4½	39	37	41½	41½	22	21½
5	43	39	42	42	22	21½

AMYLOBARBITONE FOR THE TREATMENT OF
BED WETTING

During the last two (2) years Amylobarbitone has been used with some success for the treatment of bed wetting. In all, nine (9) cases were treated. Seven (7) showed improvement of varying degrees and two (2) showed no improvement.

The children who showed improvement were emotional and highly excitable children who, in some cases, showed some sign of instability other than the bed wetting.

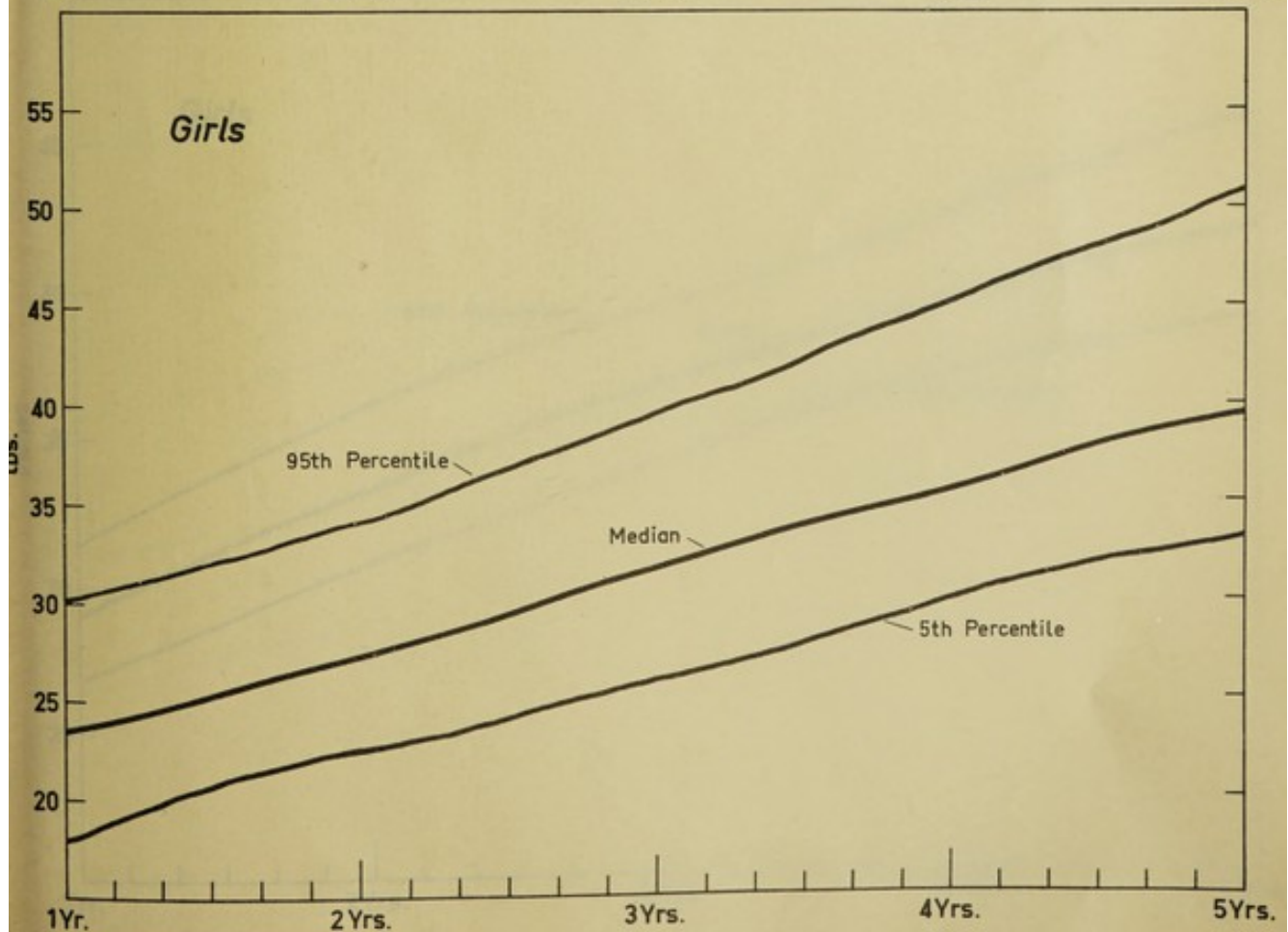
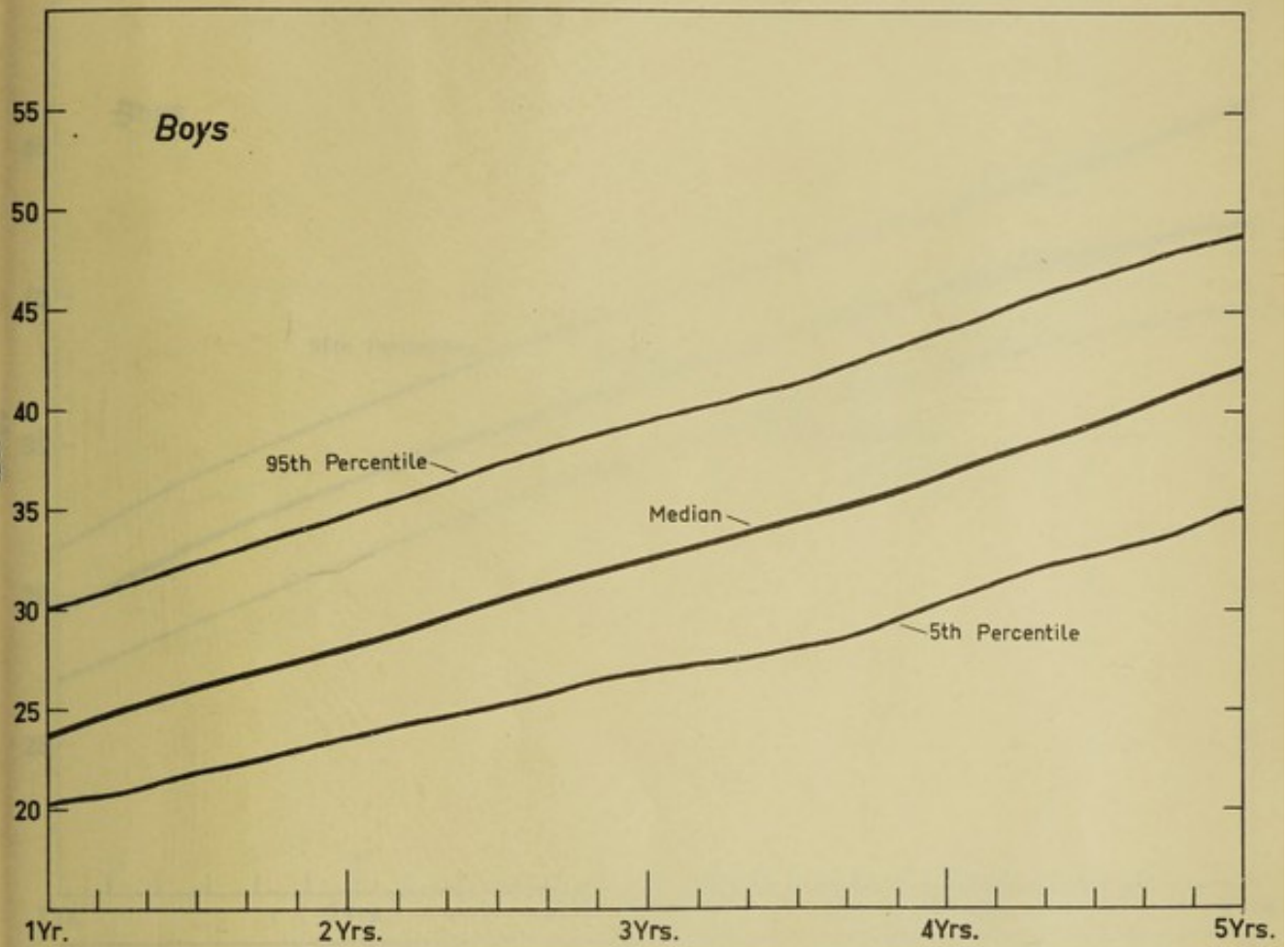
The dosage of the drug that was successful varied between gr.¼ tds. and gr.½ tds. If the

response is immediate it seems best to continue the drug for two (2) months and then to cease it gradually over the following month. Immediate re-introduction, if relapse occurs, is necessary. As cold weather and excessive fluid after 3.00 p.m. are two factors likely to cause a relapse, it is wise to restrict fluid after this time, particularly during the winter months.

Treatment is not given if the child is under three (3) years of age, and is used between 3 and 4 years if there is some co-existing factor, such as, temper tantrums, nightmares, &c. Over 4 years of age bed wetting alone is an indication for treatment if more than 2 wet beds are found in the one week.

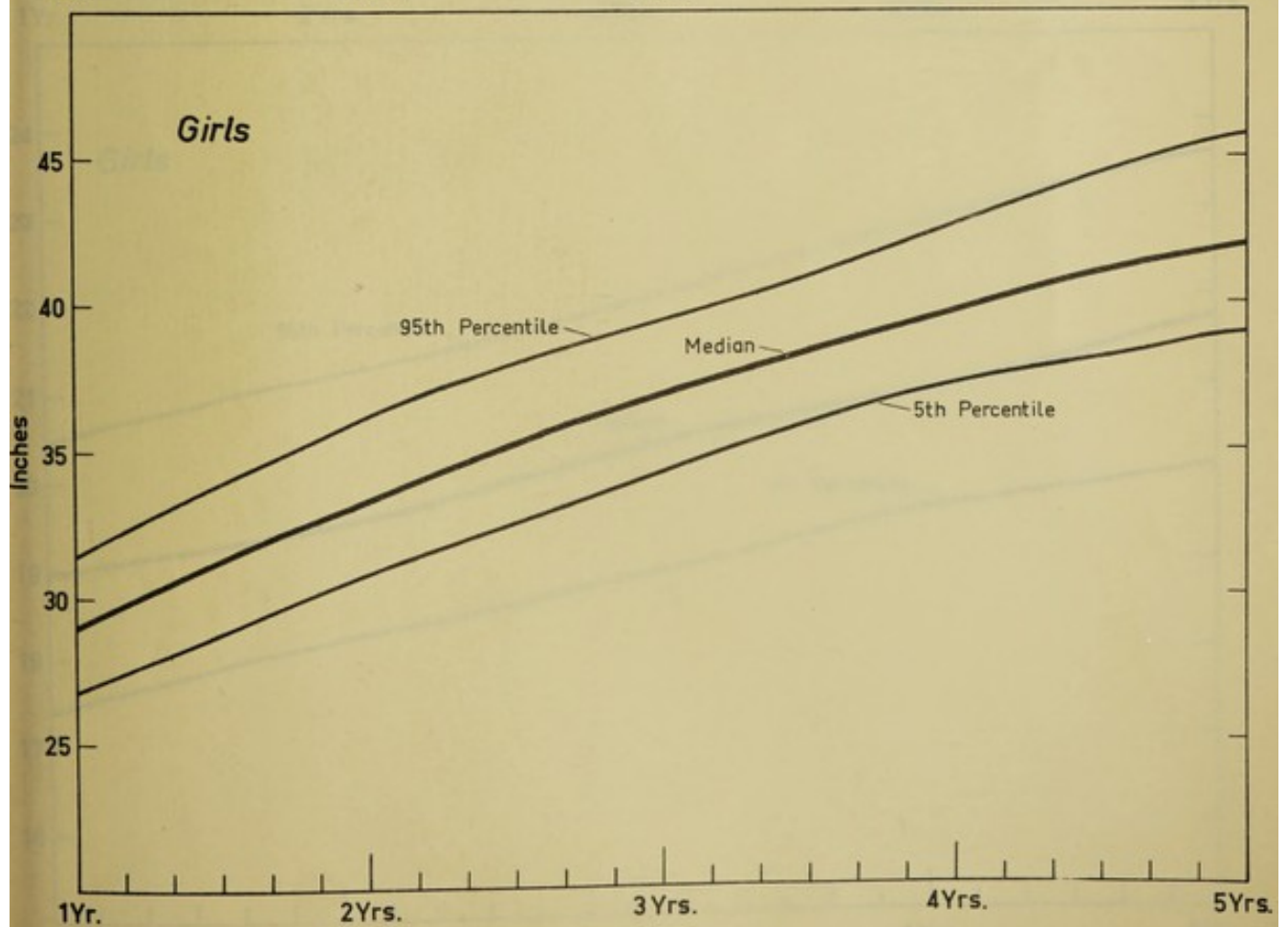
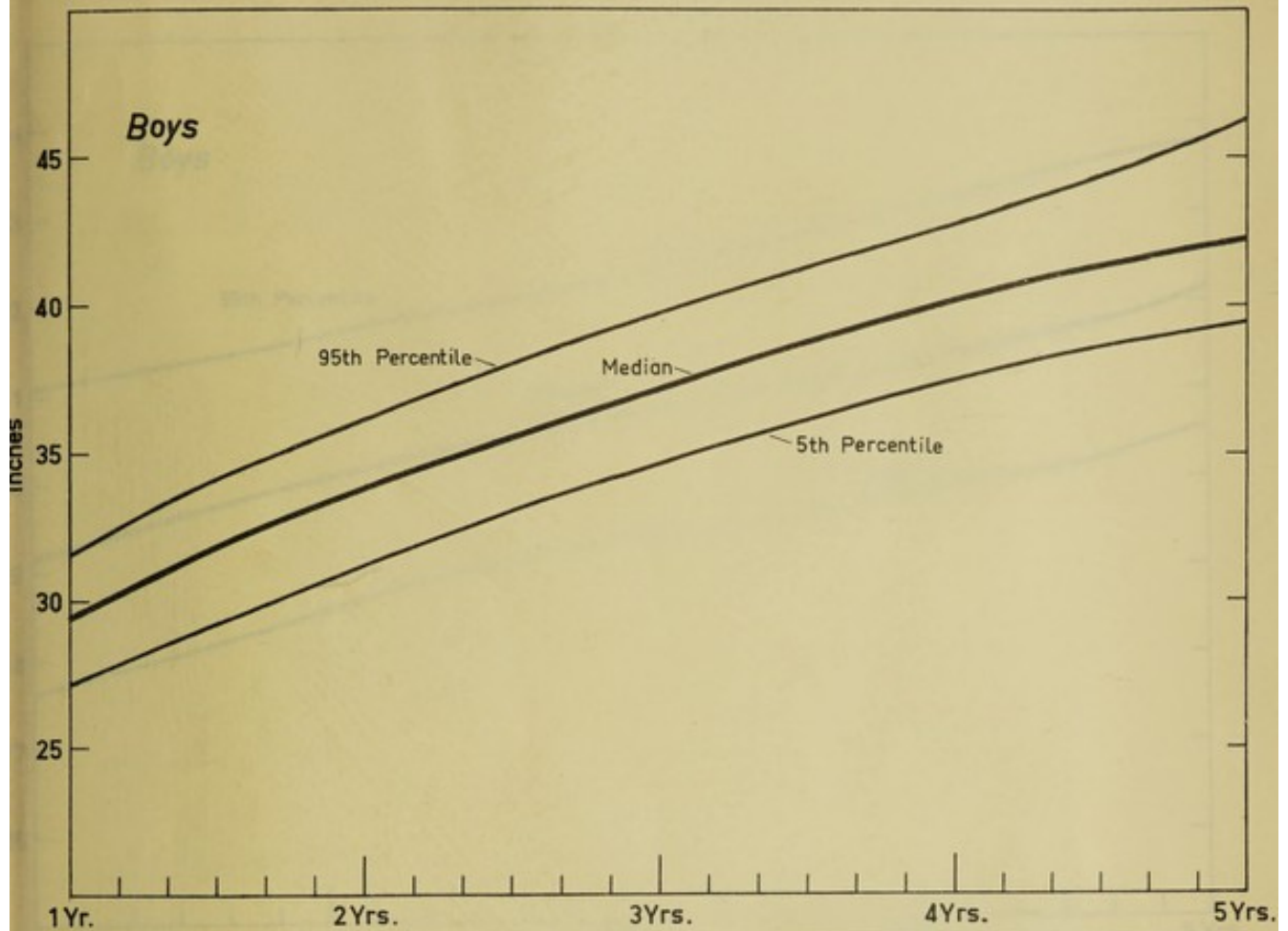
DEVELOPMENT OF CHILDREN IN QUEENSLAND

WEIGHT



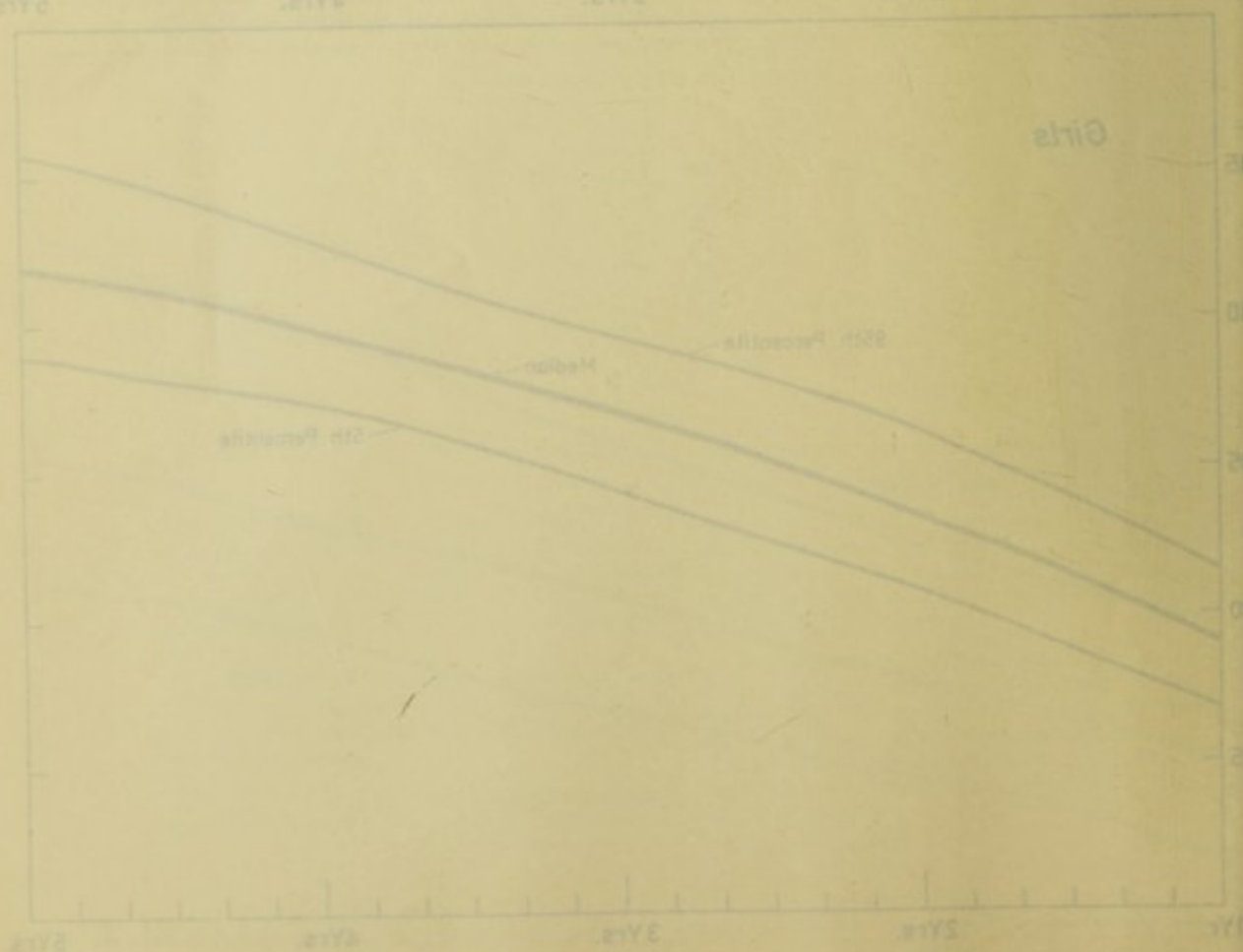
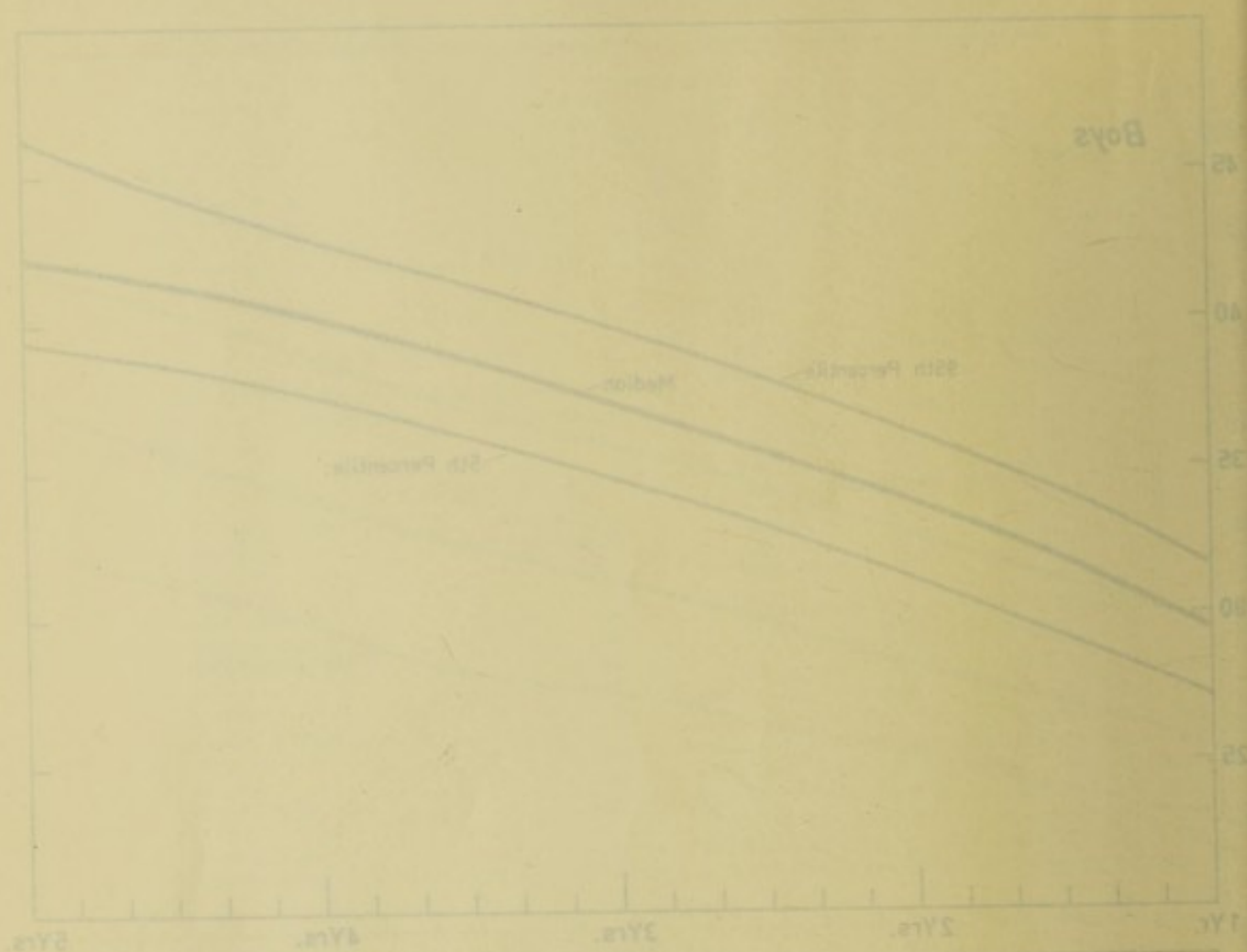
DEVELOPMENT OF CHILDREN IN QUEENSLAND

HEIGHT



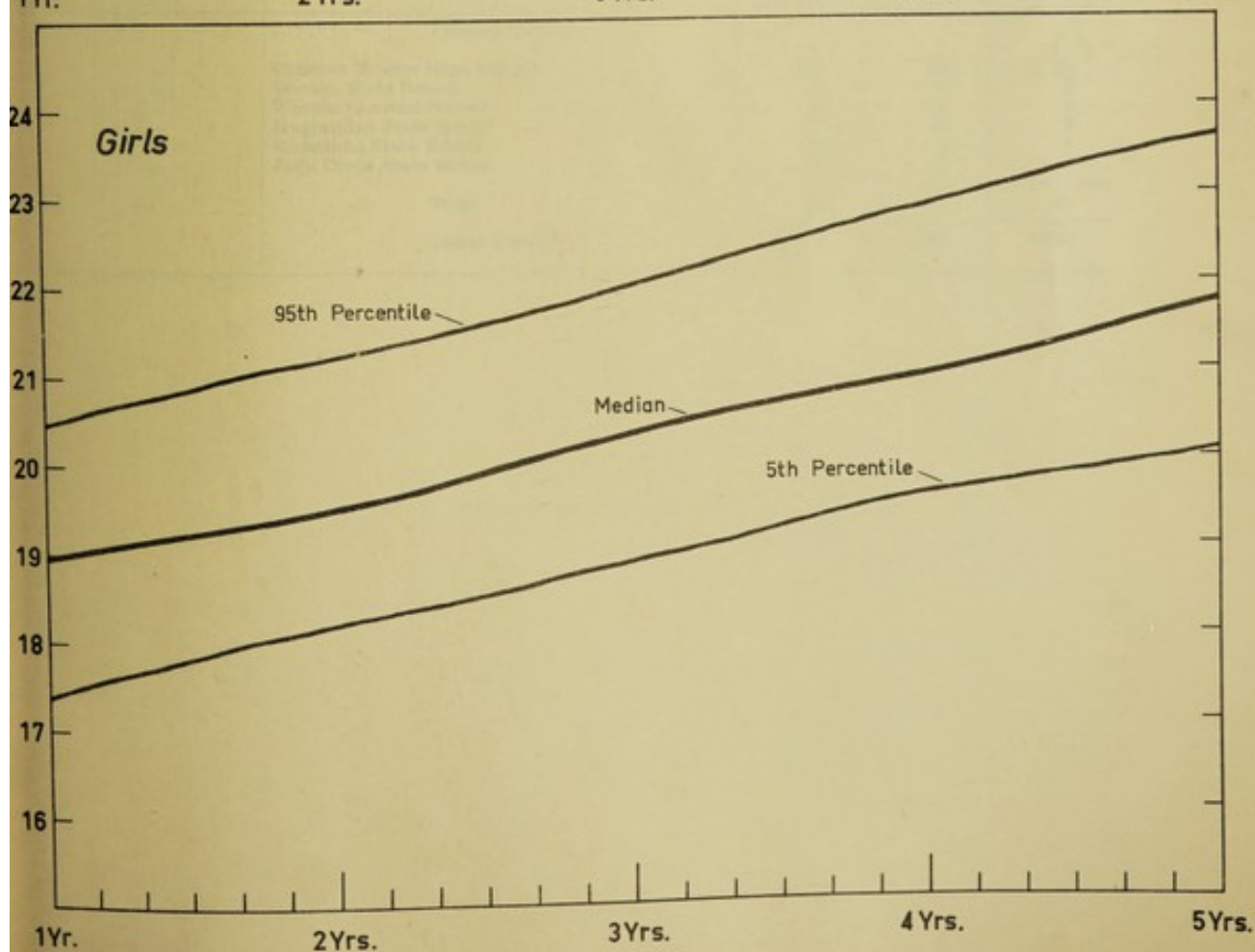
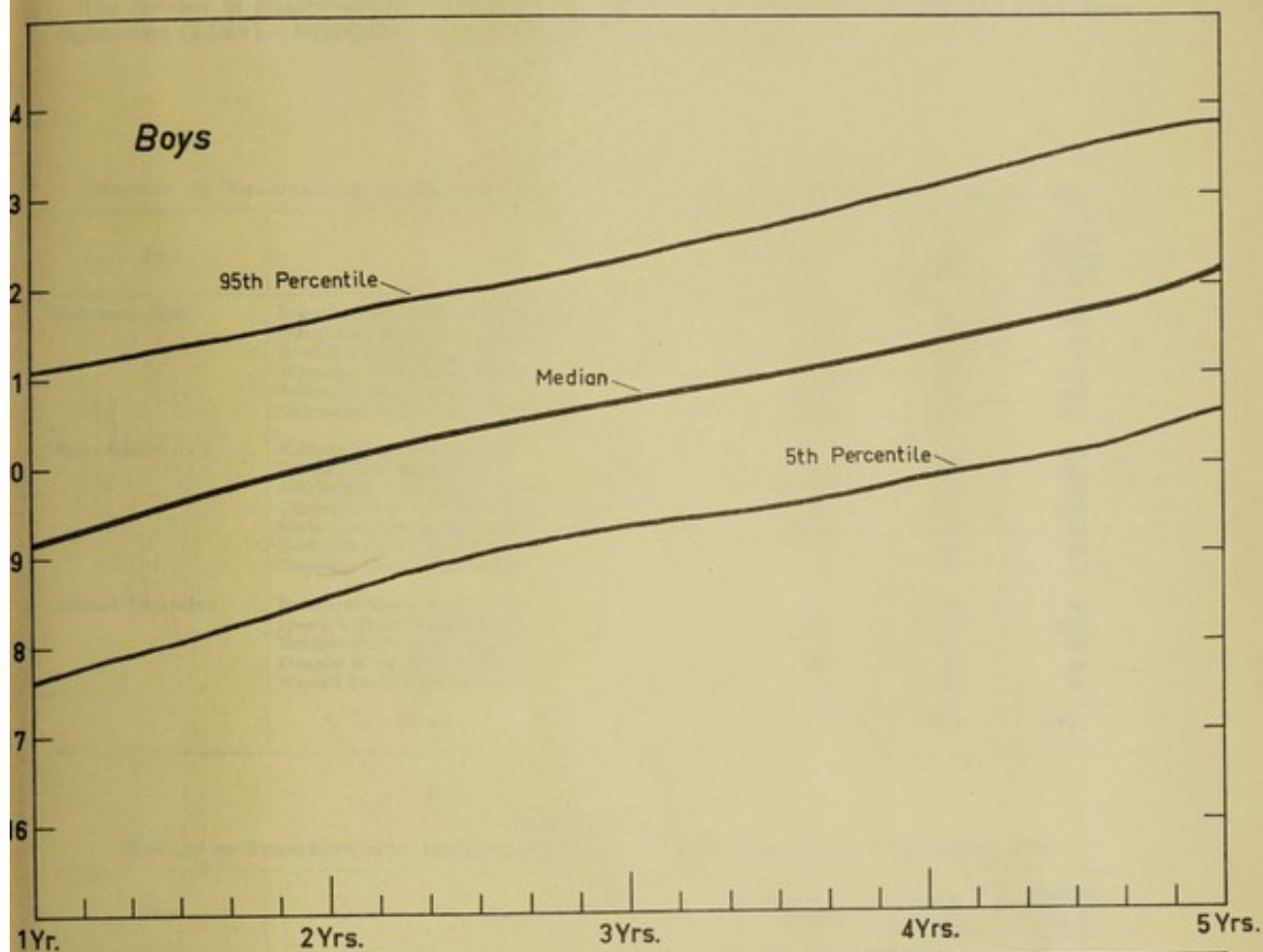
DEVELOPMENT OF CHILDREN IN QUEENSLAND

HEIGHT



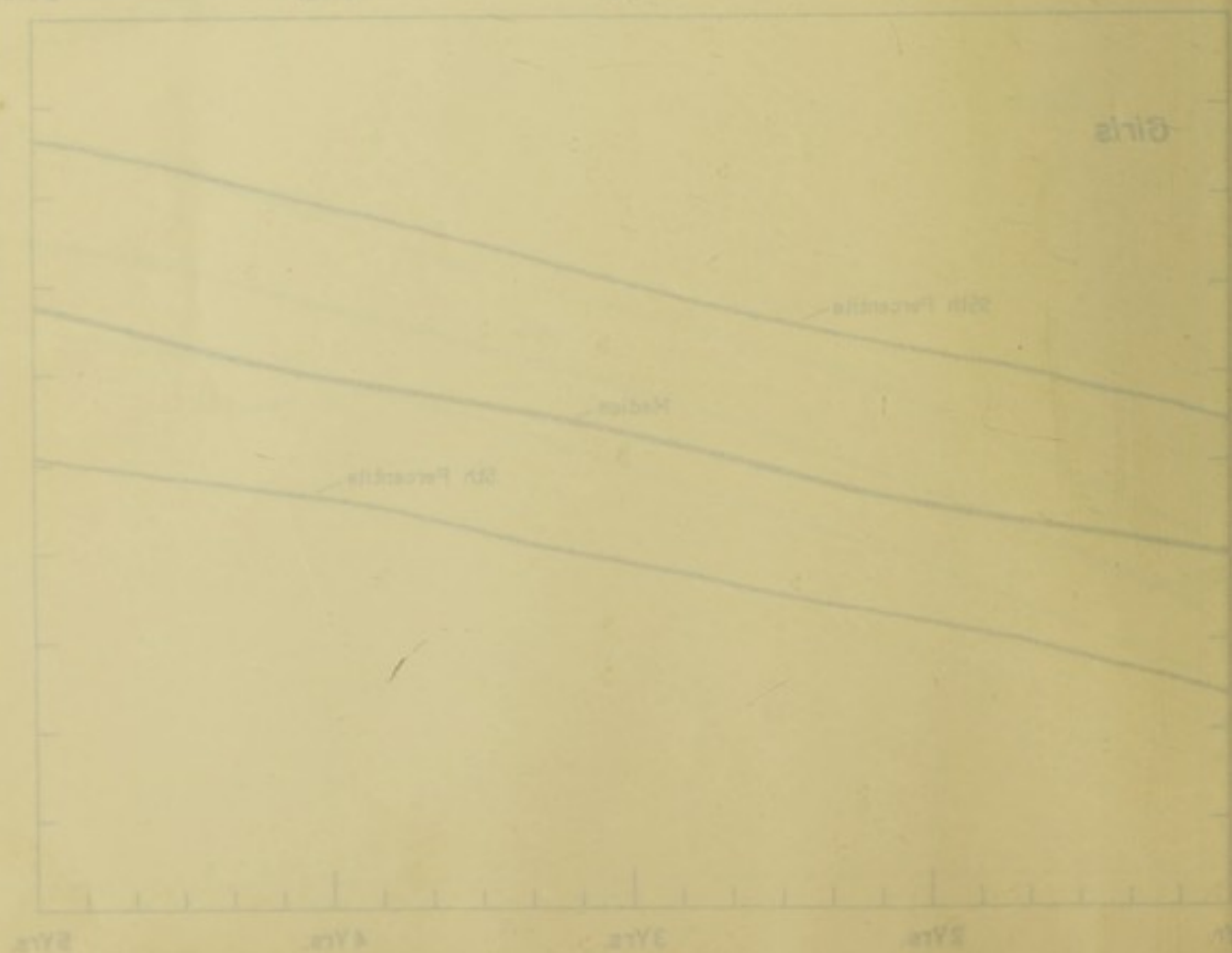
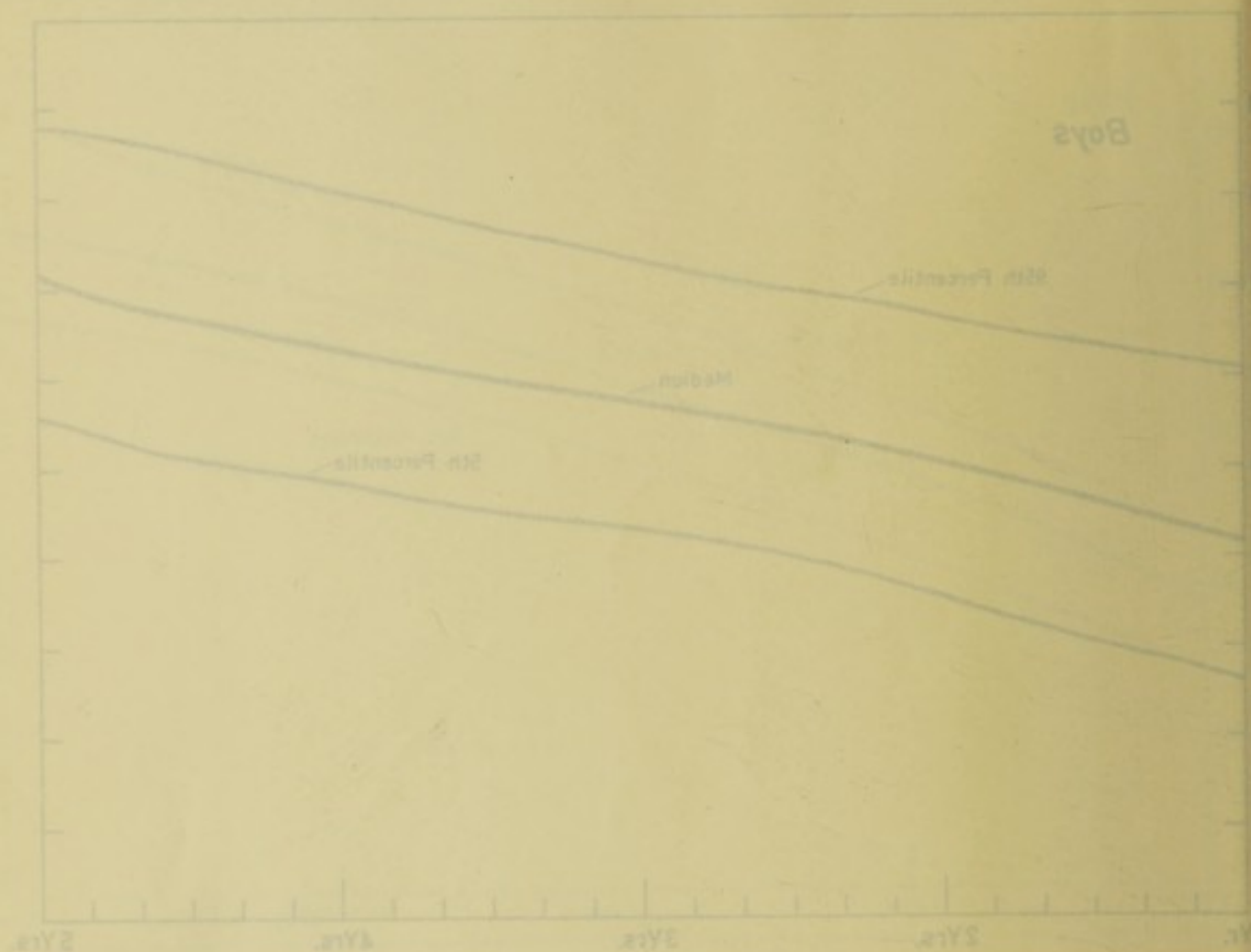
DEVELOPMENT OF CHILDREN IN QUEENSLAND

CHEST MEASUREMENT



DEVELOPMENT OF CHILDREN IN QUEENSLAND

CHEST MEASUREMENT



SISTER LECTURER'S SECTION

The Mothercraft teaching in the schools for the year ending 1958-1959 was satisfactory.

The number in classes was two thousand and eighty-nine (2,089). Ninety-four per cent. of the

girls obtained Certificates; one thousand eight hundred and eighty-three (1,883) examination papers and project books were corrected in the Metropolitan Area and seventy-nine (79) from the Country Centres.

TABLE LXXIV

RESULTS OF EXAMINATIONS IN MOTHERCRAFT FOR SCHOOL CHILDREN, SCHOOL YEAR ENDING 1959

Time	Name	Number in Class	Number sat for Examination	Number Obtaining Over 60 Per cent.
February-April ..	Indooroopilly State High School	163	140	120
	Camp Hill State High School	43	42	40
	Brisbane Girls State High School	28	28	28
	Wynnum State High School	237	223	213
	Salisbury State High School	166	152	148
	Cavendish Road State High School	240	216	191
May-August ..	Kedron State High School	241	225	218
	Banyo State High School	150	139	132
	Mitchelton State High School	73	64	62
	Domestic Science High School	149	129	126
	State Commercial High School	122	98	87
	Redcliffe State High School	101	98	93
	Brisbane State High School	48	35	35
August-December ..	Balmoral State High School	75	66	66
	Ipswich State High School	124	107	102
	Bremer State High School	35	34	33
	Deagon State High School	53	49	49
	Wavell State High School	41	38	38
	Totals	2,089	1,883	1,781

TABLE LXXV

RESULTS OF EXAMINATIONS IN MOTHERCRAFT FOR SCHOOL CHILDREN, SCHOOL YEAR ENDING 1959

Time	Name	Number in Class	Number sat for Examination	Number Obtaining Over 60 Per cent.
	<i>Country Centres</i>			
..	Charters Towers High School	46	46	32
..	Winton State School	11	8	5
..	Winton Convent School	5	5	3
..	Hughenden State School	13	11	6
..	Richmond State School	4	4	1
..	Julia Creek State School	7	5	2
	Total	86	79	49
	Grand Totals	2,175	1,962	1,830

SOCIAL WELFARE SECTION

This year there has been an increase in the Social Service and Home visits.

	1958-59	1959-60
Social Service Visits	4,449	4,803
Number of newborns visited at Home	944	1,166
Number of newborns visited in Brisbane Women's Hospital, St. Andrew's Hospital and Princess Alexandra Hospital	11,671	11,546
Number of Test Feeds given	121	115
Number of Phenylketonuria Tests	..	39

CORRESPONDENCE SECTION—POST-NATAL

The number of birth notifications are slightly lower than last year, but with co-operation of Sisters-in-Charge of the Centres, more notifications are now being received.

The response to Circular No. 2 are fewer but with the opening of Sub-Centres more mothers are now able to obtain personal advice. There has been a marked increase in the number of letters sent to mothers on request, with advice re feeding and management and consequently an increased number of birthday cards have been posted.

There has also been an increase in the number of telephone calls received requesting advice re feeding or management.

Mothers in New Guinea, Solomon Islands, Norfolk Island, Malaya and Northern Territory have been advised by air mail. These mothers usually live in remote areas and are unable to attend their own health centres. Some are wives of Army personnel who are receiving advice by correspondence before going overseas.

A number of mothers who have been receiving advice by correspondence called in during visits to Brisbane and these mothers greatly appreciate help given to them by Correspondence Service.

The usual lists of births and deaths are sent regularly to the City Council Health Department as soon as they are received.

TABLE LXXVI
CORRESPONDENCE—ANTE-NATAL SECTION

	1959-1960
Circular letters forwarded to Expectant Mothers (No. 1)	5,891
Circular letters forwarded to Expectant Mothers (No. 2) re "The Expectant Mother" book	3,119
Response to circular letters	1,487
Serial letters to expectant mothers	11,609
Letters received from expectant mothers	464
Special letters of advice sent on request	265
Copies of "The Expectant Mother" sent on request	1,390
Requests from country centres and hospitals for "The Expectant Mother" book	322
Copies of "Ante-natal and Post-natal Exercises" sent on request to expectant mothers	1,443
Requests from country Clinics for "Ante-natal and Post-natal Exercises"	676
Copies of baby patterns sent on request	167
Copies of maternity belt patterns sent on request	33

PUBLICATIONS

Requests for "Care of Mother and Child," "The Expectant Mother" and "Ante-natal and Post-natal Exercises" are continuously being received. Owing to unforeseen circumstances it has not been possible to complete the revision of "Problems of Prematurity," but it is hoped to have the revised version in the hands of the printer very shortly.

MEDICAL STUDENTS

As in the previous year, final year medical students attend two clinics conducted by the Director.

NEWSPAPER ARTICLES

As in previous years, articles of topical interest in infant and pre-school management were forwarded each month to 60 newspapers throughout the State. Subjects dealt with included:—

"Is your child afraid of the Doctor?
What should I do if my baby cries all day?
Infant problems.
Does your child wander from home?
Let's look at milk.
What should my baby weigh?
When should my baby —?
How can I breast feed my baby?
Smallpox menaces Australia.
What to do in Winter.
Has your child a problem?
What should I buy my child?"

