

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

Contributors

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1971

ANNUAL REPORT
OF THE
HEALTH AND MEDICAL SERVICES
OF THE
STATE OF QUEENSLAND
FOR THE
YEAR 1970-71

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CONTENTS

	Page
Introductory Remarks and Vital Statistics	1
Division of Public Health Supervision—	
Section of Epidemiology	8
Section of Hansen's Disease	13
Section of Enthetic Diseases	13
Section of Drugs and Poisons	15
Section of Food Supervision	15
Section of Environmental Sanitation	16
Division of Tuberculosis	18
Division of Industrial Medicine	27
Division of Maternal and Child Welfare.. .. .	29
Division of School Health Services	34
Division of Psychiatric Services	38
Division of Youth Welfare and Guidance	53
Division of Dental Services	60
Division of Laboratory Services—	
Laboratory of Microbiology and Pathology	62
Government Chemical Laboratory	76
Division of Geriatrics	84
Division of Nursing	88
Division of Social Work	90
Flying Surgeon Service	93
Legislation	93
Appendix—	
Annual Report of the National Mosquito Control Committee for 1970-71	95

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ANNUAL REPORT OF THE DIRECTOR-GENERAL OF HEALTH AND MEDICAL SERVICES 1970-71

The Honourable the Minister for Health

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 for the year ended 30th June, 1971.

P. R. PATRICK,
M.B., B.S. (Qld), D.P.H. (Syd.), F.A.C.M.A.
Director-General of Health and Medical Services.

INTRODUCTORY REMARKS

THE COMMUNITY AND HEALTH SERVICES

Throughout the ensuing pages in which the reports of the several Divisions of the Department are recorded, mention is made at various intervals, sometimes directly but often indirectly, of the relationship between the community and the health services provided by the State. The relationship can be discussed appropriately under four headings:

- (1) Extension of departmental activities into the community;
- (2) Community health education;
- (3) Community acceptance of attitudes towards health; and
- (4) The assistance given by various sections of the community.

The extension of certain health services has often only been possible by the operation of the factors which come under the three last headings. The community must first be informed; it must adopt new attitudes as a result of this information; and then be prepared to assist when called upon.

Two fields in which the care of patients is being extended into the community relate to psychiatric and geriatric services. Mention is made under the report of the Division of Psychiatric Services of the pride of the staff and of the patients themselves from Challinor Training Centre who go out from the Centre to work in sheltered employment. It is a fine illustration of education of the community, adoption of new attitudes, and then the rendering of assistance in rehabilitation.

The Division of Geriatrics has extended the care of the geriatric patient by the establishment of a community home care programme. The community has been involved in its development in many ways. Whilst there was no need for the community to develop new attitudes towards the care of the aged—they were already there—it was necessary to inform and seek co-operation of the many voluntary organisations which have been so active in this field. Mention must be made here of the Queensland Council on the Ageing, the various voluntary nursing organisations, and those bodies which have prepared and delivered meals to the aged in the community. Without the help of these bodies the programme would have faced great difficulties.

The excellent work of the Queensland Health Education Council is well known. Many departmental officers are involved directly in the Council's excellent education programme. Many more give their time willingly and independently by lecturing, talking to groups, and either conducting seminars or at least taking an active part in such activities. A study of the report of the Division of Youth Welfare and Guidance will reveal the amount of mental health education carried out by officers of the Division. There are many grateful parents and community groups who are thankful for the efforts of this personnel in the field of preventive psychiatry. It would be difficult to measure the help given to future mothers by sisters of the Maternal and Child Welfare Division during their instruction to girls in secondary schools.

These are but a few examples of the manner in which the Department is active in community health education.

One field where there is unfortunately still need for a change in community attitudes is in the field of psychiatric illness. There are still some who regard such illness with fear and shame. During the year, the Division of Psychiatric Services has been active in establishing in the community well informed groups who will act as opinion leaders and help in the adoption of new attitudes towards such diseases.

The Department is deeply appreciative of the work of all groups in the community who act as leaders in the promotion of health, and Queensland as a whole must be truly grateful for their efforts.

STAFF

Dr. Karl Halwax resigned as Psychiatric Supervisor, Division of Psychiatric Services, Townsville, in January, and Dr. Ian Atkinson filled the vacancy.

Drs. N. and J. Cominos returned to the Division of Psychiatric Services after three years' post-graduate study and experience overseas; Drs. N. Cominos and J. Wood have been appointed Senior Psychiatrists.