TABLE LXXVII
VISITS TO NEWBORNS, SUBSEQUENT AND TOTAL VISITS

Year	Visits to Newborns	Subsequent and other Visits	Total Visits
1957-58	27,682	1,536	29,218
1958-59	28,394	1,527	29,921
1959-60	26,840	1,710	28,550

TABLE LXXVIII

ATTENDANCES AT CENTRES

Number of Cases seen at the Centres

	1957-58	1958-59	1959-60
Infants—			
Under one year ..	20,991	21,610	22,352
One to two years ..	5,722	6,127	6,049
Over two years ..	2,555	2,675	2,951
Total	29,268	30,412	31,352
Expectant mothers..	1,121	1,294	1,311
Total new cases	30,389	31,706	32,663

TABLE LXXIX

ATTENDANCES OF INFANTS AND CHILDREN AT MATERNAL AND CHILD WELFARE CENTRES AND SUB-CENTRES

Metropolitan

	1957-58	1958-59	1959-60
Fortitude Valley ..	17,697	16,913	15,630
Branches—			
Clayfield	1,198	1,184	1,638
Enoggera (transferred from Herschell Street 1-7-59) ..	..	..	2,232
Everton Park	..	115	2,451
Hamilton	1,455	1,701	2,001
Hendra	1,282	1,328	1,544
Mitchelton (transferred from Herschell Street 1-7-59) ..	..	..	2,910
Newmarket-Grange ..	619	733	681
West Stafford	2,040	2,181	2,364
Windsor	2,617	2,684	2,986
Wacol Immigration (to 30-6-59) ..	801	742	..
	27,709	27,581	34,437
Herschell Street ..	17,854	16,109	14,707
Branches—			
Chelmer	1,017	932	1,084
Corinda	2,422	2,770	2,758
Darra	1,715	2,029	1,772
Enoggera (to 30-6-59) ..	2,970	2,282	..
Graceville	2,406	1,860	2,536
Inala	4,248	4,253	2,344
Inala Heights (opened 20-2-59) ..	..	813	4,441
Indooroopilly	1,696	2,035	2,110
Kenmore (opened 21-11-58) ..	..	194	578
Mitchelton (to 30-6-59) ..	3,076	2,872	..
Oxley	1,593	1,957	2,146
St. Lucia	855	1,303	1,128
Toowong	2,243	2,658	2,689
Wacol Immigration (transferred from Fortitude Valley 1-7-59) ..	..	..	389
Wacol (opened 29-5-59) ..	..	85	779
	42,095	42,152	39,461
Nundah	4,986	4,719	4,989
Branches—			
Banyo	760	777	555
Chermside	3,596	3,702	3,712
Goebung	1,092	1,695	1,708
Kedron	1,830	1,652	1,710
Northgate	325	226	89
Wavell Heights ..	219	299	327
Zillmere	2,521	2,458	2,286
	15,329	15,528	15,376

Metropolitan—continued

	1957-58	1958-59	1959-60
Paddington	3,745	3,999	4,244
Branches—			
Ashgrove	4,169	3,944	4,303
Bardon	963	1,169	1,300
Kelvin Grove	697	1,319	1,545
Rosalie	1,330	1,579	1,989
	10,904	12,010	13,381
Sandgate	5,481	5,198	5,400
Branches—			
Bald Hills	272	337	351
Caboolture	1,317	1,247	1,576
Clontarf	165	916	1,365
Cribb Island	370	343	361
Dayboro	370	237	233
Redcliffe	2,525	2,253	2,101
	10,500	10,531	11,387
South Brisbane Sub-Centres—			
Archerfield	859	872	956
Bulimba	2,377	2,701	2,583
Camp Hill	1,476	1,441	1,459
Holland Park	2,342	2,772	2,654
Morningside	2,719	2,425	2,648
Norman Park	216	948	1,193
Stones Corner	32	1,060	1,132
	10,921	12,219	12,625
West End	6,936	7,138	7,158
Branch—			
Beenleigh	1,090	966	948
	8,026	8,104	8,106
Woolloongabba ..	18,518	17,959	17,597
Branches—			
Belmont	1,576	2,065	2,767
Cooper's Plains ..	1,983	1,951	1,924
Ekibin	2,189	1,342	1,238
Ipswich Road	1,766	1,557	1,741
Moorooka	1,649	3,610	3,506
Rocklea (to 9-9-57)	88	..	..
Salisbury	1,474	1,495	1,592
Tarragindi (opened 19-8-58) ..	..	981	1,184
Upper Mount Gravatt ..	1,719	1,826	1,634
Yeronga	1,527	1,958	2,162
	32,489	34,744	35,345
Wynnum	8,694	9,021	8,578
Branches—			
Cleveland	787	637	556
Manly	1,623	1,257	907
	11,104	10,915	10,041

Country

	1957-58	1958-59	1959-60
Atherton	2,042	2,309	2,081
Branches—			
Herberton	136	282	259
Koombooboomba ..	125	231	131
Malanda	521	800	722
Millaa Millaa	330	534	435
Ravenshoe	746	712	839
Tinaroo Falls (to 19-10-59) ..	..	..	..
(closed)	263	348	39
Yungaburra	132	179	280
Walkamin (opened 2-11-59)	..	..	68
	4,295	5,395	4,854

Country—continued

	1957-58	1958-59	1959-60
Ayr	4,148	4,296	3,590
Branches—			
Clare	380	294	360
Giru	819	750	912
Home Hill ..	2,532	2,345	2,215
	7,879	7,685	7,077
Barcaldine	1,783	1,848	1,653
Branches—			
Alpha	516	658	522
Aramac	243	359	427
Jericho	106	235	215
	2,648	3,100	2,817
Biloela	5,400	5,184	5,285
Branches—			
Baralaba	563	752	534
Goovigen	281	285	226
Jambin	95	94	110
Moura	303	247	233
Thangool	344	314	247
Theodore	579	753	656
Wowan	683	718	670
	8,248	8,347	7,961
Bowen	2,077	2,059	2,400
Branches—			
Collinsville ..	1,645	1,597	1,734
Proserpine ..	1,297	1,343	1,306
Queen's Beach ..	392	476	276
	5,411	5,475	5,716
Bundaberg	10,092	12,510	13,530
Branches—			
Gin Gin	263	315	385
Miriam Vale ..	354	300	281
	10,709	13,125	14,196
Cairns	12,456	12,297	12,515
Branches—			
Cooktown	180	161	194
Earlville	949	891	768
Edge Hill	845	998	747
Edmonton	601	581	888
Gordonvale	1,515	1,852	1,692
Kuranda (to 6-1-60) ..	254	317	126
Mossman	2,036	1,926	1,852
Yarrabah Mission (opened 2-10-59) ..	..	..	1,690
	18,836	19,023	20,472
Charleville	3,070	3,561	3,067
Branches—			
Cunnamulla ..	1,636	1,568	1,240
Morven	108	132	75
Quilpie	422	582	574
	5,236	5,843	4,956
Charters Towers ..	3,545	3,350	3,654
Dalby	3,371	2,958	2,902
Branches—			
Chinchilla	1,304	1,582	1,560
Miles	683	674	726
	5,358	5,214	5,188
Emerald	1,622	1,763	1,955
Branches—			
Blair Athol ..	131	199	204
Capella	142	161	221
Clermont	529	650	996
Springsure	258	184	263
	2,682	2,957	3,639

Country—continued

	1957-58	1958-59	1959-60
Gayndah	1,370	1,429	1,964
Branches—			
Eidsvold	336	304	418
Monto	1,329	1,120	1,722
Mulgeldie	104	141	124
Mundubbera ..	1,036	807	1,162
	4,175	3,801	5,390
Gladstone	4,752	5,288	4,863
Branches—			
Calliope	188	264	206
Mount Larecom ..	352	319	346
	5,292	5,871	5,415
Goondiwindi	2,703	2,907	2,304
Branches—			
Dirranbandi ..	439	625	645
Inglewood	532	653	802
St. George	648	765	1,218
Talwood (opened 1-12-58) ..	..	152	244
Texas	608	894	972
Yelarbon	397	512	319
	5,327	6,508	6,504
Gympie	5,988	6,362	6,155
Branches—			
Cooran	312	273	297
Cooroy	532	354	527
Imbil	469	515	408
Kandanga	361	293	271
Pomona	347	307	271
Tewantin	351	428	444
	8,360	8,532	8,373
Ingham	3,347	3,173	3,363
Branches—			
Cardwell	309	286	263
Halifax	1,139	678	838
	4,795	4,137	4,464
Innisfail	5,964	6,373	6,586
Branches—			
Babinda	1,114	1,203	1,103
El Arish	171	212	221
Mourilyan	222	314	317
Silkwood	177	187	240
South Johnstone ..	220	384	310
Tully	2,048	2,399	2,837
	9,916	11,072	11,614
Ipswich	12,920	14,107	14,646
Branches—			
Boonah	1,687	1,546	1,598
Booval (opened 26-5-60) ..	..	..	146
Esk	719	479	369
Kalbar	339	330	269
Laidley	656	592	657
Lowood	592	406	414
Rosewood	952	820	1,170
Toogoolawah	688	672	612
	18,553	18,952	19,881
Kingaroy	2,870	3,080	2,474
Branches—			
Kumbia	214	156	208
Nanango	790	1,026	938
Yarraman	146	290	338
	4,020	4,552	3,958

Country—continued

	1957-58	1958-59	1959-60
Longreach	1,730	1,738	2,388
Branches—			
Blackall	1,184	1,339	687
Ilfracombe	31	36	58
Muttaborra	57	59	24
	3,002	3,172	3,157
Mackay	7,720	8,711	9,366
Branches—			
Calen	332	234	288
Finch Hatton	239	288	354
Kounala	152	240	263
Marian	351	377	397
North Mackay	1,968	1,942	1,971
Ogmore	63	120	166
Sarina	1,733	2,003	2,031
St. Lawrence	26	120	108
West Mackay	1,913	2,379	2,433
	14,497	16,396	17,377
Mareeba	3,769	3,741	3,087
Branches—			
Dimbulah	38	564	515
Kuranda (transferred from Cairns 6-1-60)			193
Mutchilba	35	243	198
	4,244	4,548	3,993
Maryborough	7,461	7,551	8,051
Branches—			
Biggenden	779	699	878
Childers	844	1,250	1,768
Howard	472	730	799
Pialba	481	730	721
	10,037	10,960	12,217
Mount Isa	4,821	4,988	6,697
Branches—			
Camooweal	69	65	114
Cloncurry	765	830	1,019
	5,655	5,883	7,830
Murgon	1,300	1,236	1,335
Branches—			
Goomeri	528	742	527
Hivesville	60	61	55
Kilkivan	194	178	152
Proston	227	291	278
Wondai	740	1,011	1,113
	3,049	3,519	3,460
Nambour	4,533	4,742	5,318
Branches—			
Buderim	194	131	75
Caloundra	408	395	408
Eumundi	152	200	192
Landsborough	286	281	300
Maroochydore	424	397	613
Palmwoods	163	177	167
Yandina	267	158	149
	6,427	6,481	7,222
Railway Car—			
Hughenden	1,706	1,717	1,957
Julia Creek	752	616	757
Maxwelton	272	303	246
Richmond	672	746	707
Winton	740	803	799
	4,142	4,185	4,466

Country—continued

	1957-58	1958-59	1959-60
Rockhampton	11,642	12,221	13,829
Branches—			
Koongal (opened 5-5-59)		19	224
Mount Morgan	1,716	2,040	2,406
North Rockhampton	1,523	1,265	1,136
Ogmore (to 26-2-58)	95		
Park Avenue	718	637	588
St. Lawrence (to 12-2-58)	41		
Yeppoon	902	1,052	965
	16,637	17,234	19,148
Roma	2,987	2,637	2,729
Branches—			
Dulacca	174	134	147
Jackson	95	80	32
Mitchell	1,512	1,409	1,027
Surat	212	302	242
Wallumbilla	249	218	115
Yuleba	240	198	108
	5,469	4,978	4,400
Southport	5,129	6,080	5,827
Branches—			
Beaudesert	1,686	2,381	2,318
Burleigh Heads	1,343	1,569	1,885
Coolangatta	2,933	2,888	2,726
	11,091	12,918	12,756
Toowoomba	6,630	6,402	6,445
Branches—			
Crow's Nest	653	623	708
Forest Hill	90	62	87
Gatton	1,010	978	746
Harristown	499	469	440
Millmerran	635	575	518
Oakley	817	1,007	886
Pittsworth	1,097	1,203	1,229
	11,431	11,319	11,059
Townsville	12,360	13,428	13,236
Branches—			
Garbutt	727	710	843
Gulliver	1,810	1,943	2,204
Rising Sun	2,633	2,361	2,621
	17,530	18,442	18,904
Warwick—			
Branches—			
Allora	607	430	410
Clifton	339	316	292
Killarney	511	425	377
Stanthorpe	3,033	2,775	2,502
	8,642	8,166	7,563
Social Welfare Services	4,073	4,449	4,803
TOTAL ATTENDANCE OF INFANTS AND CHILDREN AND EXPECTANT MOTHERS			
1957-58	443,696	463,499	478,086

DIVISION OF SCHOOL HEALTH SERVICES

Chief Medical Officer: P. R. PATRICK, M.B., B.S. (Qld.)

Acting Chief Medical Officer: M. H. GABRIEL, M.B., B.S. (Qld.)

Medical Officer: V. M. O'HARA, M.B., B.S. (Syd.)

Chief Dental Officer: T. D. PUGH, L.D.S. (Eng.), L.D.Q.

GENERAL OUTLINE OF YEAR'S ACTIVITIES

As in the previous year, the work of the Division fell into three major categories. Firstly, the School Health Services Medical Officers and Sisters continued their routine work of examining primary school children. Secondly, the school dentists continued their dental examinations and treatments in areas remote from other dental facilities, and, thirdly, the Division continued to be responsible for the distribution of all Salk vaccine used in Queensland, for recording the statistics in connection with the Salk vaccination campaign, and for continuing the adult vaccination campaign in the metropolitan area of Brisbane.

STAFF

In the nursing section there has been a considerable number of staff changes, but it has been possible to keep most of the country districts fully staffed. This has meant that the metropolitan schools have not been examined as frequently as those in country districts because there has been a constant deficiency in the numbers of metropolitan nursing staff. The difficulty of attracting suitable new nursing staff to the School Health Service is perpetuating this state of affairs.

The school dental staff was increased by State Fellowship holders at the beginning of 1960, so that all dental districts could be serviced. However, the visits to schools are not as frequent as desirable, and this situation could only be remedied by a large increase in the numbers of dentists employed.

ROUTINE SCHOOL HEALTH EXAMINATIONS

This year 1,000 schools were visited by school sisters. 931 of the schools visited were in country districts, which is in line with the policy of the branch to give priority to examination of country children, who, by and large, have less opportunity than the metropolitan children to obtain regular medical attention. This focussing of attention on children least likely to be able to obtain medical attention means large costs for transport, all of which are borne by the Division of School Health Services.

Although medical facilities are more readily available in Brisbane, the proportion of uncorrected medical defects found in metropolitan school children is not less than that found in country children, so that one wonders if it is not equally important that both country and metropolitan schools be visited with the same frequency. It is hoped that a substantial increase in the nursing staff in the metropolitan area will be possible in the coming year.

The total number of primary school children examined in both State and denominational schools for the year was 91,842. As in the previous year, special attention was paid to the pupils commencing school. In country areas it is possible to examine the whole school, but in

Brisbane only certain grades are selected for routine examination, but any pupil referred by the teaching staff is examined.

School medical officers examined children referred to them by the nursing staff, by teachers or by parents, and the number so examined for the year was 7,364.

The commonest defect found is in the child's vision and other defects of the eyes; a total of 2,326 children fell into this category.

In all 4,211 children, or 4.5 per cent. of those examined, were found to have one or more defects of sufficient importance for the parents to be advised to seek further medical advice and/or treatment. The commonest defect seen was, as already noted, a defect of vision or of the eyes, but other important defects notified were those of the ear, nose and throat, defective hearing, postural, orthopaedic and skin conditions. These notifications are followed up after one month and again after two months, and it is pleasing to be able to report that at least 80 per cent. of parents do seek medical advice and treatment for their children following the notifications.

COMMUNICABLE DISEASE IN SCHOOLS

Perhaps the commonest cause of absenteeism in school children is upper respiratory tract infection of various kinds, principally the common cold and influenza.

Again this year there were a considerable number of cases of infectious hepatitis notified in school children, the total being 314 as against 229 last year. This constitutes 62 per cent. of all infectious diseases notified in school children.

The only other infectious diseases notified in any considerable number were scarlet fever, 78 cases, and rheumatic fever, 67 cases.

It is very pleasing to be able, once again, to record very low figures for diphtheria (2 cases), tetanus (6 cases), and poliomyelitis (2 cases) in school children in Queensland. This is ample justification, if any is needed, for continuing active campaigns of immunisation against these diseases.

AUDIOMETRIC SURVEY

Early in 1958, after a meeting of the Oral Deaf Ascertainment Committee, it was decided that this branch should carry out an audiometric survey in the Brisbane metropolitan area, Ipswich, and Toowoomba. The purpose was to discover the extent of hearing losses in the 5, 6, and 7 year olds, i.e., in Grades I. and II. at the primary schools.

Four portable audiometers were used by 10 School Health Sisters in the areas covered—one in Toowoomba and district, one in Ipswich and district, and two in Brisbane. This lack of audiometers seriously limited the extent of the survey throughout the State.

Over a period of two years, from March, 1958, to March, 1960, all Grades I. and II. children in the selected areas were subjected to a screening with the audiometer. The method used was demonstrated by an officer of the Commonwealth Acoustic Laboratory. The frequencies used were 250 cps. and 4,000 cps., each being tested at 20 decibels. Any child who gave doubtful responses, or who appeared to have a hearing loss, was carefully tested later. As only two frequencies were used, and there was an even chance of guessing correctly, great care was taken to alter the time interval between each stimulus, and, in fact, to try and trick the child into giving an incorrect response. With such young children this was most effective, so there was no doubt in the investigator's mind that, at that particular time, the child had no hearing loss.

Children from other grades were also screened when this was thought necessary. These children

included referrals from the teachers, children with a history of ear trouble, or children not progressing satisfactorily with their school work. As these children were actually suspected of having a possible hearing loss, their results were kept separate and designated under the term "others."

All children with a decibel loss of 35 or more in one or both ears were referred to the Commonwealth Acoustic Laboratory in Brisbane for further investigation.

A follow-up was attempted every few months in the case of children who did not report to the Commonwealth Acoustic Laboratory. The Laboratory forwarded results of all their investigations. Children who had less than 35 decibels loss in one or both ears were noted for reassessment at the next school visit. It should be mentioned that this survey was carried out in conjunction with normal duties.

TABLE LXXX
RESULTS
Metropolitan Area

	Grade I.	Grade II.	" Others "
Total screened	8,401	7,706	5,475
Total failed	225 = 2.68%	180 = 2.34%	325 = 5.94%
Total notified	115 = 1.37%	95 = 1.23%	165 = 3.01%

Total number children screened	21,582
Total number children failed screening	730 = 3.38%
Total number children referred C.A.L.	375 = 1.74%
Total number children with minor losses	256 = 1.19%
Total number children previously investigated by C.A.L.	99

Of the 375 (1.74 per cent.) notified to Commonwealth Acoustic Laboratory—

Number reported for further investigation 263 = 70%

Investigation revealed :—

Conductive deafness	140 = 53.2%
Perceptive deafness	73 = 27.8%
Mixed deafness	10 = 3.8%
Normal	40 = 15.2%

Of the 112 who did not report to Commonwealth Acoustic Laboratory—

Whereabouts unknown	42 = 37.5%
Possibly consulted own physician—still have a hearing loss	41 = 36.6%
Number now normal	29 = 25.9%

IPSWICH AND DISTRICTS

	Grade I.	Grade II.	" Others "
Total screened	1,716	1,300	3,274
Total failed	57 = 3.32%	19 = 1.46%	93 = 2.84%
Total notified	51 = 2.97%	13 = 1%	70 = 2.14%

Total number children screened	6,290
Total number children failed screening	169 = 2.69%
Total number children referred C.A.L.	134 = 2.13%
Total number already known	19 = .3%
Total with minor losses	16 = .25%

Of the 134 (2.13 per cent.) notified to Commonwealth Acoustic Laboratory—

Number reported for further investigation 80 = 59.7%

Investigations revealed :—

Conductive deafness	52 = 65%
Perceptive deafness	14 = 17.5%
Mixed deafness	4 = 5%
Normal	10 = 12.5%

Of the 54 who did not report to Commonwealth Acoustic Laboratory—

Follow-up not completed	44 = 81.48%
Number still with hearing loss	6 = 11.11%
Number now normal	4 = 7.41%

Toowoomba and District

	Grade I.	Grade II.	" Others "
Total screened	1,017	847	1,639
Total failed	15 = 1.47%	6 = 0.71%	35 = 2.13%
Total notified	3 = 0.29%	3 = 0.35%	25 = 1.25%

Total number children screened	3,503
Total number children failed	56 = 1.6%
Total number children notified	31 = .88%
Minor losses	20 = .57%
Known	5 = .14%

Of the 31 referred to the Commonwealth Acoustic Laboratory, 3 attended—

Results—

2 with perceptive deafness (one given hearing aid)

1 with mixed deafness

Total Area Covered

	Grade I.	Grade II.	" Others "
Total screened—			
Metropolitan Area	8,401	7,706	5,475
Ipswich and Districts	1,716	1,300	3,274
Toowoomba and District	1,017	847	1,639
	11,134	9,853	10,388
Total failed screenings—			
Metropolitan Area	225	180	325
Ipswich and Districts	57	19	93
Toowoomba and District	15	6	35
	297 = 2.66%	205 = 2.08%	453 = 4.36%
Total notified—			
Metropolitan Area	115	95	165
Ipswich and Districts	51	13	70
Toowoomba and District	3	3	25
	169 = 1.52%	111 = 1.13%	260 = 2.5%

Total examined—Brisbane	21,582
Total examined—Ipswich	6,290
Total examined—Toowoomba	3,503
Total examined—All Districts	31,375

Total failed screening—	
Metropolitan Area	730
Ipswich and Districts	169
Toowoomba and Districts	56
	955 = 3.04%

Total referred to Commonwealth Acoustic Laboratory—	
Metropolitan Area	375
Ipswich and Districts	134
Toowoomba and District	31
	540 = 1.72%

Number reported to Commonwealth Acoustic Laboratory for further investigation—	
Metropolitan Area	263
Ipswich and Districts	80
Toowoomba and Districts	3
	346 = 1.1%

The 5, 6, and 7 year-olds in the three areas in Queensland were screened audiometrically over a two-year period. Of this group 2.34 per cent. failed the screening, and of these 1.33 per cent. were severe enough to warrant referral to the Commonwealth Acoustic Laboratory.

The extent of the survey was limited by lack of audiometers. This is regrettable, for it has since been noted by the Officer-in-Charge of the Commonwealth Acoustic Laboratory that there appears to be more deafness in the Rockhampton area than elsewhere in Queensland. It is proposed that this matter be investigated in the near future.

The response to referral to the Commonwealth Acoustic Laboratory was naturally best in Brisbane, although 59.7 per cent. of those notified from the Ipswich area did report for further investigation. The response from Toowoomba was poor, although, no doubt, many children were taken to their own medical advisers.

The smaller numbers screened in the country areas were due to less staff and longer distances to cover.

The amount of unsuspected deafness was surprising, although in many instances the children were referred by teachers for failure to progress in school.

An observation made by all staff participating in this survey was the large amount of intermittent deafness in school children. Unfortunately no figures were collected on this aspect. This was shown by repeated checks on children who failed the original screening. In some instances as many as six or more checks were made on a child, on different days, with a final result of no hearing loss. Also, children who had passed the class screening were, a few days later, suspected of deafness during interview, and this was confirmed by testing.

A recent communication from the Officer-in-Charge of the Commonwealth Acoustic Laboratory reveals that in future he will only be able to investigate children thought to be in need of hearing aids. This is unfortunate, for it appears that it is still not universally recognised that even moderate hearing losses can interfere with a child's school progress. It means that our system of referral will have to be altered.

As more audiometers come to hand it is proposed that extra training in audiometry be given to the School Health Sisters, so that complete and accurate audiograms may be referred to the child's own physician.

With more equipment, too, an estimation of the amount of deafness in the State will be available. At present country Sisters use the whisper test, and while this reveals gross defects, many children with minor and moderate defects must be missed.

COLOUR VISION TESTING

During a meeting of the School Health Sisters with members of the Ophthalmological Hygiene Committee early in 1959 it was recommended that colour vision testing be incorporated in the routine medical examinations of upper grade school boys.

At first the Ishihara Test Cards for Colour-Blindness were used, but it was soon decided to

abandon this method, as it does not indicate the severity of any defect detected.

This finding was confirmed by a report in "The Medical Officer" No. 2686 (Vol. CIII. No. 3) of January, 1960. Dr. B. Smith, of Reading CB., investigated colour vision in school children, using the Ishihara test, and the Giles Archer lantern test. His conclusions were:—

- "(1) The Ishihara test shows the type of colour defect, but not its severity.
- (2) The lantern test confirms the type of defect and indicates the severity of the defect.
- (3) The mistakes on the Ishihara test must be accepted as normal, as all making two or less mistakes pass the lantern test.
- (4) The Ishihara test is a sensitive test and it would not be fair to suggest that those who make more than two mistakes have significant colour defects until lantern testing is carried out."

This Branch over the last twelve months investigated the colour vision of boys aged 12, 13, and 14 years, using the AO H-R-R Pseudo-isochromatic Plates. These are produced in America, and are designed to serve a three-fold purpose:—

- (1) As a screening test to separate those with defective colour vision from those with normal colour vision;
- (2) As a qualitative diagnostic test to classify type of colour defect (whether protan or deutan, tritan or tetartan); and
- (3) As a quantitative diagnostic test to indicate degree of the defect (whether mild, medium or strong).

There are four pages of demonstration plates after which the test plates 1 to 20 follow consecutively. Test plates 1 to 6 form the screening series which separates subjects with colour vision deficiencies from those with normal colour vision. Test plates 7 to 16 diagnose red-green deficiencies. Test plates 17 to 20 diagnose blue-yellow deficiencies. The children were seated about 30 inches from the test book in good light.

TABLE LXXXI

Results	
Screening results—	
Number children screened ..	3,938
Number children failed screening	201 = 5.1%
Number with Red-Green defects	200 = 5.07%
Number with Blue-Yellow defects	6 = 0.15%
Quantitative Diagnosis—	
Red-Green defects—	
Mild	42 = 21%
Medium	55 = 27.5%
Strong	103 = 51.5%
Blue-Yellow defects—	
Medium	3 = 50%
Strong	3 = 50%

(1 Medium B-Y defect was also strong R-G; 1 Medium B-Y defect was also medium R-G; 1 Medium B-Y defect was the sole defect; 3 Strong B-Y defects were also strong R-G)

Qualitative Diagnosis—

Protan Defect	55 = 27.5%
Deutan Defect	124 = 62%
Scattered errors in Red-Green series not allowing a diagnosis	21 = 10.5%
Tritan defect	2 = 33.3%
Tetartan defect	1 = 15.8%
Scattered errors in Blue-Yellow series not allowing a diagnosis	3 = 50%

The distribution was as follows:—

Protan defects—	
Mild	7
Medium	21
Strong	27
Deutan defects—	
Mild	17
Medium	33
Strong	74
Scattered errors in Red-Green series—	
Mild	18
Medium	1
Strong	2
Tritan defects—	
Medium	1
Strong	1
Tetartan defects—	
Medium	—
Strong	1
Scattered errors in Blue-Yellow series—	
Medium	2
Strong	1

The scattered errors may indicate malingering, monochromasy, or low discrimination approaching monochromasy.

Discussion

Although no check was used such as the lantern test, it has been shown that the AO H-R-R Pseudoisochromatic Plates for colour blindness are worthwhile as a procedure for screening boys aged 12, 13, and 14 years. The test material is such that it affords a rapid screening method, and allows a quantitative and qualitative diagnosis to be made in most cases. Only those boys with a medium or strong colour defect were notified. It is proposed to lower the age group screened in future, as a defect would then be known early enough to be taken into account when the question of future careers arose.

HAT WEARING SURVEY

In February and March, 1960, as a result of representations made by the Director of the Queensland Radium Institute, a hat wearing survey was conducted by the School Health Sisters. The survey was conducted in 80 schools in all parts of the State, and while no claim is made that the figures are statistically significant, they at least show that a large number of children attend school without adequate protection of the face and neck from the intense summer sunshine.

The following method was used in the survey. The count in every case was a "snap" one; the schools were not forewarned, so that there was no extra encouragement to wear hats on the day. The hats were only counted on fine sunny days. Beanies and berets were not counted, but the small peaked caps worn by boys, often specified as part of a uniform, were counted even though

they afford little protection. Counts were taken of the children attending school on the selected day, and also counts of—

- (a) The number of hats worn to school,
- (b) On early morning parade,
- (c) At lunch time,
- (d) During physical education.

The physical education figures are not significant and are not quoted since in many places swimming was the form of physical education practiced in summer and in several convent schools beanies were included in regulation dress for physical education.

No instance was found of children being forbidden to wear hats during physical education, the teachers' attitude being neither for nor against the practice.

It may be interesting to observe that at one large school, on the day following the count, only two pupils attended morning parade without hats.

The figures are set out in the Table below:—

TABLE LXXXII

Number of children counted ..	38,554
Number of hats worn to school ..	14,078 or 36.52%
Number of hats worn at early morning parade ..	6,649 or 17.25%
Number of hats worn at lunch time ..	7,878 or 20.43%

OTHER MEDICAL EXAMINATIONS

The medical officers of the School Health Services were called upon during the year to make examination of teams of school children prior to their taking part in major sporting fixtures. Football (all codes), basketball and hockey teams were examined on numerous occasions.

At the beginning of the school year in 1960 medical examinations of all persons entering on their studies at the Teachers' Training College were carried out by the School Health Medical Officers. Once each fortnight one of the Medical Officers visits the College so that any student needing medical advice can be seen. Students attend in considerable numbers and the service is much appreciated. Also some assistance is afforded the College in conducting First Aid classes and in the examination of students for First-Aid certificates. In the earlier months of 1960 a number of talks and film showings were given to the students on the subject of mouth to mouth and mouth to nose resuscitation.

SCHOOL DENTAL SERVICES

The staff of the School Dental Service consists of a Chief Dental Officer and eighteen (18) Dental Officers. During the year one officer was retired, three were transferred to dental clinics, but these losses were more than offset by the appointment of seven (7) new officers, all of whom were trained under the State Social Service Fellowship Scheme. This increase in staff is welcome but still more dentists are required to provide a really satisfactory service. It is hoped to appoint four new dentists during the coming year.

The policy of the School Dental Service is to provide examinations and treatments for those school children least able to take advantage of established dental services. The children eligible for the service are those who attend a school situated fifteen (15) miles or more from a hospital dental clinic, children receiving correspondence instruction and those who are inmates of various institutions. The Chief Dental Officer also visits Westbrook Farm Home for Boys, The Sub-Normal Centre in Brisbane and arranges treatment for wards of the State Children Department.

Of the 24,026 children examined during the year 13,140 (or 54·7 per cent.) were under regular dental care which means that far too many children are not receiving the dental attention which they should. Whilst these figures refer to areas where established dental services are absent there is reason to believe that the figures for Brisbane and other large centres would not be substantially better. Ideally, the School Dental Service would like to be able to see every school child at least once every year, but an enormous increase in staff and facilities would be required to achieve this position.

The School Dental Service is not one to which many dentists are attracted since it involves extensive travelling in isolated parts of the State, the use of portable and consequently less efficient equipment, most of them do not have a dental nurse or any other assistant, and work often has to be done on school verandahs and in other unsuitable places. Despite these and many other

limiting factors, the Dental Service continues to do a very creditable amount of work.

SALK VACCINATION CAMPAIGN

For the first half of the financial year the Salk Vaccination Campaign continued in much the same way as in the previous year. That is to say, the Division of School Health Services was still responsible for distributing the vaccine throughout Queensland and for recording the statistics. In most Local Authority Areas the Local Authority conducted campaigns for all age groups in the population, but in Brisbane the Brisbane City Council conducted a campaign for infants, but older children who had missed doses were also accepted. The vaccination of adults in Brisbane remained the responsibility of the School Health Services Branch and frequent clinics were held both in the day time and at night, at the campaign centre in William Street and at State Schools in the suburbs.

By December, 1959, a very large proportion of the adult population who desired vaccination had already been covered so that in 1960 it was only necessary to hold clinics twice each month to give booster doses and to cater for the small but steady numbers of adults seeking vaccination. These clinics have always accepted infants and children since it is realised that people living in outer suburbs often find it difficult to attend day clinics during the week and many seek immunisation for themselves at the same time.

The future of the adult campaign in Brisbane will largely depend on whether or not the vaccine is made available to private medical practitioners.

TABLE LXXXIII

SALK VACCINATION CAMPAIGN
INJECTIONS GIVEN FROM BEGINNING OF CAMPAIGN TO 30TH JUNE, 1960

	First Injection	Second Injections	Third Injections	Total
Children (0-18 years)	466,764	435,826	404,732	1,307,322
Adults (19-44 years)	280,398	268,669	229,647	778,714
Adults (45 years and Over)	664	447	88	1,199
Total All Ages	747,826	704,942	634,467	2,087,235

Population of Queensland to 30th July, 1959—

0-18 years	538,864
19-44 years	499,774
45 and over	402,360

Percentage of population 0-18 years who have received—

	%
One injection	86·62
Two injections	80·88
Three injections	75·1

Percentage of adults 19-44 years who have received at least one injection

56·1

TABLE LXXXIV

DETAILS OF ROUTINE SCHOOL HEALTH EXAMINATIONS

	Metropolitan	Country	Total
Schools visited	69	931	1,000
Children examined	20,948	70,894	91,842
Children examined by a School Medical Officer	3,788	3,576	7,364
Children with defects requiring notification	860	3,351	4,211

TABLE LXXXIV—continued

Apparent Defects Notified

	Metropolitan	Country	Total
Deafness	159	283	442
Defective Vision	397	1,366	1,763
Other Eye Defects	197	456	563
Tonsils	53	631	684
Scrotal and Groin Swellings	71	177	248
Postural Defects	41	129	170
Lower Limb Defects	66	96	162
Heart	4	11	15
Other	51	397	448

Communicable Disease in School Children 1959-60

Diphtheria	2	Typhoid Fever	1
Scarlet Fever	78	Tetanus	6
Poliomyelitis	2	Tuberculosis	11
Lead Poisoning	13	Rheumatic Fever	67
Malaria	3	Infective Hepatitis	314
Meningitis	10		

TABLE LXXXV

DETAILS OF SCHOOL DENTAL INSPECTIONS

Number of children examined	24,026	Permanent teeth filled	54,515
Number notified for professional attention	5,519	Temporary teeth filled	11,226
Number of children under regular dental care—		Percentage of children with dirty mouths	9%
Clinic	552	Total number of defective permanent teeth	36,934
School Dental Officer	5,084	Average number defective permanent teeth, per child	1.6
Private Dentist	7,504		
Number with sound mouths—			
Natural	1,141		
Operatively restored	3,995		
Carious permanent teeth (saveable)	31,651		
Carious permanent teeth (unsaveable)	5,283		
Carious temporary teeth	30,780		
Permanent teeth lost or extracted	11,807		
Six year molars extracted	10,592		

Total Dental Treatment 1959-60

Number of children examined	24,026
Number of children treated	9,578
Number of extractions	10,795
Number of fillings	29,468
Number of other treatments	13,569
Number of operations	25,118

DIVISION OF MENTAL HYGIENE

Director of Mental Hygiene: B. F. R. STAFFORD, M.B., B.S. (Melb.).

Administration Officer: S. T. G. BEEDHAM, A.A.U.Q.

The Annual Report submitted for the fiscal year ending on 30th June, 1957, suggested the value of "stocktaking" and reviewing the whole Service over a period of twenty years. Progress and development are relative and should be assessed on the basis of what has been accomplished, rather than what remains to be achieved.

This survey has proved timely, as at the conclusion of the fiscal year of 1959-60, the Mental Hygiene Service has to adjust to momentous changes in the treatment of mental disorders and in profound changes of attitude towards the mentally sick.

It is difficult to determine the exact origin of changes as progress is usually the result of evolution, rather than revolution. Some may say the foundation was laid in the early years of this century when the psycho-analytical "school" made psychiatry more dynamic, more acceptable to the active clinician and psychiatric disorders more respectable.

However, Freud and his adherents rather eschewed the psychoses and the patient whose conduct required careful supervision. This promoted an era of mental hospital administration devoted to the physical care of patients. Perhaps it could be nowhere better exemplified than in Queensland where the late Dr. H. Byam Ellerton left a heritage of good buildings, spacious grounds, well equipped hospital wards, a training system for mental nurses, and an atmosphere of toleration (if not freedom). It is an historic fact that at the Brisbane Mental Hospital there has been an open ward for males functioning for more than forty years.

Then came the era of physical treatments and with it a new hope for speedier recoveries. This hope was realised to an appreciable degree and then followed two important trends.

Firstly.—Many more patients suffering from acute mental sickness were treated in our general hospitals.

Secondly.—Amongst the patients in our mental hospitals, recalcitrant behaviour became uncommon, and at least social recovery attained after a shorter period of hospitalisation.

This latter trend enabled our hospitals to introduce a policy of "security" and "non-security" wards. It also brought in its wake economic problems, in that many patients were so occupied with various treatments and in recovering, that productive occupations of the hospital used as rehabilitation areas for patients were depleted of patient personnel.

During World War II, the antibiotics were discovered and developed and their wide use has been a factor in increasing the number of aged

folk in our community so that they totalled one-third of admissions to mental hospitals.

The antibiotics have also contributed to the increased number of patients who attain old age in our mental hospitals and lose their psychoses, as it were, in the physical and mental infirmities consequential to senescence.

At the other end of the life span many more mentally deficient children were surviving and requiring protective supervision.

In addition, socio-economic factors were operating, such as a rapidly increasing population, an increasing industrialisation of the community, and higher living standards, with higher costs making it more and more difficult for seriously handicapped persons to be maintained and cared for in their own homes.

The above trends had developed to such a degree that in 1956-57 they were more than counteracting the benefits of the physical treatments in regard to numbers of patients admitted to mental hospitals.

The problem of senility is a world-wide problem and is receiving the attention of administrators and clinicians everywhere. The fundamental discovery has been that the most serious complication of old age has been the community's attitude of considering old age as inevitably equivalent to seriously impaired usefulness, and in the clinical field regarding the many ailments of old age as the inescapable stigmata of senility.

However, it has been amply demonstrated in the area of physical medicine that most of the ailments of old age can be cured, or at least relieved, and that very many senile dementias are not demented, but have given up the struggle to live. The final condemnation of the community has been "certification," and a sentence to end their days stigmatised as "insane".

This Department has undertaken a vigorous policy of maintaining the aged folk in the general hospital area. Everyone must concede that although our community has developed a greater understanding of the mentally sick, certification does carry both a social and legal stigma. Most people will surely agree that those aged persons who died soon after admission to a mental hospital should, if at all possible, be cared for as physically sick patients.

Most will agree that it is unjust to submit a person who has lived many useful years to social and legal embarrassment in his old age.

It is heartening to know that the majority of old people who have been admitted to general hospital annexes have improved physically and mentally.

This improvement has been due to several subtle psychological causes. Whilst in the mental hospital they were housed in up-to-date wards, equipped with modern facilities and attended by staff, many of whom were both efficient and dedicated to the care of these old folk. The improvement cannot be ascribed to better nursing or better accommodation. It is due to changed attitudes. The patient has left the area where administrators have been conditioned to custody, where staff has been trained in security regimes and in an area that carries social stigma. The patient's attitude has invariably been one of hopelessness.

In the new situation, the patient discovers he is in a permissive atmosphere, he participates in an accepting community and he sheds his "vegetation" that erstwhile passed for "dementia".

During the past fiscal year 354 senile patients have been discharged from our mental hospitals. This has greatly reduced our patient numbers.

During the same time the admissions to the Brisbane Mental Hospital were 74 patients less than in the previous year. These are significant trends in a community whose population is expanding.

The causes that can be assessed are—

1. The policy of retaining old aged persons in the general hospital area.
2. The effects of the treatment in Lowson House, North Brisbane General Hospital.
3. The effects of modern chemotherapy, enabling patients to be treated at community level, and also enabling many more patients to leave the mental hospitals after shorter periods of hospitalisation than was previously possible.
4. The Government policy in respect to Church Homes for the Aged is having a noticeable effect on the number of applicants for State Eventide Homes, thereby enabling patients to be accepted for the Eventide Homes who would otherwise have to be cared for in mental hospitals.

A significant feature was the official visit of the Director of Mental Hygiene to overseas countries. Everywhere mental health administrators were pressing and implementing the principle of treating *all* psychiatric cases in the community. There were varying methods employed to carry out such a policy, such as open hospitals (mental hospitals), day hospitals, community centres, treatment centres and clinics, expansion of psychiatric facilities in general hospitals and expansion of psychiatric teaching facilities (both under-graduate and post-graduate) and research undertakings.

The Director of Mental Hygiene found that the variations in the application of the "community treatment" principle was due to the specific conditions and circumstances pertaining in each country.

For example, the National Health Scheme in the United Kingdom has enabled the mental hospitals to largely become the psychiatric service of their respective regions. Nevertheless, the Ministry of Health officials are adapting an existing service (consisting of a large number of mental hospitals) to the policy, whereas if they were able to start afresh they would probably not build mental hospitals but psychiatric annexes to general hospitals.

In Canada the provinces visited were overwhelmed with insufficient beds for psychiatric cases. Mental hospitals being the hospital facility most readily controlled by the Provincial Administration, provision of more beds and better mental hospital services became the policy. Even so, the administrators were endeavouring to counter overcrowding by developing community services and areas of accommodation apart from mental hospitals.

The United States of America has for years been notable for the gigantic buildings and wonderful equipment devoted to the care of the mentally sick. In the populous States the size of the institutions have reached mammoth proportions (10,000 patients and more). Therefore, because of the finance already invested, it is found that these States are concentrating on improving their existing mental hospital system.

However, in the smaller States the trend is towards expansion of psychiatric facilities in general hospitals.

In Europe the heritage of past decades modifies policy there, but Denmark has definitely embarked on a building programme whereby the mental hospital is part of the general hospital organisation and structure.

The Director of Mental Hygiene has advised the Government that owing to the particular factors operating in the administration of health, and owing to the terrain and regional distribution of population, it should adopt and implement a policy of integration of the health services for Queensland.

To this end it should develop and expand the psychiatric services in the large general hospitals. The vacant beds in mental hospitals indicate that building programmes to provide more beds in mental hospitals should stop.

It is confidently expected that a concentration of psycho-therapeutic effort at community level will increase the vacant beds in our mental hospitals.

It has been recommended that vacant beds should be organised into "vacant" buildings so that services to other handicapped members of our community could be developed and/or expanded.

The greatest need is development of a service for the mentally subnormal. To provide an efficient service it must cater for two age groups—

(a) Children—

1. Infants;
2. Other children.

(b) Persons over the age of 18 years who are chronologically adults.

It must also cater for at least three classes of persons according to their mental capacity—

- (i.) Those who, because of extreme mental and/or physical defect are incapable of benefiting to any marked degree by training or education.
- (ii.) Those who can benefit to some extent by training.
- (iii.) Those who can benefit by training and special education, even to the extent of becoming independent, or independent under supervision.

It would appear that an integrated policy is necessary. Mental deficient tend to "accumulate" in all institutions. It would be sounder in respect to efficient training and management for some degree of specialisation to develop.

For example, the special Pediatric Annexe at Chermiside has been established during the past fiscal year to cater for the mentally subnormal infants. These infants are primarily feeding problems, intellectual assessment problems, and habit training problems.

Ipswich Mental Hospital has facilities to care for the more active but very defective child.

Brisbane Mental Hospital has facilities to care for the ambulant and less defective child. It is here that training and special teaching facilities must specially be developed.

In most countries the adult subnormal is rather neglected. It is expected that it will be possible to continue the training programme to include the adult so that he may be able to fully use his potential to produce.

The attached reports and statistical data relating to the mental hospitals and community services indicate some very significant trends. When viewed over several years they become still more important.

At June 30th, 1954, the population of the Brisbane Mental Hospital was 1,220 females and 1,293 males, a total of 2,513 patients.

At June 30th, 1957, the population of Brisbane Mental Hospital was 1,088 females and 1,276 males, a total of 2,364 patients.

At June 30th, 1960, the population of Brisbane Mental Hospital was 920 females and 1,151 males, a total of 2,071 patients.

However, at June 30th, 1960, the buildings accommodating 2,513 patients in 1954 now accommodate 1,928 patients, or a reduction of 585 patients.

The overall position in the mental hospitals is as follows:—

1. Over 600 beds have become available in general hospital annexes and other institutions, to which 761 patients have been admitted.

2. Vacant beds in mental hospitals—

Brisbane Mental Hospital	384
Toowoomba Mental Hospital	91
Ipswich Mental Hospital	2
Mosman Hall, Charters Towers	33
Total	510

3. There has been a reduction of beds in certain wards of the Brisbane and Toowoomba Mental Hospitals, totalling 258—

	Brisbane Mental Hospital	Toowoomba Mental Hospital
Males	80	20
Females	143	15
Totals	223	35

During the past fiscal year the Welfare and Guidance Clinic for Children was established and took over the child guidance work of the Psychiatric Clinic.

It is hoped that the intensive therapy now possible for children will make a real contribution to preventive psychiatry. There has been a consequential reduction in the number of children attending the Psychiatric Clinic, and also an increase in the number of adults attending.

The provision of adjacent accommodation for the Welfare and Guidance Clinic and the Child Guidance Clinic has proved very advantageous to both the patients and staffs of each clinic. Consultations and staff conferences have been a valuable feature of their co-operation.

The forensic functions of the Psychiatric Clinic have expanded during the past year, especially in the number of cases referred by the Parole Board. This is a most important function of the clinic, and may develop into a special clinic—the Forensic Clinic—which could be of great assistance to the Prisons Department in developing a psychiatric service in the prison itself.

BRISBANE MENTAL HOSPITAL

Medical Superintendent: C. R. BOYCE,
M.B., Ch.M. (Syd.)

The annual narrative report of a large, long established mental hospital varies little from year to year other than for some outstanding building programme, or for transient enthusiasm over a new treatment, and the customary enumeration of increased admissions, populations and over-crowding and under-staffing.

During the year 1959-60, the Brisbane Mental Hospital, now nearing its hundredth year of existence, has a different story to relate.

The very striking difference in the hospital may be seen in passing through almost any ward, when one wonders where all the patients are.

Statistics contained in the Hospital Annual Reports of 1956-57 and of 1959-60 show:—

	1956-57	1959-60
Patients in residence	2,364	2,071
Vacant beds	Nil	378

Relief to Brisbane Mental Hospital proper has also been provided by the Farm Colony Wards at present carrying 171 beds and by Mosman Hall carrying 200 beds.

This improved state of accommodation is the cumulative effect of making provision for our

old people, whose only offence against society has been to grow old and mentally feeble. More and more beds in senile annexes to country general hospitals and at Eventide Homes have been progressively made available. To these facilities our old patients are discharged and freed of the unfair stigma of certification.

Another noteworthy feature has been the increased establishment of medical officers from 9 to 15. With the larger number, and with some of them acquiring the Diploma in Psychological Medicine, it has been possible to divide the hospital into four (4) units, each unit under the control of a senior medical officer with subordinate junior officers, and each unit with approximately the same number of patients providing a wide variety of clinical types.

This scheme has enabled better classification of wards to be made; more individual care and attention to be given; checking of the tendency towards chronicity; rehabilitation of many erstwhile chronic cases; fuller and more frequent entry of clinical notes; and better tuition and training for the nursing staff.

The problem of increasing admissions of juvenile female psychopaths has been attacked by a somewhat daring experiment, now in its fourth month of trial.

These girls were at first kept apart in different wards but, when their number increased during the year, separation became impossible and with two or more of them present in any one ward, the result was inevitable—trouble. Our attempted solution was to allocate the usual small (32 bed) female admission ward for them. The trial began with a complement of 16 juvenile female psychopaths, living in comfort, together with a carefully selected nursing staff. From the very beginning they entered into a new kind of life, organising and performing their household domestic work, mending and making personal clothing, doing their own more intimate laundry, preparing and serving their own meals and participating in hospital industrial activities, occupational therapy and handicrafts.

For recreation they have designed, and are making, their own sports' uniforms, have mixed tennis, bowls, basket-ball and dancing; attend usual hospital entertainments; and have formed a discussion and debating group.

Three of them have been discharged and have apparently been successfully rehabilitated.

Departmental assistance and encouragement to young medical officers to obtain Diplomas in Psychological Medicine is consistently adding to the prestige of our staff, and Drs. Nurcombe and Burke have been the most recent recipients of the Diploma in Psychological Medicine.

Most of the Medical Officers do afternoon sessions at the Psychiatric Clinic.

Nursing staff problems are as usual—always a few sick and always some absenteeism.

Training methods and equipment, and tuition, continue to improve; married women in temporary and assistant status have been permitted to undergo training in order to obtain the Mental Nursing Certificate, and some have succeeded. One trainee indeed, coming back to nursing study after many years achieved an excellent pass at

the last examination and added the Mental Nursing Certificate to the General Nursing Certificate and Midwifery Certificate and is now an Assistant Matron.

A further feature indicative of progress is the "Policy of Liberation," which has made more fully open wards and some closed wards semi-open. A possible connection with this may be the large number of patients granted leave in the care of their relatives and friends.

No less than 3,692 periods of leave of varying lengths were granted during the year.

There has been a notable decrease in untoward incidents, suggesting that the several factors of modern chemotherapy, liberation, hospital chaplains, more individual attention to patients, improving living conditions, dietetic refinements and a greater interest and a freer entry by public and charitable bodies are synergistically producing a most desirable effect. There has been a decrease in the number of administrations of E.C.T.

A reduction in the number of patients requiring Insulin Coma Therapy suggests that Lowson House at the North Brisbane General Hospital may be lessening the intake.

The Chaplains have become an important feature of hospital life and their activities along welfare lines do much to make up for the absence of trained Social Welfare Workers on the staff establishment. It is pleasing to note that contracts will shortly be let for the construction of permanent residences for them.

Geo-physically there has been little change, although the Public Works Department and our local artisan staff have done much repair work and painting. Two new residences for medical officers have been completed and are occupied, and the new hospital store is nearing completion. New coal bunkers are in operation at the engine-room, and the fitters' shop is almost completed.

The past year has unquestionably been one of progress and of change.

Auguries for the coming year are for greater progress and further change, and the changes for which this Hospital is shortly destined with the opening of the 150 bed new Female Unit at Ipswich Mental Hospital and the Neuro-psychiatric Hospital at Chermide, are unpredictable.

Charitable bodies, concert parties, other well-wishers, continue to supply amenities, entertainments and kind thoughts and actions, and our thanks are extended to:—

Mrs. Bestman's Concert Party;
Mrs. Smibert's Concert Party;
Mr. Neylan's Concert Party;
Enterprise Concert Party;
F. Smith & Co., Concert Party;
Seventh Day Adventist Party;
Toc H. Society;
Country Women's Association;
Red Cross Society;
R.S.S.A.I.L.A.;
Mr. W. Palmer's Party;
Presbyterian Girls' Party;
Rev. Bradley's Party.

WACOL REPATRIATION PAVILION

It is desired to express appreciation to the Deputy Commissioner of Repatriation for the enthusiasm he has shown and the co-operation he has given the Medical Superintendent in the maintenance and treatment of Repatriation responsibility cases.

During the year two changes were made—

1. Portion of Ward Block C was "closed" and an airing court provided. This made it possible to bring all repatriation cases at Brisbane Mental Hospital into the Pavilion area.

Hitherto there were some 30-40 such cases, who, for various reasons, were unsuitable and inappropriate for the semi-open wards and type of life at the Pavilion. Patients have responded to Pavilion atmosphere to such an unexpected degree that all save 6-8 of these patients now participate in the open hospital regime.

2. The second change was somewhat daring, and was the opening, and leaving at all times open, the three gates of entry by road to the pavilion area.

Patients are free to come and go at will.

One or two wandered away and one deliberately made off; but all have returned.

A much appreciated gift from the Repatriation Department has been the installation of a television set in the recreation room of each of the three wards.

This form of entertainment is very popular, and when added to the regular cinema and concerts, and the sporting materials provided, leaves little more that the Department can do for its less fortunate dependants.

The canteen, run in conjunction with the main Brisbane Mental Hospital Canteen, has been repainted and renovated, and an officer is in attendance on all except two days per week.

All ward buildings have recently been painted internally; the main cafeteria dining-room floor has been tiled; four cold drinking-water units have been installed; and shortly a commencement has been promised for completion of the sports oval, tennis courts, and bowling green.

The use of the word "daring" when referring to the opening of all gates would, in retrospect, seem to be inappropriate for on reviewing the amenities narrated above it is not imaginable that anyone would wish to "escape."

Visits to the Pavilion by Repatriation officials have been regular and frequent, and the material needs of their charges in clothing, pensions, and amenities carefully watched and unhesitatingly provided.

Statistics concerning this relatively small part of the Brisbane Mental Hospital show considerable activities—

Admissions	64
Deaths	1
Transfers and Discharges	67

TOOWOOMBA MENTAL HOSPITAL

Medical Superintendent: J. H. B. HENDERSON,
M.B. B.S., (Syd.)

Extensive ward improvements continue with the completion of male wards A, B, C, D, and E, and female wards 3, 4, and 5. These improvements, whilst attractive, functional, and very welcome, still do not provide adequate storage space for patients' belongings. It is hoped that provision will be made for this and for certain day-rooms at an early date. Concurrent with the structural alterations to the various wards, horticultural improvements in their vicinity have been effected, although lack of sufficient gardeners and patient labour presents somewhat of a problem in maintaining these improvements.

Floor coverings, furniture and soft furnishings such as quilts and curtains are gradually being added to the wards, which, for the most part, now present a much more homely appearance. Painting of various buildings continues, and the Public Works Department has recently completed the painting of the nurses' quarters in attractive shades. This applies particularly to the nurses' rooms, which, however, require more modern and comfortable furniture.

An attractive verandah has been added to the Assistant Matron's quarters, and really fine cane furniture and venetian blinds installed therein.

A T.V. set has been generously presented to the hospital by the West Toowoomba Rotary Club, and in order to promote social therapy this set was installed in Female Ward 6. To this ward every day come groups of patients from other wards, including male patients, who are entertained to supper by the females. Miss Watson, our occupational therapist, also conducts musicales at night, at which male and female patients mix and where supper is provided. Community singing, dances, and sports gatherings also help in improving the social side of our therapy. The annual fancy-dress ball was a great success, as also was the carols by candlelight concert at Christmas time. These large functions and our annual sports were very capably organised by Miss Watson, and thanks are given to her and to the various members of the staff who gave so much of their time in entertaining the patients. The staff-patient relationship in this hospital is outstanding, and many of the former frequently take groups of patients to their homes for entertainment. At present a staff and patients' entertainment group is being formed, and they hope to provide concerts twice a month.

The food is now of a high standard and the bread cutting and buttering machine has been installed in a new room erected by our artisan staff.

Clothing, although improved, has not yet reached a really good standard, but it must be realised that the staining qualities of the Toowoomba red soil necessitates strenuous washing with resultant rapid deterioration of any material that is not of good quality.

The staffing position has improved and the female division has lately been able to be maintained at almost full numerical strength. The proportion of female trainees is also somewhat higher.

Many new drugs have been given a trial, but only when their proprietary exponents are prepared to donate a number large enough for proper clinical trial. Whilst the majority appear to be of negligible value, a few have proved to be very useful clinically.

The percentage of voluntary patients still remains at a high level and the open and semi-open wards have contributed to this figure. Plans for further freedom in the female wards are delayed on account of the temporary proximity of the Public Works Department compound to the yards of these wards.

Recently the quantity of milk has decreased, chiefly due to climatic conditions, and it is only by the installation of milking machines that this problem can be overcome by enabling a greater number of cows to be dealt with.

An underground silo for cattle fodder collapsed during the year and this is to be replaced, probably by a similar type.

IPSWICH MENTAL HOSPITAL

Medical Superintendent: R. A. ATHERTON,

L.R.C.P. (Edin.), L.R.C.S. (Edin.),

L.R.F.P.S. (Glasgow)

During this past year building by the Public Works Department has continued. Female Ward 5 and the nurses' quarters are nearing completion. The Pavilion for patients in Male Ward 2 is open and excavation for additions to Male Ward 3 are in progress. The Pavilion in Male Ward 2 has more than fulfilled expectations in giving patients interest and comfort. It is spacious and airy, but is protected from the westerly winds. It houses a table tennis table and magazine rack. The plans for altering Male Ward 3 are extensive, with special provision for moving cot patients to a balcony for day nursing.

A detached visitors' room fitted with cubicles has been opened for Female Ward 4.

The alterations to the kitchen to cater for additional patients are progressing to schedule. The inconvenience of cooking during these alterations is being well tolerated by the staff without interference with hygiene or lowering of the standards in quality and variety in the menu.

It is anticipated that drainage problems will be mostly overcome within the next three (3) months, i.e., before summer. The concomitant problem of fly and mosquito breeding has been controlled, but only by constant and conscientious use of the newer insecticides. Harmonious discussions have been held with the Health Officers of the Ipswich City Council to maintain control of these insect pests.

The Public Works Department has completed the laying of a ring water main around the hospital buildings.

The Main Roads Department has completed and sealed much of the recently planned road work. The remaking of some existing roads has needed the laying of new foundations.

The Medical Officer's residence is completed. The residence is in modern style, with some window walls, feature painted walls and a car port. A fence and paths remain to be completed.

While the foregoing are the major works, there has been much done by the local hospital staff in maintenance and minor modifications. These include cupboards and shelves necessary for altered storage requirements in the wards and offices. There has been the introduction of brighter colouring with bedrooms of varying colours and feature walls in the dining-room of Female Ward 1. Extra concrete ramps have been built for ease of access for wheeled transport to Male Ward 1 and the coal bunkers.

The dairy management has been improved by more cultivation and the bringing into use of some disused concrete tanks for the storage of additional silage. The herd has been reduced to a more economical level. Considering the poor growing weather experienced, the results to date are considered satisfactory. The proposed replacement of horses with a tractor will reduce further the purchase of fodder. A bull yard is in the course of construction. Officers of the Department of Agriculture and Stock have been very helpful with advice and tempered encouragement.

Nursing staff recruitment has been maintained with the recent development of a short waiting list. Although there has been this better maintenance of the nursing establishment it is regretted that so few female staff complete their training. Educational film evenings are held.

The "Ipswich Mental Hospital Social and Recreation Club" continued its activities with a slightly increased membership. Staff apathy to social activity dates back to before the war. This state is regrettable because the lack of comradeship with each other reduces the staff interest in the hospital to just a place to carry out allotted duty. The social activities are generally well patronised by the members, particularly farewells to retiring members and seasonal parties.

Patients recently admitted have shown interest in table-tennis, and the members of the Ipswich Mental Hospital Staff Table-Tennis Club have stimulated this interest with coaching. The staff club commenced fixture-playing last year. They won the premiership of their grade and now plan to enter a second team.

This last year has seen, as well as the usual patient entertainments of films, dances, concerts and trips, the introduction of three (3) features new to this hospital—

1. About 150 patients were taken to watch a firework display organised by the hospital. The staff were invited to bring close relatives and friends, with their fireworks, to add to the gaiety of the evening. The weather was good and the response by the staff exceptional. An orderly crowd of an estimate of 500 came, and the pyrotechnic display continued non-stop for over two (2) hours.
2. Arrangements were made for the patient and staff carol singers, in suitable attire and with old-style lanterns, to visit the four (4) aged people's homes in Ipswich.

They received an appreciative reception at each home. The nursing staff supplied the musical accompaniment and transport.

3. The Ipswich Thistle Band, with the two associated teams of marching girls, put on a display in the recreation area of Male Ward 2. Although space was too limited for a full display by the marching girls, it was much appreciated by the patients.

These three features, as well as giving pleasure to patients, have been the means of giving the people of Ipswich a better appreciation of the hospital and its patients.

The Country Women's Association, Red Cross Society, St. Vincent de Paul Society, Catholic Daughters of Australia, Baptist Sunday School, The Adventist Welfare Society, and the "Town Topics Revue Company" have provided additional entertainments for the patients. The Country Women's Association provided a Christmas gift of a climbing frame for the patients of Male Ward 3.

At Christmas the children enjoyed the party organised by Miss Hinton, which has been a regular feature over the years. The "Courier-Mail" Toy Fund donated gifts to the children. As well as singing carols in the aged people's homes, the party of patients and staff sang carols outside each ward on Christmas Eve.

The R.S.A.I.L.A. Sandy Gallop Sub-Branch has again been active in the interests of ex-service-men patients in arranging picnics and other entertainments outside the hospital grounds. The usual Anzac Day Service was held around the hospital flagstaff, with the Ipswich Thistle Band and the Ipswich Vice-Regal Band attending.

Ninety-two (92) patients attended the Ipswich and West Moreton Show, which they thoroughly enjoyed, particularly the free rides in the side-show section.

Seven (7) Girl Guides (patients) attended a camp for the Girl Guide Extension Groups at Redland Bay and a Thinking Service in the Festival Hall, as well as their regular meetings.

The "Queensland Times" has published accounts of hospital activities. These articles and news items were well presented, and this publicity, which leads to a better knowledge by the public of the work done in mental hospitals, is appreciated.

MOSMAN HALL—CHARTERS TOWERS

Visiting Medical Officer:

J. E. Robinson, M.B., B.S. (Q'ld.)

The year under review has been a very active one for this hospital with a steady improvement in all aspects pertaining to patients. The wearing apparel of the patients has been varied and amongst other things it is refreshing to see splashes of colour with the men wearing coloured cotton tee shirts.

The high standard of food has been maintained and compares favourably with other

institutions. The kitchen and cafeteria were opened during the financial year and provides an ideal set-up in regard to the preparation and serving of palatable meals. Attractive pictures grace the internal walls, and roses line the approaches.

The buildings are modern and require little comment other than the patients are admirably accommodated. Internal painting of Gill and Macrossan Houses is nearing completion. Cold water fountains have been installed in all the wards.

Entertainment has been increased during the year with the introduction of indoor bowls, deck tennis, medicine ball and badminton to augment the existing sporting and recreational facilities which include cricket, films, wireless, library, papers, periodicals, billiards, table tennis, quoits and sedentary games.

Monthly picnics have been introduced and are very popular.

A three-rink bowling green is under construction and at the present rate of progress it is hoped that it will be available for play within 12 months. Progress is slow due to limiting factors.

The grounds are continually being converted to suit the surroundings. Areas are being levelled and selected grasses planted. Trees provide shade for the patients on ground parole. Parole is granted also to visit the city where our patients have been accepted, and mingle freely.

Fraser House, which it is anticipated will be opened this year, is to be an open convalescent ward and the present parole system should auger well for when this eventuates.

Letters and various expressions of thanks are received from relatives in regard to attention to patients. This is directly attributable to the staff who take an interest in the welfare of the patients.

The gratitude of the Administration is extended to the representatives of the various religious denominations who tend to the spiritual needs of the patients.

Thanks are also extended to local concert parties, the Red Cross Society, St. Vincent de Paul Society, Returned Soldiers' League, Combined Sporting Association, the local Show Society and other sporting bodies who help to entertain the patients by various means. Liaison with the local branch of Alcoholics Anonymous has been continued and regular meetings have been held.

Roses from this hospital were taken to Brisbane and Townsville for the Royal Visit and supplied locally, with annuals, for Anzac Day celebrations.

Daily walks about the grounds are permitted for non-parole patients when staff is available. This offers a change of environment and exercise that they would not normally receive.

A flag pole has been erected and lends itself to the beautification of the grounds.

Occupational Therapy is in an embryo state. Volunteer helpers, in the form of two ladies resident in the town, namely Mrs. McLean and Mrs. Wakley, visit once weekly and instruct a limited number of patients in basket weaving and plastic work. The thanks of the Administration are extended to these people so generous with their time. It is hoped to extend this activity in the next financial year.

A vegetable garden has been inaugurated and the produce to date has more than compensated for installation of the irrigation system. A bush house has been constructed to propagate plants and seedlings and supply greenery to the wards.

The citrus orchard is functioning well, with surplus fruit channelled to Eventide Home and the General Hospital. The anticipated provision of an irrigation system will place the orchard on a more profitable basis, releasing man and tractor hours for more profitable ventures.

In addition to this orchard there has been established a non-citrus orchard of bananas and papaws with custard apples and grapes to be added when the recently acquired hydraulic ram is installed to utilise a portion of the septic effluent.

Attention is drawn to the large number of cases admitted as a direct result of alcoholism, or with alcoholism as a precipitating and/or aggravating factor. A number of patients' diagnoses as schizophrenia in fact may not have presented as overt cases but for the "triggering" effect of excessive drinking. While many, of course, drink compulsively as a symptom of their underlying disorder, in every case this symptom brings in its train its own quota of disturbance and militates against accurate diagnosis and the attainment of insight by the patient. Furthermore the symptom may remain as a fixed compulsion even after the original disorder has subsided. It is appreciated that the importance of these facts is becoming more widely recognised, but there remains much to be done in the way of research, special therapy, and education of the public in an effort to change drinking mores and attitudes. If tuberculosis warrants the organisation, expenditure and effort currently granted, how much more is required in connection with alcoholism?

PSYCHIATRIC CLINIC

Psychiatrist: J. A. HEDE, M.B., B.S. (Melb.),
D.P.M. (Melb.)

The Annual Report of the Psychiatric Clinic is presented in a new form for the year ending 30th June, 1960. Additional tables are included to provide a more comprehensive analysis of the diagnostic, consultative and therapeutic services provided by the clinic.

In November, 1959, the Child Welfare and Guidance Centre was established, and since that time new registrations in the Psychiatric Clinic have been mostly confined to the "18 years and over" groups. Prior to this time more than one-half of the new patients seen were in the younger age groups.

Following the age limitation of new patients, several significant trends have been observed. The waiting time between first contact or referral and the treatment of adult patients has been reduced, and new registrations in these age groups during the year showed an increase of 16.8 per cent. This increase was most apparent in the "30-39" year group (22.6 per cent.) and the "40-49" year group (16 per cent.). More time is now available for the psychological examination of adults, and a more comprehensive investigation of these patients is possible. An increased number of sessions is available for individual psychotherapy in the adult age groups, and the diagnosis, prognosis and progress of patients in therapy are discussed in case conferences twice weekly. Group therapy sessions are conducted regularly.

In the field of forensic psychiatry, consultations included examinations by direction of the Executive Council, the Supreme Court, the Prisoners' Parole Board and referrals from Her Majesty's Prison and Probation Officers of the Department of Justice. In addition, prisoners committed to the mental hospitals are examined at three or six monthly intervals for reports as to their progress and prognosis. All such patients in the forensic field have, as a routine, a full battery of psychology tests in addition to interviews and special examinations such as E.E.G. This service is assuming an increasingly important role in the activities of the Psychiatric Clinic.

A reduction in speech therapy registrations during the year was unavoidable owing to the resignation of our full-time speech therapist, but with the addition of further staff full-time speech therapy services are now available.

In addition to the management of cases referred through the Psychiatric Clinic, the speech therapists have been made available for consultations and treatment of patients registered in the Child Welfare and Guidance Centre.

PUBLICATION BY MEMBER OF THE STAFF

Szekely, E.—"Some Methodological Problems of Psychology in the Clinical Field." *Australian Journal of Psychology*, 1959, Vol. II., No. 2.

EPILEPTIC HOME

Superintendent: E. G. KENYON

As the years pass by it is evident that the establishment of the Home is serving a very useful purpose. It enables these underprivileged people to spend their lives together in picturesque and peaceful surroundings.

Some patients are difficult at times, but the majority are happy and contented; "good companions" would aptly describe them. Tolerance and patience in handling epileptics can avoid many awkward situations.

There were no untoward happenings during the year.

Some of the applications received were not approved because of unsuitability. An endeavour is made to admit only those who conform to certain mental standards and are capable of doing some form of occupational therapy—be it farm or garden for males or domestic chores for females.

Two deaths occurred during the year.

Four patients were admitted from Ipswich Mental Hospital and three were transferred to Eventide Home, Sandgate.

Over a period of ten years, 29 patients under the age of 21 years were discharged, and it is good to relate that only one of those discharged was readmitted for treatment and has again been discharged. Of those discharged, some are in employment. Three females married.

The school has 27 boys and 15 girls on roll, including 11 children from the Toowoomba Mental Hospital nearby. Sympathetic understanding and continuous patience and affection are needed to encourage these folk to obey simple commands, to observe rules of personal hygiene, and try for a simple degree of courteous behaviour.

Because of the great differences in age, intelligence and understanding, there naturally must be great differences in emotional stability, and this, coupled with constant contact through "living in," calls for continuous effort to maintain a degree of harmony and discipline.

The basis of organisation is an earnest endeavour to keep every child busily employed, with hopes that pupils will learn to live contentedly with their friends, to respect the property of others, and to join in community efforts.

Constant effort and encouragement towards self-confidence is attempted through normal gait in marching, playing games, simple folk dancing,

good posture, and tidy, pleasant personal appearance.

Renovations to the kitchen by the Department of Public Works were carried out during the year. A new ceiling and painted walls of pastel shades, with new cement floor, has made a transformation.

The laundry will, in the near future, be provided with a steam-heated tumbler dryer. This will be much appreciated in the wet weather.

Plans are in preparation for the modernising of the male lavatory block by the Department of Public Works.

Improvements to the Matron's and nurses' quarters have been deferred for the present.

Patients are still enduring the winter months without ward heating. It is hoped that with more steam power being made available from Toowoomba Mental Hospital the heaters, which have been installed for some years but not connected, will be operating next winter.

Farm production was well maintained during the year despite pest problems and weather conditions.

Various representatives of religious denominations attend to the spiritual needs of patients each Sunday, and thanks are extended to these good people for the interest.

Gratitude is expressed to the various concert parties, the Salvation Army Band, Methodist Ladies' Guild, Church of England Youth Organisation for their efforts during the year.

TABLE LXXXVI
QUEENSLAND MENTAL HOSPITALS
SHOWING ADMISSIONS, RE-ADMISSIONS, DISCHARGES AND DEATHS, DURING THE YEAR ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers			Totals	
	Males		Females	Males		Females	Males		Females	Males		Females		
	Totals			Totals			Totals			Totals			Males	Females
On the Books of the Hospitals on 1st July, 1959	1,316	1,236	2,552	595	622	1,217	357	233	590	164	2,432	2,091	4,523	
Admitted for the first time { certified	281	295	576	56	74	130	10	4	14	69	416	373	789	
voluntary	59	37	96	35	25	85	22	8	30	12	143	80	223	
Re-admitted { certified	108	168	276	26	25	51	4	..	4	11	149	193	342	
voluntary	29	40	69	5	6	11	3	2	5	4	41	48	89	
Total Admissions	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443	
Totals on Books and Admissions—All Hospitals	1,793	1,776	3,569	732	762	1,494	396	247	643	260	3,181	2,785	5,966	
Transferred from Brisbane	..	..	..	23	12	35	1	..	1	25	49	12	61	
Transferred from Toowoomba	6	1	7	..	..	..	2	..	2	..	8	1	9	
Transferred from Ipswich	14	..	14	..	..	..	..	..	..	..	14	..	14	
Transferred from Mosman Hall	3	..	3	..	..	..	..	..	..	..	3	..	3	
*Total number under care during the year	1,816	1,777	3,593	755	774	1,529	399	247	646	285	3,255	2,798	6,053	
†Discharged—														
Recovered	129	157	286	41	88	129	4	..	4	66	240	245	485	
Relieved	185	318	503	18	13	31	1	1	2	8	212	332	544	
Not Improved	106	82	188	25	46	71	10	9	19	4	145	137	282	
Voluntarily left	43	42	85	38	7	45	..	..	..	3	84	49	133	
Total Discharges	463	599	1,062	122	154	276	15	10	25	81	681	763	1,444	
Died	72	89	161	31	34	65	14	9	23	11	128	132	260	
Total Number Discharged and Died	535	688	1,223	153	188	341	29	19	48	92	809	895	1,704	
Transferred to Brisbane	..	..	..	6	1	7	14	..	14	3	23	1	24	
Transferred to Toowoomba	23	12	35	..	..	..	..	..	..	..	23	12	35	
Transferred to Ipswich	1	..	1	2	..	2	..	..	..	..	3	..	3	
Transferred to Mosman Hall	25	..	25	..	..	..	..	..	..	..	25	..	25	
Total number discharged, died, &c., during year	584	700	1,284	161	189	350	43	19	62	95	883	908	1,791	
Remaining on Books of Hospitals on 30th June, 1960	1,232	1,077	2,309	594	585	1,179	356	238	584	190	2,372	1,890	4,262	
Average Number Daily Resident	1,184	914	2,098	578	561	1,139	353	231	584	175	2,290	1,706	3,996	
Number on leave of absence on 30th June, 1960	81	157	238	18	41	59	4	2	6	10	113	200	313	
Proportion of Mentally Sick to each 1,000 of population as at 30th June, 1960	..	..	..	..	..	..	..	..	..	..	3.16	2.64	2.91	
Proportion of Admissions per 10,000 of population for year ended 30th June, 1960	..	..	..	..	..	..	..	..	..	..	10.0	9.70	9.85	

* These totals include interhospital transfers.

† Includes Section 49 Discharges as shown—

Recovered

Relieved

Not Improved

6	..	6	2	11	13	..	..	..	..	..	8	11	19
24	54	78	..	6	6	..	..	..	..	1	25	60	85
8	2	10	2	2	4	..	1	..	1	..	11	4	15
38	56	94	4	10	23	1	1	1	1	1	44	75	110

TABLE LXXXVII
ADMISSIONS, DISCHARGES, AND DEATHS, WITH THE PROPORTIONS OF RECOVERIES AND DEATHS PER CENT. DURING
THE YEAR ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
Total Admissions ..	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443
*Discharged—													
Recovered ..	139	159	298	65	90	155	4	..	4	66	274	249	523
Relieved ..	210	352	562	26	17	43	1	1	2	9	246	370	616
Not Improved ..	114	88	202	31	47	78	10	9	19	6	161	144	305
Died ..	72	89	161	31	34	65	14	9	23	11	128	132	260
Average Number													
Daily Residents ..	1,184	914	2,098	578	561	1,139	353	231	584	175	2,290	1,706	3,996
Percentage of Recoveries on Admissions ..	29.14	29.44	29.30	47.44	64.28	55.95	10.25	..	7.54	68.75	36.58	35.87	36.24
Percentage of Patients Relieved on Admissions ..	44.03	65.19	55.26	18.97	12.14	15.52	2.56	7.14	3.77	9.37	32.84	53.31	42.68
Percentage of Deaths on Average Number Resident ..	6.08	9.74	7.67	5.36	6.06	5.70	3.97	3.89	3.94	11.45	5.58	7.73	6.50

* For the purposes of this Table patients discharged under Section 49 (3) and voluntarily left have been classified under headings shown.

TABLE LXXXVIII
FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING THE TWELVE MONTHS ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
1. AFFECTIVE REACTION TYPES—													
(a) Manic Depressive Psychosis ..	15	15	30	7	21	28	..	..	..	..	22	36	58
(b) Mania ..	..	5	5	..	1	1	..	..	..	..	2	6	8
(c) Depression ..	3	33	36	18	21	39	..	..	..	2	23	54	77
Reactive Depression ..	5	8	13	..	3	3	..	..	..	1	6	11	17
Recurrent Depression ..	2	8	10	..	..	..	..	..	..	..	2	8	10
Hypomania ..	1	5	6	1	2	3	1	..	1	..	3	7	10
(d) Involutional Depression ..	2	14	16	..	6	6	..	..	..	1	3	20	23
Paranoid Reaction ..	..	..	..	1	..	1	..	..	..	..	1	..	1
Involutional Melancholia ..	1	12	13	..	..	..	..	..	..	..	1	12	13
2. SCHIZOPHRENIC REACTION TYPES—													
(a) Schizoid Personality ..	124	135	259	40	27	67	4	..	4	1	193	162	355
Schizophrenia ..	..	..	..	..	..	..	..	..	..	25	..	..	..
Schizophrenia Paranoid Type ..	49	30	79	..	1	1	..	..	..	..	49	30	79
Hebephrenia ..	1	3	4	..	..	..	..	..	..	..	1	4	5
(b) Paraphrenia ..	5	12	17	5	..	5	..	..	..	2	12	12	24
Catatonia ..	6	3	9	..	..	..	..	..	..	3	9	3	12
(c) Paranoid Reaction ..	3	..	3	..	..	..	2	..	2	..	7	..	7
3. ORGANIC REACTION TYPES—													
(a) Organic Dementia ..	10	6	16	..	..	..	..	..	..	1	11	6	17
Organic Psychosis ..	3	2	5	..	3	3	..	..	..	..	3	5	8
Hydrocephalus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Huntington's Chorea ..	2	..	2	..	..	..	..	..	..	..	2	..	2
Kernicterus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cerebral Atrophy ..	..	..	..	..	..	..	..	..	..	..	..	..	..
(b) Toxins—													
Acute Toxic Psychosis ..	1	2	3	..	1	1	..	..	..	..	1	3	4
Acute Alcoholism ..	..	..	..	1	..	1	..	..	..	..	..	..	..
Alcoholic Hallucinosi ..	..	1	1	..	..	..	..	..	..	2	3	1	4
Alcoholic Psychosis ..	2	1	3	1	..	1	..	..	..	23	26	1	27
Puerperal Psychosis ..	..	..	..	..	1	1	..	..	..	..	..	1	1
Alcoholic Psychosis (Kor-sakov's) ..	1	..	1	..	1	1	..	..	..	3	4	1	5
Cerebral Syphilis ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Alcoholism ..	6	3	9	21	..	21	..	..	..	..	27	..	27
Acute Confusional Psychosis ..	2	3	5	..	..	..	..	..	..	..	2	3	5
(c) Arteriosclerotic Dementia ..	11	14	25	..	..	..	..	..	..	7	18	14	32
Arteriosclerotic Psychosis ..	1	7	8	..	1	1	..	..	..	..	1	8	9
Presenile Dementia ..	5	7	12	..	..	..	..	..	..	..	5	7	12
Presenile Psychosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Senile Dementia ..	56	73	129	12	17	29	..	..	..	4	72	90	162
Senile Psychosis ..	14	14	28	2	2	4	1	..	1	2	19	16	35
Cerebral Arteriosclerosis ..	..	..	..	..	..	..	1	..	1	..	1	..	1
Senile Depressive ..	4	2	6	..	..	..	..	..	..	..	4	2	6
4. EPILEPTIC REACTION TYPES—													
Epileptic Psychosis ..	5	4	9	4	1	5	..	..	..	2	11	5	16
Epilepsy ..	6	2	8	5	2	7	..	..	..	..	11	4	15
5. PSYCHONEUROTIC REACTION TYPES—													
Psychoneurosis ..	15	15	30	2	12	14	..	..	..	..	17	27	44
Anxiety State ..	13	14	27	3	9	12	..	..	..	..	16	23	39
Hysteria ..	3	9	12	..	..	..	..	..	..	..	3	9	12
Obsessive ..	1	2	3	..	..	..	..	..	..	..	1	2	3
Neurasthenia ..	1	3	4	..	..	..	..	..	..	..	1	3	4
Depression ..	3	..	3	..	..	..	..	..	..	..	3	..	3
Emotional Instability ..	..	..	..	1	..	1	..	..	..	..	1	..	1
6. MENTAL DEFICIENCY—													
(a) Mental Deficiency ..	20	23	43	8	6	14	..	..	..	..	28	29	57
With Epilepsy ..	7	5	12	3	1	4	6	1	7	1	17	7	24
Moron ..	2	..	2	..	..	..	4	..	4	1	5	..	5
Mongol ..	..	..	..	..	..	..	2	2	4	1	5	4	9
With Schizophrenia ..	5	8	13	..	..	..	1	..	1	1	7	8	15
(b) Idiocy ..	..	..	..	..	..	..	8	4	12	..	8	4	12
(c) Postencephalitic Idiocy ..	..	..	..	..	..	..	..	..	..	..	..	..	..
(d) Microcephalic Idiocy ..	..	..	..	..	..	..	..	..	..	..	9	7	16
(e) Imbecility ..	1	..	1	..	..	..	8	7	15	..	3	..	3
Postmeningitic ..	3	..	3	..	..	..	..	..	..	..	3	..	3
Epiloia ..	..	..	..	..	..	..	..	..	..	..	1	..	1
7. ADDICTION—													
Chronic Alcoholism ..	29	16	45	..	..	..	..	..	..	11	40	16	56
Drug ..	..	3	3	..	..	..	..	..	..	..	..	3	3
8. PSYCHOPATHIC PERSONALITY ..	21	19	40	..	1	1	..	..	..	..	22	20	42
9. TRAUMATIC PSYCHOSIS ..	4	..	4	..	..	..	..	..	..	..	4	..	4
Totals ..	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443

TABLE LXXXIX

CAUSES OF DEATHS WHICH OCCURRED DURING PERIOD ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charlton Towers	Totals		
	Males	Females	Totals	Males	Females	Totals	Males	Females	Totals	Males	Males	Females	Totals
GENERAL DISEASES—													
Abdominal Malignancy ..	..	..	..	..	..	..	..	..	..	1	..	..	1
Septicaemia ..	..	..	..	..	..	..	..	..	..	..	1	..	1
Sarcoma of Eye ..	..	..	..	1	..	1	..	..	..	..	..	..	..
Toxaemia ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Carcinoma of Pharynx ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cirrhosis of Liver ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diabetes Mellitus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dementia Paralytica ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Asphyxiation ..	1	..	1	..	..	..	2	..	2	..	3	..	3
Schizophrenic Dementia ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Chronic Interstitial Pneumonia ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ulcer Decubitus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tertiary Lues ..	..	..	..	3	..	3	..	..	..	..	3	..	3
Schizophrenic Deterioration ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gangrene of Foot ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cachexia ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Strangulation Femoral ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hernia ..	..	1	1	..	..	..	1	1	2	..	1	1	2
											9	1	10
DISEASES OF THE NERVOUS SYSTEM—													
Cerebral Degeneration ..	7	..	7	3	..	3	1	1	2	..	11	1	12
Cerebral Thrombosis ..	4	1	5	3	..	3	1	..	1	1	9	1	10
Cerebral Haemorrhage ..	3	..	3	..	..	..	..	..	..	1	4	..	4
Cerebral Arteriosclerosis ..	3	5	8	..	..	..	..	..	..	..	3	5	8
Epilepsy ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Hydrocephalus ..	..	..	..	..	..	..	1	3	4	..	1	3	4
Status Epilepticus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Huntington's Chorea ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Subarachnoid Haemorrhage ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cerebral Metastasis ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Intercranial Haemorrhage ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Cerebral Trauma ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Pituitary Tumour ..	..	..	..	..	..	..	..	..	..	..	..	..	..
											30	11	41
DISEASES OF THE CIRCULATORY SYSTEM—													
Cardio Vascular Degeneration ..	23	40	63	12	18	30	..	1	1	..	35	59	94
Coronary Occlusion ..	6	1	7	2	4	6	1	..	1	1	10	5	15
Acute Myocarditis ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Myocardial Degeneration ..	..	4	4	1	..	1	..	..	..	..	1	4	5
Coronary Thrombosis ..	..	..	..	..	..	..	..	1	1	..	..	1	1
Toxiomyocarditis ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Myocardial Infarction ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Auricular Fibrillation ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Chronic Myocarditis ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Congestive Cardiac Failure ..	..	2	2	..	4	6	..	..	..	..	2	6	8
Left Ventricular Failure ..	5	8	13	2	..	2	..	1	1	4	9	9	18
Cardiac Failure ..	2	..	2	..	..	..	..	..	..	..	2	..	2
Congenital Cardiac Failure ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Myocardial Insufficiency ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Heart Disease ..	..	..	..	..	..	..	..	..	..	..	..	..	..
											62	86	148
DISEASES OF THE RESPIRATORY SYSTEM—													
Broncho Pneumonia ..	9	17	26	1	1	2	3	1	4	..	13	19	32
Lobar Pneumonia ..	..	2	2	..	..	..	..	..	..	..	..	2	2
Pulmonary Thrombosis ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Terminal Pneumonia ..	1	1	2	..	..	..	..	..	..	..	1	1	2
Pneumonia ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Cardiac Asthma ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pulmonary Tuberculosis ..	..	2	2	1	2	3	1	..	1	..	2	4	6
Carcinoma of Lung ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Lung Abscess ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Empyema ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Hypostatic Pneumonia ..	..	..	..	1	1	2	1	..	1	3	4	1	5
Status Asthmaticus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Pulmonary Embolism ..	..	..	..	..	..	..	..	..	..	..	..	..	..
											21	27	48
DISEASES OF THE ALIMENTARY SYSTEM—													
Carcinoma of Pancreas ..	..	..	..	1	..	1	..	..	..	..	1	..	1
Gastroenteritis ..	..	..	..	..	..	..	..	..	..	..	..	1	1
Carcinoma of Rectum ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Gastric Carcinoma ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Megacolon ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Obstruction of Oesophagus ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis ..	..	..	..	..	..	..	..	..	..	..	..	1	1
Carcinoma of Colon ..	..	..	..	1	..	1	..	..	..	..	1	..	1
Carcinoma of Stomach ..	..	..	..	..	..	..	1	..	1	..	..	1	1
Ulcerative Colitis ..	..	..	..	..	1	1	..	..	..	..	..	1	1
Tuberculous Peritonitis ..	..	..	..	..	..	..	..	..	..	..	..	1	1
Peptic Ulcer ..	..	..	..	..	1	1	..	..	..	..	..	1	1
Obstruction of Bowel ..	1	..	1	..	..	..	..	..	..	..	1	..	1
Ruptured Stomach ..	..	..	..	..	..	..	1	..	1	..	1	..	1
											4	4	8
DISEASES OF THE GENITO-URINARY SYSTEM—													
Prostatitis and Cystitis ..	..	..	..	..	..	..	..	..	..	..	2	1	3
Chronic Nephritis ..	1	..	1	1	1	2	..	..	..	..	..	..	..
Adenocarcinoma Uteri ..	..	..	..	..	..	..	..	..	..	..	..	..	..
Granulosa-cell Tumor of Ovary ..	..	..	..	..	..	..	..	..	..	..	..	1	1
Carcinoma of Urinary Bladder ..	..	1	1	..	..	..	..	..	..	..	..	..	..
Carcinoma of Prostate ..	..	..	..	..	..	..	..	..	..	..	..	1	1
Acute Pylo Nephritis ..	..	1	1	..	..	..	..	..	..	..	..	1	1
Polycystic Disease of Kidneys ..	..	..	..	..	..	..	..	..	..	..	..	..	..
											2	3	5
Totals ..	72	89	161	31	34	65	14	9	23	11	128	132	260

TABLE XC

BODILY HEALTH AND CONDITION OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
In apparently good health and condition	293	218	511	90	51	141	34	12	46	55	472	281	753
In indifferent health and reduced condition	132	272	404	37	63	100	2	1	3	35	206	336	542
In bad health and exhausted condition	52	50	102	10	26	36	3	1	4	6	71	77	148
Totals	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443

TABLE XCI

BIRTH PLACES OF PATIENTS ADMITTED DURING PERIOD ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
Queensland	252	366	618	101	100	201	36	12	48	41	430	478	908
New South Wales	67	51	118	12	13	25	1	2	3	16	96	66	162
Victoria	16	14	30	3	5	8	..	..	..	2	21	19	40
South Australia	4	2	6	2	3	5	1	..	1	..	7	5	12
Western Australia	3	2	5	..	..	..	..	..	..	1	4	2	6
Tasmania	3	4	7	..	..	..	..	..	..	..	3	4	7
Northern Territory	..	..	..	..	..	..	..	..	..	..	..	..	..
New Zealand	4	2	6	2	..	2	..	..	..	..	6	2	8
England	37	31	68	5	8	13	..	..	..	4	46	39	85
Scotland	8	16	24	2	2	4	..	..	..	1	11	18	29
Ireland	8	6	14	1	..	1	..	..	..	2	11	6	17
Wales	..	..	..	..	..	..	..	..	..	..	..	..	..
India	2	..	2	..	..	..	..	..	..	..	2	..	2
Latvia	1	3	4	..	..	..	..	..	..	1	2	3	5
Rumania	1	1	2	..	..	..	..	..	..	..	1	1	2
Germany	2	3	5	1	..	1	..	..	..	1	4	3	7
Sweden	..	..	..	..	..	..	..	..	..	1	1	..	1
Italy	5	2	7	1	..	1	..	..	..	8	14	2	16
Holland	3	2	5	..	1	1	..	..	..	..	3	3	6
Poland	6	8	14	1	..	1	..	..	..	..	7	8	15
Norway	..	3	3	..	..	..	..	..	..	2	2	3	5
Russia	4	3	7	1	..	1	..	..	..	1	6	3	9
Hungary	4	..	4	..	..	..	..	..	..	1	5	..	5
Czechoslovakia	4	..	4	..	..	..	..	..	..	1	5	..	5
United States of America	..	1	1	..	..	..	..	..	..	2	2	1	3
Cyprus	..	1	1	..	..	..	..	..	..	..	..	1	1
Greece	1	1	2	..	..	..	..	..	..	1	2	1	3
Ukraine	3	1	4	..	..	..	..	..	..	..	3	1	4
France	2	..	2	..	..	..	..	..	..	..	2	..	2
Estonia	1	2	3	..	..	..	..	..	..	..	1	2	3
Austria	..	2	2	..	..	..	..	..	..	..	..	2	2
South Africa	1	1	2	..	..	..	..	..	..	..	1	1	2
Yugoslavia	2	2	4	..	..	..	..	..	..	1	3	2	5
Malta	..	..	..	..	..	..	..	..	..	..	..	..	..
Fiji Island	1	..	1	..	..	..	..	..	..	..	1	..	1
Switzerland	..	..	..	..	..	..	..	..	..	..	..	..	..
Philippines	..	..	..	..	..	..	..	..	..	..	..	..	..
Canada	1	..	1	..	..	..	..	..	..	..	1	..	1
Denmark	..	1	1	..	1	1	..	..	..	..	..	2	2
Finland	2	..	2	..	..	..	..	..	..	1	3	..	3
West Indies	..	..	..	..	..	..	..	..	..	..	..	..	..
Lithuania	4	..	4	..	..	..	..	..	..	..	4	..	4
China	1	5	6	..	1	1	..	..	..	..	1	6	7
South America	..	..	..	..	..	..	..	..	..	1	1	..	1
Spain	..	..	..	..	..	..	..	..	..	2	2	..	2
Ceylon	..	..	..	1	..	1	..	..	..	..	1	..	1
Unknown	24	4	28	4	6	10	1	..	1	5	34	10	44
Totals	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443

TABLE XCII
DISTRICTS WHENCE PATIENTS WERE RECEIVED DURING THE YEAR ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
Northern and North-Western	16	21	37	..	..	..	6	1	7	96	118	22	140
Central	8	25	33	1	2	3	5	2	7	..	14	29	43
Southern and South-Western	453	494	947	136	138	274	28	11	39	..	617	643	1,260
Totals ..	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443

TABLE XCIII
GENERAL CLASSIFICATION OF OCCUPATIONS OF PATIENTS ADMITTED DURING THE YEAR ENDED 30TH JUNE, 1960

Occupations	Brisbane Mental Hospital			Toowoomba Mental Hospital			Ipswich Mental Hospital			Mosman Hall, Charters Towers	Totals		
	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Fe-males	Totals	Males	Males	Fe-males	Totals
Rural Industries ..	32	2	34	28	..	28	..	..	..	16	76	2	78
Secondary Industries, Trades, &c.—													
Building Construction ..	14	..	14	25	..	25	..	..	..	7	46	..	46
Machinery and Electrical ..	31	..	31	10	..	10	1	..	1	4	46	..	46
Foodstuffs, Meat, &c. ..	14	6	20	4	..	4	..	..	..	4	22	6	28
Clothing, Retail, &c. ..	4	14	18	..	2	2	..	..	..	..	4	16	20
Mining	3	..	3	..	..	..	..	..	..	2	5	..	5
Transport	15	..	15	10	..	10	1	..	1	5	31	..	31
Clerical	14	15	29	3	4	7	1	..	1	3	21	19	40
Domestic Employment	..	329	329	..	113	113	..	..	..	..	..	442	442
Private Employment	5	..	5	2	..	2	..	..	..	1	8	..	8
Miscellaneous Employment ..	151	14	165	20	..	20	5	..	5	27	203	14	217
No Occupation, and Pensioners ..	158	141	299	32	17	49	2	1	3	17	209	159	368
Professions	21	16	37	2	2	4	..	..	..	..	23	18	41
Children	15	3	18	1	2	3	28	13	41	1	45	18	63
Unknown	..	..	..	..	..	..	1	..	1	9	10	..	10
Totals ..	477	540	1,017	137	140	277	39	14	53	96	749	694	1,443

TABLE XCIV
AGE GROUPS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES, OR DEATHS OCCURRED DURING THE YEAR, AND THOSE WHO REMAINED IN THE HOSPITAL ON 30TH JUNE, 1960

Age Group	Admissions			* Discharges						Deaths			Remaining		
				Recovered			Relieved and not Improved								
	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total
BRISBANE MENTAL HOSPITAL															
Under 5 years	..	..	..	..	..	..	3	..	3	..	..	..	22	..	22
5 years and under 10 years	4	..	4	..	..	..	7	4	11	..	..	..	33	4	37
10 years and under 15 years	8	5	13	2	..	2	..	..	..	..	..	..	..	..	..
15 years and under 20 years	29	19	48	7	1	8	13	19	32	2	..	2	58	28	86
20 years and under 30 years	72	64	136	21	11	32	46	41	87	4	2	6	148	88	236
30 years and under 40 years	100	102	202	47	25	72	42	75	117	3	3	6	251	189	440
40 years and under 50 years	79	105	184	30	42	72	32	62	94	3	5	8	287	249	536
50 years and under 60 years	53	86	139	14	44	58	32	55	87	7	5	12	259	238	497
60 years and under 70 years	47	62	109	12	25	37	52	82	134	12	19	31	133	157	290
70 years and under 80 years	60	58	118	5	8	13	65	66	131	28	30	58	37	91	128
80 years and under 90 years	21	30	51	1	3	4	27	26	53	12	22	34	3	30	33
90 years and over	4	8	12	..	..	..	5	10	15	1	3	4	..	2	2
Unknown	..	1	1	..	..	..	..	..	..	..	..	..	1	1	2
Totals, Brisbane Mental Hospital	477	540	1,017	139	159	298	324	440	764	72	89	161	1,232	1,077	2,309
TOOWOOMBA MENTAL HOSPITAL															
Under 5 years	..	..	..	..	..	..	1	..	1	..	..	..	..	1	1
5 years and under 10 years	1	1	2	..	..	..	..	..	..	..	..	..	5	7	12
10 years and under 15 years	3	4	7	..	..	..	2	1	3	..	..	..	8	12	20
15 years and under 20 years	13	2	15	5	1	6	2	1	3	1	..	1	32	14	46
20 years and under 30 years	23	17	40	16	15	31	9	2	11	1	..	1	25	43	68
30 years and under 40 years	29	29	58	16	25	41	11	9	20	3	1	4	82	62	144
40 years and under 50 years	23	20	43	12	14	26	3	1	4	..	3	3	111	109	220
50 years and under 60 years	19	24	43	8	17	25	2	8	10	7	5	12	151	155	306
60 years and under 70 years	9	17	26	4	9	13	12	27	39	6	8	14	111	122	233
70 years and under 80 years	10	13	23	4	8	12	8	8	16	8	8	16	51	51	102
80 years and under 90 years	7	9	16	..	..	..	7	7	14	4	8	12	12	5	17
90 years and over	..	2	2	..	..	..	..	..	..	1	1	2	1	1	2
Unknown	..	2	2	..	1	1	..	..	..	..	..	..	5	3	8
Totals, Toowoomba Mental Hospital ..	137	140	277	65	90	155	57	64	121	31	34	65	594	585	1,179
IPSWICH MENTAL HOSPITAL															
Under 5 years	15	5	20	..	..	..	4	6	10	1	2	3	21	11	32
5 years and under 10 years	8	6	14	..	..	..	2	..	2	6	1	7	36	47	83
10 years and under 15 years	4	2	6	..	..	..	1	..	1	2	1	3	26	41	67
15 years and under 20 years	4	..	4	..	..	..	..	1	1	..	..	..	30	23	53
20 years and under 30 years	2	..	2	..	..	..	..	1	1	..	2	2	30	29	59
30 years and under 40 years	3	..	3	2	..	2	..	..	..	..	..	..	28	9	37
40 years and under 50 years	1	1	2	1	..	1	..	1	1	..	..	1	34	17	51
50 years and under 60 years	1	..	1	..	..	..	1	1	2	..	..	..	56	21	77
60 years and under 70 years	..	..	..	..	..	..	..	..	..	1	1	2	63	19	82
70 years and under 80 years	1	..	1	1	..	1	2	..	2	2	2	4	26	8	34
80 years and under 90 years	..	..	..	..	..	..	1	..	1	1	..	1	5	2	7
90 years and over	..	..	..	..	..	..	..	..	..	..	..	..	1	1	2
Unknown	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals, Ipswich Mental Hospital	39	14	53	4	..	4	11	10	21	14	9	23	356	228	584
MOSMAN HALL															
Under 5 years	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
5 years and under 10 years	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
10 years and under 15 years	1	..	1	..	..	..	..	..	..	..	..	..	2	..	2
15 years and under 20 years	..	..	..	1	..	1	..	..	..	..	..	..	2	..	2
20 years and under 30 years	13	..	13	9	..	9	4	..	4	..	..	..	23	..	23
30 years and under 40 years	25	..	25	23	..	23	1	..	1	1	..	1	46	..	46
40 years and under 50 years	21	..	21	20	..	20	4	..	4	1	..	1	36	..	36
50 years and under 60 years	12	..	12	7	..	7	2	..	2	1	..	1	34	..	34
60 years and under 70 years	12	..	12	3	..	3	1	..	1	2	..	2	26	..	26
70 years and under 80 years	6	..	6	1	..	1	1	..	1	3	..	3	15	..	15
80 years and under 90 years	3	..	3	1	..	1	..	..	..	3	..	3	5	..	5
90 years and over	1	..	1	..	..	..	..	..	..	..	..	..	1	..	1
Unknown	2	..	2	1	..	1	2	..	2	..	..	..	..	..	..
Totals, Mosman Hall, Charters Towers ..	96	..	96	66	..	66	15	..	15	11	..	11	190	..	190
Grand Totals, All Hospitals	749	694	1,443	274	249	523	407	514	921	128	132	260	2,372	1,890	4,262

*For the purposes of this Table patients discharged under Section 49 (3) and voluntarily left have been classified under headings shown.