Dr. J. E. Thompson has resigned from the position of Assistant Director of Tuberculosis and Dr. P. A. M. Dale-Lace as Chest Physician, Rockhampton. Dr. N. Ribush was appointed Medical Officer, Chest Clinic, Brisbane; Drs. N. Nobbs and L. Wilkes resigned during the year.

Dr. W. S. Wright was appointed Regional Supervisor, Division of Youth Welfare and Guidance, Townsville, in place of Dr. D. I. Nasser. Drs. J. Carter, R. Heap and E. Nixon were appointed Medical Officers, Division of Youth Welfare and Guidance.

Dr. J. F. McFarlane, Director of the Division of Maternal and Child Welfare, was awarded a World Health Organization Travelling Fellowship and left Queensland in April to study maternal and child health problems in New Zealand, Fiji, the United States of America, Canada, and Jamaica.

Miss Yvonne Battey, Senior Bacteriologist, Laboratory of Microbiology and Pathology, was awarded a National Health and Medical Research Council Public Health Travelling Fellowship, and left in April to study recent advances in bacteriology in Japan, Europe, England, Canada, and the United States of America.

Mr. K. Stevens, Radiation Health Physicist, visited the United Kingdom at the invitation of the British Hospitals Export Council to study hospital equipment and design in relation to the use of radiation.

Dr. G. Powell, Medical Officer, Division of Geriatrics, obtained Membership of the Royal College of Physicians of the United Kingdom, taking her special subject "Geriatrics" in Edinburgh.

Dr. G. A. C. Douglas commenced duty with the Division of Geriatrics and Dr. W. T. Fifoot was appointed Medical Officer, Flying Surgeon Service.

VITAL STATISTICS

Queensland can still claim that, apart from Tasmania, it is the most decentralised State in Australia. Less than half of the State's population lives in the capital city. There is a trend, however, for the percentage in the metropolitan area to gradually increase in all capital cities. In 1947 the percentage of the State's population living in Brisbane was 36.4; in 1958 it had risen to 39.2; in 1970 it has grown to 47.41. The effect of urbanization on the health of the community is a subject worthy of greater study.

TABLE I

State	Percentage Proportion of State Population in Capital Cities Statistical Divisions	
	1961	1970
New South Wales	58.81	60.88
Victoria	67.74	70.42
Queensland	45.60	47.41
South Australia	68.00	70.87
Western Australia	64.54	67.65
Tasmania	37.17	38.45

There is evidence that the crude birth rate which has fallen in recent years is now recovering.

The acceptable indices in the comparison of births are the number per thousand population and the rates in women of child-bearing years.

The crude birth rate was 23.1 in 1962. It then began to fall and in 1966 was only 19.7. It rose to 20.4 in 1967, falling slightly to 20.3 in 1968 and rising to 20.7 in 1969 and 20.8 in 1970.

TABLE II

Year	*Index of Crude Birth Rates	*Index of Births to Number of Women aged 18-39 inclusive
1954	100	100
1955	102	103
1956	99	102
1957	101	106
1958	99	105
1959	103	110
1960	99	108
1961	102	112
1962	98	107
1963	97	106
1964	93	102
1965	88	95
1966	84	90
1967	86	93
1968	86	92
1969	87	92
1970	88	92

*Base: 1954 = 100

TABLE III
BIRTHS ACCORDING TO AGE-GROUP OF MOTHER AND NUMBER OF BIRTHS
PER 1,000 WOMEN IN VARIOUS AGE GROUPS—QUEENSLAND, 1965-1970, INCLUSIVE