TABLE XCV

MARITAL STATUS OF PATIENTS WHOSE ADMISSIONS, DISCHARGES AND DEATHS OCCURRED DURING THE YEAR
AND OF PATIENTS WHO REMAINED IN HOSPITAL ON 30TH JUNE, 1960

Marital Status	Admissions			*Discharges						Deaths			Remaining		
				Recovered			Relieved and not Improved								
	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total	Males	Fe- males	Total
BRISBANE MENTAL HOSPITAL															
Single	257	158	415	73	31	104	186	137	323	26	23	49	951	525	1,476
Married	174	255	429	59	106	165	98	199	297	33	26	59	242	418	660
Widowed	38	111	149	6	17	23	37	98	135	13	38	51	15	108	123
Divorced	5	15	20	1	5	6	3	6	9	..	2	2	10	21	31
Unknown	3	1	4	..	..	..	..	..	..	..	..	..	14	5	19
Totals, Brisbane Mental Hospital	477	540	1,017	139	159	298	324	440	764	72	89	161	1,232	1,077	2,309
TOOWOOMBA MENTAL HOSPITAL															
Single	70	28	98	28	8	36	34	22	56	21	15	36	496	332	828
Married	54	91	145	33	73	106	17	28	45	6	6	12	70	199	269
Widowed	10	20	30	3	8	11	6	13	19	3	12	15	12	36	48
Divorced	2	..	2	1	..	1	..	1	1	1	1	2	5	14	19
Unknown	1	1	2	..	1	1	..	..	..	..	..	..	11	4	15
Totals, Toowoomba Mental Hospital	137	140	277	65	90	155	57	64	121	31	34	65	594	585	1,179
IPSWICH MENTAL HOSPITAL															
Single	35	14	49	3	..	3	10	9	19	13	6	19	306	193	499
Married	1	..	1	..	..	..	1	..	1	1	1	2	32	23	55
Widowed	2	..	2	1	..	1	..	1	1	..	1	1	6	5	11
Divorced	..	..	..	..	..	..	..	..	..	..	1	1	4	6	10
Unknown	1	..	1	..	..	..	..	..	..	..	..	..	8	1	9
Totals, Ipswich Mental Hospital	39	14	53	4	..	4	11	10	21	14	9	23	356	228	584
MOSMAN HALL															
Single	54	..	54	41	..	41	9	..	9	5	..	5	150	..	150
Married	27	..	27	16	..	16	4	..	4	3	..	3	25	..	25
Widowed	10	..	10	4	..	4	1	..	1	3	..	3	11	..	11
Divorced	2	..	2	3	..	3	1	..	1	..	..	..	1	..	1
Unknown	3	..	3	2	..	2	..	..	..	..	..	..	3	..	3
Totals, Mosman Hall, Charters Towers	96	..	96	66	..	66	15	..	15	11	..	11	190	..	190
Grand Totals, all Hospitals	749	694	1,443	274	249	523	407	514	921	128	132	260	2,372	1,890	4,262

* For the purposes of this Table patients discharged under Section 49 (3) and voluntarily left have been classified under headings shown.

TABLE XCVI

LENGTH OF RESIDENCE IN THE HOSPITAL OF THE PATIENTS WHO WERE DISCHARGED OR WHO DIED DURING THE YEAR AND OF THOSE WHO REMAINED ON THE BOOKS OF THE HOSPITAL ON 30TH JUNE, 1960

	*Discharges						Deaths			Remaining		
	Recovered			Relieved and not improved								
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
BRISBANE MENTAL HOSPITAL												
Under 1 month	17	6	23	25	24	49	22	10	32	36	44	80
1 month and under 3 months	49	59	108	67	94	161	9	18	27	65	66	131
3 months and under 6 months	40	48	88	62	93	155	6	11	17	71	93	164
6 months and under 9 months	9	12	21	28	29	57	7	6	13	52	64	116
9 months and under 12 months	5	7	12	18	22	40	4	5	9	42	51	93
1 year and under 2 years	6	15	21	36	62	98	5	10	15	113	118	231
2 years and under 3 years	8	4	12	18	22	40	4	8	12	81	69	150
3 years and under 5 years	1	2	3	16	22	38	2	4	6	125	99	224
5 years and under 7 years	1	3	4	6	15	21	2	7	9	110	59	169
7 years and under 10 years	..	3	3	6	11	17	1	4	5	130	80	210
10 years and under 12 years	2	..	2	2	6	8	1	1	2	63	45	108
12 years and under 15 years	..	..	..	4	21	25	..	1	1	78	76	154
15 years and under 20 years	1	..	1	7	7	14	3	3	6	101	82	183
20 years and over	..	..	..	29	12	41	6	1	7	165	131	296
Totals, Brisbane Mental Hospital ..	139	159	298	324	440	764	72	89	161	1,232	1,077	2,309
TOOWOOMBA MENTAL HOSPITAL												
Under 1 month	11	6	17	15	5	20	5	6	11	7	12	19
1 month and under 3 months	29	30	59	9	5	14	1	1	2	10	19	29
3 months and under 6 months	14	17	31	9	6	15	..	1	1	13	11	24
6 months and under 9 months	3	13	16	4	3	7	1	3	4	15	13	28
9 months and under 12 months	2	8	10	1	3	4	1	1	2	9	11	20
1 year and under 2 years	4	10	14	3	5	8	..	5	5	28	32	60
2 years and under 3 years	1	2	3	3	2	5	..	2	2	17	24	41
3 years and under 5 years	..	1	1	2	1	3	2	1	3	35	33	68
5 years and under 7 years	1	..	1	2	1	3	1	2	3	34	28	62
7 years and under 10 years	..	2	2	1	1	2	1	1	2	41	42	83
10 years and under 12 years	..	..	..	..	4	4	1	1	2	32	24	56
12 years and under 15 years	..	..	..	..	2	2	2	1	3	48	50	98
15 years and under 20 years	..	1	1	1	3	4	3	1	4	69	72	141
20 years and over	..	..	..	7	23	30	13	8	21	236	214	450
Totals, Toowoomba Mental Hospital	65	90	155	57	64	121	31	34	65	594	585	1,179
IPSWICH MENTAL HOSPITAL												
Under 1 month	..	..	..	1	..	1	..	..	..	6	..	6
1 month and under 3 months	..	..	..	..	1	1	..	..	..	6	1	7
3 months and under 6 months	2	..	2	1	1	2	3	..	3	6	3	9
6 months and under 9 months	..	..	..	1	2	3	3	..	3	4	3	7
9 months and under 12 months	..	..	..	2	1	3	1	..	1	8	5	13
1 year and under 2 years	2	..	2	1	1	2	..	1	1	20	26	46
2 years and under 3 years	..	..	..	1	..	1	1	1	2	21	16	37
3 years and under 5 years	..	..	..	..	1	1	2	1	3	29	18	47
5 years and under 7 years	..	..	..	1	..	1	..	1	1	28	20	48
7 years and under 10 years	..	..	..	..	..	..	..	..	..	48	34	82
10 years and under 12 years	..	..	..	..	..	..	..	1	1	13	18	31
12 years and under 15 years	..	..	..	..	1	1	..	..	..	29	11	40
15 years and under 20 years	..	..	..	..	2	2	1	1	2	51	32	83
20 years and over	..	..	..	3	..	3	3	3	6	87	41	128
Totals, Ipswich Mental Hospital ..	4	..	4	11	10	21	14	9	23	356	228	584
MOSMAN HALL												
Under 1 month	4	..	4	5	..	5	..	..	..	7	..	7
1 month and under 3 months	30	..	30	4	..	4	1	..	1	12	..	12
3 months and under 6 months	19	..	19	2	..	2	..	..	..	11	..	11
6 months and under 9 months	8	..	8	1	..	1	3	..	3	14	..	14
9 months and under 12 months	3	..	3	1	..	1	1	..	1	6	..	6
1 year and under 2 years	1	..	1	1	..	1	2	..	2	17	..	17
2 years and under 3 years	..	..	..	1	..	1	1	..	1	18	..	18
3 years and under 5 years	..	..	..	..	..	..	3	..	3	26	..	26
5 years and under 7 years	..	..	..	..	..	..	..	..	..	28	..	28
7 years and under 10 years	1	..	1	..	..	..	..	..	..	16	..	16
10 years and under 12 years	..	..	..	..	..	..	..	..	..	7	..	7
12 years and under 15 years	..	..	..	..	..	..	..	..	..	9	..	9
15 years and under 20 years	..	..	..	..	..	..	..	..	..	7	..	7
20 years and over	..	..	..	..	..	..	..	..	..	12	..	12
Totals, Mosman Hall, Charters Towers ..	66	..	66	15	..	15	11	..	11	190	..	190
Grand Totals, all Hospitals	274	249	523	407	514	921	128	132	260	2,372	1,890	4,262

* For the purposes of this Table patients discharged under Section 49 (3) and voluntarily left have been classified under headings shown.

TABLE XCVII

POPULATION CHANGES AT EPILEPTIC HOME DURING THE YEAR 1959-60
 PATIENTS AT 30TH JUNE, 1959: MALES 47; FEMALES 54; TOTAL 101
 FOR YEAR ENDED 30TH JUNE, 1960

Age	Admitted		Discharged		To Ment. Hosp.		Deaths		Remaining		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Total
Under 5 years	..	..	..	..	..	..	..	..	..	..	..
5—10 years	..	..	..	..	..	..	..	..	..	..	..
10—15 years	2	1	1	..	..	..	..	..	3	5	8
15—20 years	3	1	..	..	1	..	..	..	9	6	15
20—25 years	..	1	..	..	..	..	..	..	9	6	15
25—30 years	..	..	..	..	..	..	..	..	5	5	10
30—35 years	..	..	..	..	..	..	..	..	9	1	10
35—40 years	..	..	..	..	..	..	..	..	4	6	10
40—45 years	..	1	..	1	..	..	..	..	..	7	7
45—50 years	..	..	..	..	..	..	..	..	3	6	9
50—55 years	..	..	..	..	..	..	1	..	4	6	10
55—60 years	..	1	..	..	..	..	..	..	1	4	5
60—65 years	..	..	..	..	..	..	..	2	..	2	2
Over 65 years	..	..	1	2	..	..	..	..	1	..	1
Totals	5	5	2	3	1	..	1	2	48	54	102

PATIENTS RESIDENT—

Under 5 years	22
5—10 years	18
10—15 years	26
15—20 years	12
Over 20 years	24
	102

CAUSES OF DEATH—

Female aged 61. Cerebral Thrombosis, Epileptic Psychosis, Chronic Enteritis.

Female aged 60. Myocardial Degeneration, Chronic Epilepsy.

Male aged 50. Pneumonia.

TABLE XCVIII

EXPENDITURE TABLE, EPILEPTIC HOME, FOR THE TWELVE MONTHS ENDED 30TH JUNE, 1960
 Average Number Daily Resident—102

	£	s.	d.
Gross Expenditure	39,304	11	8
Collections	12,640	7	8
Net Expenditure	26,664	4	0
Gross Cost per patient per annum	385	6	9
Net Cost per patient per annum	261	8	3
Gross Cost per patient per week	7	8	2
Net Cost per patient per week	5	0	7

TABLE XCIX

SHOWING ADMISSIONS, DISCHARGES, AND DEATHS AT THE WACOL REPATRIATION PAVILION DURING THE YEAR ENDED 30TH JUNE, 1960

Total number of patients on books as at 30th June, 1959	107	Total number of patients on books as at 30th June, 1960	103
Transferred from Brisbane Mental Hospital	61	Total number of patients on leave as at 30th June, 1960	4
Transferred from Ipswich Mental Hospital	1		
Admitted	2		
	171	Total number of patients in residence as at 30th June, 1960	99
Discharged, recovered	3	Average number of patients daily resident	97
Discharged, relieved	6		
Discharged, not improved	3		
Voluntarily left	4		
Died on leave	1		
Transferred to Brisbane Mental Hospital	47		
Transferred to Toowoomba Mental Hospital	1		
Discharged (Section 50 (8), 49 (3)), Mental Hygiene Act	3		
	68		

TABLE C

EXPENDITURE TABLE FOR THE FINANCIAL YEAR ENDED 30TH JUNE, 1960

	Brisbane Mental Hospital	Toowoomba Mental Hospital	Ipswich Mental Hospital	Mosman Hall, Charters Towers	Total and Average Costs
Average Number Daily Resident	2,098	1,139	584	175	3,996
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
Total Expenditure	1,181,085 3 1	480,154 14 3	406,309 1 9	124,945 4 8	2,192,494 3 9
Sales	6,389 6 3	2,958 18 9	2,140 12 5	7 15 0	11,496 12 5
Collections	56,775 18 0	4,313 9 5	2,140 4 3	1,538 1 10	64,767 13 6
Net Expenditure	1,117,919 18 10	472,882 6 1	402,028 5 1	123,399 7 10	2,116,229 17 10
					Average Costs
Gross Cost per Patient per annum	562 19 2	421 11 2	695 14 8	713 19 5	548 13 5
Net Cost per Patient per annum	532 17 0	415 3 5	688 8 1	705 2 9	529 11 9
Gross Cost per Patient per week	10 16 6	8 2 2	13 7 7	13 14 7	10 11 0
Net Cost per Patient per week	10 4 11	7 19 8	13 4 9	13 11 2	10 3 8

TABLE CI

STATEMENT SHOWING EXPENDITURE BY THE DEPARTMENT OF PUBLIC WORKS AT MENTAL HOSPITALS AND THE EPILEPTIC HOME DURING THE FINANCIAL YEAR ENDED 30TH JUNE, 1960

Place	Expenditure 1959-60		
	Revenue Fund	Loan Fund	Total
	£ s. d.	£ s. d.	£ s. d.
Mental Hospitals—			
Brisbane (Excluding Hospital)	16,904 9 8	62,814 5 10	79,718 15 6
Charters Towers	2,335 13 9	20,583 9 11	22,919 3 8
Ipswich	732 15 11	98,371 3 7	99,103 19 6
Toowoomba	8,552 11 0	57,115 1 10	65,667 12 10
Epileptic Home—			
Toowoomba	630 18 11	12 9	631 11 8
	£29,156 9 3	£238,884 13 11	£268,041 3 2

DETAILS OF EXPENDITURE ON MAJOR WORKS—MENTAL HOSPITALS

		Expenditure 1959-60
		£ s. d.
Brisbane	Erection of new General Store	28,466 11 0
	Fitters and Mechanics Workshops	3,915 11 0
	Two Residences for Medical Officers	12,095 15 7
	Repairs to Roofs—Male Wards	2,851 11 9
	Sealing to Roadways—Female Division	2,201 5 0
Ipswich	Erection of New Ward for Females	26,134 19 10
	Additions to Nurses Quarters	19,000 12 11
	Additions and Alterations to Main Kitchen	14,305 2 5
	Road Works	11,417 18 3
	Additions and Alterations to Male Ward 3	8,655 4 8
	Improvements to Water Supply	8,277 17 1
	Medical Officers Residence	3,610 9 3
Charters Towers	Erection of Convalescent Ward	15,170 10 3
Toowoomba	Improvements to Sculleries, Bathrooms and Lavatory Accommodation	52,708 4 0

TABLE CII
PSYCHIATRIC CLINIC
SUMMARY OF NEW PATIENTS REGISTERED DURING THE YEAR 1959-1960

	0-4		5-9		10-14		15-19		20-29		30-39		40-49		50-59		60 and over		Totals		Totals
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Schizophrenia	..	..	..	..	..	..	10	5	24	15	26	22	14	17	7	13	3	5	84	77	161
Manic Depressive Reactions	..	..	..	..	..	..	..	..	2	1	7	3	4	6	10	3	7	13	30	43	
Involuntary Melancholia	..	..	..	..	..	..	..	..	..	..	..	..	3	1	3	..	2	1	8	9	
Paranoia and Paranoid States	..	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	1	1	5	1	6
Senile Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	9	4	9	13
Organic Psychosis	..	..	..	..	..	..	..	1	..	..	..	1	2	..	..	1	..	3	2	5	
Alcoholic and Drug Addiction Psychosis	..	..	..	..	..	..	..	..	..	1	1	2	..	1	..	..	1	4	2	6	
																			114	129	243
Psychoneurosis	..	..	..	..	1	1	2	4	4	12	11	25	5	19	5	8	..	5	28	74	102
Psychoneurosis with Psychosomatic Symptomatology	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	2	2	
Obsessive Compulsive Reactions	..	..	..	..	1	..	..	..	..	..	3	..	2	2	..	..	..	6	2	8	
																			34	78	112
Immature Personalities	..	..	5	2	1	2	4	6	5	4	8	7	3	1	..	1	..	1	26	24	50
Pathological Personalities	..	..	..	..	2	1	5	5	18	8	15	5	10	1	2	1	2	..	54	21	75
Organic	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	1	2	2	4	
Primary Childhood Behaviour Disorders	3	2	14	5	13	10	4	4	..	..	..	..	..	..	..	..	..	34	21	55	
																			116	68	184
Epilepsy	1	..	1	..	..	..	2	1	..	1	..	..	..	..	..	..	..	4	2	6	
Physical Only	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	1	
Mental Deficiency	1	..	3	2	5	1	2	..	..	1	2	..	2	1	1	..	..	14	7	21	
Borderline Mental Deficiency	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	
																			15	7	22
Marriage Problems	..	..	..	..	..	..	..	..	1	..	6	..	1	..	..	..	..	..	8	8	
Stammering	2	..	10	1	4	1	1	..	3	..	..	1	..	..	..	..	..	21	2	23	
Alalia	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	
Dyslalia and Retarded Speech Development	19	4	7	5	1	..	..	2	..	..	..	..	..	..	..	..	..	29	9	38	
Cleft Palate	..	1	..	..	1	..	..	..	1	..	..	..	..	..	..	..	..	1	2	3	
Aphasia and Dysphasia	..	..	..	..	..	..	..	..	..	2	..	..	..	..	1	..	..	1	2	3	
Dysarthria	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	
Laryngectomy	..	..	..	..	..	..	..	..	..	..	..	1	..	..	2	..	..	3	..	3	
Deafness and Partial Deafness	1	..	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	2	1	3	
																			58	17	75
N.A.D.	..	..	..	..	1	1	1	2	..	..	1	..	1	1	1	..	..	5	4	9	
Not Yet Diagnosed	1	..	1	..	1	..	1	..	..	3	1	..	1	..	..	1	..	7	3	10	
Totals	28	8	42	16	30	18	31	28	58	45	75	77	46	54	27	37	17	33	354	316	670

TABLE CIII
SOURCES OF REFERRAL OF PATIENTS TO PSYCHIATRIC CLINIC, YEAR ENDED 30TH JUNE, 1960

	Male	Female	Totals
Personal	93	96	189
Commonwealth Government Departments	15	10	25
State Government Departments—			
(a) Justice Department	59	3	62
(b) Others	42	28	70
Medical Practitioners	37	42	79
General and Mental Hospitals	95	127	222
Others	13	10	23
Totals	354	316	670

TABLE CIV

SUMMARY OF PATIENTS CONTINUING IN TREATMENT FROM THE PREVIOUS YEAR, 1958-1959, INTO
THE CURRENT YEAR, 1959-1960

	0-4		5-9		10-14		15-19		20-29		30-39		40-49		50-59		60 and over		Totals		Totals
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Schizophrenia	..	..	1	..	..	..	2	4	5	4	7	6	5	1	3	..	1	16	23	39	
Manic-Depressive Reactions	..	..	..	..	..	..	..	1	1	1	1	1	2	..	3	..	1	3	8	11	
Involutional Melancholia	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	1	
Senile Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	4	4	
Organic Psychosis	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	
Alcoholic and Drug Addiction Psychosis	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	
Other Psychoses	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	1	
																		20	38	58	
Psychoneurosis	..	..	..	..	1	..	..	1	3	4	8	5	13	1	1	1	1	13	26	39	
Immature Personalities	..	1	2	5	7	1	3	1	..	..	1	..	..	..	..	..	..	13	8	21	
Pathological Personalities	..	..	..	..	..	..	3	1	1	1	2	1	..	1	..	2	..	6	6	12	
Primary Childhood Behaviour Disorders	2	2	8	6	11	2	3	5	..	..	..	..	..	..	..	..	..	24	15	39	
																		43	29	72	
Epilepsy	..	..	1	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	1	2	
Mental Deficiency	..	2	1	1	1	1	2	..	..	..	..	..	..	..	..	..	..	4	4	8	
Borderline Mental Deficiency	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	
																		5	4	9	
Marriage Problems	..	..	..	..	..	..	..	..	..	1	2	..	..	..	..	..	..	1	2	3	
Stammering	..	2	1	..	7	1	..	..	1	..	..	..	..	..	..	..	..	9	3	12	
Dyslalia and Retarded Speech Development	1	1	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	7	2	9	
Cleft Palate	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	1	2	
Aphasia and Dysphasia	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	..	2	..	2	
Dysarthria	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	1	..	2	..	2	
Deafness and Partial Deafness	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	1	
																		21	7	28	
Totals	3	8	22	13	27	6	11	9	10	13	13	19	13	22	3	9	2	8	104	107	211

TABLE CV

SUMMARY OF PATIENTS DISCHARGED IN PREVIOUS YEARS WHO HAVE RECEIVED TREATMENT
IN THE CURRENT YEAR, 1959-1960

	0-4		5-9		10-14		15-19		20-29		30-39		40-49		50-59		60 and over		Totals		Totals
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	
Schizophrenia	..	..	..	..	..	..	2	2	10	8	15	22	12	21	8	17	..	6	47	76	123
Manic-Depressive Reactions	..	..	..	..	..	..	..	..	..	..	2	2	1	6	3	11	4	7	10	26	36
Involuntional Melancholia	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	3	..	..	..	4	4
Paranoia and Paranoid States	..	..	..	..	..	..	..	..	..	..	..	1	1	3	..	1	..	..	1	5	6
Senile Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	..	..	6	6
Organic Psychosis	..	..	..	..	..	..	..	1	..	1	1	..	..	1	2	..	2	..	3	5	8
Alcoholic and Drug Addiction Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1
																		62	122		184
Psychoneurosis	..	..	..	..	..	1	..	2	..	9	9	14	5	16	5	8	1	8	20	58	78
Psychoneurosis with Psychosomatic Symptomatology	..	..	..	..	1	..	..	..	..	..	..	1	..	..	..	..	1	1	1	2	3
Obsessive Compulsive Reactions	..	..	..	..	..	..	..	..	1	..	..	2	..	1	..	1	..	..	1	4	5
																		22	64		86
Immature Personalities	..	..	2	3	7	2	1	1	1	1	2	2	..	1	..	..	..	..	13	10	23
Pathological Personalities	..	..	..	..	2	..	3	2	6	..	4	2	..	..	1	..	..	..	16	4	20
Organic	..	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	1	1	2
Primary Childhood Behaviour Disorders	..	..	13	7	16	11	16	6	..	..	..	..	..	..	..	..	..	..	45	24	69
																		75	39		114
Epilepsy	..	..	1	..	1	..	2	3	4	..	3	5	..	3	..	..	..	..	11	11	22
Physical Only	..	..	..	..	..	..	1	..	..	..	..	..	..	..	1	..	..	..	1	1	2
Mental Deficiency	..	..	4	3	6	1	..	..	6	1	4	2	1	2	..	..	..	..	21	9	30
Borderline Mental Deficiency	..	..	1	..	3	..	..	..	2	..	..	..	..	..	..	..	..	..	4	2	6
																		25	11		36
Stammering	..	..	6	..	9	2	4	..	5	1	1	..	..	..	1	..	..	..	26	3	29
Dyslalia and Retarded Speech Development	2	..	21	9	5	3	..	..	..	..	..	..	..	..	..	..	..	..	28	12	40
Cleft Palate	1	..	4	4	1	1	..	..	..	..	..	..	..	..	..	..	..	..	6	5	11
Deafness and Partial Deafness	..	..	..	..	1	..	2	..	..	..	..	..	..	..	..	..	..	..	3	..	3
Signatism	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1
																		63	21		84
Totals	3	..	52	27	53	21	31	17	34	22	41	54	21	54	19	44	5	30	259	269	528

Total number of all patients who have received treatment during the year 1959-1960—

Table CII	670
Table CIV	211
Table CV	528
Grand Total	1,409

Total number of consultations, excluding speech therapy—4,626.

TABLE CVI

FORENSIC CLINIC—ANALYSIS OF EXAMINATIONS OF PATIENTS (ALREADY INCLUDED IN PREVIOUS TABLES)
REFERRED BY OR THROUGH THE DEPARTMENT OF JUSTICE

														15-19		20-29		30-39		40-49		50-59		60 and over		Totals		Totals	
														M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.
Parole Board																													
Schizophrenia	..	..	..	..	1	..	..	..	2	..	..	..	..	..	..	3	..	3	..	..	..	..	..	..	..	..	..	..	
Manic-Depressive Reactions	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	
Senile Psychosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Alcoholic and Drug Addiction	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	
Psychosis	..	..	2	..	2	..	4	..	1	..	..	..	..	..	..	9	..	9	..	..	..	..	..	..	..	..	..	..	
Immature Personalities	..	..	..	7	..	8	1	6	..	..	..	..	1	..	..	22	1	23	..	..	..	..	..	..	..	..	..	..	
Pathological Personalities	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	
Mental Deficiency	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	
No Psychiatric Abnormality	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Totals	..	..	2	..	11	..	14	1	10	..	1	..	2	..	2	..	40	1	41	..	..	..	..	..	..	..	..	..	
Pre-Sentence Reports																													
Schizophrenia	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Pathological Personalities	..	..	2	..	1	..	..	..	2	..	1	..	..	..	6	..	6	..	..	..	..	..	..	..	..	..	..	..	
Totals	..	..	2	..	1	..	..	..	2	..	2	..	..	..	7	..	7	..	..	..	..	..	..	..	..	..	..	..	
Police and Probation Officer Referrals																													
Schizophrenia	..	..	1	..	2	..	1	..	..	..	..	..	..	..	4	..	4	..	..	..	..	..	..	..	..	..	..	..	
Psychoneurosis	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Immature Personalities	..	..	..	..	1	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Pathological Personalities	..	..	1	..	1	..	..	..	..	1	..	1	..	4	..	4	..	4	..	..	..	..	..	..	..	..	..	..	
Organic	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Primary Childhood Behaviour Disorders	..	..	2	1	..	..	..	..	..	..	..	..	..	..	2	1	3	..	..	..	..	..	..	..	..	..	..	..	
Totals	..	..	4	2	3	1	2	..	..	1	..	1	..	1	..	11	3	14	..	..	..	..	..	..	..	..	..	..	
Prison Referrals																													
Schizophrenia	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Paranoia and Paranoid States	..	..	..	..	..	..	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Immature Personalities	..	..	1	..	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Pathological Personalities	..	..	..	..	..	1	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Totals	..	..	2	..	..	1	..	..	..	1	..	..	..	..	4	..	4	..	..	..	..	..	..	..	..	..	..	..	
Examined by Order of Executive Council																													
Schizophrenia	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	
Immature Personalities	..	1	..	..	1	..	..	..	..	..	..	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	
Pathological Personalities	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Epilepsy	..	..	..	1	..	..	..	..	..	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	
Totals	..	1	..	2	2	1	..	..	..	..	..	..	..	..	4	2	6	..	..	..	..	..	..	..	..	..	..	..	
Grand Totals	..	11	2	17	3	18	1	12	..	5	..	3	..	66	6	72	..	..	..	..	..	..	..	..	..	..	..	..	

Number of Consultations at Her Majesty's
Prison 123
Number of Consultations at Psychiatric
Clinic 39
Number of Consultations at Mental Hospitals 9
Total 171

THE DIVISION OF WELFARE AND GUIDANCE

Senior Medical Director: B. J. PHILLIPS, M.B., B.S. (Old), D.P.M. (London)

This is the first annual report of the Division of Welfare and Guidance, which came into existence towards the end of the year 1959 with the completion of a Youth Guidance Centre at 30 Mary Street, Brisbane. Since then a Youth Rehabilitation Hospital has been planned, and at the present time the old Wilson Ophthalmic Hospital is being renovated and converted for this purpose.

The building housing the Guidance Centre at 30 Mary Street was originally the old Queensland Hotel. Prior to conversion to psychiatric uses, the building contained the Medical Board and other Government offices. The Guidance Clinic occupies approximately one-half of the building and the offices of the Department of Mental Hygiene and the Psychiatric Clinic occupy the other half. The Psychiatric Clinic is a useful and co-operative neighbour, and often helps with treatment of the parents of some of the children attending the Guidance Clinic.

The building has been well adapted to the purposes of the clinic by the Department of Public Works. The alterations have been carefully done and the rooms have been tastefully painted and furnished. The provision of a playroom, one-way screens, conference room, and other equipment has put the Guidance Centre among the best of modern clinics.

In August, 1959, Dr. B. J. Phillips, who had been in charge of Child Guidance Clinics and Clinics for Delinquent Youth in Sydney, was appointed Senior Medical Director. Since then two full-time psychiatrists and three part-time medical officers have been added to the staff and appointments have been made of four clinical psychologists and five social workers. A physician, a neurologist and a pediatrician visit this clinic for consultant work on a part-time basis, and the staff also has child guidance nurses, clerk-typists and a library assistant. Part of this staff will be working at Wilson Rehabilitation Hospital when it opens.

The clinics and hospitals which will be used by the Division of Welfare and Guidance are designed for the diagnosis and treatment of emotional and behaviour disorders of children and adolescents. They offer centres where doctors, clergymen, parents or any other person concerned with the care of children can consult an expert for advice on their problems.

Amongst the doctors conducting the Guidance Clinics are psychiatrists who are specializing in the emotional and nervous disorders of children and adolescents. Consulting them is like consulting any other doctor. The doctor will take a history and do an examination of the child and advise treatment.

The doctors conducting the Guidance Clinics need specialized assistance from several sources, and this is the reason for the appointment of

physicians, neurologists and other medical specialists. The psychiatrist may also need the assistance of a profession other than medicine. This is the reason for the appointment of clinical psychologists who do psychological tests and social workers who do social investigation and counselling.

The types of cases accepted for diagnosis and treatment in the Welfare and Guidance Clinics are varied. The cases seen are those suffering from emotional disorders, behaviour disorders, disorders of speech, and educational problems. The types of cases being sent to the clinics are listed in Table CXI. As can be seen, the reasons are many and varied and the range is from mild disturbances of behaviour to gross behaviour disorders and even brain damage.

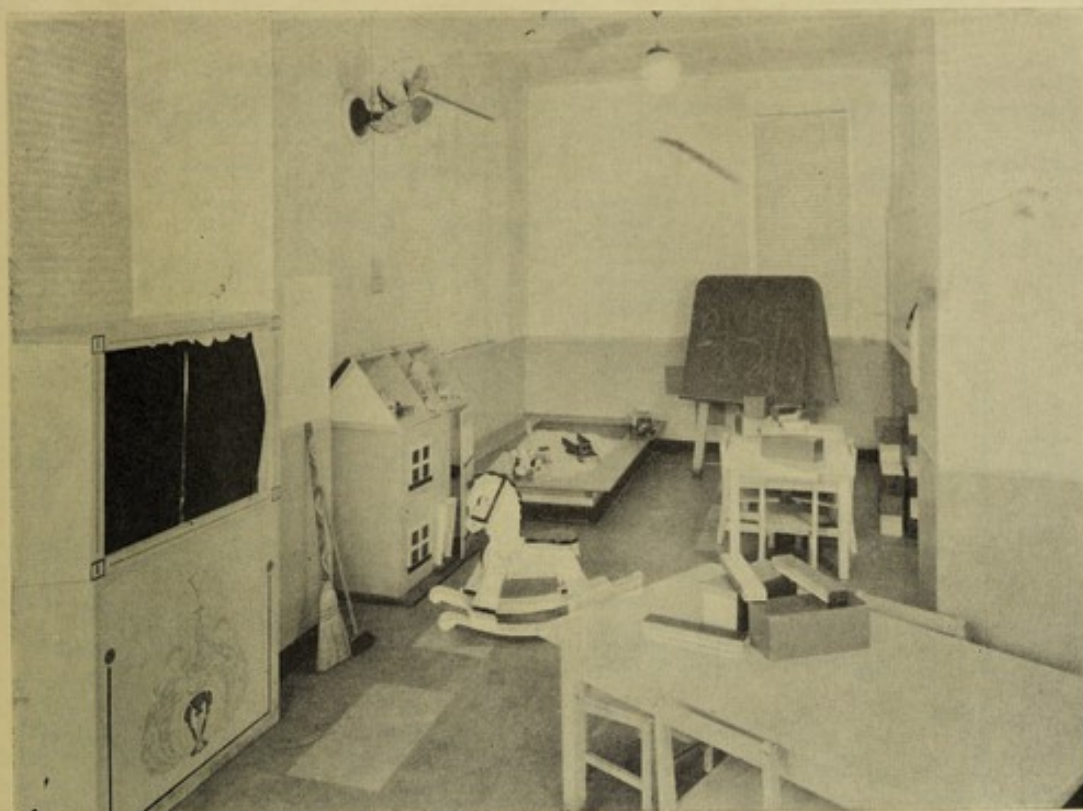
Before the second World War, child guidance was cared for in Queensland, as far as the medical profession was concerned, by general practitioners, pediatricians and adult psychiatrists. Meanwhile, in Britain and America in particular, child guidance was evolving as a separate speciality.

The first Child Guidance Clinics in America were opened in the 1920's, and from this beginning there has been considerable interest in the child's emotional problems. In Australia, Adelaide was one of the first places in the world to have a Child Guidance Clinic and it was established in conjunction with the Children's Court. In Queensland, a Child Guidance Clinic was opened at the Children's Hospital during the second World War, and child psychiatry has been done at the Psychiatric Clinic ever since it first opened.

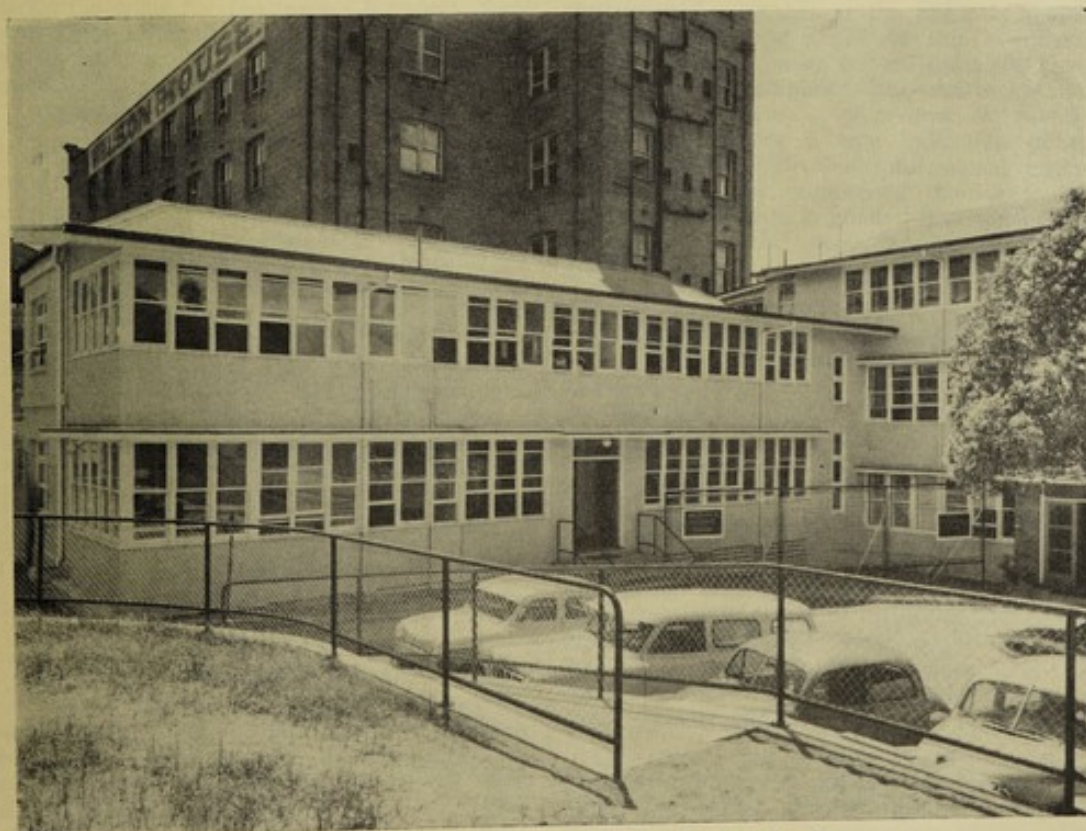
These clinics, however, were not sufficient for the size of the problem, and it has been felt that wider facilities are necessary and will become increasingly necessary as the State grows. Thus evolved the Division of Youth Welfare and Guidance, which is intended to care for the emotional and behaviour problems of youth. The Division of Welfare and Guidance approaches the emotional problems of youth not only by the treatment of established cases but also by preventive methods.

THE MARY STREET CHILD GUIDANCE CENTRE

The Mary Street Clinic began to take patients at the beginning of November, and during the eight (8) months from that time to 30th June the clinic interviewed and treated 641 families. Quite often more than one member of the family is treated in child guidance work, the minimum number being the child himself and one parent. Table CVII. shows the age distribution of the patients seen. It will be noted that about 70 per cent. were in the age range of 5 to 15 years; approximately 20 per cent. were under 5, and only 9 cases were aged 17 or over.



Play Therapy Room, Youth Welfare and Guidance Centre, 30 Mary Street



Youth Welfare and Guidance Centre, 30 Mary Street

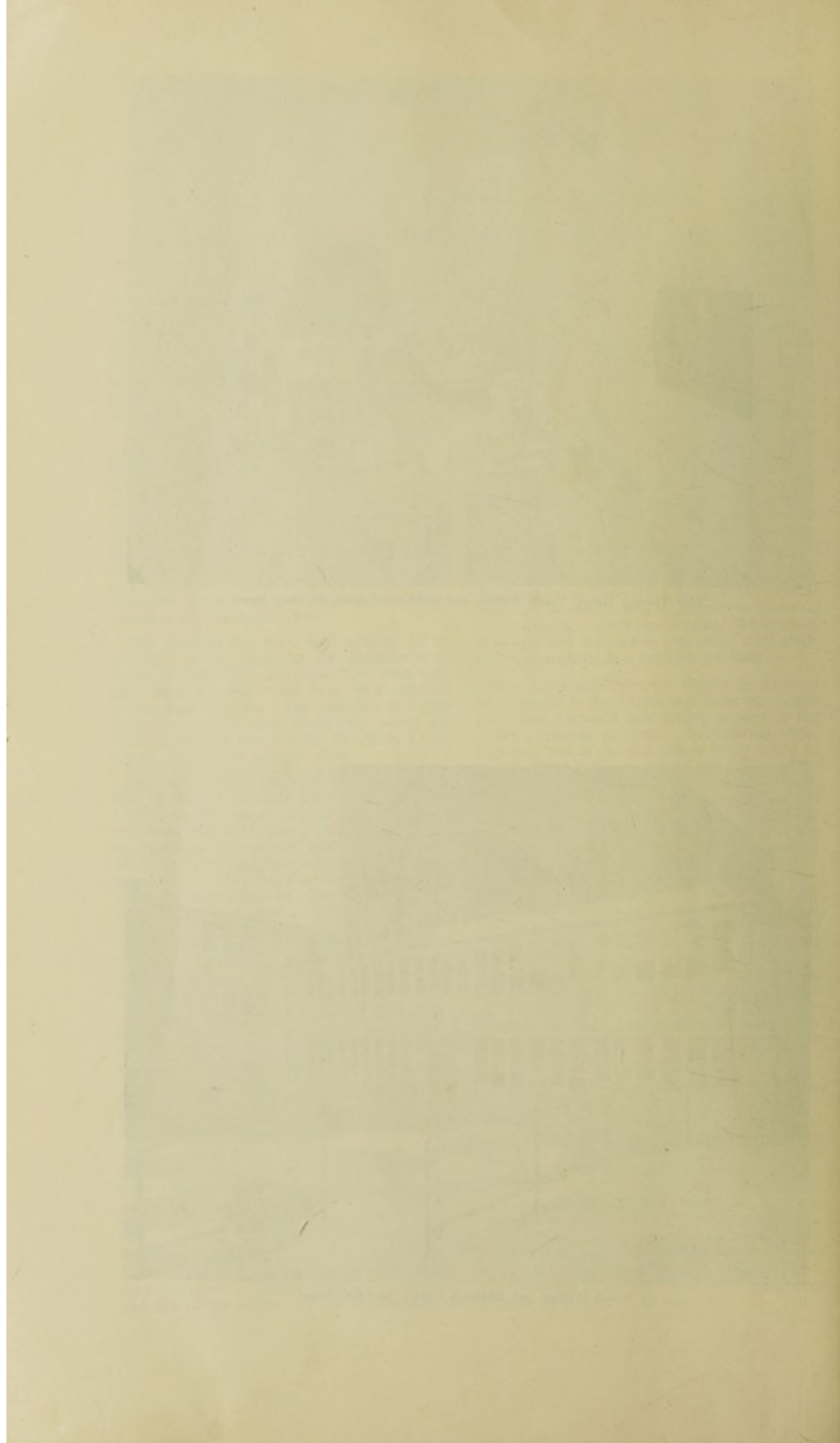


TABLE CVII
SHOWING AGES OF PATIENTS WHO HAVE ATTENDED
MARY STREET CLINIC 1959-60

Years	Numbers	Grouped Numbers
1-2	4	0-4 years .. 121 (18.9%)
2-3	14	
3-4	50	
4-5	53	
5-6	46	5-9 years .. 235 (36.7%)
6-7	38	
7-8	49	
8-9	53	
9-10	49	10-14 years .. 228 (35.6%)
10-11	47	
11-12	61	
12-13	46	
13-14	34	15 years and over .. 57 (8.9%)
14-15	40	
15-16	29	
16-17	19	
17-18	7	
18 and over ..	2	
Totals ..	641	641

The reason for such a large number of patients being seen in such a short time was that the clinic was able to see cases rapidly for some months when there were few old cases for treatment.

As many of the children attending the clinic are given psychological tests, the distribution of intelligence of those tested was recorded and appears in Table CVIII. Altogether 384 children had their I.Q. estimated, and of these, 154 (40 per cent. approximately) were of average intelligence. As will be seen from the table, high intelligence is not a safeguard against emotional or nervous disorder. Quite a few bright children attend the clinic for treatment. However, there were quite a number of mentally defective or border-line defective children among those tested.

TABLE CVIII
SHOWING DISTRIBUTION OF INTELLIGENCE
IN 384 CHILDREN TESTED

I.Q.	Numbers	Wechsler Grouped Numbers	Wechsler Classified
30-40	5	68	Mental Defect
41-50	10		
51-60	17		
61-70	36		
71-80	45	45	Borderline
81-90	73	73	Dull Normal
91-100	88	..	..
101-110	66	154	Average
111-120	31	31	Bright Normal
121-130	10	10	Superior
131-140	1	3	Very Superior
141-150	1		
151-160	1		
Totals ..	384	384	

The source of referral of our patients is interesting. General practitioners and the parents themselves are the most active in seeking help from the clinic. Approximately 42 per cent. are referred by general practitioners or by some official health service. Another 34 per cent. were referred by parents and other relatives or came to the clinic on the suggestion of friends.

TABLE CIX
SHOWING MODES OF REFERRAL OF PATIENTS

Mode	Numbers	Grouped Numbers
Education—		
School	14	62
Pre-School	9	
Disability School	7	
Research and Guidance	22	
Remedial Education Centre	10	
Health—		
General practitioner	127	269
Medical specialist	17	
Psychiatrist	20	
Children's Hospital	47	
Brisbane General Hospital	10	
Maternal and Child Welfare	21	
School Health Services	9	
Red Cross Welfare	2	
Social Worker	9	
Commonwealth Acoustic Laboratory	5	
Brisbane Mental Hospital	2	
Welfare—		
State Children's Department	71	79
Children's Homes	4	
Bush Children's Health Scheme	4	
Private—		
Self	177	221
Relative	8	
Friend	33	
Minister of Religion	3	
Police—		
Police	11	11
Totals	642	642

As can be seen from Table CIX., children are referred from many sources, both without and within the Department of Health and Home Affairs.

The amount of work done by the various professional personnel in the clinic is difficult to illustrate as most joined the staff at different times. Another factor is that some work was done by group methods. This makes the total number of sessions or interviews as recorded in Table CX not a true indication of the industry of the individual professional groups. For example, the number of interviews done by the psychologists is greater than the number carried out by the social workers because of group methods.

TABLE CX
SHOWING NUMBER OF INTERVIEWS BY THE
PROFESSIONAL STAFF

Psychiatrists—	
Total interviews	1,456
Psychologists—	
Total interviews	1,343
Social Workers—	
Total interviews	972

The staff has worked very hard and extremely well under sometimes rather trying conditions during the initial stages of furnishing and getting the clinic functioning. Some of the staff have not done Child Guidance before and the experienced ones were a great help during the initial training period.

The reasons for bringing children to Child Guidance Clinics is always of interest and Table CXI. shows disorders with which children were brought to the Mary Street Clinic. The high incidence of organic cases is interesting.

Disorders due to brain pathology make up 12 per cent. and psychosomatic disorders 4 per cent., making a total of 16 per cent. Some of the behaviour disorders and personality disorders prove to be of organic origin on investigation and this does not appear in the figures shown in Table CXI.

TABLE CXI
SHOWING REASONS FOR REFERRAL OF THE PATIENTS

Reasons	Number	Grouped Number
Speech Disorders—		
Speech difficulties	5	99
No/Poor speech	14	
Speech defect	8	
Dyslalia	19	
Dyslalia (gross)	8	
Stammer	21	
Stammer (gross)	6	
Alalia	4	
Labial cleft	1	
Cleft palate	3	
Retarded speech development	6	
Retarded speech	1	
Development and dyslalia	2	
Alveolar cleft	2	
Double facial cleft	1	
Anti-social Behaviour—		
Abandoning from homes	4	96
Running away from home	3	
Stealing	37	
Anti-social behaviour	12	
Truanting and stealing	6	
Truanting	5	
Stealing and lying	15	
Breaking and entering	2	
Suicide threats	5	
Threats of patricide	1	
Bad mixer	6	
Personality Disorders—		
Personality change	1	42
Fears of death and poison	1	
Immature personality	26	
Fantasy	1	
Neurotic/Psychoneurotic	3	
Hysterical outbursts	3	
Moods of depression	2	
Fear of being alone or of the dark	1	
Schizoid behaviour	3	
General disturbance	1	
Habit and Behaviour Disorders (not necessarily anti-social)—		
Moderate behaviour problem	34	160
Behaviour problem	61	
Aggressive behaviour problem	5	
Severe behaviour problem	14	
Difficult to manage	11	
Hyper-active	5	
Head-banging	3	
Temper-tantrums	13	
Thumb-sucking	1	
Difficult feeder	1	
Sibling jealousy	9	
Petty thieving	1	
Uncontrollable	2	
Sex Disorder—		
Behaviour disorder—sexual	16	24
Masturbation	5	
Homo-sexuality	3	
Elimination Disorders—		
Enuresis	20	24
Encopresis and enuresis	1	
Encopresis	3	
Organic Disorders—		
Epilepsy	16	73
Mental defective	36	
Abnormal E.E.G.	1	
Brain damage	1	
High grade mental defective	2	
Mental defective and Epilepsy	3	
Retarded child	9	
Backward child	5	
Post-encephalic trauma	1	

TABLE CXI—continued
SHOWING REASONS FOR REFERRAL OF THE PATIENTS—continued

Reasons	Number	Grouped Number
Educational Disorders—		
Backward at school	15	57
School difficulties	39	
School phobia	3	
Psychosomatic Disorders—		
Asthma	5	24
Rash on body	1	
Headaches	3	
Migraine	4	
Facial tic	1	
Over hospitalization	1	
Hearing defects	5	
Blindness	1	
Spastic paralysis	1	
Pink disease	1	
Hydrocephalus	1	
Sleep Disorders—		
Insomnia	2	8
Nightmares and sleep disturbances	5	
Nightmares and enuresis	1	
Miscellaneous Disorders—		
Nothing abnormal detected	1	16
Neglected child	9	
I.Q. testing	2	
Work difficulties	4	
Totals	623	623

It will be noted from Table CXI. that approximately 25 per cent. of the children were brought along with habit and behaviour disorders. Quite a number of children, too, have speech defects. The personality disorders which usually are of a very much more serious nature, fortunately occur less frequently. The relatively low incidence of educational disorders is because the Research and Guidance Clinics of the Department of Education, handle the bulk of these children.

THE WILSON YOUTH REHABILITATION HOSPITAL

The creation of the Wilson Youth Rehabilitation Hospital was approved during this year and work is already well advanced on the project. It is a hospital for treating as both out-patients and in-patients, the mental, nervous and personality disorders among delinquent children. There will be a Children's Court and Court Clinic at the hospital which will also have in-patient accommodation for about 35 boys. In-patient care for girls is already catered for by three (3) church homes which specialise on this section of delinquency. It is proposed that our psychiatrists visit these church homes to assist in the treatment of these girls.

The Children's Court will be under the control of the Justice Department and the State Children's Department and it is expected that children appearing before the Children's Court will be given the benefit of psychiatric examination when it is needed. All of those children admitted to institutions will be examined both mentally and physically before admission.

The Court Clinic will be working in close liaison with the stipendiary magistrate, State Children inspectors, and the clergymen concerned with the individual child. It is hoped that this close liaison will do much to prevent recidivism.

The boys detained in the hospital will be those boys of the delinquent population who need psychiatric treatment. They will be under the care of doctors, nurses, youth leaders, teachers and other personnel.

The psychiatric treatment of juvenile delinquents is an established service in many parts of the world. Usually, however, due to shortage of personnel and lack of facilities, few delinquents have the benefit of such treatment. When the Wilson Hospital is functioning, psychiatric treatment will not be denied to any delinquent child who needs it.

OTHER IN-PATIENT FACILITIES

The Department is considering further in-patient facilities for the treatment of mentally and emotionally disturbed children. It has been estimated that between 200 and 300 children per year, passing through the Child Guidance Clinics are in need of in-patient psychiatric treatment. The estimation was again approached from a different way and it was found that between 200 and 250 children in church homes, hospitals, orphanages, &c., are suffering from emotional disturbances, nervous or behaviour disorders. It sometimes happens that these children are denied adequate psychiatric treatment.

The residential treatment of an emotionally disturbed or maladjusted child is considered a necessity in many parts of the world and it is agreed that the out-patient treatment of some children is relatively useless. They need in-patient psychiatric treatment and some centres (such as the Ryther Child Guidance Hospital in America) state that they get two out of three very severely disturbed children back to normal by in-patient methods.

It has been considered that children should not be nursed in the same wards as adult psychiatric cases. Not only do they get inadequate treatment but they are denied schooling and are even discharged from hospital behind in their school work. The orientation of adult psychiatry and child psychiatry is quite different. The routine for children and adults is also different and children are often disturbing to the older patients. It is obvious to all that children should not be nursed in the same wards as adult homosexuals, chronic neurotics, psychopaths and so on.

It is equally true that children who are emotionally and mentally disturbed and in need of psychiatric treatment should not be sent to ordinary Church homes. Not only will they upset the home but they will also be deprived of such treatment. They will cause extra work for the home and thus will deprive the normal children of their full share of the staff's time. Most people will agree that before emotionally disturbed children are sent to a Church home or similar institution, a period of time in a Child Guidance hospital is necessary to settle them down. This is of benefit not only to the child but also to the Church home.

The Department is, at the present time, considering the establishment of such a Youth Guidance Hospital.

CHILDREN'S HOSPITAL CHILD GUIDANCE CLINIC

Other activities of the Division during the year, included the re-opening of the Child Guidance Clinic at the Brisbane Children's Hospital. Dr. B. J. Phillips was appointed senior psychiatrist and he is assisted by two clinical assistants. The Clinic functions four half-days a week and many emotionally disturbed children referred to the hospital are seen there.

A Diagnostic Centre for mentally retarded babies has also been opened with in-patient facilities at the Chermide Hospital and out-patient facilities at the Brisbane Children's Hospital. It is intended that all mentally retarded babies will be brought to the Centre and assessed. Those whose parents want them put in an institution will be sent to the in-patient part of the Chermide Hospital where they will be studied for some time. It is intended that they be thoroughly assessed and if there is a chance of their being rehabilitated, their parents will be encouraged to take them home.

TEACHING ACTIVITIES

As some of the staff of the Division of Welfare and Guidance had not done much child guidance work before, a training scheme of lectures and case demonstrations was introduced. In child guidance, as several of the professional staff may be treating the one family, frequent case discussions are essential so that the treatment programme can be integrated. Some systematic lectures have also been given on topics related to child guidance.

The clinic has also been active in teaching undergraduates. Senior psychology students, social studies students, kindergarten and remedial education students, have attended here for lectures and demonstrations. So far, medical students have not been able to avail themselves of the wealth of clinical experience to be had at the Clinic.

Nurses from the School Health Services have been attending the Clinic for lectures and demonstrations. We hope to extend this teaching as we feel that child psychiatry is an important part of the school nurses' activities. The nurses of the Welfare and Guidance Clinics are furthering their knowledge of psychology by doing Psychology 1 at the University in the evenings.

Members of the staff of the Welfare and Guidance Clinics have been active during the year with public lectures. Many have been given to community groups on child guidance topics. There is always a keen interest shown by the public on these topics which are helpful in making child guidance principles more widely known.

By teaching some of the principles of child guidance to other professional groups who are concerned with the welfare and guidance of children, we feel that we are making an important contribution to social and preventive medicine. The Division will shortly be embarking on a series of lectures which will be available to these professional groups for we are not only concerned with the treatment of youth problems, but also concerned with the prevention of these problems. The prevention of the occurrence of emotional

disturbances, maladjustment, behaviour disorders and mental and nervous disorders is an integral part of social and preventive medicine. The Division is trying to adjust families and to prevent maladjustments occurring. Early detection of cases and the education of professional people and the public remains the chief approach of preventive medicine to these problems.

Adequate psychiatric treatment of children with emotional disorders, will save a considerable expense in years to come as well as helping the individual to become more happy and efficient. Early treatment may prevent much of the expensive adult medical and psychiatric treatment which is now necessary for psychoneurotic patients. Child guidance may also be able to prevent many of the social problems caused by maladjusted parents producing children who, in their turn, will become the maladjusted parents of a future generation to pass on their attitudes to yet another generation.

ALCOHOL CLINIC

Medical Officer: E. J. O'SULLIVAN, M.B., Ch.B.

The Alcohol Clinic at the North Brisbane Hospital was opened two years ago when it was realised that alcoholism was a public health problem involving the whole community, being not only medical but also legal, educational, social, and religious in its implication.

The Clinic consists of an out-patient's department and an in-patient unit consisting of two male wards and one female ward, a total of fourteen beds. In-patient treatment has the advantage of closer and continuous association between patient and staff which is very important in the treatment of the alcoholic. It is particularly advantageous to admit patients too sick to have a reasonable chance of benefiting by out-patient treatment.

Out-patient treatment has the advantage of allowing the alcoholic to carry on his work with less financial upset. In addition the family unit is preserved and the transition period from hospital to home and work is avoided.

A patient who is under the influence of alcohol is not admitted to the Clinic as one of the pre-requisites to admission is that the patient must sincerely desire to want to help to overcome his alcoholism. If drunk he is not in a condition to determine this. Such a patient is admitted to Ward 16 where he is examined by the Medical Officer of the Clinic.

The Medical Officer visits the Marburg Inebriates Home weekly. This is an institution for chronic alcoholics who are not considered suitable for the North Brisbane Hospital Clinic.

With acceptance of alcoholism as a disease medical students attend the Clinic for clinical instruction.

The follow-up of patients after leaving hospital has not been carried out because of the inability to obtain the services of a social worker to do this work.

Table CXII. sets out the attendances at the Clinic.

TABLE CXII
ATTENDANCES AT ALCOHOL CLINIC, NORTH BRISBANE
HOSPITAL

	Males	Females	Totals
New Patients—			
Out-patient Department			
level	230	33	263
Admissions	128	30	158
Transfers from Ward 16	50	7	57
Total new patients	408	70	478
Patients previously treated—			
Out-patient Department			
level	179	43	222
Admissions	20	3	23
Transfers from Ward 16	10	3	13
Total patients previously treated	209	49	258
Total patients during 1959-60—			
Out-patient Department			
level	409	76	485
Admissions	148	33	181
Transfers from Ward 16	60	10	70
Total patients ..	617	119	736

Interviews—Non-alcoholic relatives—142.

DIVISION OF LABORATORY SERVICES

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

Director: J. I. TONGE, M.B., B.S. (Syd.), D.C.P. (Syd.), M.C.P.A.

Deputy Director: M. J. J. O'REILLY, M.B., B.S. (Syd.), M.C.P.A.

Pathologist: A. DAVIDSON, M.B., B.S. (Qld.), M.C.P.A.

Technical Supervisor: H. E. BROWN

1. HISTORICAL REVIEW OF THE LABORATORY OF MICROBIOLOGY AND PATHOLOGY (1910-1960).

2. STAFF AND DEVELOPMENT.

3. STATISTICAL SUMMARY.

4. Q FEVER—

- (a) Incidence: geographic and occupational.
- (b) Outbreak of Q fever in a pineapple farm.
- (c) *C. burneti* in kangaroos and kangaroo ticks in Western Queensland.
- (d) Q fever in an infant in a Brisbane suburb.
- (e) Chronicity of Q fever.
- (f) Survey of bovine sera for Q fever.

5. LEPTOSPIROSIS—

- (a) Classification and nomenclature of leptospiral serotypes.
- (b) Incidence.
- (c) Serological diagnosis of leptospirosis.
- (d) Survey of wild and domestic animals.
- (e) Colonial growth of leptospirae.

6. COMPLEMENT-FIXING ANTIBODIES FOR THE PSITTACOSIS-LYMPHOGRANULOMA GROUP OF VIRUSES IN PATIENTS WITH PYREXIAS.

7. SEROLOGICAL DIAGNOSIS OF SYPHILIS.

8. ATYPICAL MYCOBACTERIA.

9. "PRIMARY" DRUG RESISTANCE OF M. TUBERCULOSIS ISOLATED FROM PATIENTS WITH NO PREVIOUS CHEMOTHERAPY.

10. SEROLOGICAL DIAGNOSIS OF MELIOIDOSIS.

11. PHAGE TYPING OF STAPHYLOCOCCI—

- (a) Trial of efficacy of Phisohex in newborn babies.
- (b) Staff carrier rate at Brisbane Women's Hospital.
- (c) Staphylococcal carrier rate in mothers on admission and discharge.
- (d) Infections in babies.
- (e) Breast abscess.
- (f) Naseptin trial for treatment of carriers in the staff.
- (g) Staphylococcal survey in surgical wards.
- (h) Cultures from country centres.

12. HISTOPATHOLOGY.

13. PUBLICATIONS.

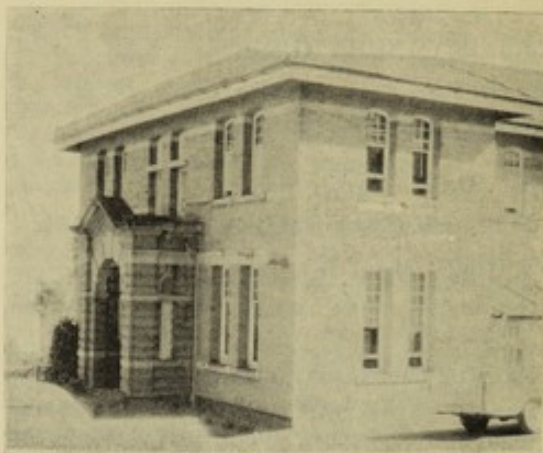
1. THE LABORATORY OF MICROBIOLOGY AND PATHOLOGY (1910-1960)

On 16th September, 1960, the Laboratory of Microbiology and Pathology will have been in existence for fifty years. It therefore seems appropriate at this time to record the circumstances leading up to its foundation and briefly to trace its history since that time.

It was on the 2nd December, 1893, that the Stock Institute was founded in temporary premises in Turbot Street. The founding of this Institute which was the first in Australia to deal with stock diseases was largely at the instigation of Mr. P. R. Gordon, the first Chief Inspector of Stock for Queensland. The Institute was under the control of the Colonial Secretary's Department and Mr. C. J. Pound was appointed Director and Bacteriologist in charge.

On 30th June, 1899, the Institute was moved to newly erected premises in College Road (now the Department of Education's Correspondence School). Its name was changed to the Bacteriological Institute and it was placed under the control of the Home Secretary's Department at the same time. Mr. Pound was appointed the first Government Bacteriologist and remained in charge. The Institute extended its scope of activities to investigate human as well as stock diseases, thus providing the first Public Health Bacteriological service for Queensland.

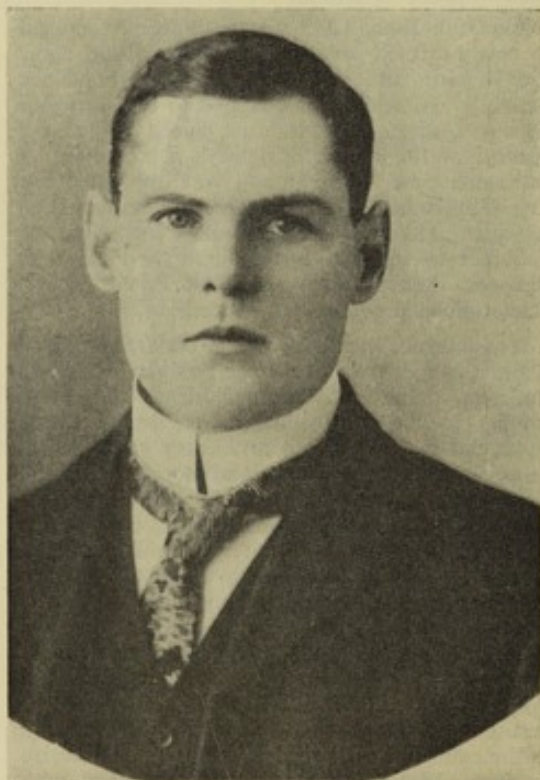
The plague epidemic of 1901-1907 provided a great stimulus to the Bacteriological Institute and its value to the health of the community in the control of disease began to be appreciated. It must have been considered, however, that a separate laboratory for human pathology was necessary, for in 1910 a request was made by a deputation from the British Medical Association that a fully-equipped laboratory, with a specially-qualified medical officer in charge, should be instituted under the Commissioner of Public Health and this received Ministerial consideration. After endorsement by Dr. J. S. C. Elkington, the Commissioner, the proposal was adopted and the Bacteriological Institute in College Road was formally transferred to the control of the Department of Public Health as from 16th September, 1910, together with portion of its staff and equipment. Mr. C. J. Pound was placed in charge of the Government Stock Institute at Yeerongpilly and in order to prevent confusion, the Bacteriological Institute now became known as the Laboratory of Microbiology and Pathology. Laboratory investigation of human diseases only was now carried out



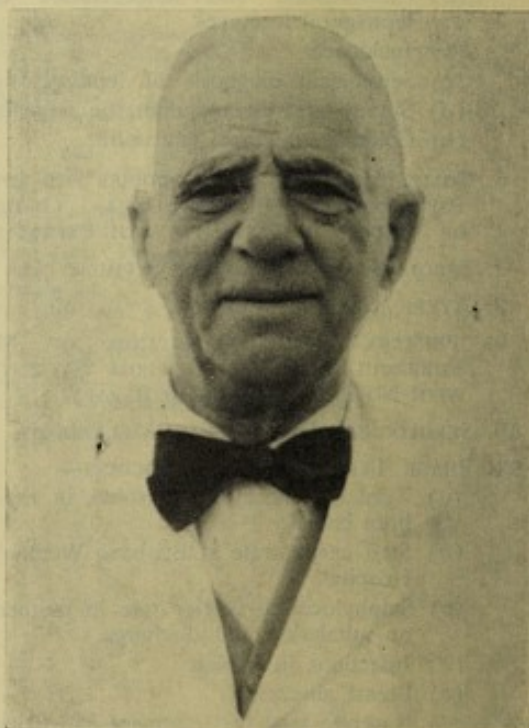
THE BACTERIOLOGICAL INSTITUTE
ESTABLISHED 1899.
 Renamed **LABORATORY OF MICROBIOLOGY**
AND PATHOLOGY.
SEPTEMBER 16th, 1910.



LABORATORY OF MICROBIOLOGY AND
PATHOLOGY IN OLD COURT HOUSE,
HOPE ST., SOUTH BRISBANE. (1918-1935).



DR. JOHN HARRIS.
 Director of Laboratory (1910-1918) (1921-1923).



MR. H. E. BROWN.
 Joined staff 1913. In charge of Laboratory from
 1923-1935. Technical Supervisor now.

THE STAFF (1913)



DR. E. H. DERRICK.
Director of Laboratory.
(1935-1947).



Mr. H. G. Beardmore Mr. H. E. Brown.
Dr. J. Harris.

THE STAFF (1960)



J. Zagami, W. Flinn, A. Wood, S. Butler, F. Stamp, A. Milligan, F. de Landells.
A. Howden, J. Cameron, J. Russell, J. Baker, E. Jiggins, U. Murray, S. Pirrotta, S. Hillard, C. Olsen, G. Lord.
J. Armstrong, J. Forrest, M. Kelly.
J. Truman, C. Shepherd, Z. Blacklock, A. Lipscomb, A. Summerville, J. Sherwood, P. Green.
F. Sharp, P. McMahon, M. Self, R. Dwyer, N. Stallman.
J. Morrissey, D. J. W. Smith, H. E. Brown, J. I. Tonge, M. J. J. O'Reilly, A. Davison.
(Absent: Y. Battey, M. Fallon, C. Byrne, P. Herod).

here, whilst animal diseases were investigated at Yeerongpilly, now under the administration of the Department of Agriculture and Stock.

On 24th December, 1910, Dr. John Harris was appointed Director of the Laboratory. Dr. Harris had worked at the Australian Institute of Tropical Medicine at Townsville and, at the time of his appointment he was Government Bacteriologist in Perth, Western Australia. He took up his appointment on 27th March, 1911, and had as his staff two bacteriological assistants, one messenger and one typiste. The scope of the work was increased and within a year the laboratory was re-equipped at an expenditure of £500. A scale of fees was prepared for work submitted by private practitioners, printed instructions for forwarding specimens were circulated and diagnostic kits for typhoid and diphtheria were made available. Dr. Elkington encouraged the use of the laboratory and supported its activities fully. He wrote scathingly of practitioners who declined to make use of its services. It is of interest that in the year 1912, of the 30,514 tests carried out by the laboratory, 25,309 were examinations of rats for plague.

In 1918, Dr. Harris resigned as Director, his place being taken in 1918-19 by Dr. Burton-Bradley and in 1919-20 by Dr. Arnold Dean. Dr. Harris again became Director of the Laboratory in 1921 and resigned on 11th June, 1923. During the period 1923-1935 the laboratory was in the charge of Mr. H. E. Brown, no medical officer being available. Mr. Brown had joined the staff in 1913 as an assistant and he kept the laboratory functioning effectively during this period of 12 years with a small staff to help him. It is of interest that in December, 1960, Mr. Brown, now Technical Supervisor and Senior Bacteriologist, retires after having given 47 years of faithful and efficient service to the laboratory. Mr. J. P. Morrissey who joined the staff in 1921 was with Mr. Brown during this period and is now a Senior Bacteriologist.

In 1918 the Laboratory of Microbiology and Pathology was moved from College Road to be under the same roof as the Department of Health, occupying at the time the Old Court House in Hope Street (now Colchester Street), South Brisbane. The laboratory was housed in the old court room and media preparation and sterilising were carried out in the court gallery. This move was a most unfortunate one as the laboratory had been comfortably housed in College Road in a building designed for the purpose and the Court House was unsuitable and inadequate having little to recommend it save the advantage of proximity to the administration.

When Sir Raphael Cilento became Director-General of Health and Medical Services in 1934, he appreciated the urgent necessity for a Medical Director of the laboratory and in June, 1935, Dr. E. H. Derrick was appointed Director of the laboratory. On his appointment Dr. Derrick not only took charge of the laboratory work but also became responsible for the coronial autopsies in the metropolitan area. These coronial autopsies have remained the responsibility of the medical staff of the laboratory ever since.

Dr. Derrick's appointment was an exceedingly fortunate one as he ushered in a period of active

and productive research which was to bring international credit to the laboratory, its director and the comparatively small staff who assisted him. Dr. D. W. Johnson and Mr. D. J. W. Smith joined the staff in 1937 and contributed greatly to the research work carried on in the laboratory.

The investigation of the fevers occurring at the Brisbane Abattoirs commenced in 1935 and this culminated in the elucidation of Q fever as an entity in 1937. Twenty scientific papers were published on various aspects of this disease alone and it is notable that Dr. Derrick's original descriptions of the disease stand as a model of clarity and comprehensiveness today.

Among other contributions of scientific importance made by the staff were the isolation of *Leptospira pomona* in 1937, and *Leptospira hyos* (*Leptospira mitis* Johnson) in 1942. The Karp strain of *Rickettsia tsutsugamushi* was isolated and this was to be widely used later in Scrub Typhus research in the U.S.A. and Australia. Rat-bite fever and Torulosis were described for the first time in Queensland and Chromoblastomycosis for the first time in Australia. A total of 40 scientific papers were published by members of the staff during the period 1935-1946.

This research work was carried on in cramped quarters with limited staff and equipment and the routine work of the laboratory continued meanwhile. Additional difficulties were experienced during the war years with a depleted staff and heavy demands were made in teaching commitments during the early years of the Medical School.

It was in 1935 that the Laboratory was moved from the Old Court House in Hope Street, where it had been for 17 years, to the new building occupied by the Department of Health and Home Affairs in William Street. In his Annual Report of 1935-36 Dr. Derrick wrote, "the change over has been welcome for the new quarters are more commodious, better lighted and better ventilated than the old ones." Whilst this was undoubtedly true the design of these "new quarters" made no provision for subsequent expansion of the laboratory's activities. In the post-war years this expansion has been very great but for many years has been seriously hampered by restrictions of space.

In 1946, Dr. J. Tonge was appointed Medical Officer (Medico-Legal Pathology) and subsequently in August, 1947, he was made Acting Director of the laboratory when Dr. Derrick resigned to become Deputy Director of the newly established Queensland Institute of Medical Research. Dr. Tonge was appointed Director of the laboratory in May, 1948, and in the same year Dr. M. J. J. O'Reilly joined the staff as Deputy Director. Dr. A. Davison was appointed Pathologist in 1956. Dr. Johnson left the staff in 1947 to become Deputy Director-General of Health and Medical Services.

During the last fourteen years the amount of routine work handled by the laboratory has greatly increased. In the year 1945-46 with a staff of fifteen, 48,000 tests were performed, whilst in 1959-60 with a staff of thirty-seven over 248,000 tests were carried out. During this

period the autopsies have increased from 351 in 1946 to 610 in 1959. The clinical pathology service developed greatly, providing a service for both metropolitan and country areas. A tuberculosis laboratory was established in 1951 and now handles over 9,000 specimens each year. The laboratory has become a reference centre for the serological diagnosis of the fevers of unknown origin for the State and is now recognised as the W.H.O. Leptospiral Reference Laboratory for Australasia. A laboratory for the phage typing of staphylococci has been introduced and a cytological diagnostic service for carcinoma of the lung is provided. Medico-legal investigations often necessitate members of the staff travelling all over the State.

Though primarily a routine diagnostic and Public Health laboratory, active participation in investigations and research continues. A most happy liaison exists with the staff of the Queensland Institute of Medical Research and in several important projects the work has been shared between the two institutions. Perhaps the most important of these was the investigation and solution of the problem of the fevers of North Queensland. A thorough survey of leptospirosis in Queensland has been achieved and no less than 8 serotypes new to Australia isolated, of which 4 were new-world types. Contributions to the serology of leptospirosis have been made as well as studies of the survival of these organisms in soil. Brills disease and "Cat-scratch" disease have been reported for the first time in Australia. A total of 38 papers have been published by staff members during the last fourteen years.

Steadily increasing demands are made on the laboratory and it has been frustrating that it has not been possible to meet all of these commitments because of cramped accommodation. There is a necessity for the scope of the laboratory to be increased, for the provision of a better diagnostic service to country areas and for the establishment of a virology unit.

We look forward to the future with eager anticipation due to the erection of the Institute of Forensic Pathology, the planning and approval for the erection of a new laboratory in George Street, and a modern animal house at the Normanby.

The Institute of Forensic Pathology which, it is anticipated, will be ready for occupation in August or early September this year will provide excellent facilities for autopsy work. It also includes a laboratory, a photographic and X-ray unit and first-class conditions for the teaching of forensic pathology. This Institute is a most valuable addition to the Department and will be the most modern unit of its type in Australia.

The plans for the new laboratory provide for a virology unit, a mycology laboratory and space for the expansion of all our existing departments. Provision has been made for a conference room and good accommodation for experimental animals will be available on the roof.

The animal house at the Normanby, erection of which is to start next year, will provide air-conditioned breeding rooms for laboratory animals

as well as a separate unit for quarantine or special research. The existing animal houses are a relic of 50 years, having been used as stables prior to that time. The new building should prove to be both flexible and efficient.

The Laboratory of Microbiology and Pathology, now in its 50th year, has been a varied but interesting career. Those who have been associated with it have an affection for it and considerable pride in what has been achieved, often with difficulty. One can look forward to the future with enthusiasm as the way is now open for greater development, and, it is hoped, distinction.

2. STAFF AND DEVELOPMENT

Mr. D. J. W. Smith, Senior Bacteriologist, returned from abroad in November, 1959, after having spent eight months in U.S.A., Great Britain and Europe. His visit was made possible by a W.H.O. Travelling Fellowship. He was appointed to the Leptospira Subcommittee of the International Committee on Bacteriological Nomenclature in 1959.

Whilst accommodation is still a major problem in the laboratory the situation has been eased during the year. Additional laboratories have been made available for phage typing and for histopathology, and facilities for patients and male staff have been improved. There is now more space for the storage of medico-legal exhibits.

Much detailed planning has been made for the new laboratory to be erected in George Street. The plans have now been finalised and approved and it is hoped that tenders will be called for the erection of the building early in 1961. The laboratory is to occupy three floors of the new eight-storey building and an animal house is to be provided on the roof.

Approval has been granted for the erection of a new animal house at the Normanby, to be used as a breeding station for laboratory animals. The building is to be air-conditioned and a small isolation unit is to be provided for quarantine and special experimental work.

The Institute of Forensic Pathology is within a few weeks of completion. It is an extremely fine building and will provide first class facilities for autopsies, including ancillary laboratory, photographic and X-ray services, together with a students' gallery.

There has been a remarkable increase in the volume of routine work during this year, over 248,000 tests having been performed. This represents an increase of 49,000 tests over the previous year. There has been a decrease in the amount of routine bacteriology only and this is attributable to the diminished attendance at the female Venereal Disease Clinic. It is anticipated that the volume of work will steadily increase and that additional staff will be needed to cope with this. In addition further equipment is needed for both routine and special investigations. At present it is impossible to envisage how this staff and equipment can be accommodated in the existing space available.

3. STATISTICAL SUMMARY

TABLE CXIII

1. BACTERIOLOGY

A. Specimens of Human Origin

Specimen	Mode of Examination	Number
Swabs—		
Throat, Nose	Culture	199
	Direct Smear ..	19
	Antibiotic Sensitivity Test	69
Urethra, Cervix, Bartholin's Gland, Anus	Culture	302
	Direct Smear ..	3,046
	Antibiotic Sensitivity Test	20
Ear ..	Culture	52
	Direct Smear ..	4
	Antibiotic Sensitivity Test	34
Eye ..	Culture	12
	Direct Smear ..	1
	Antibiotic Sensitivity Test	10
Wound ..	Culture	13
	Direct Smear ..	1
	Antibiotic Sensitivity Test	11
Mouth ..	Culture	4
	Direct Smear ..	1
	Antibiotic Sensitivity Test	3
Leg ..	Culture	6
	Antibiotic Sensitivity Test	8
Knee ..	Culture	2
	Antibiotic Sensitivity Test	1
Umbilicus ..	Culture	1
	Direct Smear ..	1
Ulcer ..	Culture	1
	Direct Smear ..	1
Sinus ..	Culture	1
	Culture	1
	Culture	1
Hand ..	Culture	1
Pus ..	Culture	239
	Direct Smear ..	4
	Antibiotic Sensitivity Test	209
Pleural Fluid	Culture	16
	Microscopic ..	9
	Antibiotic Sensitivity Test	1
Cerebrospinal Fluid	Culture	43
	Microscopic ..	75
	Antibiotic Sensitivity Test	1
Synovial Fluid	Culture	7
	Microscopic ..	4
Ascitic Fluid	Culture	2
	Microscopic ..	1
Pericardial Fluid	Culture	2
	Microscopic ..	3
	Antibiotic Sensitivity Test	1
Aspirated Fluid	Culture	1
	Microscopic ..	2
Subdural Fluid	Culture	3
	Microscopic ..	2
Parietal Peritoneum	Culture	1
	Culture	2
	Antibiotic Sensitivity Test	2

TABLE CXIII—continued

1. BACTERIOLOGY—continued

A. Specimens of Human Origin—continued

Specimen	Mode of Examination	Number
Serous Exudate	Direct Smear ..	1,202
	Dark Ground Microscopy ..	4
	Culture	286
Sputum ..	Direct Smear ..	32
	Antibiotic Sensitivity Test	140
Blood ..	Culture	78
	Antibiotic Sensitivity Test	3
Urine ..	Culture	1,150
	Microscopic ..	1,977
	Antibiotic Sensitivity Test	490
Faeces ..	Culture	464
	Microscopic ..	21
	Antibiotic Sensitivity Test	7
Post Mortem Swabs and Tissues	Culture	87
	Direct Smear ..	3
	Antibiotic Sensitivity Test	1
Total 1959-60 ..		10,400
Total 1958-59 ..		17,337

TUBERCULOSIS SECTION

Specimen	Mode of Examination	Number
Sputum ..	Culture	6,438
	Microscopic ..	6,438
	Animal Inoculation ..	140
Gastric Aspiration	Culture	2,006
	Animal Inoculation ..	798
Laryngeal Swab	Culture	92
	Microscopic ..	1
Urine ..	Culture	224
	Animal Inoculation ..	119
Pus ..	Culture	7
	Microscopic ..	7
	Animal Inoculation ..	8
Pleural Fluid	Culture	21
	Microscopic ..	21
	Animal Inoculation ..	21
Cerebrospinal Fluid	Culture	6
	Microscopic ..	6
	Animal Inoculation ..	6
Ascitic Fluid	Culture	2
	Microscopic ..	2
	Animal Inoculation ..	2
Abscess Fluid	Culture	2
	Microscopic ..	2
	Animal Inoculation ..	2
Synovial Fluid	Culture	2
	Microscopic ..	2
	Animal Inoculation ..	3
Fluid from Cyst	Culture	1
	Microscopic ..	1
	Animal Inoculation ..	1
Aspiration from Wrist ..	Culture	1
	Microscopic ..	1
	Animal Inoculation ..	1

TABLE CXIII—continued
TUBERCULOSIS SECTION—continued

Specimen	Mode of Examination	Number
Bronchial Washing	Culture	7
	Microscopic	7
	Animal Inoculation	5
Laryngeal Washing	Culture	14
	Microscopic	14
	Animal Inoculation	3
Tracheal Washing	Culture	29
	Microscopic	29
Lung Aspiration	Culture	2
	Microscopic	2
	Animal Inoculation	2
Sinus Swab ..	Culture	3
	Microscopic	3
	Animal Inoculation	3
Cervical Swab	Culture	1
	Microscopic	1
	Animal Inoculation	1
Faeces ..	Culture	1
	Microscopic	1
	Animal Inoculation	1
Milk	Culture	2
	Microscopic	2
	Animal Inoculation	2
Skin	Culture	1
	Microscopic	1
	Animal Inoculation	1
Ascitic Fluid	Culture	1
	Microscopic	1
	Animal Inoculation	1
Tissues ..	Culture	49
	Microscopic	49
	Animal Inoculation	9
Parietal Peritoneum	Culture	1
	Microscopic	2
	Animal Inoculation	1
Culture ..	Identification (atypical strain) ..	59
	Sensitivity Test (Streptomycin, P.A.S. and I.N.A.H.) ..	244
	Sensitivity Test (Viomycin, Pyrazinamide and Cycloserine) ..	46
	Animal Inoculation ..	1,077
	Total 1959-60 ..	18,062
	Total 1958-59 ..	17,337

B. Foods and Waters

Specimen	Mode of Examination	Number
Water ..	Culture	334
	Plate Count	334
Milk	Culture	417
	Plate Count	396
	Reductase Test	187
	Animal Inoculation	7
Cream ..	Culture	25
	Plate Count	25
	Reductase Test	3
Ice Cream ..	Culture	27
	Plate Count	26

TABLE CXIII—continued
B. Foods and Waters—continued

Specimen	Mode of Examination	Number
Butter ..	Culture	3
	Plate Count	3
Ice Block ..	Culture	4
	Plate Count	4
Ice	Culture	3
	Plate Count	3
Olive	Culture	1
	Plate Count	1
Yoghurt ..	Culture	1
	Plate Count	1
Soft Drinks ..	Culture	2
	Plate Count	2
Meat Paste	Culture	1
Oysters	Culture	5
Cheese	Culture	12
Egg Pulp	Culture	3
Vegetable Stew ..	Culture	3
Vegemite	Culture	10
Fish	Culture	9
Tinned Meat ..	Culture	2
Cooked Meat ..	Culture	7
Cordial	Culture	1
Bread	Culture	2
Tinned Rice and Cheese	Culture	7
Sausages	Culture	14
Pies	Culture	2
Ghee	Culture	1
Coconut	Culture	6
Flour	Culture	1
Yeast	Culture	2
Chicken Roll ..	Culture	3
Total 1959-60 ..		1,900
Total 1958-59 ..		1,805

C. Various Materials

Specimen	Object of Examination	Number
Disinfectants and Antiseptics	Rideal-Walker Co-efficient	95
	Germicidal Value	2
Bottles	Sterility	39
Glasses	Sterility	4
Bacterial Cultures ..	Identification	17
Detergent	Culture	7
Fertiliser	Culture	7
Effluent	Culture	15
Silk Sutures	Culture	2
Cutlery and Crockery	Sterility	10
Filter Pad	Efficiency	1
Catgut	Culture	72
Nail Clippings ..	Culture	2
Skin Scrapings	Culture	15
	Direct Smear	4
	Antibiotic Sensitivity Test	3
Total 1959-60 ..		295
Total 1958-59 ..		159

2. PHAGE TYPING

	Number
Cultures Prepared	7,402
Coagulase Tests	4,475
Antibiotic Sensitivity Tests	2,024
Phage Typing of Staphylococci	3,359
Total 1959-60	17,260

TABLE CXIII—continued

3. SEROLOGY

	Number
Serum Agglutination (Screen)—	
<i>Erbethella typhosa</i> (O)	1
<i>Erbethella typhosa</i> (H)	4,634
<i>Salmonella paratyphi</i> (H)	4,626
<i>Salmonella schottmülleri</i> (H)	4,626
<i>Proteus OX19</i>	4,619
<i>Proteus OXK</i>	4,626
<i>Proteus OX2</i>	2
<i>Brucella abortus</i>	4,625
<i>Leptospira icterohaemorrhagiae</i>	5,829
<i>Leptospira canicola</i>	5,829
<i>Leptospira australis</i>	5,829
"Robinson" Strain of <i>Leptospira</i>	5,829
<i>Leptospira zanonii</i>	5,829
<i>Leptospira esposito</i>	5,829
<i>Leptospira pomona</i>	5,829
<i>Leptospira grippityphosa</i>	5,829
<i>Leptospira medianensis</i>	5,829
<i>Leptospira krematos</i>	5,829
<i>Leptospira mini</i>	5,829
<i>Leptospira hyos</i>	5,829
<i>Leptospira celledoni</i>	5,829
<i>Leptospira autumnalis</i>	5,829
<i>Coxiella burneti</i>	168
<i>Streptococcus MG</i>	9
Cold Agglutinins	10
Serum Agglutination Tests (Quantitative)	2,148
Paul Bunnell Tests	469
Leptospiral Strains Typed (35) Agglutination Tests Performed in Typing	700
Leptospiral Antisera Prepared	4
Complement Fixation Tests—	
<i>Coxiella burneti</i> —	
Routine	5,606
Quantitative	767
Typhus Fever Murine (Soluble)—	
Routine	197
Quantitative	7
Psittacosis (E.A.E. Virus)—	
Routine	5,652
Quantitative	256
Eagle Wassermann (Serum)—	
Routine	7,373
Quantitative	59
Kolmer Wassermann (Serum)	1,541
Reiter Protein	349
Eagle Wassermann (C.S.F.)	172
Kline	8,372
Kahn	809
Lange Colloidal Gold Reaction (C.S.F.)	814
Total 1959-60	144,847
Total 1958-59	118,134

4. BIOCHEMISTRY

Specimen	Examined For—	Number
Whole Blood ..	Urea	916
	Glucose	153
	Uric Acid	331
	Chloride	12
	Pigments	19
Plasma	Chloride	2
	Fibrinogen	1
Serum	Protein	857
	Cholesterol	165
	Bilirubin	564
	Chloride	76
	Calcium	89
	Inorganic Phosphate	39
	Acid Phosphatase	87
	Alkaline Phosphatase	492
	Thymol Turbidity	456
	Thymol Flocculation	456
	Zinc Sulphate	
	Turbidity	456
	Paper Electrophoresis	579
	Amylase	17
	Cholinesterase	3
	Bicarbonate	5
	Sodium	100
	Potassium	87
	Transaminase	12
	Bromide	1
	Iron	1
	Schumm's Test	1

TABLE CXIII—continued

4. BIOCHEMISTRY—continued

Specimen	Examined For—	Number
Cerebrospinal Fluid ..	Protein	81
	Globulin	64
	Chloride	68
	Glucose	69
	Urea	15
	Sodium	3
	Potassium	1
Subdural Fluid ..	Protein	3
	Globulin	3
	Chloride	3
	Glucose	3
Abdominal Fluid ..	Protein	1
Vomitus	Presence of Blood	2
Urine	Albumin	1,997
	Sugar	2,013
	Pigments	7
	Bilirubin	6
	Urobilin	6
	Urobilinogen	3
	Diastase	1
	Sodium	3
	Potassium	3
	Chloride	1
	Calcium	3
	Inorganic Phosphate	1
	Esbach's Protein	1
	Phenylpyruvic Acid	2
Faeces	Total, Split and Unsplit Fats	78
	Occult Blood	85
	Creatorrhoea	3
	Trypsin	3
	Protein Digestion	1
Renal Calculi ..	Chemical Constitution	26
Gastric Juice ..	Acidity	1
	Hydrochloric Acid	1
Functional Tests ..	Glucose Tolerance Tests	259
	Urea Clearance Tests	53
	Urea Concentration Tests	57
	Fractional Test Meals	78
Total 1959-60		10,985
Total 1958-59		9,708

5. HAEMATOLOGY.

	Number
Cell Counts—	
Red Cells (Total)	261
Red Cells (Stippled)	205
Reticulocytes	71
White Cells (Total)	2,638
White Cells (Differential)	2,974
Platelet Count	77
Haemoglobin	9,565
Haematocrit	6,706
Sedimentation Rate	1,002
Cosagulation Time	72
Bleeding Time	69
Prothrombin Time	164
Red Cell Fragility	10
Le Cells	17
Blood Grouping (A.B.O.)	3,981
Blood Grouping (Rh)	3,981
Blood Grouping (M and N)	13
Rh Antibodies	1,259
Total 1959-60	33,065
Total 1958-59	29,969

TABLE CXIII—continued

6. PARASITOLOGY

Specimen	Object of Examination	Number
Faeces	Amoebae (Cysts and Vegetative) ..	59
	Helminth ova ..	688
Pus	<i>Trichomonas vaginalis</i> ..	2
Blood	<i>Plasmodium</i> spp. ..	18
Helminth	Identification ..	17
	Total 1959-60 ..	784
	Total 1958-59 ..	584

7. VARIOUS TESTS

	Number
Male Toad Test (Pregnancy)	2,343
Aschheim Zondek Test (Quantitative) ..	11
Casoni Skin Test	6
"Cat-Scratch" Skin Test	3
Seminal Fluid Assessment	15
Total 1959-60	2,378
Total 1958-59	2,269

8. HISTOLOGY

Tissue Sections Prepared	Number
Human—	
Biopsy (specimens received 4,484) ..	6,413
Post-Mortem	2,550
Medico-Legal Tissues	78
Animal Tissues	42
Total 1959-60	9,083
Total 1958-59	8,785

9. EXFOLIATIVE CYTOLOGY

Specimen	Number
Sputum	943
Bronchial or Tracheal Washing	54
Pleural Fluid	22
Miscellaneous	12
Total 1959-60	1,031
Total 1958-59	1,140

10. MEDICO-LEGAL

Specimen	Object of Examination	Number
Clothing and Various Articles	Blood	173
	Spermatozoa	125
Vaginal Smears	Spermatozoa	98
Tissue	Histopathology	78
Blood	Grouping	5
Blood-Stained Articles	Blood Grouping	3
Scrapings	Presence of Blood ..	1
	Determination of Blood Group of Stains	1
Skull	Identification	1
Skeleton	Identification	9
Hair	Identification	10
Earth	Presence of Blood ..	6
	Total 1959-60	510
	Total 1958-59	498

TABLE CXIII—continued

11. POST-MORTEM

	Number
Post-Mortem Examinations—	
Total 1959-60	653
Total 1958-59	610

12. ATTENDANCES AT COURT

	Number
Supreme Court	26
Police Court	28
Coroner's Court	7
Other Courts	10
	71

13. MATERIAL SUPPLIED

To hospitals, private practitioners and local authorities

Diagnostic kits for tuberculosis	2,236
Diagnostic kits for bacteriology	839
Diagnostic kits for haematology and serology	2,560
Diagnostic kits for biochemistry	323
Diagnostic kits for cytology	172
Media (single units)	669
	6,799

In our capacity as W.H.O. Leptospiral Reference Laboratory for Australasia, cultures of most of the recognised leptospiral serotypes as well as such International Anti-Leptospira Reference sera as have been prepared and distributed, are maintained. Arrangements have been made to undertake a serological survey for leptospirosis for the Christian Medical College in Vellore, Southern India.

Close collaboration with the Queensland Institute of Medical Research has continued and the laboratory staff have provided assistance in a number of research projects. The Institute staff in turn have aided the laboratory in many ways during the year.

In various investigations carried out at the Brisbane Women's Hospital and the Princess Alexandra Hospital excellent co-operation has been received from the medical, nursing and technical staff of these institutions.

4. Q FEVER

(a) Incidence: geographic and occupational

In the period 1st July, 1959, to 30th June, 1960, 289 cases of Q fever were diagnosed in Queensland in the laboratory. These cases were regarded as probable recent infections as indicated by either a complement fixation titre for *Coxiella burnetii* of 1:64 or greater, or a significant rise in titre in paired sera. In addition to the above a further 155 patients had serum titres of 1:32 or 1:16 in single samples or showed a rise in titre in paired sera which was considered to be of doubtful significance. Some of these were undoubtedly from patients with acute infections and either only one serum sample was submitted or else the sera were not collected at the optimum period. From a very limited

number of sera submitted from New South Wales eighteen cases of Q fever were diagnosed. The geographical distribution of these cases is set out in Table CXIV.

TABLE CXIV
GEOGRAPHICAL DISTRIBUTION OF Q-FEVER CASES
DIAGNOSED IN THE LABORATORY
(1ST JULY, 1959—30TH JUNE, 1960)

QUEENSLAND			
Metropolitan District	134		
Darling Downs District	26		
Maryborough District	17		
Rockhampton District	12		
Townsville District	19		
Cairns District	8		
Central West District	32		
Far West District	Nil		
Roma District	16		
South West District	25		
Total	289		
NEW SOUTH WALES			
Tenterfield District	6		
Northern Rivers District	9		
Broken Hill	3		
Total	18		

The disease is widely endemic in Queensland and once again there is evidence that it is widespread in New South Wales.