Year	Age of Mother					
	15-19	20-24	25-29	30-34	35-39	40-44
1965—						
Number of Births	3,849	11,126	9,270	5,305	2,997	921
Female Population	71,684	57,404	47,169	44,723	48,672	49,701
Births per 1,000 Women	53.7	193.8	196.5	118.6	61.6	18.5
1966—						
Number of Births	4,163	10,823	9,080	4,982	2,831	872
Female Population	74,820	61,570	49,210	44,760	49,100	50,520
Births per 1,000 Women	55.6	175.8	184.5	111.3	57.7	17.3
1967—						
Number of Births	4,078	12,141	9,753	5,042	2,750	834
Female Population	76,000	64,080	50,820	46,860	49,330	50,710
Births per 1,000 Women	53.7	189.5	191.9	107.6	55.8	16.4
1968—						
Number of Births	4,159	12,564	10,100	5,007	2,509	772
Female Population	77,340	68,720	52,440	47,700	48,430	50,720
Births per 1,000 Women	53.8	182.8	192.6	105.0	51.8	15.2
1969—						
Number of Births	4,340	13,158	10,698	5,247	2,325	725
Female Population	78,632	72,277	55,303	49,566	47,826	51,073
Births per 1,000 Women	55.2	182.1	193.4	105.9	48.6	14.2
1970—						
Number of Births	4,556	13,226	11,279	5,355	2,337	694
Female Population	79,960	75,279	58,916	50,660	47,779	50,629
Births per 1,000 Women	57.0	175.7	191.4	105.7	48.9	13.7
Percentage Increase or Decrease in rates, 1965-70	+6.1	-9.3	-2.6	-10.9	-20.6	-25.9

From Table III it will be seen that there has been a percentage increase in the birth rate in the 15-19 years group while a decrease has taken place in all other age groups of the child-bearing period.

An analysis of the figures in Table III suggests that women in the upper child-bearing years are using oral contraceptives to a greater degree than younger women.

There was an increase in the crude birth rate for Queensland from 20.7 to 20.8 per 1,000 population in the past year, the number of births increasing from 36,576 to 37,530. The Queensland crude birth rate is higher than the Australian average of 20.5. It will be seen from Table VI that the downward trend in birth rates is world-wide but it may be halting in Australia.

The marriage rate was 8.9 per thousand mean population. The crude birth rate is the number of births per thousand population not per thousand women of child-bearing age. In comparing the present rate with that of other years, some adjustment should be made for the increasing number of old people and young children in the population. Table I shows a comparison of the birth rate related to women of child-

bearing age (18-39 years). If the crude birth rate in 1954 is taken as 100, in 1970, it was 88. If, however, it is related to women between the ages of 18 and 39, it is 92. The rate is below that of 1954 after making allowance for increase of women in the 18-39 years' age group from 201,638 to 264,367. The contraceptive pill has been used widely since 1961.

It is again disappointing to report that over 10 per cent. of all births are illegitimate. The illegitimate child frequently fares badly when compared with babies born to married parents. The abnormalities in illegitimate babies are higher than in those born in wedlock. The unmarried mother who keeps her child faces great difficulties, particularly if she has to work to support herself and her baby.

In the calendar year of 1970 there were 4,251 illegitimate births which were 11.33 per cent. of all births. 1,562 or 36.74 per cent. of all ex-nuptial births were to mothers under 20 years of age as compared with 36.11 per cent. in 1969.

TABLE IV
SHOWING THE NUMBER OF EX-NUPITAL BIRTHS
AND RATE PER THOUSAND UNMARRIED
FEMALES—1965-70

Year	Under 16 Years		16 and 17 Years		18 and 19 Years	
	Number	Rate	Number	Rate	Number	Rate
1965	107	3.61	431	15.34	634	26.42
1966	91	2.98	441	15.47	705	29.25
1967	102	3.07	454	14.60	713	28.40
1968	92	2.88	489	16.94	761	31.20
1969	107	3.35	481	15.63	795	31.28
1970	121	3.70	558	18.18	883	33.17

Attention is drawn to the high ex-nuptial birth rate in the under 20 years age group. The rate in the under 16 years age group increased but the rate at ages 18-19 years shows the highest rate in the last six years.

The infant mortality rate decreased from 18.9 (691) per thousand live births in 1969 to 17.9 (672). The rate decreased from 16.5 to 15.2 in the Brisbane Statistical Division, fell from 20.6 to 17.8 in the other sub-tropical areas, and increased from 21.2 to 23.1 in the tropical area.

Of the 188 deaths from congenital malformation 88 died during the first month of life. Little can be done for most malformations while if the birthweight is below 2 lb. 12 oz. the baby does not usually survive.

The maternal mortality rate decreased from 0.22 per thousand live births in 1969 to 0.21. There were 8 maternal deaths during 1970.

The Maternal Mortality Committee continues its excellent work in its endeavours to reduce deaths which occur as a result of pregnancy and confinement. The report of the first five years of its activities was received very favourably by the profession.

Heart disease again heads the list of causes of death, being responsible for 5,940 (35 per cent. of total deaths) as against 5,684 (36 per cent.) in 1969. It is a condition of middle and old age and with an increasing number of people reaching old age an increase in the number of deaths each year must be expected.

Cancer was the second leading cause of death and the high incidence is to be expected as it also occurs in middle and old age. Of the total of 2,557 deaths*, 444 died from cancer of the lung (390 males, 54 females). This is an increase of 19 males and 21 females as compared with 1969 (371 males and 33 females). There were 54 deaths from cancer of the cervix and 203 deaths from cancer of the breast.

The number of deaths from motor vehicle traffic accidents (544) shows a decrease of 30 compared with the previous year. Several bodies in Australia have studied various aspects of traffic accidents and some excellent reports have resulted. However, there has been much fragmentation and a pooling of resources may help to solve some of the aspects associated with this serious problem.

SECTION OF EPIDEMIOLOGY

The number of notifications of communicable disease received (2,070) approximated that for the previous year (2,135). Although notification of certain prescribed diseases is compulsory, the effect with which the law is complied varies. The number of cases of tuberculosis, diphtheria, and poliomyelitis reported can be relied upon as a reasonably accurate assessment of the incidence of these particular diseases. Cases of these diseases are for the most part treated in hospitals where compliance with notification is reliable. When communicable diseases are treated by private practitioners and not hospitalised, the reporting is less dependable. However, this no doubt is a continuing factor and the notifications received can be taken as a guide of what is happening from year to year.

Three communicable diseases which occur in considerable numbers are infective hepatitis, tuberculosis, and venereal disease. There is still no effective vaccine for infective hepatitis and attention to personal hygiene remains the only means of prevention. The decrease in number of cases of tuberculosis in the last five years is the pleasing result of the vigorous campaign commenced over twenty years ago. The total number of cases of venereal disease reported (1,880) was actually less than the previous year (1,950). The rate per 100,000 population of 103.3 approximates the rate of cases reported for the preceding five years. The incidence of disease is highest in the 15-19 years age group in females and in the 20-24 years age group in males. A disturbing feature in this area is the large number of cases of non-specific urethritis seen in male patients. So far no causative organism for this condition has been isolated. Research into the disease is in progress through a grant from the National Health and Medical Research Council.

* Includes neoplasms of lymphatic and haematopoietic system.

The small number of cases of poliomyelitis and diphtheria reported these days is due to the efficacy of immunization. Actually not one confirmed case of either of these diseases was reported during the year under review. What a different picture from the year 1921 when there were 2,434 cases of diphtheria with 124 deaths and the period from October 1950 to June 1952 when 1,173 cases of poliomyelitis were reported with over 100 deaths.

Agents are now available for protection by immunization against both forms of measles. The response to campaigns to immunize 12-14 year-old girls against rubella has resulted in approximately 24,000 being protected. This is equivalent to about half the Queensland female population in this age group. The response to the immunization programme against morbilli or what is called "ordinary measles" has been much less. Only 10,745 doses were distributed.

The influenza epidemic which commenced in June 1970 continued during July. The number of deaths attributed to influenza for 1970 by the Commonwealth Bureau of Census and Statistics (see Table X) was 233 as compared with 14 the year before.

SECTION OF FOOD SUPERVISION

In the field of food supervision, the health authority has three main responsibilities in its role of protector of the health of the public. It must ensure that the food sold conforms with prescribed standards; it must ensure that the food is described correctly if labelled; and it must ensure that the food is free of injurious substances.

In accepting these responsibilities, the State Health Department must lay down standards and, by inspection and analysis of food products, ensure that all requirements are met.

With the advent of more sophisticated manufacturing processes, food sold in cans and other containers is generally free of contamination. Considering the increase in volume of this type of product, defects in standards and labelling are few.

The Local Authorities are responsible for the direct control of public eating premises and the departmental officers act in an advisory role in this area.

Divergence in food regulations from State to State in Australia sometimes results in difficulties for manufacturers who wish to sell on a national scale. The National Health and Medical Research Council special committee on food aims at producing uniform standards to overcome such problems. Queensland follows closely the recommendations of the Council.

SECTION OF DRUGS AND POISONS

Drugs and poisons when used correctly are often beneficial to man. Their misuse may cause illness, sometimes death. It is the responsibility of the State Health Department to permit the former and prevent the latter.

It is essential that products on the market are true to label and conform to prescribed standards to enable the greatest benefit from the proper use of drugs. Constant supervision by officers of the Section of Drugs and Poisons and routine and check analyses are the methods used to achieve these goals.