Meatworkers, those associated with the sheep industry and dairy farmers are the three main occupational groups affected in decreasing order of incidence. In the year 1958-59 meatworkers formed 62 per cent., and those associated with the sheep industry 19 per cent. of the total of 410 proven cases. In the current year, of the 289 proven cases 50 per cent. were meatworkers and 24 per cent. were shearers, station hands, graziers, etc. The three patients from Broken Hill were all associated with the sheep industry.

It is of considerable interest that two of the patients in Queensland were from St. George and had been processing kangaroo meat for the export trade. This is yet further evidence of the occurrence of *C. burneti* in kangaroos in Western Queensland. The packing of kangaroo meat is now carried on in Brisbane and a careful watch is being maintained for further cases occurring in the particular factory concerned. The occupational distribution of the cases is set out in Table CXV.

(b) Outbreak of Q fever on a Pineapple farm

Reference was made in last year's Annual Report to a remarkable outbreak of Q fever which occurred over a period of 9 weeks between October-December, 1958, on a pineapple farm near Palmwoods. A family consisting of both parents and four grown-up sons became infected. This outbreak was investigated in association with members of the Queensland Institute of Medical Research. Infection did not occur from person to person nor could it be traced to cattle or sheep. A lead as to the source of the infection was found in bandicoots (*Isodon macrourus*) which were fairly numerous in the area. Trapping between April and October, 1959, resulted in 20 being captured and of these, three were found by guinea pig inoculation to

be infected with *C. burneti*. There was no evidence of infection in 296 ticks from the bandicoots, nor in five *Rattus rattus* and one possum (*Trichosurus vulpecula*) from the farm. Infection probably arose from inhalation of dust contaminated by the bandicoots or by contact with contaminated mud in a waterhole around which there had been considerable activity.

(c) *Coxiella burneti* in kangaroos and kangaroo ticks in Western Queensland

Derrick, Pope and Smith (M.J. Australia, 1, 585, in 1959) reported the occurrence of Q fever in shearers in Western Queensland. The shearers were almost certainly infected due to *C. burneti* in the sheep's wool. It was not so easy to determine the method by which the wool itself had become contaminated. Due to the large numbers of kangaroo ticks (*Amblyomma triguttatum*), on the sheep at the time it was thought that these might be carrying the rickettsiae, and that the kangaroos might be reservoirs. As a result of this an investigation was carried out by Mr. Pope of the Queensland Institute of Medical Research and by Mr. Dwyer of this laboratory.

TABLE CXV
OCCUPATIONAL DISTRIBUTION OF Q-FEVER CASES
DIAGNOSED IN THE LABORATORY
(1ST JULY, 1959—30TH JUNE, 1960)

QUEENSLAND			
<i>Meat Industry—</i>			
Abattoir workers	113		
Sundry occupations associated with abattoirs	30		
Butchers (retail)	1		
Kangaroo meat handlers	2		
<i>Sheep Industry—</i>			
Shearers	47		
Station hands	17		
Graziers	5		
Children living on sheep stations	2		
Drover	1		
<i>Dairying Industry—</i>			
Dairy farmers	15		
Mixed farmers	8		
Children living on farms	2		
<i>Others—</i>			
Hide handlers	6		
Cane cutters and cane farmers	4		
Labourers	3		
Children (school age)	3		
Infant (18 months)	1		
Housewife	1		
Wardman	1		
Tradesmen	4		
Publican	1		
Unstated	22		
Total	289		
NEW SOUTH WALES			
Abattoir workers	11		
Occupations associated with abattoirs	1		
Dairy farmers	3		
Shearer	2		
Grazier	1		
Total	18		

Complement-fixing antibodies to *C. burneti* were present in 23 per cent. of kangaroos collected in Western Queensland and agglutinating antibodies in 15 per cent. A higher incidence of complement-fixing antibodies was found in red kangaroos (*Megaleia rufa*), 33 per cent., than in the grey kangaroo (*Macropus major*)

12 per cent. In three areas the incidence of complement-fixing antibody in *M. rufa* was between 46 per cent. and 54 per cent. *Coxiella burnetii* was isolated in mice from the blood of one *Macropus major*.

From nearly 3,000 *Amblyomma triguttatum* thirteen isolations were made. Infection of kangaroos and *Amblyomma triguttatum* was widespread in Western Queensland between 24 deg. and 28 deg. S and 144 deg. and 149 deg. E.

This investigation provides good support for a natural kangaroo-tick cycle. The tick has a wide host range and thus could spread infection to domestic animals as well as kangaroos. Infestation of the sheep brings ticks also into contact with workers in the sheep industry and this probably provides the means of infection for this occupational group. A report of this investigation has been published.

(d) *Q fever in an infant in a Brisbane suburb*

During the last two years a number of children of school age have become infected with *Q fever* but there was in each case a clear-cut history of animal contact either with cattle on a dairy farm or with sheep on a station property. A most remarkable occurrence, however, was the finding of complement-fixing antibodies to *C. burnetii* in an infant aged 18 months, living in a modern home in St. Lucia, a Brisbane suburb. The child had been taken to a doctor because of a vague febrile illness and cervical glandular enlargement. Serum was submitted to the laboratory, since infectious mononucleosis was the provisional diagnosis. Three sera were examined over a period of one month and provided titres for *C. burnetii* of 1:64, 1:64 and 1:32 respectively. Inquiry failed to reveal any likely source of infection from the parents, the milk, or the home or neighbouring environment. Sera from both parents and an elder sister gave negative complement fixation tests. Every probable or possible source of infection is being investigated in an endeavour to discover the source of infection in this puzzling case.

(e) *Chronicity of Q fever*

The search for further evidence of chronic disease resulting from infection with *C. burnetii* continues. Eight patients presenting with vague symptoms possibly referable to previous infection have been investigated for prolonged survival of the rickettsiae, by animal inoculation of both blood and urine. From none of these patients were rickettsiae recovered.

Attention was drawn by Marmion (1959, B.M.J., 2. 983) to the value of Phase I. complement-fixing antigen in detecting cases of chronic *Q fever*. A supply of this antigen has been obtained from the Commonwealth Serum Laboratory, and when tested with control serum, kindly supplied by Dr. Marmion, it was found to be satisfactory and of high titre. It has only been used to date to test sera from one patient suspected of having chronic *Q fever*. This antigen will possibly provide a valuable tool for the investigation of further suspected chronic cases. Particular attention is paid to all patients with cardiac lesions who have had *Q fever* as a result of the published reports of endocarditis due to *C. burnetii*.

Active collaboration has continued with Dr. Powell of the Princess Alexandra Hospital in his study of liver dysfunction in *Q fever*.

(f) *Survey of Bovine sera for Q fever*

As part of the investigation of 2 cases of *Q fever* occurring in dairy farmers, sera from two herds of cows were tested for evidence of complement-fixing antibodies to *C. burnetii*. In one herd from Kenilworth, sera from 65 cows were tested and 3 had titres of 1:16 for *C. burnetii*. In another herd of 10 cows from Yandina all but two had titres of 1:8 or greater. In this same herd 6 of the cows had serum titres of 1:8 or greater to the Enzootic Abortion of Ewes virus antigen.

5. LEPTOSPIROSIS

(a) *Classification and nomenclature of leptospiral serotypes*

The Joint W.H.O./F.A.O. Expert Committee on Zoonoses which met in Stockholm in August, 1958, has published a classified list of what are regarded as valid leptospiral serotypes. In conformity with the principles of the International Code of Nomenclature of Bacteria and Viruses some changes in the designation of serotypes have been made. The terms *L. australis A* and *L. australis B* have been supplanted by *L. australis* and *L. zannoni* respectively and *L. kramastov* and *L. esposito* are accredited provisionally with serotype status pending further work.

A serotype, as presently defined, embraces strains of varied antigenic content. Slight differences in technique in the performance and reading of absorption tests, can and do influence the results obtained in the examination of borderline strains and are responsible for differing opinions as to their status. This situation must exist until more rigidly defined conditions are observed. Such differences exist in relation to the Queensland *canicola* group of strains, some of which may merit independent serotype status, and to the "Robinson" strain whose status in the *pyrogenes* group is still in question. Whilst thirteen serotypes are at present recognised in Queensland, the true position will only be determined when a more detailed study of existing material is undertaken.

(b) *Incidence of Leptospirosis*

In the period 1st July, 1959, to 30th June, 1960, all sera submitted from cases of pyrexia of unknown origin were tested with the agglutination-lysis test, using fourteen leptospiral strains. Sera from 254 patients in Queensland showed antibodies in a titre of 1:100 or greater to one or more leptospira. Of these patients, the antibody titres obtained indicated recent infection in 194, seventy-eight being from areas north of Rockhampton and 116 from Southern Queensland. The serotypes considered to be causing these infections in the two areas are set out in Table CXVI.

During the year only one known death occurred due to leptospirosis, this being a 75 year old man in Brisbane who became infected with *Leptospira icterohaemorrhagiae* and who became severely jaundiced prior to death.

In a limited number of sera submitted from New South Wales, leptospiral antibodies were

found in 27 patients and in 22 of these the titres obtained indicated recent infection. All these cases were from the Northern Rivers District and 19 of the infections were due to *Leptospira pomona* and 3 to *Leptospira hyos*. Antibodies to *L. pomona* were found in the serum of a patient from Broken Hill (N.S.W.) and to *L. hyos* in one from Tasmania.

TABLE CXVI
DISTRIBUTION OF SEROTYPES CAUSING LEPTOSPIROSIS IN
NORTH AND SOUTH QUEENSLAND (1959-60)
IN 194 PATIENTS

Serotype	Number of Patients in North Queensland	Number of Patients in South Queensland
<i>L. icterohaemorrhagiae</i>	1	3
<i>L. canicola</i>	2	..
<i>L. zanonii</i>	15	..
"Robinson" type	1	..
<i>L. australis</i>	26	1 (?)
<i>Hebdomadis</i> serogroup	10	..
<i>L. pomona</i>	16	91
<i>L. hyos</i>	3	18
<i>L. pomona</i> (mixed infection)	..	3
<i>L. hyos</i>	4	..
<i>L. celledoni</i>	..	..
Total	78	116

Twenty-two cultures of leptospira isolated in North Queensland from patients, were identified in the laboratory. The distribution of these is as follows: *L. icterohaemorrhagiae* 1, *L. canicola* 1, *L. zanonii* 3, *L. australis* 10, "Robinson" type 1, *Hebdomadis* serogroup 3, *L. pomona* 1, *L. celledoni* 2.

(c) Serological Diagnosis of Leptospirosis

The microscopic agglutination test performed with living culture antigens remains the most widely favoured procedure. It has been the standard diagnostic test used in this laboratory for many years. It provides the maximum amount of information and no special preparation or standardization of antigens is required. In order to cope with the increasing number of sera referred to the laboratory, changes in technique designed to conserve both time and materials have been introduced from time to time. The current screening procedure involves the mixing of one drop of culture and one drop of serum in a final dilution of 1:30. Tests are read after 90 minutes incubation at 37 deg. C. No further savings appear possible.

A number of leptospiral macroscopic slide-agglutination antigens have been described and that of Galton et al. (1958) was chosen for trial because of its simplicity in preparation. The antigen consists of a concentrated suspension of leptospira in a solution containing 0.5 per cent. formalin, 12.0 per cent. sodium chloride and 20.0 per cent. glycerin. One volume of serum and five volumes of antigen were mixed on a slide and rotated for four minutes on a Kline shaker. The tests were read macroscopically after standing for ten minutes. The specificity of the test was broadened by the use of an antigen pool containing three serotypes *L. icterohaemorrhagiae*, *L. pomona* and *L. hyos* without significant loss of sensitivity. All sera

exhibiting a titre of 1:100 in the microscopic agglutination test reacted visibly with this antigen. It seems likely that few if any human infections in South Queensland would be missed if sera from this area were screened with the concentrated antigen. Its use, however, involves a much greater volume of leptospiral culture per test and thus requires more rabbit serum for media preparation. A chronic shortage of rabbit serum is already a factor which seriously limits the activities of the laboratory. Whilst it is felt that the macroscopic slide-agglutination test holds no advantages for us over our present methods, it could be useful in hospital laboratories where leptospiral cultures are not maintained.

The economical preparation of antigens, living and concentrated, would be facilitated by the adaptation of diagnostic strains to growth in media containing sheep serum instead of rabbit serum. This matter is being explored.

(d) Survey of wild and domestic animals

The study of animal reservoirs of leptospira in North Queensland has continued in conjunction with members of the Field Station of the Queensland Institute of Medical Research.

Agglutination Tests—

(i.) *General survey.*—The results of a wide general survey of wild and domestic animals have been reported in previous years; this survey has been continued with the object of filling gaps in the host-serotype records.

Sera from 68 general survey animals were tested, in addition to approximately 160 outstanding from last year's Annual Report. The only new host record for North Queensland is the finding of antibodies against *L. pomona* in the blood of a domestic cat.

(ii.) *Mark-Recapture experiments.*—The principal effort, commenced last year, has been the following of infection in individual marked animals. For this purpose animals have been captured in sample areas, bled, marked, and released to be recaptured and bled again at approximately monthly intervals. It has, thus, been possible to assemble series of samples from the same individual animal.

Tests on 946 sera from animals in three Mark-Recapture ("M-R") experiments, bringing the total number of sera reported to 1,040 from 629 "M-R" animals. Table CXVII. shows the proportion of animals showing serum agglutinins at one or more examinations, and the serotypes involved.

(iii.) *Identification of strains isolated.*—During the year the following strains of leptospira were isolated and identified from wild animals, either direct from kidney culture, or by cultivation of laboratory mice previously inoculated with urine from "M-R" animals.

Species	Serotype identified
3 <i>Rattus conatus</i> ..	3 <i>australis</i>
1 <i>Rattus rattus</i> ..	<i>australis</i>
1 <i>Perameles nasuta</i> ..	<i>australis</i>
1 <i>Rattus assimilis</i> ..	<i>australis</i>
1 <i>Isodon macrourus</i> ..	<i>hebdomadis</i> serogroup
1 <i>Isodon macrourus</i> ..	<i>zanoni</i>

Also from the Field Station 54 sera from experimental animals and 11 from eight humans were tested for agglutinins. Two *hebdomadis* group infections were detected in the latter, and the infecting strains isolated.

TABLE CXVII
"M-R" ANIMALS TESTED FOR SERUM AGGLUTININS

Species	Proportion of animals showing agglutinins	Serotypes indicated				
		<i>icterohaemorrhagiae</i> *	<i>pyrogenes</i> serogroup	<i>australis</i> serogroup†	<i>puscosa</i>	<i>hebdomadis</i> serogroup
Bandicoots—						
<i>Perameles nasuta</i> ..	13/46	+	+++	+		+++
<i>Isodon macrourus</i> ..	16/63		+++	++		+++
Rodents—						
<i>Hydromys chrysogaster</i>	1/20					++
<i>Uromys caudimaculatus</i>	6/20		+	++		
<i>Melomys</i> spp. ..	15/254		+	++		
<i>Rattus s. conatus</i> ..	6/69		+	+		
<i>R. assimilis</i> ..	40/82		+	+		+
<i>R. rattus</i> ..	2/25		+	+		+
<i>Mus musculus</i> ..	0/2					
Others—						
<i>Tachyglossus aculeatus</i>	0/2					
<i>Hypsiglymmys</i>						
<i>moschatus</i> ..	0/1					
<i>Varanus varius</i> ..	0/2					
<i>Bufo marinus</i> ..	0/6					
Frogs ..	0/3					
Birds ..	0/14					

* = *L. icterohaemorrhagiae* is difficult to identify by serological evidence alone.

† = *australis* serogroup strains isolated have been identified as *L. australis*. In the *pyrogenes* serogroup, one strain of *L. zanzoni* was isolated from *I. macrourus* and one strain of "Robinson" from *U. caudimaculatus*.

‡ = antibodies only detected.

§ = antibodies detected, and at least one strain isolated.

(e) Colonial Growth of *Leptospirae*

American workers have recently described methods for the cultivation of leptospirae as discrete colonies, grown from single cells, on solid media. This technique is being investigated. Some strains have been grown successfully and culture lines established from single colonies.

6. COMPLEMENT-FIXING ANTIBODIES FOR THE PSITTACOSIS-LYMPHOGRANULOMA GROUP OF VIRUSES IN PATIENTS WITH PYREXIAS

In the period 1st January, 1959, to 30th June, 1960, sera from 4,931 patients have been examined for complement-fixing antibodies to the psittacosis-lymphogranuloma group of viruses. These patients were all either suffering from or in the convalescent phase after some pyrexial illness. The particular antigen used in the laboratory is that prepared from the E.A.E. virus, a group-reactive antigen, which will detect antibodies to many viruses within the psittacosis-lymphogranuloma group.

Of the 4,931 patients effectively tested it was found that sera from 229 or 4.7 per cent. gave titres of 1:8 or greater. The distribution of these titres is set out in Table CXVIII.

TABLE CXVIII
DISTRIBUTION OF C.F. TITRES TO E.A.E. VIRUS ANTIGEN IN 229 PATIENTS

	C. F. Titre					
	1:8	1:16	1:32	1:64	1:128	1:256 or greater
Number of patients	105	77	25	14	7	1
Percentage	46%	33.6%	10%	6%	3%	0.4%

From 112 of the 229 patients with titres for E.A.E. virus, single serum specimens were tested but from the remainder paired sera were available. Eighty-three of the patients were diagnosed serologically as having some disease unrelated to infections with this group of viruses, whilst in the other 146 patients the fever remained undiagnosed. The relationship of E.A.E. virus complement fixation titres in single and paired sera to the diagnosis of the patient's illness is set out in Tables CXIX and CXX.

From the onset it was exceedingly difficult to know what significance to attach to these titres to the E.A.E. virus antigen. It is necessary to find out whether these reactions are specific, and do in fact represent evidence of past or present infection with a member of the psittacosis-lymphogranuloma group of viruses. The more complex problem is to determine what particular virus or viruses in this group are responsible for these antibodies.

As far as the investigation has proceeded in human sera, the reactions are reproducible and seem consistent with contact at some time past or present with a virus of the psittacosis-lymphogranuloma group. Whether this contact amounts on all occasions to clinically apparent disease has yet to be determined. To date all the sera tested have been from patients with some pyrexial illness, and it will be necessary to determine the incidence of reactions to the E.A.E. virus in a control group of normal persons of approximately the same age and place of residence.

TABLE CXIX
RELATIONSHIP OF E.A.E. VIRUS COMPLEMENT FIXATION TITRES IN SINGLE SERA FROM 112 PATIENTS TO ULTIMATE DIAGNOSIS

	C. F. Titre (E. A. E. Virus)						
	8	16	32	64	128	256	Totals
Number of patients	63	37	6	5	..	..	112
Diagnosis—							
Q fever ..	9	6	3	1	..	..	19
Leptospirosis ..	3	1	..	..	..	..	4
Infectious ..							
mononucleosis	4	2	1	1	..	..	8
Murine Typhus	1	1	..	..	..	..	2
Brucellosis ..	1	1	..	..	..	..	2
Undiagnosed ..	45	26	2	3	..	1	77

TABLE CXX
RELATIONSHIP OF E.A.E. VIRUS COMPLEMENT FIXATION
TITRES IN PAIRED SERA FROM 117 PATIENTS
TO ULTIMATE DIAGNOSIS

	Stationary or less than a fourfold rise in titre	Fourfold rise in titre	Totals
Number of patients	104	13	117
Diagnosis—			
Q fever	24	6	30
Leptospirosis	10	2	12
Infectious mononucleosis	1	..	1
Murine Typhus	4	..	4
Brucellosis	1	..	1
Undiagnosed	64	5	69

It was thought that there might be in these patients some occupational or geographical relationship to the presence of E.A.E. virus antibodies, and a proforma has been sent out to accumulate data on these points. This information is incomplete, but to date shows no definite occupational association.

Certain of the diseases caused by this group of viruses such as lymphopathia venereum and trachoma can be excluded as they are excessively rare in the white population of this State and there was no suggestive history to suggest such diagnoses.

In the series of 33 patients with titres of 1:32 or greater, collected during the last twelve months, probably nine were true cases of psittacosis, since all had had close contact with either parrots or budgerigars. These cases occurred in the following localities: Ipswich (2), Brisbane (2), Toowoomba, Atherton, Charleville, Crow's Nest, and Newcastle (N.S.W.). These cases of psittacosis are in addition to the 12 reported in the Annual Report of 1958-59.

It is well known that viruses of the psittacosis-lymphogranuloma group can cause a variety of infections in both sheep and cattle and possibly similar infections may occur in other domestic animals, birds and poultry. It seems, therefore, that a detailed history of animal contact must be obtained if one is to solve the source or sources of these infections. One should exercise caution in diagnosing psittacosis merely on the evidence of antibodies in human sera to the E.A.E. virus or some other group-reactive antigen.

7. SEROLOGICAL DIAGNOSIS OF SYPHILIS

In 1945 the Eagle complement fixation test for syphilis was introduced in the laboratory and performed in parallel with the British Medical Research Council technique until 1947, when the latter test was discontinued. Eagle and Kline tests have been performed routinely on all sera submitted for examination since then. Kahn tests have been made on selected sera since 1949.

During recent months the current procedures have been under review. A comparative study of these and other tests using cardiolipin and Reiter protein antigens has been initiated with a view to adopting procedures more in line with modern practice when experience has been gained in their performances. Sera which are reactive in a sensitive screening test for Wassermann antibody will be tested by the Reiter protein complement fixation test which detects antibodies to

treponemas and which gives results claimed to be comparable to the treponema immobilization test.

Since March, 1959, the Kolmer 1/5 volume test using the Kolmer Cardiolipin antigen has been run in parallel with the routine Eagle Wassermann and Kline tests. At present a comparison is being made between two Reiter complement-fixing antigens.

8. ATYPICAL MYCOBACTERIA

With the successful treatment of tuberculosis and the control of the disease, one is becoming increasingly aware of the atypical mycobacteria both clinically and bacteriologically. This appears to be a world-wide problem though more pronounced in certain geographical areas. It is evident that certain of these atypical acid-fast organisms can produce a disease clinically very like tuberculosis.

Certain criteria have been derived which help to delineate the causative relationship between these atypical acid-fast bacilli and the disease process in humans. These are:—

- (1) The isolation of atypical mycobacteria in pure culture (i.e., not with *Mycobacterium tuberculosis*).
- (2) The isolation of the same atypical organism on more than one occasion.
- (3) The demonstration of atypical mycobacteria by culture of biopsy or surgically resected specimens.
- (4) Immunobiological data (differential skin tests).

The term "atypical" is unsatisfactory but serves merely as an expedient and should be replaced by specific identifying names as soon as the taxonomy of this group of organisms is understood. These organisms are not merely variants of *M. tuberculosis* var. *hominis* and *bovis*, but differ in so many respects that complete taxonomy and species identification is indicated. They have certain unique characteristics:—

- (1) Most grow at low temperature and often rapidly.
- (2) Their colonies are frequently pigmented and smooth.
- (3) The majority of the strains are resistant *ab initio* to P.A.S., Isoniazid and Streptomycin.
- (4) They fail to produce progressive disease in guinea pigs—a fact which by no means necessarily implies a lack of pathogenicity for man.

At present most workers concerned with the problems of the atypical mycobacteria are endeavouring to devise some simple *in vitro* test to aid in the differentiation and determination of virulence of these mycobacteria. Many have been tried and discarded but certain tests appear to be of some, though limited, value. No single cytochemical test can be relied upon for final virulence determination and it is probably safe to say that no laboratory animal can provide a reliable measure of the pathogenicity of atypical acid-fast bacilli.

It is a perplexing problem to know which of the atypical acid-fast organisms one encounters in one's routine cultures are of significance. Some are undoubtedly truly pathogenic, appearing in

repeated cultures from patients with pulmonary disease, some are probably harmless commensals occurring with *M. tuberculosis* and some are true contaminants from food, water, &c. One cannot at present assess their virulence with any degree of reliability and their classification is unsatisfactory and inadequate. To serve as a base-line towards some species identification, however, the classification devised by Runyon has been adopted temporarily in this laboratory.

In an area such as Queensland where there is such a high incidence of tuberculin reactors and a low incidence of clinical tuberculosis these atypical mycobacteria may well be of great importance and in the present state of our knowledge none can be ignored.

The incidence of these organisms in comparison with true *M. tuberculosis* in the routine cultures of human material submitted to the Tuberculosis Laboratory, is set out in Table CXXI.

TABLE CXXI

INCIDENCE OF ATYPICAL MYCOBACTERIA COMPARED WITH *M. tuberculosis*

Year	Number of Specimens	% positive <i>M. tuberculosis</i>	% atypical Mycobacteria (one or more tubes)
1956	6,924	12.4%	1.8%
1957	8,371	9.0%	1.8%
1958	9,938	4.1%	1.6%
1959	9,039	5.6%	2.2%

Seventy-one strains isolated from 56 patients have now been typed according to the Runyon classification and the results are as follows:—

Non-chromogenic—Group III.	39
Chromogenic—Group III.	4
Non-chromogenic—Group IV.	12
Chromogenic—Group IV.	14
? <i>M. fortuitum</i>	2
Total	71

Nine further strains are being investigated at present. It is notable that in our series there have, to date, been no photochromogens or scotochromogens. Of the 71 strains isolated from 56 patients, the same organism was cultured from two patients on three separate occasions and in eleven patients, twice. In one case, a non-chromogenic Group III mycobacterium was isolated on five occasions and atypical acid-fast bacilli were seen in smears from resected lung tissue from the same patient subsequently. Unfortunately the organism could not be cultured from the lung.

Fifty-six of the strains of atypical mycobacteria have been inoculated subcutaneously into guineapigs and all failed to produce disease. Twelve strains inoculated subcutaneously into rabbits failed to produce disease. Nine strains have been inoculated into mice by both the intravenous and intraperitoneal routes. With three of these, disseminated disease was produced by both routes, with two strains disease was produced by the intraperitoneal route only. Four of the strains failed to produce any evidence of disease by either injection method.

To date the sensitivity of 63 strains of atypical mycobacteria have been tested to streptomycin, para-amino-salicylic acid and isoniazid, and 57

strains to viomycin, pyrazinamide and cycloserine. The results are as follows:—

30% were resistant to Streptomycin	100 micrograms
55% were resistant to Streptomycin	10 micrograms
97% were resistant to P.A.S.	100 micrograms
98% were resistant to P.A.S.	10 micrograms
97% were resistant to isoniazid	5 micrograms
100% were resistant to isoniazid	1 microgram
60% were resistant to viomycin	100 micrograms
86% were resistant to viomycin	10 micrograms
100% were resistant to pyrazinamide	500 micrograms
100% were resistant to pyrazinamide	20 micrograms
72% were resistant to cycloserine	20 micrograms
95% were resistant to cycloserine	5 micrograms

9. "PRIMARY" DRUG RESISTANCE OF *M. TUBERCULOSIS* ISOLATED FROM PATIENTS WITH NO PREVIOUS CHEMOTHERAPY

Since July, 1956, sensitivity tests with streptomycin, para-amino-salicylic acid and isoniazid have been made on 519 strains of *M. tuberculosis* isolated from newly diagnosed and untreated cases.

For the sensitivity tests the drugs in the following strengths, streptomycin 100, 10 and 2 micrograms per mil., P.A.S. 100, 10 and 1 microgram per mil. and isoniazid 5, 1 and 0.2 microgram per mil. respectively were incorporated in modified Lowenstein-Jensen medium. The results obtained are set out in Table CXXII.

TABLE CXXII

RESULTS OF SENSITIVITY TESTS OF 519 STRAINS OF *M. tuberculosis* ISOLATED FROM UNTREATED PATIENTS

	Streptomycin (100 micrograms)		Streptomycin (10 micrograms)	
	No.	%	No.	%
Sensitive	515	99	456	88
Resistant	4	1	63	12

	P.A.S. (100 micrograms)		P.A.S. (10 micrograms)	
	No.	%	No.	%
Sensitive	508	98	501	97
Resistant	11	2	18	3

	Isoniazid (5 micrograms)		Isoniazid (1 microgram)	
	No.	%	No.	%
Sensitive	499	96	480	93
Resistant	20	4	39	7

	High concentration		Low concentration	
	No.	%	No.	%
Resistant to all 3 drugs ..	2	0.38	6	1.1
Resistant to Strep. + P.A.S.	2	0.38	7	1.3
Resistant to Strep. + I.N.A.H. ..	2	0.38	15	2.8
Resistant to P.A.S. + I.N.A.H. ..	6	1.1	13	2.4
Resistant to one drug only	23	4.4	69	13.1

In the International Tuberculosis Yearbook for 1960 the results of a survey of "Primary" drug resistance was published. This survey was organised by the International Union Against Tuberculosis and results were obtained from seventeen different countries. Since no figures from Australia were included this present series may be of value and it is hoped to have them published in the near future.

10. SEROLOGICAL DIAGNOSIS OF MELIOIDOSIS

A diagnosis of melioidosis was made by culture in a female patient of 54 years at the Commonwealth Health Laboratory in Townsville in February, 1960. Serum from this patient had been sent to our laboratory for routine tests, all of which proved to be negative. This serum was subsequently sent to Mr. Hall, of the Animal Health Station, Oonoonba, and a titre between 1:80 and 1:160 for melioidosis was obtained.

This result is worthy of record, as it probably represents the first occasion on which this disease has been diagnosed by the complement fixation test. Much credit is due to the staff of the Animal Health Station for developing a satisfactory complement fixation test antigen. This will undoubtedly prove to be a useful and important laboratory tool. Melioidosis may well prove to be more common in this State than has been hitherto realised. A satisfactory complement fixation test antigen will now enable workers to undertake surveys of human sera and to obtain more information regarding the incidence and epidemiology of this serious disease.

11. PHAGE TYPING OF STAPHYLOCOCCI

A laboratory for the phage typing of Staphylococci was established in August, 1959. Besides the typing of cultures or swabs submitted to the laboratory, several special investigations have been undertaken during the year at the Brisbane Women's Hospital and the Princess Alexandra Hospital.

(a) Trial of the efficacy of Phisohex in newborn babies

This investigation was commenced on 14th September, 1959, and continued till 17th February, 1960, at the Brisbane Women's Hospital. During this period all babies admitted to one ward (M3) were bathed with phisohex in the labour ward and then on every subsequent alternate day. The procedure employed was for the baby's skin to be wet with a moistened swab; to another moistened swab 2 cc. of phisohex was applied and the entire body surface was swabbed. The skin was then again moistened with wet swabs and the lather patted off with a towel. A further 1 cc. of phisohex was then applied to the infant and allowed to dry on the skin. phisohex was also used for hand washing by the nursing staff in this ward.

To serve as controls an equal number of babies was selected with birth times as close as possible to those in the test group. These babies were in wards M1 and M2 and they were bathed in the normal manner.

A nasal and umbilical swab was taken from each baby twice during the first five days. The results of these are set out in Table CXXIII.

Each baby in both groups was watched for signs of any infection, e.g. pustules, sticky eyes,

&c. Coagulase positive staphylococci were grown from 9 (2.3 per cent.) such infections in the phisohex treated group and from 16 (4.0 per cent.) in the control group. Unfortunately these numbers are too small to be statistically significant.

(b) Staff carrier rate at Women's Hospital

Over the same period the staff in the three wards had nasal swabs taken each week to determine the carrier rate. As the staff often worked in various parts of the hospital, very little difference was noted in the carrier rate in the three wards.

Number of nasal swabs taken from staff	948
Number of coagulase positive staphylococci cultured	373 (39.5%)
Number of phage type 80/81 and related strains	64 (17%)
of coagulase positive cultures	

(c) Staphylococcal carrier rate in mothers on admission and mothers and babies on discharge from hospital

It was decided to determine the nasal carrier rate of mothers on admission and discharge, and also to compare the results of nasal swabbings of the mother and baby on the day of discharge.

Mothers on admission—

Out of 47 nasal swabs, 17 (36 per cent.) had coagulase positive staphylococci and one of these 17 was an 80/81 strain.

Mothers on discharge—

Out of 130 nasal swabs, 60 (46 per cent.) carried coagulase positive staphylococci and 4 of these 60 were 80/81 strain.

Results of nasal swabs of mothers and their babies on discharge gave the following results:—

Mother negative baby negative	4
Mother positive baby negative	5
Mother negative baby positive	66
Mother positive baby positive	55
Total	130

Of the above, 4 mothers and 42 babies carried 80/81 strains. In one case only the mother and baby both carried this strain. Unfortunately the numbers tested in each group were too small for statistical analysis.

(d) Infections in babies

For six months from 14th September, 1959, all cultures from lesions in babies which grew coagulase positive staphylococci were phage typed. The results are set out hereunder—

Eye infections—	
Total	102
80/81 or related strains	47 (46%)
Group III phage type	21 (21%)
Pustules—	
Total	31
80/81 or related strains	16 (51%)
Group III phage type	6 (19%)
Infected cord or umbilicus—	
Total	40
80/81 or related strains	15 (38%)
Group III phage type	18 (45%)

(e) Breast abscess

In six months from 1st September, 1959, 10 cultures from breast abscesses were received from the Brisbane General Hospital. Seven of these grew type 80/81 strains.

TABLE CXXIII

RESULTS OF NASAL AND UMBILICAL SWABBINGS IN NEWBORN INFANTS IN PHISOHEX TREATED AND CONTROL GROUPS

Days after birth	NASAL					UMBILICAL				
	Total	Coagulase +ve staphylococci	Per cent.	80/81 Strain	Per cent. of Coagulase +ve with 80/81 Strain	Total	Coagulase +ve staphylococci	Per cent.	80/81 Strain	Per cent. of Coagulase +ve with 80/81 Strain
2nd Day P ..	127	4	3	0	..	127	28	22	2	7
C ..	125	16	13	8*	50	125	51	41	13	25†
3rd Day P ..	260	40	15	4	10	260	113	43	18	16
C ..	261	83	32	19	23	260	201	77	40	15
4th Day P ..	124	30	24	6	20	124	66	53	11	17
C ..	122	60	50	11	18	122	110	90	25	23
5th Day P ..	281	92	33	14	15	281	174	62	26	15
C ..	276	172	62	29	17	276	241	87	49	20

P = Phisohehex treated group.

C = Control group.

* = 6 of these occurred in 1 week.

† = 8 of these occurred in 1 week.

(f) Naseptin trial for treatment of carriers in the staff

This investigation was commenced on 23rd May, 1960. In a six-week period, 193 members of the nursing staff were swabbed and of these 66 (34 per cent.) carried coagulase positive staphylococci. Of these, 38 were carrying 80/81 and related strains, i.e., 58 per cent. of the coagulase positive cultures. Thirty of these 38 carriers have been treated with naseptin for one week and then they were reswabbed after one week without treatment. On the second swabbing 6 (20 per cent.) were still carrying their 80/81 or related strain.

This survey is still incomplete and the 193 nurses are now being swabbed six weeks after their first swabbing to determine whether treatment with naseptin has lowered the overall carrier rate. The treated nurses are also being reswabbed at fortnightly intervals to see how soon they become reinfected with the 80/81 strains.

(g) Staphylococcal survey in surgical wards at Princess Alexandra Hospital

This survey was commenced on 24th April, 1960. Patients are selected at random in two surgical wards G6 and M5. Only "clean" operations are included and these are mainly hernias, cholecystectomies, thyroidectomies, appendicectomies, gastrectomies and mastectomies.

The patient on the day of the operation has swabs taken from the anterior nares and the wound site. Approximately five days after the operation swabs are again taken from the nose and the wound. Details of any pre-operative or post-operative antibiotic treatment are noted and the clinical appearance of the wound is graded into one of three classes, namely:—clean, 2nd stage infection and 3rd stage infection, the latter being a broken down wound with profuse pus. The patients are asked to return to an outpatient clinic approximately three weeks after the operation and the appearance of the wound is then again clinically graded and swabs taken if the wound appears infected.

Swabs are taken from the medical and nursing staff of the two surgical wards and the theatres involved in the survey. Any lesions on the hands or faces of surgeons or nurses are swabbed.

Seventy-seven cases have been completed to date and 20 patients (26 per cent.) were found to be nasal carriers of coagulase positive staphylococci on the day of operation. Two of these were carrying 80/81 strains.

On the second swabbing approximately five days after operation 27 (35 per cent.) were nasal carriers, two with 80/81 strains.

Eight patients (10 per cent.) had coagulase positive staphylococci on their wound site before operation (one with an 80/81 strain).

All except three were negative when swabbed five days later. These three all developed slight infections with 80/81, 31B and an untypable strain respectively. Nine patients (12 per cent.) had coagulase positive staphylococci on their wound site approximately 5 days after operation. These results are set out in Table CXXIV.

Infections—

Seven patients in the series (9 per cent.) had broken down wounds. The phage types were 80/81 (3), 81, 42E, 7/47D, 7/31B/47D. One case was readmitted 8 days after discharge, i.e., 13 days post operation; one patient with type 7/31B/47D was seen on the 5th day after operation and the others were seen 11-18 days after operation.

TABLE CXXIV
POST-OPERATIVE WOUND INFECTIONS

Number of days after operation	Infecting phage type	Clinical condition of wound at time of swabbing	Subsequent condition of wound
5	81	Clean	Clean
5	81	Clean	Clean
5	29/42E	Clean	26 days: slight infection
6	80/81	Clean	8 days: slight infection
11	81	Broken down	12 days: broken down
5	42E	Slightly moist	
5	7/31B/47D	Broken down	
5	Non-typable	Infected	
5	Non-typable	Infected	

Nineteen patients (25 per cent.) showed signs of slight infection. Eight of these were seen in the wards between the 5th and 8th day after operation. Coagulase positive staphylococci of phage types 42E, N.T. (2) were grown from three, coliform organisms from one and non-pathogens were isolated from the other 4 patients.

On attendance at Outpatient Clinic, 11 others showed signs of slight infection. Of these, 3 grew coagulase positive staphylococci types 3A/3C, 80 and 29. In 2 non-pathogens were isolated and in 6 no swabs were taken.

Staff—

In the 11 weeks ending 10th July, the total number of staff swabbed was 729 and from these coagulase positive staphylococci were grown in 324, i.e., 44 per cent. Of these the number of type 80/81 and related strains was 91 or 28 per cent. of coagulase positive cultures. Table CXXV.

These percentages give the carrier rates in these particular wards over a certain period. They are possibly higher than the overall carrier rate if the whole hospital were swabbed at any one time.

Antibiotic Sensitivity Tests of Staphylococci at Princess Alexandra Hospital

Sensitivity tests to Penicillin, Streptomycin, Chloramphenicol, Terramycin, Erythromycin and Tetracycline are carried out on cultures when first isolated from any one person. Repeat sensitivity tests were only done when the phage type for any one person changed.

Number of cultures tested	261	..
Number of cultures sensitive to all antibiotics	126	48%
Number of cultures resistant to Penicillin and sensitive to all others	101	39%
Number of cultures resistant to Penicillin and one or more others	34	13%

Of these 34 cultures, the number resistant to the antibiotics were as follows:—

Penicillin	34
Streptomycin	15
Chloramphenicol	0
Terramycin	28
Erythromycin	2
Tetracycline	15

Thirteen of these were 80/81 or related strains.

TABLE CXXV
RESULTS OF SWABBING OF NURSING AND MEDICAL STAFF

	Nursing Staff						Medical Staff	
	Ward M5		Ward G6		Theatre		No.	Per cent.
	No.	Per cent.	No.	Per cent.	No.	Per cent.		
Total swabs	153		176		219		181	
Coagulase +ve	58	38	59	34	100	45	107	59
80/81 and related strains	15	26 per cent. of coagulase +ve Staphylococci	28	48 per cent. of coagulase +ve Staphylococci	26	26 per cent. of coagulase +ve Staphylococci	22	21 per cent. of coagulase +ve Staphylococci

Air Sampling—

Bacteriological tests were conducted on the air being supplied to one of the operating theatres where a precipitron unit was installed at the inlet. A millipore membrane filter was used in a small pump which sucked through the filter a known quantity of air in a given time. The filter was subsequently incubated on a media-impregnated pad and direct colony counts were made. Owing to the fineness of the filters and the capacity of the pump, only small volumes of air could be sampled. Fifteen cubic feet of air were found to contain only 5 bacteria-containing particles, i.e. 0.3 particles per cubic foot of air. On a number of blood plates exposed for a total of 50 minutes only 7 colonies grew and no *Staphylococcus aureus* was recovered.

This test represented a preliminary trial of the technique, and doubtless the low bacterial counts were due to the efficiency of the precipitron unit and to the fact that the operating theatre was not in use.

There is a necessity for further air sampling in the surgical wards, theatres and "dressing" areas, and these will be undertaken as soon as possible.

(h) Cultures from Country Centres

One hundred and three cultures have been received from country centres, namely Cairns, Charleville, Longreach, Mackay, Stanthorpe, Townsville, Warwick and Wondai.

With the exception of one from Townsville, all cultures were from staff or patients in the maternity wards. Four out of seven infections were caused by strain 80/81. Twelve out of 83 staff members were found to be carrying type 80/81 strain.

12. HISTOPATHOLOGY

The survey of resected tuberculous lungs has continued and a total of 133 specimens have now been examined both bacteriologically and histologically. Six of the specimens were from patients considered to be infected with atypical acid-fast bacilli, yet the histopathology of these specimens differed in no significant degree from that seen in typical tuberculous lesions.

Since June, 1960, the laboratory has undertaken the histopathological examination of biopsies from the Queensland Radium Institute. At present this varies between 40 to 60 biopsies each week.

Amongst the routine biopsy and post-mortem material examined during the year the following are of particular interest:—

"Milkers nodules" (8 cases).

Chromoblastomycosis (5 cases): from Maryborough (2), Tully, Kingaroy and Gympie.

Sporotrichosis (from Maryborough).

Cutaneous berylliosis.

Amniotic fluid embolism.

Myocarditis in infancy and young adults (5 cases).

Xanthofibroma theca cellulare.

Kaposi sarcoma.

Coronary occlusion in childhood.

Liposarcoma of the sacrum in a young adult male.

Chorionepithelioma.

13. PUBLICATIONS

Dwyer, R. St. C. (with Pope, J. H., and Scott, W.), (1960): "Coxiella burneti in Kangaroos and Kangaroo Ticks in Western Queensland," Aust. J. exp. Biol. 38, 17.

Dwyer, R. St.C., Tonge, J. I., and Hoffman, T. R. (with Scott, W. Derrick, E. H., and Pope, J. H.), (1960): "A Remarkable Outbreak of Q fever" (in the press).

Tonge, J. I. (1959): "Brills Disease (Recrudescence Epidemic Typhus) in Australia," M.J. Australia, 2, 919.

QUEENSLAND GOVERNMENT CHEMICAL LABORATORY, 1959-1960

Director, Government Analyst and Chief Inspector of Explosives: S. B. WATKINS, M.Sc., F.R.A.C.I.

Deputy Director and Inspector of Explosives: A. S. HURWOOD, B.Sc., F.R.A.C.I., A.R.I.C.

The Government Chemical Laboratory provides a co-ordinated chemical service for Queensland Government Departments except those of Agriculture and Stock and the Railways, both of which maintain chemical laboratories. Collaboration however exists between the Government Chemical Laboratory, the Agricultural Chemical Laboratory, and the Dairy Research Laboratory relative to any advice requested with water samples which are received by any of the three services. The Government Chemical Laboratory advises on the chemical suitability of the water for industrial purposes, human consumption, and household use, and for septic tanks; the Agricultural Chemical Laboratory on the suitability of the water for irrigation, stock watering, and gardens; and the Dairy Research Laboratory for dairy purposes and in butter factories.

With the increase in the variety and complexity of goods carried by the Railway Department there has been an increasing demand for advice on the nature, hazards and classification of many lines of goods. The laboratory also tested a range of textiles for the Railway Comptroller of Supplies. The Brisbane City Council sought the services of the laboratory in textile testing of cloth for uniforms and quite a range of work was also undertaken for the Commissioner of Police in anticipation of the introduction of new uniforms. In all this work the new Avery Textile Testing Machine referred to in last year's report has been used. More work is being carried out for the various Commonwealth Departments in Queensland. Of this the Department of Customs and Excise submits the largest proportion with the Department of Primary Industry next in importance. Other include the Aeronautical Inspection Directorate, the Department of Works and Housing, the Portmaster General, the Army and the Repatriation Department.

The following State Departments and semi governmental authorities utilised the services of the laboratory:—

- The Director-General of Health and Medical Services.
- The Director of the Laboratory of Microbiology and Pathology.
- The Government Medical Officer.
- The State Mining Engineer and Chief Inspector of Mines.
- The Chief Inspector of Coal Mines.
- The Chief Government Geologist.
- The Department of Public Works.
- The State Housing Commission.
- The Commissioner of Police.
- The Irrigation and Water Supply Commission.

- The Department of Main Roads.
- The Department of Education.
- The Auditor-General.
- The Co-ordinator-General of Public Works.
- The State Stores Board.
- The Railway Department.
- The Department of Harbours and Marine.
- The Portmaster.
- The Department of Local Government.
- The Coal Board.
- The State Electricity Commission.
- The Department of Weights and Measures.
- The Director of Secondary Industries.
- The Hospital Boards.
- The Medical and Dental Professions.
- The Public.

Accommodation

Accommodation is still a vexed question for augmented sectional staffs consequent on increased service demands tax the available space. The transfer of part of the activities of the water section to a building in Colchester Street, South Brisbane, and the establishment of an Air Pollution Laboratory in the same building did little to solve the problem for the latter was a new activity and the increase of one in the professional strength of the Water Section rather discounted the apparent advantage for the additional officer had to be housed with another officer in the foods room of the central laboratory. A part solution will be forthcoming in the near future by the provision of additional laboratory facilities on the side verandah at Colchester Street. Any of these moves does not assist in overcoming the congestion in the ores room of the laboratory where 2 work tables and a large furnace clutter up the passage way and working space is reduced to a minimum because of the necessity to house furnaces and other permanent equipment on work benches, originally intended for analytical procedures. The conditions under which the coal washing investigations are undertaken leave much to be desired especially during wet and windy weather.

Equipment

The Avery Textile Testing Machine referred to in last year's report as awaiting installation is now operative, though some delay has been occasioned in securing the air conditions required for standard practice in textile testing. The spectrophotometer also referred to in the last report will

be set up in the near future in an existing room to be specially equipped for this purpose and for like equipment to cover the infra red range for which provision on the Estimates has been requested. This complementary infra red spectrophotometer is required for the work of the Customs Section of the laboratory in resolving the nature of substances used in plastic manufacture and the analysis of compound medicines, &c.

Steps are being taken to acquire a modern gas chromatograph to assist in the analysis of samples of ground and bore gases taken during operations concerned with the search for oil in Queensland. This equipment will find wider application than that referred to above, for it can be used to analyse in great detail with a high degree of accuracy any substance or mixture of substances which can be vapourised.

The air pollution survey commenced last year has been conducted for a full twelve months, and the observations made and results obtained are now being subject to critical analysis with a view to assessing what is the level of pollution in Brisbane. One deposit gauge station is still being maintained for reference purposes. Automatic smoke recording is continuing, as this phase of the work was commenced at a later date.

Because of legal requirements the title of Government Analyst was restored, and the official designation is Director of the Government Chemical Laboratory, Government Analyst and Chief Inspector of Explosives.