In its efforts to control the misuse of drugs, the Department has a responsibility in two fields—legislation and health education. Whilst Queensland has seen evidence of the spread of a world-wide upsurge of the misuse of drugs within its population, the problem is not as extensive as may be found in some other Australian States or in some overseas countries. However, the potential for an increase is present and for this reason the Department has taken steps to combat the menace.

During the year the Health Act was amended to provide stiffer penalties for drug offences and in particular differentiation was made between the trafficker and the person in unauthorised possession of drugs.

The Queensland Health Education Council is maintaining its vigorous drug education programme.

SECTION OF ENVIRONMENTAL SANITATION

The responsibility for a satisfactory physical environment is a shared one in Queensland. The public and the State Government have definite roles to play. In addition, the Local Authorities must accept their share of responsibility. Most Councils are fully appreciative of their duties in this regard and appoint sufficient health inspectors to achieve the required objectives. Others are hesitant to do so and expect health inspectors to carry out extraneous tasks.

The Section of Environmental Sanitation provides an advisory and supervisory service and many problems have been solved by the co-ordination of efforts of officers of this section and those of Local Authority health inspectors.

The section is responsible also for the health supervision of the sale of toys. Two areas in which it is active in this field are in ensuring that no toy for sale contains lead or

other hazardous substance and also that toys are not dangerous when handled by children. Manufacturers and agents are generally co-operative and withdraw any articles from sale when a hazard is pointed out to them.

Officers of this section are also responsible for control of two specific diseases—Weil's disease and hookworm. Their activities have been responsible for the low incidence of both diseases during the year.

DIVISION OF TUBERCULOSIS

The excellent work carried out by the Division of Tuberculosis during the twenty-one years since its establishment is revealed in the low number of notifications and deaths from the disease reported during the year. A marked decline in the number of new cases commenced six years ago. During 1970-71, however, the notification rate for the disease equalled that of the previous year. The halt in the decline was no doubt due to the influenza epidemic in the winter months of 1970 which, it is believed, precipitated active tuberculosis in many patients. The death rate of 2.1 per 100,000 population for 1970 is the lowest since the campaign commenced in 1950 when it was over nine times this figure.

The research unit established to investigate atypical mycobacteria has continued its examinations. Special attention is being paid to all aspects of tuberculosis patients whose disease is caused by an atypical organism. The environment is being carefully examined to determine the source of these organisms and a careful study is being made of the tuberculin reaction of school children.

During the search for tuberculosis in the community, other diseases are revealed. Of these, an important condition is that of lung cancer, many cases of which are no doubt due to cigarette smoking.

The mass radiography campaign is still continued with diminishing results. One interesting point arising from the campaign is the rate of cases found in persons who at first failed to report and were later X-rayed after follow-up procedures. The rate is approximately thirteen times as high as that found in persons who reported when first requested.

DIVISION OF INDUSTRIAL MEDICINE

This Division is concerned with health hazards arising as a result of particular occupations. It provides both service and advisory facilities. Workers themselves are investigated to determine the effect of their work environment on their health and the environment itself is examined for the presence of factors which may adversely affect the health of the workers. Should such prove to be the case, necessary advice is given for the elimination of these factors.

Ill health associated with established lead industries is seldom seen now. The steps taken by management to eliminate hazards and routine health checks of personnel are generally responsible for the absence of illness due to this chemical. Occasionally symptomatic lead poisoning occurs in situations in which a lead hazard is not suspected.

The Division's investigation of noise in industry indicates that motivation is the most important factor in the establishment of a hearing conservation programme.

An important section of this Division is that concerned with radiation health physics. This section plays an important role in the general supervision of radiation health and in advising the Department on the design of areas in public hospitals which house sources of radiation. The services of the newly appointed Technical Officer (Radiation) has produced considerable improvement in country hospital radiography.

DIVISION OF MATERNAL AND CHILD WELFARE

An analysis of certain statistics in the report of the Division of Maternal and Child Welfare reveals some heartening facts. During 1970 the number of births in Queensland (37,530) is the highest ever recorded. Associated with this large number there were only eight maternal deaths giving a maternal death rate of 0.2 per 1,000 live births—a figure which was below the Australian rate for the year. At the same time the infant mortality rate of 17.9 per 1,000 live births was the lowest for four years.

During the year a Perinatal Mortality Committee was established in Queensland to examine foetal and neo-natal deaths with a view to reducing still further the loss of life in these stages.

The work of the Division continues to expand with an increase of 19,789 (3.8%) attendances at clinics bringing the total for the year to 534,994 attendances.

The Division includes 20 Aboriginal communities in its services and clinic sisters travel with the Royal Flying Doctor Service to remote areas of the State where these sisters examined 16,133 babies.

Accidents still figure largely as a cause of death in children over one year. Of 28 deaths in children two to five years of age due to accidents, 15 were due to drowning.

Two important building projects are nearing completion for this Division. A new Mothercraft Home at Clayfield to accommodate mothers and babies will replace the original building in which excellent service has been given for many years. At Townsville, a residential centre will also be ready for occupation soon.

DIVISION OF SCHOOL HEALTH SERVICES

This Division provides screening examinations of school children to detect physical and mental defects and a dental service in those areas in which hospital board dental clinics are not readily accessible. In addition, it accepts a responsibility for the medical fitness of teacher trainees. The gradual increase in school population and entrants to the teaching profession continues to keep the Division fully occupied.

An increase in school sisters and dentists enabled the Division to cope more fully with the increased school population. It was possible for school sisters to provide a full screening examination for over 91,000 primary school children. A further 35,000 children were given visual acuity tests, whilst over 11,000 high school pupils were examined for hearing and vision. Defects in either of these senses, if uncorrected, may have an adverse effect on the school progress.

Parents of over 7,000 primary and high school pupils were advised of medical defects found during school health examinations. Disability in vision constituted by far the greatest number of these notifications. The Division's report draws attention to the satisfactory response to these reports with the vast majority of parents seeking medical attention when advised of a defect in their children.

Dentists working from rail dental clinics and using portable equipment at schools examined nearly 32,000 children and gave dental attention to nearly 10,000 of these.

DIVISION OF PSYCHIATRIC SERVICES

It is again pleasing to report a year of great progress from the Division of Psychiatric Services. Care and treatment of the highest standard have continued and new physical facilities have been provided in many areas.

One of the most significant features of the year's work has been the efforts of the Division in developing services to meet community needs in the field of preventive psychiatry. These have included the provision of consultative services to various agencies working in the community and the fostering of groups who are in a position to act as agents to disseminate authoritative information and advice regarding psychiatric illness.

The Psychiatry Clinic in Mary Street, Brisbane, has increased its workload during the year. In addition to day outpatient services the clinic has held two night clinics per week.

Mention must be made of the Central Assessment Clinic set up to determine the needs of the intellectually handicapped. Under the supervision of the Director of Psychiatric Services, a psychologist and social worker examine patients referred by community agencies and private practitioners to determine priorities for placement in residential centres, both long-term and in short-term emergency situations.

During the year, Ellerton House, a new 140 bed patients' accommodation complex was opened at Wolston Park Hospital. The excellent facilities are occupied by male and female patients. Other new buildings at this hospital will soon provide a new kitchen and main dining area in addition to a clinical block and Nurse-Training School.

At Toowoomba, Baillie Henderson Hospital's reputation in the community is indicated by the large number of patients who enter the hospital voluntarily. Its standard of service may be assessed by the high discharge rate.

The Training Centre for Intellectually Handicapped at Challinor Centre, Ipswich, has continued its excellent work. Probably the most pleasing feature of this centre is the rehabilitation of its residents through sheltered workshops and hostel accommodation.

DIVISION OF YOUTH WELFARE AND GUIDANCE

This Division gives an excellent service of curative and preventive child psychiatry. In the metropolitan area it has been possible to develop specialised fields of the service. Its activities include a service to the community at two centres at Mary Street and the Institute of Child Guidance at Rogers Street. At Wilson Youth Hospital, its officers provide a psychiatric service for disturbed children who come before the Children's Court and a similar service is provided at Warilda for children in the various metropolitan homes. At Townsville and Toowoomba, a general comprehensive service is given from clinics in the hospital grounds.

It is noted with interest that there has been an increase in the medical officer strength of this Division and plans are being made for an inpatient unit as well as extension to the suburbs in Brisbane.

Mention has been made in the introductory remarks of the preventive aspects of this Division. Staff from all centres have been active during the year in disseminating knowledge to various groups in the community. Their excellent advice on many topics related to the mental health of children and adolescents is greatly appreciated by all who are privileged to attend the many group discussions, lectures, and seminars in which the staff is involved.