Table CXXVI. covers the total number of samples examined for—

Year	Total Number of Samples
1950-51	14,137
1951-52	15,657
1952-53	26,091 (record year)
1953-54	21,894
1954-55	20,905
1955-56	21,178
1956-57	19,927
1957-58	21,806
1958-59	23,157
1959-60	24,286

The total for the year under review is the second highest on record, and its analysis among the sections is shown in Table CXXVII. in a comparative manner against similar figures for the past five years.

TABLE CXXVII

Year	Section 1	Section 2	Section 3	Section 4
1954-55	7,397	2,815	4,412	6,281
1955-56	6,690	3,207	3,754	7,527
1956-57	6,731	3,686	4,473	5,037
1957-58	8,269	3,887	4,620	5,030
1958-59	8,087	2,830	5,994	6,246
1959-60	7,556	4,236	5,551	6,943

The number of samples submitted by the various Government Departments, Hospital Boards, the medical profession and the public is indicated in Table CXXVIII.

TABLE CXXVIII

State Departments—	
Health and Home Affairs	7,186
Police	444
Mines	50
Coal Board	421
Portmaster	2,438
Geological Survey	1,836
Tile Testing Station	244
Irrigation	1,495
Local Government	66
Harbours and Marine	240
Main Roads	144
State Stores	670
Public Works	1,218
Housing Commission	854
Railways	108
Others	815
Commonwealth Departments—	
Customs	2,480
Commerce	1,447
Others	658
Hospital Boards	993
Medical Profession	164
Public	315
Total	24,286

SECTION I

FOODS, DRUGS AND WATERS

A. S. HURWOOD, B.Sc., F.R.A.C.I., A.R.I.C.,
Deputy Director—Officer-in-Charge

Table CXXIX. gives the source and number of the samples examined.

TABLE CXXIX

Department	No. of Samples
Health and Home Affairs	5,048
Irrigation and Water Supply	1,495
Other Government Departments	771
Local Government	42
Public	200
Total	7,556

TABLE CXXX

SUMMARY OF SAMPLES OF FOODS AND DRUGS EXAMINED FOR THE DEPARTMENT OF HEALTH AND HOME AFFAIRS

Nature of Sample	No. of Samples
Beverage or Cordial	374
Bread	211
Cereal	113
Confectionery	27
Crayon or Colour Pencil	311
Disinfectant	34
Drug or Medicine	197
Fish	34
Fruit or fruit juice	42
Jam or jelly	35
Meat	297
Milk—official	2,160
Milk—unofficial	80
Milk product	81
Paint or Paint Scraping	431
Spirituous Liquor	31
Tobacco	42
Toy	50
Vegetable	10
*Miscellaneous	300
Total	4,860

* The miscellaneous samples include plastic tube, percussion cap, fibre glass, effluent, cracker, soil, vegetation, bait, drinking straw, marking ink, beer glass, Sikes hydrometer, cigarette paper, slipper, cup and saucer, water bottle and dead duck.

TABLE CXXXI

DETAILS OF LEGAL SAMPLES TAKEN BY INSPECTORS
IN ACCORDANCE WITH THE PROVISIONS OF
"THE HEALTH ACTS, 1937 TO 1959"

Nature of Sample	Number Examined	Passed	Failed
Milk	2,160	2,074	86
Paint and paint scraping ..	239	126	113
Minced meat	217	114	103
Sausage	44	22	22
Bread	15	13	2
Spirituos Liquor	14	1	13
Toy	10	..	10
Drug	8	1	7
Drink	7	2	5
Waste Beer	5	..	5
Lysol	1	..	1
Honey	1	..	1
	2,721	2,353	368

TABLE CXXXII

DETAILS OF LEGAL SAMPLES OF MILK SUBMITTED FOR ANALYSIS

District	Total Number of Samples	Number of Samples which Passed the Standard	Number of Watered Samples	Number of Samples below the Standard in Fat (3-3 per cent.) but not Watered	Number of Samples below the Standard in Total Solids (12 per cent.) and/or Solids not Fat (5-5 per cent.) but not Watered nor Deficient in Fat	Proportion of Watered Samples (per cent.)	Average Proportion of Added Water in Watered Samples (per cent.)
Greater Brisbane	1,174	1,163	2	8	1	0.2	14.5
Bundaberg ..	20	20	..	..	..	..	..
Cairns	54	46	6	2	..	..	2.6
Ipswich	273	261	1	9	2	0.4	8.0
Mackay	25	20	5	..	..	20.0	17.0
North Coast ..	159	148	2	9	..	1.3	6.0
Rockhampton ..	47	46	..	1	..	..	..
South Coast ..	121	114	..	5	2	..	..
Toowoomba ..	83	72	2	6	3	2.4	8.5
Townsville ..	63	57	..	6	..	..	..
Western Towns ..	66	54	..	10	2	..	..
Wide Bay ..	75	73	..	1	1	..	..
Totals ..	2,160	2,074	18	57	11	0.8	9.3

SUMMARY OF TABLE CXXXII

	Percentage of Total Number of Samples
Samples adulterated with water ..	0.8
Samples deficient in fat but not watered ..	2.6
Samples below the standard in total solids and/or solids not fat only ..	0.5
Samples which passed the standard ..	96.1
Total	100.0

TABLE CXXXIII
MILK SAMPLES TAKEN IN GREATER BRISBANE
COMPARED WITH PREVIOUS YEARS

Year	Number of Samples	Proportion of Total Samples	Proportion Adulterated with Water
		Per cent.	Per cent.
1952-53	813	42.1	0.7
1953-54	768	37.7	7.7
1954-55	898	51.3	0.9
1955-56	679	41.9	0.9
1956-57	730	46.7	1.9
1957-58	1,305	53.1	0.6
1958-59	1,664	61.2	0.5
1959-60	1,174	54.4	0.2

TABLE CXXXIV

SHOWING MILK POSITION COMPARED WITH PREVIOUS YEARS

Year	Number of Legal Samples	Percentage showing Deficiency in Fat but not Watered	Percentage Below the Standard in Total Solids and/or Solids not Fat only	Percentage of Watered Samples	Added Water in Watered Samples (Average per cent.)
1952-53	1,934	7.8	3.5	2.8	10.2
1953-54	2,036	11.0	7.5	6.3	9.4
1954-55	1,750	6.4	3.0	3.5	10.2
1955-56	1,621	5.4	1.1	3.7	9.2
1956-57	1,562	6.4	2.8	3.7	7.5
1957-58	2,459	5.3	3.0	2.2	8.9
1958-59	2,719	3.3	1.0	1.4	9.6
1959-60	2,160	2.6	0.5	0.8	9.3

MILK

The town supplies of heat treated milk from Brisbane and the larger towns of the State were regularly examined, as also was school supply milk under the free milk scheme.

A study of the statistics in the above tables shows that the milk position this year was easily the best on record due in no small measure to the increased consumption of bulk processed milk. Adulteration with water was at a record low level and for the first nine months of the year the milks submitted were all genuine. Milks deficient in fat and naturally poor milks were also at the lowest levels on record.

In the larger towns where heat treated milk is almost exclusively retailed the bulking in large quantities of milk from numerous sources makes it unlikely that individual samples will fail to comply with the minimum legal standard. Several such samples, however, did give indications of low level adulteration with water and to find the unscrupulous dealer more intensive sampling of milk from the individual suppliers prior to pooling, must be made.

The average fat content of the legal milks was 4.01 per cent. Over the last ten years this figure has varied from 3.75 to 4.03, the average being 3.93 which is well above the prescribed Queensland minimum of 3.3 per cent. It is of interest to note the legal minimum for fat in other States, namely New South Wales 3.2 per cent., Victoria 3.5 per cent., South Australia 3.5 per cent., Western Australia 3.2 per cent., Tasmania 3.3 per cent., and New Zealand 3.25 per cent.

As regards milk products, all the samples of cream and flavoured milks submitted conformed with requirements but with malted milk powder, of seven brands examined three brands contained added cane sugar in contravention of the Regulations.

MEAT

Intensive sampling of minced meat and sausages throughout the State by health inspectors resulted in the examination of an all-time record of 217 legal samples of minced meat and 44 legal samples of sausages. Nearly every second sample failed to conform with requirements due chiefly to the presence of the preservative substance (sulphur dioxide) in the minced meat and excess preservative (sulphur dioxide) in the sausages.

Preservative is not permitted in any proportion in minced meat and only to the extent of 3.5 grains to the pound of sulphur dioxide in sausages. It is surprising that past prosecutions and publicity have had little effect in improving the position.

BREAD

Two hundred and eleven (211) samples of bread were examined.

Bread surveys were carried out in twenty-five towns, including Toowoomba, Ipswich, Dalby, Redcliffe, Gladstone, Cooktown, Mareeba, Proserpine, Kilcoy, and Miles and most of the bread was of good quality and conformed with prescribed standards. Poor quality bread constituted about 5 per cent. of the samples. A number of the wholemeal breads and the brown breads were deficient in wholemeal content.

Of thirty-eight samples sold as milk bread, eight contained less than the prescribed minimum of four per cent. (dry basis) non-fat milk solids. Under "The Weights and Measures Act Amendment Act of 1957" the dry solids content of a two pound loaf of bread must be not less than 19.2 ounces, with proportionate values for loaves of other denominations. One hundred and ten loaves of bread were examined in connection with this legislation, compared with sixty-nine last year and seventy-two the year before.

Queensland is still the only Australian State controlling bread weight on a dry solids basis. Other States are interested and could soon introduce similar legislation. The method has given every satisfaction to baker and consumer alike. The underbaked loaf is now less common than before because the baker knows that under this new legislation provided the dough weights are correct, the loaf can be properly baked without fear of prosecution for short weight bread. This has led to an overall improvement in the quality of bread as sold in Queensland.

FLOUR

Following a good wheat season, the quality of ordinary bakers' flour milled in Queensland was consistently good, judged on the samples examined.

The protein content varied from 11.5 to 13.2 per cent. with an average of 12.2 which is well above average compared with bakers' flour in other States of Australia.

The white bakers' flour invariably conformed with requirements. A few protein rich flours were slightly deficient in nitrogen content (prescribed minimum 2.7 per cent.—dry basis) and a few of the wholemeal flour mixtures were deficient in wholemeal. Of six brands of self-raising flour examined, one brand failed to conform with official requirements.

DRUGS AND MEDICINES

Submissions of drugs and medicines totalled 197 samples.

Drugs were checked for purity against official standards and the composition and claims of new proprietary lines examined. Medicines were checked for accuracy in dispensing and complaint samples from the public examined.

Eighteen pharmacies were included in a dispensing check on prescriptions for ear drops, ointments and antacid powders. The dispensing error in one case alone was considered excessive. Eighteen packages of deteriorated dangerous drugs from various pharmacies and hospitals were checked for identification and quantity for record purposes and then destroyed.

Drugs as sold to the public or as used in hospitals seldom fail to attain the necessary standards. No serious issues were involved in any of the complaint samples received from the public.

SOFT DRINKS

At least thirty towns including Proserpine, Pinalba, Mackay, Innisfail, Kilcoy, Warwick, Thursday Island, Redcliffe, Cooktown, Clermont, and Rockhampton were included in a soft drink survey and 374 samples in all were examined.

Most of the samples conformed with official requirements. A few were labelled incorrectly, others contained excess preservative and a few were sweetened with saccharin in contravention of the Regulations. Ten different brands of Kola summer drink contained less than the permitted one grain to the pint of caffeine and less than the permitted five grains to the pint of phosphoric acid.

TOBACCO

The position in Queensland in regard to tobacco is now vastly improved to what it was in the year 1952, when excessive spraying with lead arsenate was instrumental in the condemnation of a large proportion of the crop. Recent results indicate that lead arsenate is now seldom used, and insect pests are controlled chiefly through the agency of D.D.T. and Endrin both in the seed box and in the field. It has now been clearly demonstrated that Queensland can produce a tobacco leaf second to none in the world, in smoking quality.

Prepared tobacco samples to a total number of 42 were examined. Contraband cigarettes, cigars and pipe tobacco were examined for quality and suitability for sale.

Cigarettes from the open market were examined for spray residues with satisfactory results. Tender samples of cigarettes, pipe and plug tobacco were examined for the State Storekeeper who was advised of their comparative values and suitability for use in Government Institutions.

SEARCH FOR LEAD

Intense sampling of substances likely to contain lead and likely to come within the reach of a child still continues and 792 samples in all were examined in this respect for lead content. The samples comprised, for the most part, paints, paint scrapings, toys, coloured pencils and crayons.

None of the new household paints contained lead but many of the paint scrapings from old homes contained lead in quantity and the less these old crumbling leaded paints are handled by children the better for the health of the child. The toys all too frequently contained lead on the painted surface but the position is improving. The coloured pencils, more especially the greens and the yellows, at times contained lead on the painted surface but the coloured core was usually free of lead. The old lead soldier, a popular toy with children in the past is now off the market due to pressure from the Health Department. It has been replaced largely by either a hardened zinc or a plastic counterpart, better in appearance and safer in use.

CONFECTIONERY

Of ten samples sold as glucose confectionery, five contained less than the prescribed minimum proportion of 10 per cent. medicinal glucose.

Paraffin wax was not detected in a highly polished chocolate coated nut confection.

Five samples of imported chocolates contained alcohol derived from harmless flavouring substances at rates varying from 0.2 to 1.0 per cent. The words "Rum" and "Liqueur" appeared on the labels of two of the samples in contravention of the Regulations.

FROZEN FOODSTUFFS

Complaint samples of frozen vegetables were examined for quality. The buyer of such foodstuffs should know that the storage temperature for frozen foods must be rigidly controlled and that the food once thawed out should not be refrozen for in this way alone can the colour, flavour, freshness and food value be retained. The food product should be kept in a frozen state until ready for use. Any fluctuation above optimum storage temperature causes some deterioration to take place and the greater the fluctuation, the more adverse the effect on the product.

FOOD POISONING THROUGH COPPER CONTAMINATION

Two cases under this heading are recorded.

Sickness with children resulted from the consumption of raspberry cordial containing copper at the rate of 180 p.p.m and again from Cafe soda water containing copper at the rate of 50 p.p.m.

Further examination of soda water fountains will be carried out more especially in soft water towns like Southport, Coolangatta, Charleville, Bundaberg, Roma and many others.

PAINT REMOVERS AND PAINT BRUSH CLEANERS

Five samples were powders consisting of mixtures of synthetic detergent and/or soap and alkaline sodium salts including carbonate, phosphate and silicate.

Five samples were liquids, the chief component of three being methylene chloride, a compound not previously detected in this type of preparation.

Another sample consisted of a solution of a synthetic non-ionic detergent in alcohol and light mineral oil, and the remaining sample examined was a mixture of light mineral oil, xylene and cresylic acid.

WORK FOR MISCELLANEOUS GOVERNMENT DEPARTMENTS

A large volume of work was again carried out for Government Departments other than the Department of Health and Home Affairs. Tender and contract samples of foodstuffs were examined for the Departments of the Army and Repatriation, samples of human milk for Maternal and Child Welfare Centres, samples of salt for the Department of Labour and Industry, and drinking straws for the Education Department in connection with the State school free milk scheme. Loaves of bread were examined for the Weights and Measures Department, drugs for various hospitals, and canned meat and ice cream for Health Departments in New Guinea. Foodstuffs were examined for the Railway Department for goods classification purposes, and samples of suspected ambergris for the Department of Harbours and Marine. Further submissions came from the Department of Public Works, the Department of Agriculture and Stock, the Lands Department and the Department of Mental Hygiene.

OTHER DEMANDS ON THE SECTION

Heavy demands were made on the Section for work of a consultative and advisory nature.

Many and varied were the enquiries on foods and drugs received during the year from Government Departments and from the public, resulting in an increased volume of work in this direction.

MISCELLANEOUS

Certificates of purity for export purposes were issued on samples of arrowroot and crystallised ginger.

One submission accompanied with extravagant health claims was a penicillin by-product high in mycelium. Its unrestricted sale as a food or drug was not recommended.

Of ten specimens of suspected ambergris, two only were genuine, one being poor quality black ambergris from Double Island Point and the other good quality grey ambergris from Fraser Island.

An experimental milk vat composed of plastic material reinforced with fibre glass was kept in daily use on a farm. After three months fine spicules of glass were found in the wash water and the vat was condemned as unfit for use as a milk container.

There were thirty-two submissions of foreign substances in foods, including a cigarette butt in bread, glass in milk, cockroach in pie, and bag fibres in sugar. Prosecution for this offence, with resultant fine and publicity, has a marked corrective influence and helps to check carelessness in the manufacture and handling of food-stuffs.

Twenty-three submissions of deteriorated food-stuffs were condemned as unfit for human consumption. These included fish, nuts, figs, olives, tea, nutmeg and dates, and the chief spoilage agents were mould and insect attack.

Preservative was present in three imported lines of canned fish in contravention of the Regulations. Two contained benzoic acid up to 12 grains per pound and one contained salicylic acid at the rate of 6 grains per pound.

The lead content of four varieties of wine varied from 0.1 to 0.18 parts per million, being below the permitted maximum. The lead content of a number of soft drinks was also determined, and apart from one sample, varied from nil to 0.01 p.p.m. In one sample the lead was excessive at 0.4 p.p.m. and will be further investigated.

Auction room foodstuffs were examined for fitness for sale for human consumption. These lines receive special attention from the health inspector, since the incidence of deterioration is high.

A survey of the brands of cider on the market showed that with a few brands the description cider was loosely applied to the unfermented apple juice.

A preparation for the treatment of the hair was condemned as unfit for use because of the presence of lead compounds.

Arsenic was found present in quantity in the soil and dead vegetation from a suburban garden.

The position relative to fruit and vegetables was satisfactory, as only three samples of grapes, cherries and apples were condemned because of excessive spray residues.

A number of samples of detergents was examined under "The Cafe Regulations, 1952," and a number of household insecticides under "The Health (Insecticides) Regulations, 1953."

Harmless struvite crystals, somewhat glass-like in appearance, were again encountered in complaint samples of canned crab.

Thirteen legal samples of spirituous liquor, including rum, whisky, brandy and gin, were adulterated with water.

A yellow oil soluble coal tar dye was present in the skin of a sample of oranges. The practice of colouring orange skins is common in some American States, but is not permitted in Queensland.

One sample of honey was adulterated with cane sugar at the rate of 34 parts per centum.

The declared composition of a large number of paints was checked, and in most cases the declarations were accepted as reasonably correct.

A complaint sample of Epsom salts was contaminated with tartaric acid.

The only new legislation on foods and drugs introduced during the year was amendment to the Health Act assented to on 21st December, 1959.

This report of the Foods and Drugs Section could be misleading to the public because of the high proportion of failures recorded. This high proportion of failures is due to the fact that it is largely the lines of doubtful purity that receive the attention of the health inspector and the Government Analyst.

A high order of purity obtains in the vast majority of foods and drugs sold in Queensland. The figures quoted in this report give no indication of the state of the market except perhaps with milk and minced meat, where the sampling is more general.

WATERS

A record number of 2,428 samples of water, sewage and industrial wastes was examined during the year. Most of the samples were submitted by State Government Departments, but several Commonwealth Government Departments and the general public were also sources of a considerable number of samples.

The following table indicates the various Government Departments requiring analyses of water and examinations of sewage and trade wastes, and the number of samples examined for each.

TABLE CXXXV

Source	Number of samples
Waters—	
Department of Health and Home Affairs	188
Irrigation and Water Supply Commission	1,495
Department of Local Government ..	42
Department of Harbours and Marine ..	240
Miscellaneous Government Departments	59
Public	185
Sewage—	
State Departments	150
Commonwealth Departments	69

A considerable increase in the number of samples analysed for the Irrigation and Water Supply Commission is a direct result of the Commission's investigation of the State's potential water resources, both underground and on the surface as rivers, creeks, lagoons, &c. To assist in the carrying out of these analyses as soon as possible after the submission of the samples, a fifth analyst was seconded to the water sub-section in January.

During the last year or so samples in increasing numbers have been submitted by the public to see whether they are suitable for use in hot water systems and/or septic tanks. With the increased reticulation of electricity in rural areas, many homes can now enjoy the benefits of a plentiful piped hot water supply.

The main requirements of water for use in a hot water system are that it is not too hard and not corrosive. Base-exchange softening and the addition of slaked lime or soda ash are the respective treatments usually recommended to enable water, otherwise unsuitable, to be used in a hot water system with the likelihood of damage to the system by the water kept to a minimum.

The obvious advantages of a septic system in areas where there is no sewerage is being realised more and more, and water which is unsuitable for other purposes may be used in a septic tank. Sulphates and magnesium chloride in appreciable amounts are the dissolved salts which may cause corrosion, either indirectly or directly, of metal and concrete components in a septic system.

SECTION 2

TOXICOLOGY, BIOCHEMISTRY, INDUSTRIAL HYGIENE AND AIR POLLUTION

I. L. B. HENDERSON, B.Sc., Officer-in-Charge

The total number of specimens submitted for examination by this section was 4,236.

POLICE DEPARTMENT

Specimens submitted by this Department during the year numbered 444, of which 320 were in connection with 125 post-mortem examinations.

Poisons found included barbiturate (42), strychnine (6), A.P.C. mixture (4), arsenic (2), mercuric chloride (2), chloral (2), acetic acid (1), oxalic acid (1), zinc chloride (1), QES tablets (1), organic phosphate (1), dieldrin (1), carbimazole (1), alcohol (1).

The remaining 59 examinations did not disclose any poison, but were considered necessary to exclude poison as a possible cause of death.

This Department also submitted 64 specimens of blood and urine for alcohol determination in connection with road accident investigations.

Seventeen specimens of horse and dog viscera were examined, and 11 suspected poison baits.

Miscellaneous specimens investigated included foodstuffs, anaesthetics, drugs, paints, weed killers, and plant material.

Evidence was given in court in a number of cases.

BIOCHEMISTRY

Biochemical specimens are examined for the Laboratory of Microbiology and Pathology, Government Medical Officers, the Director of Industrial Medicine, the North Brisbane and Princess Alexandra Hospitals, other hospitals and sundry medical practitioners.

The nature, significance and number of such specimens are shown in the following table:—

TABLE CXXXVI

Nature of specimen and significance	Number of specimens
Blood and urine, for alcohol or other drugs	1,124
Urine for lead	1,989
Bone for lead	46
Urine for mercury	4
Hair, nail and urine for arsenic	117
Blood for carbon monoxide	13
Miscellaneous	256
Total	3,549

The miscellaneous item includes a large number of investigations of stomach washings for the presence of ingested drugs, mainly of the sleep-inducing type.

The determinations of alcohol in blood and urine are carried out for the Government Medical Officer—the majority in connection with charges against motorists—and for the Government Pathologist, who submits post-mortem specimens in appropriate cases.

The number of examinations of urine for lead remains high. During the year a paper was published in the Medical Journal of Australia entitled "Calcium Versenate in the Diagnosis of Chronic Lead Nephropathy"—under the joint authorship of Dr. B. T. Emmerson, of the Medical Professorial Unit, Brisbane Hospital, and Mr. B. R. Thiele, of this Laboratory.

INDUSTRIAL HYGIENE

Excluding biochemical specimens, the number of samples examined was 215.

Investigations undertaken during the year for the Director of Industrial Medicine and the State Health Inspectorial Section included:—

Ventilation tests in city cafes.

Dust surveys in two Brisbane brickworks, a mineral sands treatment plant, and a fertilizer factory.

Safety tests of the bulk wheat fumigation process at Pinkenba.

Tests on a liquid petroleum operated space heater at the Warwick High School.

Inspection of a large Toowoomba foundry and manufacturing establishment.

Nitrogen dioxide tests at a brewery.

Investigation of an accident at a factory manufacturing steel containers.

Lead in air determinations at four factories handling lead and lead compounds.

A survey of fibreglass manufacturing processes in Brisbane.

At the request of the Director of Industrial Medicine, acting under instruction of the State Industrial Court, a full survey of mining and smelting operations at Mt. Isa was conducted. This involved the analysis of 157 atmospheric samples for temperature, air velocity, dust, carbon dioxide, sulphur dioxide or lead, and 364 specimens of blood and urine for lead.

AIR POLLUTION SURVEY

A survey of air pollution in Brisbane and Ipswich commenced in March, 1959, is continuing. The chief work is associated with the determination of deposited pollution and smoke.

DEPOSITED POLLUTION

Results for one year from twenty deposit gauges in Brisbane and Ipswich are now available. Since the end of March only one deposit station has been operating in Brisbane.

SMOKE

Five smoke stations are at present in operation seven days a week around Brisbane. Three of these are manually operated, smoke filters being changed once every 24 hours. The other two are automatically changed hourly to give the pattern of smoke through the day.

Information from deposited pollution analyses and smoke measurements is being incorporated in a report on air pollution in Brisbane.

SECTION 3

MINES, MINERALOGY, METALLURGY AND EXPLOSIVES

V. R. CUNDITH, B.Sc., A.R.A.C.I.,
Officer in Charge.

Table CXXXVII. shows the sources of work done by this Section and the number of each to account for the total of 5,551 samples.

TABLE CXXXVII

Department	Number of samples
Geological Survey and Mines Department	1,836
Coal Board	421
Portmaster (Explosives)	2,438
Other Departments (includes 234 tiles)	632
Public	106
Commonwealth Departments	118
Total	5,551

MINES DEPARTMENT AND GEOLOGICAL SURVEY

General

Samples of ore were examined for estimations of copper, lead, zinc, cobalt, nickel, tin, antimony, arsenic, chromium, manganese, mercury, uranium, thorium, &c. Minerals such as beryl, rare earths, monazite, fluor spar were analysed.

In addition to the usual assays for gold and silver (261 samples received) amalgamation and cyanidation tests were also carried out.

A concentrate yielded platinum, silver and gold.

Meteorite

Of interest is the analysis of a meteorite from Woodstock near Gladstone. A sample from the meteorite yielded:—

	Per Cent.
Iron (Fe)	91.95
Nickel (Ni)	6.70
Cobalt (Co)	0.47
Carbon (C)	0.27
Phosphorus (P)	0.27
Sulphur (S)	0.04
Silicon (Si)	0.06
Chlorine (Cl)	faint trace
Total	99.76

Mn, Sn, Pt, Cr were not detected.

Manganese Mineral

A sample from Pegmatite near Mount Isa assayed:—

	Per Cent.
Ferrous Oxide (FeO)	15.2
Ferrie Oxide (Fe ₂ O ₃)	0.4
Manganese Oxide (MnO)	35.9
Lime (CaO)	5.1
Magnesia (MgO)	1.2
Phosphoric Pentoxide (P ₂ O ₅)	40.8
Moisture	0.7
Total	99.3

Gases

Samples of mine air, bore gases, bituminous material, sludges and waters were received in connection with "search for oil" projects.

Analysis of two (2) bore gas samples from the Winton Formation in the Quilpie District showed:—

	(a)	(b)
	Per Cent.	Per Cent.
Carbon dioxide (CO ₂)	0.2	0.4
Oxygen (O ₂)	0.0	5.0
Hydrogen (H ₂)	81.2	54.2
Methane (CH ₄)	0.3	5.9
Nitrogen (N ₂)	18.3	34.5
	100.0	100.0

The proportions of hydrogen are the highest yet recorded for gases from this formation.

Analysis of another bore gas ex. Pickanjinie yielded:—

	Per Cent.
Carbon dioxide	0.3
Oxygen	0.2
Methane	79.9
Ethane	18.7
Inert	0.9
	100.0

The hydro carbons were estimated by a combustion analysis and are calculated to methane and ethane by convention. Other homologues may be present.

With the acquisition of a gas chromatograph, the laboratory will be able to determine the proportions of the higher homologues which may be present and thus provide a better estimate of their significance in prospects for oil.

Iodine and Bitumen Soaps in Bore Waters

Waters are given the usual examination for salinity, alkalinity, &c., however several samples were examined for dissolved bitumen soaps and iodine, the presence of which serve as hydrochemical indicators of petroleum and could be of significance in the "search for oil" in Queensland.

Coal and Coke

The coal and coke work for the Government Geologist (1,168 samples received) and Coal Board (432 samples received) has been considerable and it involves practically the full time attention of Mr. Mathers, M.Sc., Senior Analyst, two (2) analysts, a technician and cadet.

The appointment of Mr. K. Chapman, Dip. Sugar Chem., Laboratory Technician Div. II. to this section has done much in assisting the team overtake the back lag which has resulted with continued pressure of work.

Calorific value, proximate and ultimate analyses, ash, fusion point of ash, specific gravity, agglutination tests, sulphur, chlorine, bedded moisture determination, washability tests are the requirements with the submission of most of the samples received.

Carbonised Coal in Bowen and Blake Seams (Collinsville Area)

Much of the coal in the Collinsville area has been affected by igneous activity in the form of sills and dykes.

The following tables show the analyses of coal from the Bowen and Blake seams compared with their types of coal carbonised by felspar porphyry intrusions:—

	Bowen Seam		Blake Seam	
	Unaffected	Adjacent to intrusion	Unaffected	Adjacent to intrusion
	Per Cent.	Per Cent.	Per Cent.	Per Cent.
Moisture	0.9	1.8	1.6	3.1
Volatile Matter ..	18.6	5.8	18.3	5.2
Fixed Carbon ..	66.7	71.6	62.8	64.7
Ash	13.8	20.8	17.3	27.0
	100.0	100.0	100.0	100.0

The general effect of intrusives is to lower the volatile matter, which is more or less compensated by increase in fixed carbon, moisture, ash and specific gravity.

The calorific value is not seriously affected. Coking properties are progressively destroyed with proximity to intrusions.

Another analysis of carbonised coal from the Blake seam showed—

	Per Cent.
Moisture	1.5
Volatile matter	9.0
Fixed carbon	67.2
Ash	22.3
	100.0
B.Th. U. per lb.	10,470
Sulphur (per cent.)	0.3
Specific Gravity	1.98
Coking Test	noncoking

The increase in specific gravity is marked, and it would appear that graphitisation of the coal has taken place.

Classification of Coal

More recently the trend to classify coals in accordance with definite properties of volatile matter, calorific value, swelling index and other coking properties has called for research into the methods for the determination of the bedding or equilibrium moisture.

The bedding loss is the moisture of conditioned coal determined under controlled humidity of 97 per cent at 30 deg. C. It is a function of the coal from which an assessment of moisture-holding capacity is derived.

It would appear that whilst the test is simple to carry out closer attention to standardisation of particle size is required.

Calorific Value of Carbonised or Coked Coals

The calorific value of coked coal is one where adherence to standard methods is fruitless. This called for some detailed research in which several techniques were tried.

Variations in oxygen pressure in the bomb were not a complete answer, nor was the mixing of the coal with another coal of better quality a satisfactory solution.

It was ultimately found that by substituting for the platinum crucible used a crucible of similar design but made of asbestos paper shaped and ignited beforehand a solution to the problem was obtained.

One interesting point which arose during these researches was that very erratic results were obtained for sulphur values if its determination was made by the bomb method after having diluted one coal with another of known sulphur content.

Methods have been examined for the determination of the sulphur content of coals.

Some work has been carried out on the nature of the sulphur present in the Garrick Seam, Collinsville; much of it is pyritic (marcasitic) sulphur, and it should be possible to remove it by washing.

OTHER DEPARTMENTS

The consultative and analytical work from Government Departments covered a range of industrial products, alloys, filter alum, filter sands, concrete tiles, concrete, corrosion products, galvanised iron, Golden Casket discs, crockery, enamel and plated ware, &c. These indicate the diversity of the samples handled.

The colouring matter of 234 concrete tiles submitted for test conformed with the specification.

Supplies of aviation oxygen from the R.A.A.F. were tested to determine agreement with specification.

The Golden Casket discs were received for calibration.

Use of Pozzolan

In connection with the use of pozzolan, the formation of this important additive for concrete

mixes is shown in the following analyses. The depth of the weathering is greater than 40 feet:—

	Parent Rock	Semi decomposed	Weathered Material Raw Pozzolan
	Per Cent.	Per Cent.	Per Cent.
Silica (SiO ₂) ..	45.4	35.3	27.6
Iron as Fe ₂ O ₃ ..	12.3	11.7	13.3
Titania (TiO ₂) ..	1.8	2.8	3.0
Alumina (Al ₂ O ₃) ..	24.5	25.5	28.9
Lime (CaO) ..	5.2	4.8	0.2
Magnesia (MgO) ..	5.3	5.7	0.9
Alkalies (Na ₂ O) ..	1.6	0.48	0.26
Alkalies (K ₂ O) ..	0.64	0.20	0.08
Loss on ignition ..	2.5	9.0	10.6
Moisture at 110°C. ..	1.4	4.7	15.7
Total ..	100.64	100.38	100.54
Total water solubles ..	0.15	0.11	0.01
Water soluble alkalies ..	0.09	0.07	0.007

Usually the raw pozzolan is given a drying treatment at 100 deg. C. and crushed to a fine powder.

The leaching of magnesia, lime, alkalies and silica during the weathering and formation of the pozzolan is shown by the analyses.

Use of Producer Gas

In Western Queensland the Southern Electricity Commission has successfully commissioned several coal-burning producers to supply fuel to gas engines driving generators for public electric supply purposes.

The producers consume about 1.8 lb. of coal per unit generated and are more economical than charcoal or fuel oil.

Analyses of gas from these sources—

	(a)	(b)	(c)
	Per Cent.	Per Cent.	Per Cent.
Carbon dioxide ..	5.2	3.9	5.7
Oxygen ..	0.0	1.9	1.1
Hydrogen ..	14.5	14.0	14.9
Carbon Monoxide ..	25.2	23.1	22.8
Methane ..	0.5	1.2	0.8
Nitrogen ..	54.6	55.9	54.7
Total ..	100.0	100.0	100.0

Corrosion

Effect of Acid Fumes from Timber

An eyebolt from a large transformer/rectifier unit just unpacked from storage was found to be covered with a dense white deposit of cadmium acetate. The eyebolt was cadmium-plated, and during storage the plating had been subjected to volatile wood acids derived from the case.

Acid vapours from certain woods such as oak and Douglas fir (especially when green) are known to cause similar troubles when used for wooden ducts and museum cases.

Super Heater Tube Deposit

This sample essentially consisted of magnetic oxide of iron carrying small proportions of slaked lime, sulphate and carbonate of calcium, carbon, phosphate and siliceous material, traces of mineral oil and copper.

The heater tube was fully plugged with the deposit, the origin of which was due to priming caused by sugar, oil and lime suspension in the boiler water.

Dezincification

An interesting example of this type of corrosion was found in examination of a carbon tetrachloride type of fire extinguisher.

The brass container had been severely affected, particularly at the jet end, where the embrittled metal had cracked and broken apart.

Moist carbon tetrachloride had caused the dezincification, in which the zinc is dissolved from the alloy, the remainder consisting of a porous mass of redeposited copper, which has no mechanical strength.

Brasses containing over 20 per cent. zinc are attacked by moist carbon tetrachloride, and in this case the alloy assayed 61 per cent. copper, 38.8 per cent. zinc.

SECTION 4

FEDERAL DEPARTMENTS, PUBLIC WORKS, HOUSING COMMISSION, STATE STORES, MAIN ROADS, &c.

J. ADAMSON, A.R.A.C.I. Chief Chemist,
Officer-in-Charge

The number of samples examined by this section showed a marked increase when compared with the previous year.

The following table gives a detailed list of the samples examined during the year:—

TABLE CXXXXVIII

Customs and Excise ..	2,026
Primary Industry ..	1,447
Public Works Department ..	1,218
Housing Commission ..	843
State Stores ..	619
Explosives (fireworks) ..	454
Main Roads Department ..	137
Railway Department ..	108
Miscellaneous Departments ..	83
Public ..	8
Total ..	6,943

This year for the first time the work from the State Departments was slightly in excess of that from the Federal Departments. This was due to a large increase in the samples submitted by the Public Works Department and the Housing Commission.

As in previous years, the Customs and Excise Department submitted a very diverse range of samples chiefly for classification for duty purposes.

There was also an increase in the work from the Department of Primary Industry. This department supervises the export of primary products from this State and it submits samples to ensure the maintenance of export standards. It is extremely important that these standards be maintained as a market once lost by poor quality goods is very hard to regain.

Both the Public Works Department and the Housing Commission submitted an increased

number of samples during the year. The bulk of the paints submitted were of a satisfactory quality. The assessing of these paints ensures that only the best quality paints are used on public buildings and dwelling houses erected by the Commission. It also keeps a check on the soluble lead content of the paints used.

The State Stores Board submitted a large and varied number of samples during the year; they included inks, biro pens, textiles, detergents, insecticides, cordials, disinfectants, metal polishes, &c. However an insufficient number of delivery samples was submitted; it is important to check tender samples but it is more important to see that the goods delivered are up to the standard of the tender samples.

Bitumen tar and other roadmaking materials were examined for the Main Roads Department.

The examination of fireworks imported into the State is controlled by this Section. Japanese fireworks and also fireworks from China were received for the first time since the war. The great bulk of the fireworks were in accordance with the regulations of the Explosives Act.

The paint analysts received a much needed increase in working space by the incorporation of the old water room.

The new textile machine has been installed and is giving satisfactory service.

DIVISION OF NURSING

Adviser in Nursing: D. BARDSLEY, F.C.N.A., R.A.N.F.

INTRODUCTION

Of all the problems which today confront nursing organisations as well as hospital and public health authorities employing nurses, those which remain continually in the forefront are (1) the question as to what is the true function of the nurse and the best and most effective way to prepare her for that function and (2) the shortage of nurses and the wastage from nursing of both trained and student staffs.

In connection with these problems many and diverse statements are made, not a few of which are ill-considered and made by persons with little or no knowledge of the factors involved. A number of countries are endeavouring to find a solution of the problems by conducting pilot studies in actual nurse training; others are carrying out genuine research projects involving considerable financial expenditure and the full time employment of qualified research personnel. Some countries emulating Charles Dickens' well known character Mr. Micawber are acting on the principle that if they do nothing about it some solution will undoubtedly turn up.

Again we have on one hand advocates of decreasing the number of registered nurses and at the same time giving them a more specialised technical training and on the other hand nursing organisations all over the world expressing grave concern at the number of highly technical procedures which are being passed on to nurses by medical staff and which are not considered to be part of a nurse's function but more suitable to a grade of medical technician.

The changing family patterns which are emerging from increased industrialisation and urbanisation, the mounting world tensions with increase of mental ill health; and the changing patterns of population showing increases in all age groups particularly those over 45 years of age have brought forward advocates of training an "all-purpose" nurse. She would be capable on graduation of taking beginning positions in either general or midwifery hospitals or in public health services and would be able to appreciate her role in nursing as a vital social service. The revised curriculum of New Zealand was developed with this idea in mind and contracts to train in 3 years nurses who are eligible for registration as both general and maternity nurses and have in addition an orientation to public health. In this connection also we have, in our own State, advocates for the inclusion in the general nursing curriculum of instruction and experience in psychology and psychiatry and public health with an orientation to midwifery and baby care.

The General Nursing Council for England and Wales has decided that the best way to improve the training of nurses is to eliminate all but the large hospitals as training schools for professional nurses and to demand high

standards of training school equipment and staffing. Hospitals or groups of hospitals which desire recognition as training schools will be required to have a minimum of 300 beds and a daily average of 240 occupied beds with numerous other qualifications in relation to clinical experience, theoretical training and staffing of both wards and school. In contrast to this we continue to register as training schools in Queensland hospitals with a daily average of occupied beds as low as 10.

With regard to nurse wastage there is a similar pattern of definite action in some countries to deal with the problem and in others very little appreciation of the fact that it has become a problem, or alternatively a *laissez-faire* attitude towards it in the hope that it will solve itself. However, it has now been officially recognised as an international problem by its inclusion in a recent comparative study by the International Labour Office, Geneva. Entitled "Employment and Conditions of Work of Nurses" (Studies and Reports, New Series, No. 55), this study is based on replies to questionnaires prepared by the I.L.O. and circulated in 67 countries throughout the world, through the courtesy of the International Council of Nurses, the International Committee of Catholic Nurses and Social Workers, and the International Federation of Unions of Employees in Public and Civil Services. Australian nursing organisations contributed information which is included in this study. The matters dealt with include the functions and qualifications of nursing personnel; the employment situation in nursing; methods of determining nursing conditions, hours of work, and remuneration; nurses' living conditions, health protection, social security, social status and with nursing as a career service. The study points out that the supply of nurses is almost everywhere lagging behind demand. In 1956 some 70,000 additional nurses could have found employment in the United States of America and 7,544 vacancies for nurses and midwives were officially listed in the United Kingdom. Many countries report particularly acute shortages of nursing personnel in rural areas, in mental hospitals, in administrative and supervisory positions, and in senior teaching posts. As a means of combating this widespread shortage the study recommends three basic approaches: (1) more adequate and effective recruitment policies; (2) more reasonable and effective utilisation of existing nursing resources; and (3) measures to retain personnel in the nursing field. The United States has also given official recognition to wastage of nurses as a problem, and, in order to try and answer the questions "How can the nurse shortage be alleviated?" and "What can be done to make the best use of nurses now available?" has created a Division of Nursing Resources in the Public Health Service, which issues periodic reports of progress in the programme of work developed by this Division.

As far as this State is concerned the Division of Nursing has continued the survey on wastage of student nurses, and statistics on this survey are published in Table CXXXIX. Unfortunately, it would not be possible to do any work on the shortage of registered nurses, which, in the few statistics available, appears to be progressive, although a much more detailed survey would be necessary to make the evidence conclusive.

SURVEYS

(1) *Wastage of Student Nurses*

For the third year in succession this Division is publishing a table of statistics on the wastage of student nurses from Queensland public hospitals. (Table CXXXIX.)

The Interstate Officers' Conference held in Melbourne on 2nd April, 1959, recommended that a record be kept in each State of every nurse who discontinues training in order that the problem of wastage may be watched.

With this in mind and in order to evaluate the statistics on wastage at present being collected by the Division of Nursing for research purposes, the Adviser sought the help of the Senior Lecturer in Medical Statistics, University of Queensland, and submitted to him forms, record cards, and other material used in the survey. It was considered that an excellent response had been developed in respect of details already requested from hospitals. However, it was advised that for a true comparison to be made some additional details would be necessary. The first is an analysis of age groups and educational standard of all nurses shown under total "student enrolment" as well as for those who leave during the year—in order to determine whether the wastage is unduly high in any particular age group or among nurses of any particular educational standard. Secondly, as hospital size is a possible feature to be taken into consideration, it might be a good plan to record in the table for each hospital the daily average of occupied beds.

In order to obtain a correct estimate in respect of the daily average it will be necessary to use the figures presented annually in September to the Nurses and Masseurs' Registration Board for the preceding calendar year for the reason that the calendar year is being used in connection with the wastage statistics. It is not possible for the year 1959 to publish the additional particulars suggested, viz., age groups and educational standard of the total student enrolment as this matter was not contained in the pro forma already in use for that year.

However it has been possible to obtain from the Nurses' Board the daily average of occupied beds of the training schools and this figure is included in the table.

A suggestion in respect of student nurses transferring from one hospital to another was that these should not be included in the actual wastage statistics but should be entered on a separate list giving the name of the nurse; hospital from which transferred; hospital to which transferred; age and educational standard. This has been done in so far as is practicable but some difficulties have been encountered. The 25 nurses who are listed in the published table as having transferred to other hospitals are those

who definitely left their previous hospital having already applied and been accepted for transfer to another hospital. However from the annual reports of training schools received early in 1960, a total of 124 names have been listed of nurses who have entered hospitals on transfer. Many of these will have been contacted by the Division of Nursing at the time of their resignation and having remained at home or entered other occupations and found they still preferred nursing, have appealed to the Adviser for help or advice re entering another training school, or have themselves applied to complete their training at their own or another hospital. Transfers may have taken place many months after the nurse resigned from her original training school. Another factor to be considered in respect of transfers is that private or Church hospitals registered as training schools are not included in the survey and yet it is possible for nurses to transfer from one of these hospitals to a public hospital and vice versa. The list of transfers is included in records held in the office of the Division of Nursing and would be available for research purposes.

With regard to an analysis of the published figures it will be noted that the survey covers 52 State public hospitals (general) and one separate midwifery hospital (The Brisbane Women's) and the Repatriation Hospital, Greenslopes. In these hospitals a total of 2,634 student nurses were enrolled in the different grades for the year 1959—212 more than for the previous year. Of these 659 resigned or were retired during the year as against 638 during 1958. This results in a slightly lower overall percentage for the State, 25.01 per cent. in 1959 as against 26.3 per cent in 1958.

A study of the table will show that the only hospitals which individually make a significant contribution to both the student and trained nurse strength are those with a daily average of occupied beds of over 100. It will be useful therefore to make a particular study of these in respect of the wastage of student nurses from their staffs. Six of the hospitals in this group had a wastage percentage of less than 20.

Greenslopes Repatriation Hospital with a student strength of 60 had only a 5 per cent. wastage. Toowoomba was the lowest of the State hospitals with 16.8; Mackay 17.2; Princess Alexandra, South Brisbane, 17.5; and Maryborough 17.9. Rockhampton came next with a percentage of 28.6 and then five of the hospitals showed a wastage percentage of over 30—Brisbane Hospital and Gympie (each 30.9), Townsville (31.1), Bundaberg (31.9), and Cairns (33.8). The remaining hospital in the over 100 bed group was Ipswich with a total student enrolment of 45 and a wastage of 23 giving a percentage of 51 per cent.

With regard to the very small hospitals the total student enrolment is in some cases so small that the percentage of wastage shown hardly gives a true picture. Those with a particularly high wastage are Blackall with a student enrolment of 1 and wastage of that 1; Gayndah enrolment 9, wastage 8; Gladstone enrolment 6, wastage 4; Barcaldine enrolment 5, wastage 3. There are 31 hospitals each with a student enrolment of 20 or less giving a total enrolment of 300. Of these, 73 left without completing their

training. Of the reasons given for leaving from all hospitals in the survey and excluding marriage which was the highest figure and accounted for 144, there were a number which must be regarded as wholly unsatisfactory. Ninety were stated as not suitable for nursing either by the hospital authority or the nurses themselves, as compared with 74 in 1958; 43 resigned or were retired for failure in examinations, as compared with 28 in 1958, and 29 found that they disliked nursing as against 11 in 1958. It would seem that a more careful assessment of the nursing potential of these girls before they were admitted to training might have been instrumental in preventing wastage from these causes. There is also need to assess the effectiveness of the teaching as not all of the nurses who leave because of failure to pass examinations are in the lower grades of preliminary education. The number leaving for "health reasons" is too high (52) and calls for a more effective method of maintaining health statistics of both student and trained nurse staff. The vague states of ill health which cause some nurses to discontinue their training may well have a psychological rather than a physical origin. Whether the continual contact with disease and death has a detrimental effect on the very young girl as some have stated might well be the subject of investigation.

It becomes increasingly evident that many problems which come to light during a survey of this kind require not only a considerable amount of study but the services of an officer experienced in handling research material and with adequate time to devote to the survey.

(2) *Survey on the Position in Queensland of Nurses of Aboriginal or Pacific Island Extraction*

Following the receipt of an enquiry which could not be answered owing to lack of information it was decided in July, 1959, to send a circular letter to all nurse-training schools asking for information under the following headings:—

(1) Have you in your hospital any nurses of Aboriginal, part Aboriginal or Pacific Island extraction who are:—

(a) Taking a full course for registration, and if so, in which year, 1st, 2nd, 3rd, or 4th?

(b) Employed as Assistants in Nursing?

(2) How many girls in this category have completed their training at your hospital and registered with the Nurses' Board?

(3) How many have commenced their training and discontinued, and if so, in which years?

(4) Have you any record of the date on which the first coloured girl in this category was admitted to training at your hospital?

(5) Any known special problems raised by the presence of these girls in training or at work.

(6) Any other comments you would care to make about the aptitude and suitability of these girls in relation to professional or other type nursing.

The co-operation of matrons of hospitals in response to this questionnaire was excellent. Out of 58 to whom the form was sent 48 returned

replies answered to the best of their ability. Of these, 32 matrons stated that they had not either then or at any time previously had Aboriginals, Caste-Aboriginals or Pacific Islanders on their student staffs or acting as Assistants in nursing. A number added in explanation that no applications had ever been received from girls in this category and this could probably be true of others who did not make this statement. Of the remaining 16 hospitals—Atherton, Brisbane Hospital, Brisbane Women's, Bundaberg, Cairns, Charters Towers, Chinchilla, Collinsville, Gympie, Ingham, Maryborough, Princess Alexandra (South Brisbane), Proserpine, Rockhampton, Townsville, and Tully, supplied as much information as possible in connection with the enquiry.

From this information it would appear that at the time the survey was made 21 nurses of Aboriginal or Pacific Island extraction were undertaking a full course for registration as general nurses in the hospitals named and 3, having already registered as general nurses had commenced a twelve-months' midwifery course. Of the general student nurses, 9 were in the 1st year, 3 in 2nd year, 7 in 3rd year, and 2 in 4th year. Those in 2nd, 3rd, and 4th years had passed the appropriate sectional examinations. One has since passed her final examination and received her certificate. In addition 3 girls in this category were reported as employed as assistants in nursing.

Mention was made in some replies of nurses of Sinhalese, Malayan, Indian, and Negro origin either training as nurses or employed as assistants, but as this information was not required by the questionnaire the statistics are not included in the report.

Particulars of nurses in the categories concerned who have completed their training are likely to be fairly accurate as in most cases this has occurred only in recent years. Of those registered as general nurses it has already been noted that 3 are undergoing midwifery training—two in Brisbane and one in a country hospital. A fourth is taking obstetric training in Sydney. The last-named was reported as having successfully held relieving positions as a trained nurse before commencing her midwifery training. A fifth registered nurse is Sister-in-Charge of Out-Patients' Department in a general hospital and a sixth is a staff sister in a midwifery hospital and was reported as being the best practical nurse of her year at graduation. It would appear from opinions put forward that most, if not all, of these nurses are Caste-Aboriginals—up to the present the full-blood girls have proved less stable.

The number of nurses in this category who commenced training and left before completion appeared to do so for similar reasons to those of white students—marriage, transfer to other hospitals, home-sickness, trouble with studies, &c. The number reported can not be regarded as accurate as one large hospital reported that the racial origins of nurses applying for training had not been recorded and the number mentioned (12) was drawn from memory by nursing and office staff. The total appears to be 20 or upwards. As far as can be ascertained the first aboriginal girl in the State to commence

training for registration as a nurse did so in 1944 at Rockhampton Hospital—but failed in her first sectional examination, refused to sit again, and resigned at the end of 1945. It would appear that most of the nurses in this group have entered training since the mid-1950's as more of them have reached higher levels of general education.

The matrons of the hospitals concerned were practically unanimous in stating that no special problems have been created by the presence of these or other coloured girls on nursing staffs. In all cases they were reported as being well accepted by both staff and patients alike and a number had proved specially popular. Two in one hospital had been presidents of their student nurses association and one had been treasurer. Matrons agreed that as with white students the standard of preliminary education is important and where this is good this group of girls had no difficulty with studies. One nurse was reported as having passed Junior and another had a missionary college education and both had excellent reports. "Aptitude above average" and "Exceptionally bright and intelligent" were comments in respect of others in the group. One matron who had both Aboriginal and Island girls as students stated that she was admitting another half-caste girl to do her general training and would be well satisfied if she was up to the standard of those already in training. Comments on the spotless cleanliness and tidiness of rooms were made in some reports. The matron of one northern hospital made the observation that these girls could be of great assistance in hospitals on mission stations or general hospitals having numbers of aborigines as patients; she had noticed that aborigines coming in to the hospital from surrounding station properties appreciate very much being cared for by a nurse of their own people.

The matron of one of the larger hospitals said that these nurses while accepted in wards and nurses homes and joining fully in entertainments are not partnered by white men at hospital dances. This was the only definite statement in regard to any discrimination against these nurses.

It would appear that given a sound preliminary education girls in this group could form a useful addition to nursing staffs in many areas of the State if some definite recruitment plan could be developed to arouse their interest.

VISITS OF INSPECTION TO NORTHERN AND NORTH WESTERN HOSPITALS

Townsville, Charters Towers, Hughenden, Richmond, Julia Creek, and Mount Isa Hospitals were visited by the Adviser in Nursing. The tour covered 12 days in order that a minimum of one full day could be spent at each hospital. Where necessary this was extended. Every ward and department of the hospitals concerned was inspected and in the case of training schools the accommodation and equipment including reference library. Living quarters for matrons and nurses and facilities for both indoor and outdoor recreation were seen. During these visits opportunity was taken to discuss nursing matters and problems not only with the matron and senior nursing staff but also with medical superintendents and secretaries. Staff and training

school records were inspected and where these were deficient suggestions were made to improve record keeping. At Mount Isa, the new hospital, now in its final stages of construction, was inspected in company with the Clerk of Works and the Secretary. The old buildings at present in use were visited also.

At both Townsville and Charters Towers the matrons arranged informal meetings with the trained staff to discuss present day trends in nursing and obtain opinions. This was much appreciated. In the smaller hospitals meeting the staff at morning or afternoon tea times provided opportunities for discussion.

As a number of the hospitals visited either are non-training schools or employ assistants in nursing to supplement a shortage of student nurses, opportunity was taken to discuss with the matrons the suggestion which is put forward from time to time that special training with some form of registration should be established for the assistant nurse. Their opinions will be outlined under a separate heading.

There is no doubt that the hospitals in western areas have their own particular problems and that these differ in some degree from the problems of hospitals in areas with a greater density of population. One of the problems as far as nursing staff is concerned centres round the small number of young women in the towns and surrounding districts served by the hospitals. The hospitals must therefore compete for staff with banks, commercial offices and stores which offer employment covering straight duty periods in day-time hours. The result of this is that either the number of student nurses or assistants as the case may be is below requirements or there is a very high turnover of staff or both. In the smaller training schools it is rare for student nurses to remain long enough to reach their third or fourth year so that there is a perpetual shortage of senior student staff to take charge of wards in the absence of trained staff. This situation is usually complicated by a shortage of the double certificated nurses so necessary when both general and midwifery sections of the hospital must be covered by one sister. Not only does the matron carry a heavy burden in these places but insufficient staff make it impossible to admit other patients when a seriously ill patient requires constant attention. This lowers the daily average and creates a vicious circle. The greatest co-operation was received from medical superintendents, matrons, and lay administrators and in several cases chairmen of hospitals boards indicated their readiness to co-operate with any suggestions which might result from the visit.

At the request of the Director, Maternal and Child Welfare, a visit was made to the Maternal and Child Welfare Centre in Mount Isa to discuss matters in connection with a proposed new Centre in the area. The Centre at Charters Towers was also visited.

OTHER VISITS

A visit of inspection to Lowson House, Brisbane Hospital, in connection with a proposal to utilise it in clinical teaching for a post-graduate course in psychiatric nursing was made. A detailed report was furnished.

COMMENTS RE THE EMPLOYMENT AND TRAINING OF ASSISTANTS IN NURSING

As stated in the previous paragraph the matter of the advisability of establishing a statutory form of training and registration for an auxiliary nursing group was discussed with the matrons of hospitals on the North Western line which are not registered as training schools. Two of these matrons have been in charge of training schools and therefore are in a position to see both sides. In no case did the matrons consider that any useful purpose would be served by instituting a statutory training for this group. It was pointed out that many of these girls have already commenced training and discontinued it before the first sectional examination or afterwards following failure to pass after one or more attempts. One matron stated that these girls like working in hospitals and become quite competent in carrying out routine nursing procedures which they can learn by repeated performance. However they do not wish to settle down to any sort of training involving study and examinations and would rather take other work than do so. It was also stated that their period of service is usually short-lived—their turnover rate is very high and they either marry young or eventually drift into other occupations. This opinion is supported in an article in an English nursing publication in which it is stated *inter alia* that the number of nursing auxiliaries employed in English hospitals at a certain date numbered 21,529 full-time and 17,818 part-time. The majority of these do not wish to train as State enrolled assistant nurses and the schools established to train assistant nurses cannot recruit their full complement of pupils. In connection with the question of whether basic nursing care should be carried out by a subsidiary grade of nurse it is interesting to note that the International Council of Nurses intend to publish a paper on "Basic Nursing Care" which has been written by Virginia Henderson, Research Associate, Yale University School of Nursing, who is the author of a text book on the principles and practise of nursing which has received worldwide recognition. At the conclusion of her paper Miss Henderson says "No attempt is made here to set up standards in the form of hours of nursing care needed per patient per day or to differentiate between the functions of highly qualified and less qualified nursing personnel. It is pointed out however that the assessment of patients' needs demands among other things sensitivity, knowledge and judgment and that the modifying of nursing procedures, even simple ones, according to the individual needs of the patient often requires a high degree of competence. We stress that while giving basic nursing care the qualified nurse has an opportunity to listen to the patient to identify with him and his family, to assess his needs and to build up the helpful personal relationship essential to the most effective nursing."

By stressing basic nursing care as requiring the qualifications of the professional nurse for effective nursing of the patient, it would seem that considerable thought should be given to this whole matter before such care is allowed to become entirely the province of a subsidiary grade of nurse.

STUDY PROGRAMME FOR OVERSEAS NURSES

The Adviser was requested in August, 1959, to arrange a post-graduate Study Programme in Public Health Nursing for two public health nurses from Singapore who were in Australia under the Colombo Plan. The period covered by the programme was two months, 15th September to 13th November, 1959.

Considerable planning was necessary in order that a useful and effective programme could be developed for nurses whose work has to be carried out in conditions which vary greatly from those in Australian cities. With the helpful co-operation of administrators in public health and education services the two nurses received experience in all aspects of the Maternal and Child Welfare and School Health Services; the Chest Clinic; Lady Gowrie Child Centre (Pre-School Kindergarten); Centres for care and education of the handicapped; Welfare and Guidance Clinic; Research and Guidance Branch, Department of Education, and Health Education Council. The students were introduced personally to each Department by the Adviser in Nursing prior to commencing study there and had periodical meetings with her to assess the value of the studies.

RADIO BROADCAST ON THE WORK WITH COLOMBO PLAN STUDENTS

Following the termination of the Special Course for the Colombo Plan students the Australian Broadcasting Commission approached the Adviser and requested a broadcast interview covering the arrangements made for these students and their response to working and living with Queensland nurses. This was approved and the interview was broadcast over Radio Australia.

THE ANNUAL CONFERENCE OF THE MATRONS' ASSOCIATION

This Conference was held in Brisbane from 11th July to 15th July inclusive. Sixty-nine matrons were present from all parts of the State. The Conference was officially opened by the Minister for Health and Home Affairs, the Hon. H. W. Noble.

The matrons had chosen Gynaecology and Midwifery as subjects for study and the Adviser in Nursing was requested as usual to arrange the programme.

This included a presentation of the "Result of the Staphylococcal Survey" recently carried out by the State Health Department which was given by the Deputy Director-General of Health and Medical Services Dr. D. W. Johnson. Dr. Roger Salter lectured on "Special Aspects of Gynaecological Nursing" and Dr. L. P. Sapsford on "Early Symptoms of Malignant Disease in Gynaecology." The study of Midwifery was covered by Dr. K. Wilson, Medical Superintendent, Brisbane Women's Hospital, with a lecture on "Recent Advances in Obstetrics"; Dr. John Byrne with "Haemorrhages in Midwifery Practice"; Dr. Charles Marks with "Toxaemias of Pregnancy" and Dr. Murray Elliott with "Nursing Management of Abnormal Labours". Dr. J. C. A. Dique gave a lecture demonstration on "Acute Emergencies in Obstetrics requiring Transfusion".

A debate "That there should be some training in Maternity Nursing in the Basic General Training" was well argued by six of the matrons with a member of the Queensland Debating Union as adjudicator, and a Symposium on "Problems of Early Infancy" had as speakers Dr. Grantley Stable, Paediatrician to the Brisbane Women's Hospital; Miss M. F. Nixon, Superintendent, Maternal and Child Welfare; Sisters Sommerville and Swan of the Brisbane Women's Hospital with Miss. D. Bardsley in the chair. By the courtesy of the North Brisbane Hospitals Board a whole day was spent at the Brisbane Women's Hospital and the matron had made excellent arrangements for the showing of films, demonstrations, and visits to special departments for matrons desiring these as well as the provision of morning and afternoon tea.

Every lecturer covered the subjects chosen in such an interesting and practical way from the nursing angle that the approach to these subjects in hospitals whose matrons were present could not fail to be improved. The whole Conference was voted a great success from every angle including that of a personal exchange of ideas between matrons themselves and also matrons and officers of the Department.

COLLEGE OF NURSING, AUSTRALIA, QUEENSLAND BRANCH

The Adviser in Nursing was called upon for help and advice in connection with the opening of the Regional College in Queensland and for the development of the first Short Courses in Hospital Administration with which the Educational programme of the College was commenced. At the request of the Director of the College the Adviser took part in the two Administration Courses by giving lectures on "Reports and Records" and attending discussion groups at final sessions of the courses as well as meetings of lecturers at which the Courses were assessed.

SCHOOL HEALTH SERVICES

The Adviser has been a member of the panel interviewing applicants for appointment to the Service and also assisted with orientation lectures in public health subjects for newly appointed Sisters and with any problems involving nursing staff.

SPECIAL INTERVIEWS

These have included a number concerned with the appointment of nurses to positions in Government departments or institutions and also those concerned with applications of nurses from European and other overseas countries for registration in Queensland by the Nurses' and Masseurs' Registration Board. The Adviser is asked to assess the nursing training and experience of the applicants and their command of English in order that the Board may be guided to a decision as to the further training and examination which may be necessary before registration can be granted.

BUREAU OF ADVICE AND INFORMATION

In the absence of any other central advisory authority the Division of Nursing continues to

be referred to by any individual or organisation requiring advice or information about nursing in general. It would at this stage of its existence be difficult to separate from the Division the function of Bureau of Advice and Information which has been attached to it by nurses and the public as filling a need not supplied elsewhere. As has been stated in previous reports a large amount of up-to-date reference material concerning nursing and nurses has to be maintained in the office of the Division in order to fulfil this need. Senior nursing officers in other States and countries refer to the Adviser numbers of nurses who are interested in working in Queensland. As a result a number of both country and city hospitals have been supplied with staff and in one case the threatened closure of a small hospital was prevented by obtaining the services of two Sisters who had called as a result of correspondence from England. The Commonwealth Employment Service maintains a liaison with the Division in connection with nurses calling there and also in respect of general information regarding nursing which it may require. These activities give the Division an additional role as an employment service.

Discussions are held with girls wishing to take up nursing as a career and their parents, individually or together. An increasing number of trained nurses are requesting counsel or information regarding post-graduate training or personal problems. Girls who have left nursing without completing their training and wish to commence again, and matrons with problems they wish to "talk out" in order to find a solution may at any time appeal to the Adviser in person or by letter.

SPECIAL COMMITTEE ON NURSING TRAINING

This Committee of which the Adviser is Convenor is preparing a programme for training graduate nurses in psychiatric nursing.

OTHER ACTIVITIES

The Adviser continued as a member of the Queensland Nurses' and Masseurs' Registration Board; the Queensland State Committee of the College of Nursing, Australia, the Lady Gowrie Child Centre and the Australian Pre-School Child Association, also as an examiner in Child Welfare and for Part I. of the Administration Course of the College of Nursing, Australia and the Committee on nursing of the National Health and Medical Research Council.

At the International level the Adviser remained a member of the Nursing Service Committee of the International Council of Nurses and was also invited to become a member of a newly established Committee of the International Council Committee on Legal Responsibilities for Nursing Practise. She was also requested by the Overseas Nursing Association, London, to remain its representative in Queensland in connection with interviews for posts in the Colonial Nursing Services.

A number of post-graduate nurse-students enrolled for College Courses have been assisted with material on public health and social services.

Hospital	Daily Average	Student Enrolment					Total Year, 1959	Wastage of Students					Per-centage of Total	Age Groups					Educational Standard					Reason given for Leaving											
		Student Enrolment						Total	1st	2nd	3rd	4th		5th	17 and under	18	19	20	21 +	Not known	8th and under	Sub-jr.	Jnr.	Above Jnr.	Not known	Fall in Exams	Mar-riage	Per-sonal	Health	Dom-estic	Others **	Not suited			
		1st	2nd	3rd	4th	5th																													
Atherton	63.2	14	7	9	6	..	36	22.2	3	2	3	..	..	..	..	..	4	..	..	..	2	3	82	19	1	23	..	..	..	..	..	..	..	..	..
AYF	55.56	5	5	5	5	1	19	31.6	4	2	1	..	..	..	..	..	..	..	..	..	..	1	2	5	1	..	..	..	..	..	..	..	..	..	..
Beaudesert	28.91	6	5	1	2	..	14	60.0	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Biloela	22.38	6	2	2	..	..	10	20.0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Blackall	17.88	1	..	..	..	..	1	100.0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Bonmah	18.67	1	1	..	..	..	2	25.0	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Bowen	21.11	6	6	..	..	..	12	25.0	..	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Brisbane Hospital	1,799.34	272	154	169	139	..	734	111	75	30	11	..	..	..	..	..	70	56	32	35	..	102	23	82	19	1	23	27	7	25	8	116	21		
Brisbane Women's Hospital	314.05	141	20	10	13	..	143	26	..	..	..	..	..	..	..	..	..	..	..	..	..	4	2	16	5	1	..	11	..	..	..	..	..	..	
Bundaberg	111.89	29	20	10	13	..	72	19.5	..	..	..	..	..	..	..	..	..	..	..	..	..	10	7	8	1	..	..	..	..	..	..	..	..	..	
Cairns	137.42	33	19	13	6	..	71	11	5	3	..	..	..	..	..	..	..	..	..	..	..	12	7	6	1	..	..	..	..	..	..	..	..	..	
Charterville	44.53	7	..	..	..	..	10	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Charters Towers	33.36	4	..	..	..	..	17	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Chinchilla	31.13	8	..	..	..	..	8	5	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Chinmont	23.89	3	..	..	..	..	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Clonserry	29.9	5	..	..	..	..	5	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Collinsville	24.08	7	..	..	..	..	7	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Dalby	42.92	6	9	3	1	..	18	1	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Gayndah	15.82	4	..	..	..	..	9	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Gladstone	35.38	5	1	..	..	..	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Goondwin	23.42	6	13	..	..	..	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Greenslopes	435.8	12	13	21	14	..	60	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Gympie	96.71	19	19	7	10	..	55	4	6	3	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Herberton	19.75	2	4	1	2	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Ingham	43.7	15	1	1	3	..	20	5	1	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Inniskillen	89.64	16	10	6	9	..	41	6	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Ipswich	161.62	45	..	..	..	..	45	13	7	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Lea-Childers	14.85	5	..	..	..	..	5	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Kilgooy	19.2	3	..	..	..	..	3	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Kingaroy	40.68	3	6	8	..	..	25	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Longreach	23.09	6	1	1	3	..	10	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
MacKay	116.16	38	13	3	6	..	64	8	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Mackay	52.87	7	16	3	5	..	23	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Marreeba	143.3	35	17	18	14	..	84	11	1	2	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Maryborough	22.48	1	..	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Miles	19.7	1	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Mitchell	19.7	5	4	2	..	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Monto	20.76	7	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Moosman	20.83	7	..	..	..	..	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Mount Isa	46.8	12	8	4	3	..	26	7	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Mount Morgan	62.63	8	8	3	3	..	29	4	4	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Narborough	29.56	8	5	10	7	..	31	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Proserpine	24.1	4	..	..	..	..	12	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Rockhampton	319.96	32	19	20	13	..	84	14	3	6	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
Roma	73.74	9	4	8	1	..	22	2	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	
South Brisbane	1,041.64	138	74	86	38	..	336	21	27	9	2	..	..	..	..	..	18	24	3	4	2	26	5	20	6										

DIVISION OF SOCIAL WORK

Senior Social Worker: M. K. WHILEY, B.A., Dip. Soc. Studies (Melb.)

This Division was established early this year following the recognition of the need in this State for services of qualified social workers to help people who have social problems, particularly those social problems related to illness and those affecting families and young children. This development is in keeping with modern trends in preventive medicine as it is no longer considered adequate to provide health and medical services without taking into account the many and varied social needs.

In February a senior social worker who has had experience both in Australia and overseas took up duty in the Department. It is hoped through this appointment to effect a liaison with the State Children Department, with social work departments in hospitals and with social workers in the Welfare and Guidance Clinics and to co-ordinate the services of social workers as they are introduced to other Divisions where a direct service to people is carried out.

In the early months some of the Senior Social Worker's time has been spent on becoming closely acquainted with the welfare services, both voluntary and statutory, already existing in this State, in studying the services already offered, and in assessing the most urgent social needs.

Although social workers have been appointed to general hospitals to help patients with any social problems which may be linked with their illnesses, and to help relieve social stresses to enable patients to get the maximum benefit from the medical care available to them, there is at present no such service available to adult patients in mental hospitals. It is hoped that it will be possible to introduce these services in the field of mental health as soon as suitably trained people become available to fill vacant positions. This would help to ensure that the patient, who has been successfully treated in hospital, need not return to the difficult social conditions which might have contributed to his breakdown.

INDIVIDUAL CASES

As well as the above duties the Senior Social Worker has been able to offer a limited casework service to 48 individual people and families who were referred to her mainly through Government Departments.

Basic problems

An analysis of these cases shows that people requested help for the following reasons:—

Social problems related to Illness (including Rehabilitation)	17
Social problems related to Mental Illness	4
Social problems related to Mental Defect	5
Family and marital problems	10
Child Welfare	7
Care of the Aged	4
Housing problems	2
Employment problems	11
Financial problems	11

Of these 48 cases there were:—

- 28 in which a casework service was offered by the Senior Social Worker.
- 11 in which Senior Social Worker acted as Consultant only.
- 4 were referred to Social Workers in hospitals.
- 1 was referred to Welfare and Guidance Clinics.
- 1 was referred to State Children Department.
- 3 were referred to other Social agencies.

In addition there have been a number of enquiries from other Departments and from social agencies, where the Senior Social Worker has acted as a consultant only without taking any action on behalf of the client or patient, or where there appears to be no service available under the circumstances, e.g., some requests for temporary home-help.

The relatively high percentage of requests for help with social problems which are related to both physical and mental illness, would appear to indicate an urgent need to build up social work services in hospitals and in the Divisions of this Department which are offering direct health, medical and psychiatric services to people, e.g., Mental Hygiene Division, Tuberculosis Division.

Where help was requested with family problems the request indicated the urgent need for skilled family casework services and for a preventive child welfare programme. This would make it possible for many family and social problems to be treated when the earliest symptoms appear and would prevent the necessity of families breaking up under extreme social stresses.

RECRUITING

To develop social work services in this State it will be necessary to recruit a number of professionally trained social workers, and it is hoped that many of these will become available as they graduate in the Social Studies courses now established in the University of Queensland. The Department is co-operating with the University in training social workers by making available facilities for a small number of students to do their practical work under the supervision of the Senior Social Worker and the Social Workers in the Welfare and Guidance Clinics.

FLYING SURGEON SERVICE

Flying Surgeon: C. F. A. CUMMINS, M.R.C.S. Eng., L.R.C.P., Lond. 1942,
F.R.C.S., Edin. 1949

The Flying Surgeon Service began operating on 1st June, 1959. The intention of this service is to bring specialist surgical facilities to some twenty-one towns in Western Queensland, of which sixteen are visited regularly every month. The towns are mostly one or two doctor towns and vary between one thousand and twelve thousand population—they are separated from each other and from the coastal towns by hundreds of miles of mostly indifferent dirt roads which in wet weather are often impassable.

The following towns are included in the regular monthly visits and are all ones where there are one or more resident doctors:—Mount Isa, Mary Kathleen, Cloncurry, Julia Creek, Richmond, Hughenden, Winton, Muttaborra, Aramac, Barcaldine, Alpha, Clermont, Emerald, Springsure, Blackall, and Isisford. Places such as Boulia, Normanton, or Camooweal, &c., which normally have no resident doctor, would only be visited if the Flying Doctor had a case there which he felt was unfit to move and which required a consultation or operation on the spot.

The team consists of a surgeon, Dr. Christopher Cummins, an anaesthetist, Dr. Powell Thomas, and a pilot, and the aircraft has up to now been a Cessna 182 high-wing monoplane with full radio equipment, and this will shortly be replaced by a twin-engined aircraft with a greater pay load and a faster speed. The service is based at Longreach, which is the approximate geographical centre of the area. The equipment is complementary to the general operating equipment possessed by all the hospitals and consists, among other things, of a comprehensive set of endoscopy apparatus in the way of cystoscopes, bronchoscopes,

oesophogoscopes, sigmoidoscope, &c., with a full range of ancillary instruments for them.

There is also the various orthopaedic equipment necessary for internal fixation of all fractures and other bone work as well as many additional general surgical instruments. The anaesthetist has a C.I.G. midget portable machine, and all hospitals visited keep cylinders of nitrous oxide, and oxygen plus an adequate combined anaesthetic can be given to all cases.

Cases are seen in consultation only at the request of another doctor, and during the twelve months up to 1st June, 1960, a total of 1,531 patients have been seen and 360 operations performed. Of these operations 80 have been emergency ones. Requests for advice on treatment over the telephone have occurred about two or three times a week during this year, and there have been over 150 such calls.

Of the emergency calls during the year approximately half comprised major trauma and fracture work, major abdominal emergencies one-quarter, and the remaining quarter was divided between obstetric complications, endoscopy cases (i.e. removal of foreign bodies, &c.), head injuries, and burns.

Twenty-five cases were recommended for transfer to a larger centre. From the experience gained in the first year it is apparent that this new service has been much appreciated by all the practitioners who have occasion to use it, and it would also appear to fill a long-felt need in this sparsely populated area which it serves. With the provision of a larger and faster aircraft the scope and efficiency of the service will be much enhanced.

LEGISLATION

"*The Health Acts, 1937 to 1959*," were comprehensively amended by "*The Health Acts Amendment Act of 1959*," which was assented to on 21st December, 1959. The main amendments consisted of provision for the notification of certain types of disabilities such as blindness and home accidents; provision to regulate the packing, labelling, and sale of dangerous pesticides and substances such as kerosene; provision for the fixing of standards for public water supplies and public swimming pools; an amendment of the section relating to leprosy; and many machinery clauses.

Amendments to "*The Cafe Regulations of 1955*" were published in the *Government Gazette*

dated 28th May, 1960. Those of chief importance were the provision of new definitions of "cafe" and "food stall," amendments of the definitions of "light refreshments" and "liquid foods," and extension of the licensing provisions of Regulation 52 to include the local authority areas of the Town of Charleville and the Shires of Burrum, Emerald, and Redland.

"*The Poisons Regulations of 1958*" were amended in several particulars to correct weaknesses in certain administrative sections, to remove anomalies in the Schedules, and to include new drugs. These amendments were also gazetted on 28th May, 1960.

ACKNOWLEDGMENTS

In conclusion I desire to express my thanks to all members of the staff for their help and their unfailing and conscientious attention to duty.

I would also thank officers of Health Departments overseas who have rendered every assistance to Departmental officers during study tours.

Acknowledgment is also made to the Agent-General for Queensland and his officers for the assistance given me whenever it was asked for, and to other Government Departments for their co-operation, particularly the Government Statistician, who, as usual, has been of great assistance

in preparing the vital statistics section of this report and supplied other statistical details from time to time throughout the year.

Members of the British Medical Association have again been most co-operative, and it is desired to express appreciation for this.

I would also thank the members of the Advisory Committee on Hospital Drugs and Surgical Appliances for their co-operation, and I particularly thank Dr. A. D. D. Pye, General Superintendent of the North Brisbane Hospital, for the assistance he has given during the year.

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE, 1959-1960

The work of the Committee has continued to be concerned principally in basic research on mosquito systematics and biology, and in rendering assistance to Local Authorities and to Research Institutions and individual research workers.

These and other facets of its activities are treated in more detail below.

The Committee's Graduate Research Assistant, Dr. E. N. Marks was appointed by the University of Queensland as its delegate to the First Interterritory Malaria Co-ordination Conference, held in Port Moresby 23rd to 26th October, 1959. Dr. Marks has been granted six months special leave from 1st June, 1960, to enable her to attend the XIth International Entomological Congress in Vienna and to visit overseas institutions engaged in mosquito research.

1. FIELD WORK

Three long and two short field trips were undertaken; the latter were to Tibrogargan, 19-9-59 and Cunningham's Gap, 21-11-59.

Daru I., 29-10-59—5-11-59

Following on the Interterritory Malaria Co-ordination Conference at Port Moresby, a fortnight's field work in Papua was planned with the co-operation of the Health and Agriculture Departments. *Daru I.* was the first place visited. Due to breakdowns in air services 7 instead of 14 days were spent there and visits to other localities had to be cancelled.

Daru I. is the administrative centre for the Western District and the largest Papuan settlement in the vicinity of Torres Strait Islands, with which visits are exchanged by the natives. Malaria is of common occurrence on the island. Conditions were exceedingly dry. Only one adult mosquito (*Aedes scutellaris*) was taken in numerous attempts to collect in jungle, mangrove swamp and eucalypt forest areas.

Anopheles farauti, a malaria vector, was breeding in a pool in a grassy roadside gutter in the settlement; this was kept filled by overflow from a hand pump at a well from which the natives drew their water supply; it was also breeding in a disused polluted well behind the hospital.

Culex annulirostris was breeding in both the above sites, and *Uranotaenia lateralis* in the gutter. *Culex sitiens* larvae were found in brackish puddles in an almost dry swamp.

Culex fatigans was breeding in the disused well, in an old dugout canoe, and was common in 44-gallon drums containing household water supplies in the native village. Adults were taken in native houses and the source of a very heavy infestation in a European dwelling was traced to the septic tank.

Mitchell River Mission, 30-3-60—10-4-60

Assistance was rendered to the Queensland Institute of Medical Research's investigations of arthropod borne viruses by Dr. Marks' participation in a team which visited the Mitchell River Mission to collect adult mosquitoes for testing. The object was to isolate the virus causing Murray Valley Rash and determine the vector. It is known to be close to or identical with a virus isolated from mosquitoes in Malaya, and blood tests had indicated recent infections at the Mission. The Council of the Institute has expressed its appreciation of this help.

Nightly collections of approximately 500-2,000 mosquitoes were taken biting horses or man in the vicinity of the settlement, the total being 11,600 mosquitoes, which were individually identified to species before being frozen for subsequent testing. A few adults were taken from daytime resting places in palm leaf dwellings or fowl houses, but these sites were generally unproductive. Mosquito breeding places in the vicinity of the settlement were investigated. In all 33 species of mosquitoes were found.

The mission is situated on the banks of Magnificent Creek, which has well wooded shady banks and large permanent waterholes with extensive growth of water hyacinth. The surrounding country is mainly open sclerophyll forest. Overflow channels from the creek as they dry out form a chain of swampy waterholes through the settlement, but for much of the year these would be dry. The natives live in three main villages, all within about half a-mile radius of the store and school.

Culex annulirostris was by far the commonest mosquito comprising 58 per cent. of the adult collection. It was present in 12 larval collections; from the weedy edge of the creek and isolated pools and backwaters; hoofprints, wheeltruts, grassy swampy areas and a 44-gallon drum.

Anopheles bancroftii represented 14 per cent. of the adult collection. Larvae were found in swamps and swampy waterholes amongst vegetation.

Anopheles farauti comprised about 10 per cent. of the adults taken. It is interesting that it should be so common on the western side of Cape York Peninsula in view of the former common occurrence of malaria at the mission (as reported by the ex superintendent, Mr. J. Chapman) as well as in other parts of the Gulf country. This species was not taken in collections in June, 1952, on Vanrook Station, 100 miles south.

A. farauti was breeding at the mission in sunlit and shaded weedy edges of the creek, sunlit swampy pools, hoofprints and puddles, and a shallow shaded well.

Anopheles annulipes adults were also fairly common. Larvae were found in most sites with *A. farauti*, and in a 44-gallon drum.

Anopheles meraukensis occurred in small numbers and was breeding in a swamp among high grass, associated with *A. bancroftii*.

Anopheles amictus amictus and *Anopheles amictus hilli* adults were scarce, and breeding places were not located.

Mansonia uniformis, *M. septempunctata* and *M. xanthogaster* adults were present in surprisingly small numbers, considering the abundance of water hyacinth, a plant with which the larvae are usually associated. That the scarcity was not just seasonal was suggested by the lack of familiarity of the inhabitants with *M. xanthogaster*, whose striking orange colour most people notice. According to Mr. Chapman hyacinth was not always present in the creek, and possibly *Mansonia* numbers may only be beginning to build up.

Aedes normanensis, *Aedes lineatopennis*, *Aedes alboscutellatus* and *Aedes ?reesi* all breed in temporary rainfilled pools, and larvae may have disappeared before collecting was commenced. Only *A. normanensis* was at all common; *Aedes vigilax* and *Aedes (Mucidus) alternans* were also scarce.

Tripteroides magnesianus, *Aedes tremulus*, *Aedes notoscriptus*, *Aedes purpureus*, and *Aedes quasirubithorax* were taken in small numbers. All breed in treeholes, but for only the last was a breeding place located, in a Poinciana tree, where it was associated with *Aedes australiensis* larvae. *Toxorhynchites* larvae were also collected from treeholes.

Collection of a specimen of *Aedes iwi* is interesting, as it was previously known only from Badu I., in Torres Strait; its breeding places are unknown.

Adults of *Uranotaenia albescens* and of three species of *Culex (Lophoceraomyia)* were resting in great numbers among the leaves and stems of water hyacinth. Females of these *Culex* cannot at present be specifically identified. On three occasions, at 9.45 a.m.-10 p.m., a mosquito was taken biting a large green frog (*Hyla* sp.) which frequented the verandah of the laboratory quarter. Two were *Culex (Lophoceraomyia)* sp., but whether the same species as others taken biting man and horse is unknown. The third was *Uranotaenia albescens*, and this appears to be the first record outside U.S.A. of a *Uranotaenia* being taken biting in nature. The American species also fed on frogs.

U. albescens was breeding in shallow shaded pools at creek and swamp margins and also in 44-gallon drum. *Culex (Lophoceraomyia)* larvae were in shaded pools and creek margins.

Culex fatigans was very scarce; only the adult was taken in a fowl house, and larvae were found only in one 44-gallon drum. Perhaps conditions in the dry season are unfavourable to this species.

Culex bitaeniorhynchus was taken in moderate numbers, while *C. squamosus* was less common. They were both breeding in weedy edges of the creek, and *C. squamosus* also in a waterhole.

Culex pullus and *Culex (Lutzia) halifaxii* are non-man-biting species, larvae of which were found in a shallow well.

Noosa, 14-19-4-60

A new record for this area is *Aedes (Finlaya) wasselli*, taken biting in rain forest; this species was previously recorded from only two localities in south Queensland. *Aedes (Chaetocruomyia) spinosipes* was taken biting at the same locality. Males and larvae of both species are still unknown. A search for their breeding places was unsuccessful, as were attempts to induce blood-fed *A. spinosipes* to lay eggs.

2. PUBLICATIONS

The following papers have been published during the year:—

Marks, E. N., 1959. On Two Mosquitoes of the Subgenus *Finlaya* (Diptera: Culicidae). *Proc. Roy. Soc. Qd.* 70: 21-25.

Marks, E. N., and Lavery, H. J., 1959. Australian Wild Ducks as Mosquito Predators. *Aust. J. Sci.* 22: 216-217.

Marks, E. N., 1960. Taxonomy and Biology of some Papuan Culicidae. I. Genus *Topomyia*. *Pacific Insects* 2: 91-98.

The following papers are in the press:—

Klein, J. M., and Marks, E. N. Australian Mosquitoes described by Macquart. I. Species in the Paris Museum, *Aedes (Finlaya) alboannulatus* (Macquart), *Aedes (Finlaya) rubrithorax* (Macquart), *Aedes (Ochlerotatus) albirostris* (Macquart). New Synonymy and a new species from New Zealand. *Proc. Linn. Soc. N.S.W.* 85.

Marks, E. N. Australian Mosquitoes described by Macquart. II. Species in Bigot's Collection, *Aedes (Ochlerotatus) nigrithorax* (Macquart). New Synonymy. *Proc. Linn. Soc. N.S.W.* 85.

Marks, E. N. Presidential Address. A History of the Queensland Philosophical Society and the Royal Society of Queensland from 1859 to 1911. *Proc. Roy. Soc. Qd.* 71.

Marks, E. N., Mosquitoes biting frogs. *Aust. J. Sci.*

The following paper has been prepared for presentation at the XIth International Entomological Congress, August, 1960:—

Marks, E. N. Faunal Relationships of some Australian and Papuan Mosquitoes.

3. LABORATORY STUDIES

Studies completed are indicated under Publications. These included the first record of the genus *Topomyia* from the Australian Region, and the first records of ducks feeding on mosquitoes in Australia.

At Port Moresby the extensive collection of the Malaria Section, Department of Public Health, was examined, through the kindness of Dr. W. H. Peters, Malariologist, who loaned material of several species for further study.

Approximately 330 slides, mainly of larval and pupal skins linked with reared adults, have been prepared. Labelling, cataloguing and identification of adults from 1958 New Guinea collection

has been completed, and all linked skins are now mounted. The larval collection has still to be identified.

Preliminary work on the *Aedes kochi* group in New Guinea has included preparation of a key to the species. Prior to 1958 4 named species were recorded from New Guinea. Sixteen species are now known to occur, 10 undescribed. Two new records were received from Dr. J. van den Assem, 1 from Dr. M. O. T. Iyengar (coll. Dr. H. de Rook), 5 from Dr. Peters and 4 from Dr. Marks' 1958 collections. *A. josephinae*, described from North Queensland, has now been found in New Guinea.

Interchange of information and specimens of Australian species has continued with Mr. N. V. Dobrotworsky, Zoology Dept., University of Melbourne, and living *Tripteroides* sp. larvae were forwarded to him for study of their biology.

4. IDENTIFICATIONS

Numerous specimens have been received, and have provided valuable information on life histories and distribution. The following contributed specimens:—

Queensland.—I. C. Yeo (Bunya Mts.; Heifer Creek); J. Pope (Palmwoods); J. L. Wassell (Coen district—2 samples); J. T. Brooks (Brisbane—4 samples, about 200 specimens); M. Hawken (Binna Burra); 1 Mobile Malaria Control Unit (a collection of approximately 570 specimens).

New South Wales.—K. A. Walker.

New South Wales and Victoria.—P. R. Webb.

A.C.T.—M. F. Day.

Tasmania.—F. McDonald.

South Australia and Northern Territory.—R. V. Southcott.

Western Australia.—T. E. Woodward.

New Guinea.—S. H. Christian, B. McMillan (2 lots); M. O. T. Iyengar; 1 Mobile Malaria Control Unit.

Celebes.—R. Morris.

Malaya.—R. H. Wharton (2 collections); A. R. Woodhill.

In addition a large collection of New Guinea mosquitoes has been received for identification and study from the Bishop Museum, (Honolulu).

Among the most interesting of the above collections were—

1. The life history of *Aedes* (*Chaetocruomyia*) *tulliae* bred by Mr. J. L. Wassell. This is the first time larvae of any species in this subgenus have been collected; males of *A. tulliae* were also hitherto unknown.

2. The southernmost records for *Tripteroides argenteiventris* and northernmost for *Aedes gahnicola*, both from the Cairns District. I.M.M.C.U. collection.

3. A series of adults, with linked larval and pupal skins, of *Aedes ashworthi*, collected by Dr. Woodward from the type locality in West Australia. This species was previously unrepresented in our collection. Dr. Woodward also collected *Culex globocoxitus*, previously unrecorded from West Australia.

5. SUMMER MOSQUITO INFESTATION OF BRISBANE

Mr. J. T. Brooks has continued to provide regular collections from Taringa. *Culex fatigans*, *Culex annulirostris* and *Aedes notoscriptus* were regularly present in small numbers from July onwards. *Aedes vigilax* was noticeable from the end of October to mid-March but there appeared to be no large invasion. Numbers of *C. annulirostris* rose sharply for a few days at the end of November, as did numbers of *C. fatigans* in late March. Other species taken occasionally were *Aedes vittiger*, *Culex sitiens*, *Culex bitaeniorhynchus* and *Mansonia xanthogaster*.

6. INSECTICIDE RESISTANCE TESTS

W.H.O. is seeking to obtain world-wide information on the development of resistance to insecticide among mosquitoes, and supplied a specially designed test kit to the Committee who undertook to test Queensland species. The Brisbane City Council co-operated in supplying *Culex fatigans* larvae. Tests on larvae from Morningside, where breeding sites had received regular B.H.C. treatment, gave figures comparable with those of B.H.C. resistant strains in other parts of the world, strongly suggesting that resistance has already developed here. It has not yet been possible to obtain larvae from an untreated area near Brisbane for comparison. Brisbane figures also suggest that, as has been found elsewhere, an increase in dieldrin resistance is associated with the increase in B.H.C. resistance (this was borne out by results with adults.)

7. REPORT ON LARVICIDES SUBMITTED TO THE BRISBANE CITY COUNCIL

The samples submitted were a mixture of larvicides forming a surface film and emulsions capable of dissolving in water. Naturally it is very difficult to compare larvicides such as these. With a surface film it does not matter how deep the water is. In the case of the larvicide soluble in water the volume of water is most important. The figures shown in the table may be on the low side because our tests were carried out with standard containers of tank water. No allowance has been made for contamination, surface debris, vegetation, &c. However, this does not matter much when we are comparing a number of larvicides. Even if you have to double or treble the amount we found to be effective it is still easy to compare one larvicide with another. In our tests we first of all found out a minimum amount to give 100 per cent. kill in twenty-four hours. As these amounts were very small I thought it better to indicate the relative value of the insecticides by giving the cost of treating one acre at varying depths. This is the only way you can compare a surface film and a larvicide soluble in water. The variation in some cases seems absurd but we checked them several times and are quite satisfied that our results are fairly accurate.

I feel quite certain that the suppliers mixed up samples A and B. In our tests we found that A was six times as effective as B, yet the suppliers indicated both by their recommended rate of usage and cost that B was approximately five

times as toxic and effective as A. I have given the figures for A and B in the table on the assumption that the makers did not mix their

samples. Below the table however are given figures for A and B on the assumption that they did mix their samples.

COST OF TREATING ONE ACRE AT DEPTHS OF 3-INCH, 6-INCH, 1-FOOT, 2-FOOT, 4-FOOT, AND 8-FOOT

	3-inch deep	6-inch deep	1-foot deep	2-foot deep	4-foot deep	8-foot deep
	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.	£ s. d.
A	0 4 2	0 4 2	0 4 2	0 4 2	0 4 2	0 4 2
B	5 5 8	5 5 8	5 5 8	5 5 8	5 5 8	5 5 8
C	0 0 4½	0 0 9	0 1 6	0 3 0	0 6 0	0 12 0
D	0 0 8½	0 1 5	0 2 10	0 5 8	0 11 4	1 2 8
E	0 5 1	0 10 2½	1 0 5	2 0 10	4 1 8	8 3 4
F	80 13 4	80 13 4	80 13 4	80 13 4	80 13 4	80 13 4
G	1 11 3	3 2 6	6 5 0	12 10 0	25 0 0	50 0 0
H	0 0 3½	0 0 7	0 1 2	0 2 4	0 4 8	0 9 4
I	0 18 7	0 18 7	0 18 7	0 18 7	0 18 7	0 18 7
J	0 0 3½	0 0 7	0 1 2	0 2 4	0 4 8	0 9 4
K	1 11 5	1 11 5	1 11 5	1 11 5	1 11 5	1 11 5
L	1 5 1	1 5 1	1 5 1	1 5 1	1 5 1	1 5 1
M	1 3 4	1 3 4	1 3 4	1 3 4	1 3 4	1 3 4
N	1 6 11	1 6 11	1 6 11	1 6 11	1 6 11	1 6 11
On the assumption that A and B were incorrectly labelled the figures would be						
A	0 17 8	0 17 8	0 17 8	0 17 8	0 17 8	0 17 8
B	1 4 11	1 4 11	1 4 11	1 4 11	1 4 11	1 4 11

8. LIGHT TRAP COLLECTIONS

A light trap of the New Jersey pattern, specially designed for mosquito collection, was purchased. Traps of this pattern have yielded interesting results in New Guinea. Collections commenced on 11th May, 1960. Conditions were mainly cold and windy and unfavourable for insect collecting at this period. In the first four nights of operation outside the Entomology Laboratory, University, George Street, five mosquitoes, representing 5 species of mosquitoes were taken, viz.: *Uranotaenia pygmaea*, *Ficobia elegans*, *Culex fatigans*, *Culex annulirostris*, *Culex sitiens*. *Aedes notoscriptus* occurred in a later catch.

9. EDUCATION

Demonstrations in identification of mosquitoes were given to Medicine IV. students, and specimens collected by them were examined.

A key to identification of common Queensland mosquito adults and larvae was prepared for the use of medical students and others.

Three radio interviews concerning work at the Mitchell River Mission were given by Dr. Marks.

10. MISCELLANEOUS ACTIVITIES

Visitors to the Laboratory have included Professor A. W. A. Brown, W.H.O. advisor on insecticide resistance; Professor Sandoshan, Dept. of Parasitology, University of Malaya; Mrs. M. Spencer, Malaria Section, Dept. of Public Health, New Guinea; Dr. R. H. Wharton, Chief Entomologist, Institute of Medical Research, Kuala Lumpur, Malaya.

Other workers have been assisted by checking for the character of specimens in the collection, or by loan or gift of specimens.

Dr. Marks was appointed to a subcommittee of the Interterritory Malaria Co-ordination Conference, which drew up a map of the distribution of major malaria vectors in the South Pacific.

11. PUBLIC HEALTH

Collections were received for identification through the Department of Health and Home Affairs from—

Warwick City Council (3 collections).

Thursday Island.

Cairns.

Cooktown.

Proserpine.

Townsville City Council.

Toowoomba City Council (2 collections).

Other samples were identified for—

Department of Agriculture and Stock (Ravenshoe).

Senior Medical Officer, Amberley.

Brisbane City Council.

Of interest was the report from Toowoomba City Council's Health Inspector (12-5-60) that accompanied species of *Aedes vittiger*—"After several days of strong westerly winds various parts of the city have been subjected to rather large invasions of this species." These very likely were brought by the wind from brigalow country further west where *A. vittiger* breeds in great numbers after heavy rain. This species was also observed in and close to Brisbane about the time of the west wind—6-8 May, but might have been breeding locally.