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

The Laboratory of Microbiology and Pathology functions as a clinical laboratory for country hospitals and a pathological and medico-legal service for the Coroner and the Police Department. In addition, it plays a valuable role in controlling outbreaks of communicable disease.

The Laboratory has not escaped the increased demand for pathological tests which is a feature of current medical practice and which is placing a strain on space and facilities in many laboratories.

Whilst providing a routine service, the staff continue to make important discoveries. Dr. E. H. Derrick, a former Director of the Laboratory, elucidated Q fever as an entity. During the year, the Laboratory diagnosed the disease in a five-month-old baby, the youngest ever recorded case, which unfortunately ended fatally—a rare outcome of the disease.

Between December 1968, and March 1969, an outbreak of gastro-enteritis occurred on an island resort off the Queensland coast. Laboratory staff established the case as a marine vibrio—*V. parahaemolyticus*. This was the first time the organism was isolated outside Japan. During the year it was found in oysters received at the Brisbane Fish Board.

The Virology Laboratory shares in the increased requests for services. It continued to isolate A2/Hong Kong influenza virus in July 1970, from cases in the epidemic which had commenced one month previously. Rubella virus was again isolated from patients suffering from the disease.

In addition to conducting coronial autopsies the Institute of Forensic Pathology provided more valuable data regarding the blood alcohol level of persons killed in motor vehicle accidents.

GOVERNMENT CHEMICAL LABORATORY

The Government Chemical Laboratory provides a chemical, analytical, and advisory service for all State Government Departments and a restricted analytical service for the Territory of Papua and New Guinea. It also provides a complete service for the Commonwealth Departments of Customs and Excise and of Primary Industry, and a limited service for the Defence Forces and other Commonwealth Departments.

There have been improvements in staffing, accommodation, and equipment. The appointment of additional staff has resulted in satisfactory numbers in most sections although experienced staff is short in some areas. Air conditioning is being installed in the Spectrographic Laboratory and new floor covering and painting have improved the Food and Drug and the Mining Laboratories. New sophisticated equipment will improve the facilities for blood alcohol analysis and the determination of the presence of non-ionic detergents.

An outstanding feature of the work of this Division is its diversity. Many decisions depend on its reports. Its

work is of great importance in ensuring that drugs and foods conform to prescribed standards. Its results may be followed by prosecution in police work. It enables exporters of meat to send to foreign countries a satisfactory product and helps in assessing the mineral wealth of the State. Its staff perform quickly and unassuming tasks which are of enormous benefit to the health and welfare of Queensland.

DIVISION OF GERIATRICS

Queensland has good reason to be proud of the work being performed by the Division of Geriatrics. After the establishment of a very fine inpatient and day centre for geriatric patients at Princess Alexandra Hospital, the programme of care for the aged was expanded late in 1969 by the commencement of a community home care programme. After a successful initial period in the metropolitan area, it was possible to commence operations in Maryborough, Bundaberg, Gympie, Nambour, and Redcliffe towards the end of the year under review.

The main objective in this programme is to care for the aged sick and disabled in the familiar surroundings of their own home. To achieve this goal, the patient's general practitioner is asked to provide medical and social information so that he may be advised of any help that the service can provide. He retains the medical supervision of his patient. After a careful assessment, the needs of the patient are determined and, if necessary, home help is provided.

The success of the scheme depends on a full utilization of all agencies available in the community. Services from the practitioner, community agencies, and Government services are all co-ordinated to help the patient.

It is pleasing to report that the Council for the Ageing has accepted the responsibility of co-ordinating the "Meals on Wheels" services in Brisbane.

Whilst the Community Home Care programme initiation and expansion has drawn much attention, the excellent work at the Princess Alexandra Geriatric Unit continued.

It is pleasing to report that after a careful assessment and rehabilitation, over half of the elderly patients admitted to the Unit were discharged to their homes.

DIVISION OF NURSING

In many countries throughout the world two subjects are common topics of debate in the nursing field. They are nursing education and a general shortage of nursing staff.

The proposals to improve the standard of nurse education are varied and there is by no means complete agreement. Queensland has now consolidated its regional scheme for nurse training by which nurses from smaller hospitals are brought to larger hospitals on an exchange basis.

The Department again arranged a seminar to study further aspects of the recently introduced new curriculum. Nurse educators from both State and private hospitals attended.

In many hospitals throughout Queensland the nursing staff has for years been augmented by nursing aids. The Nurses Board of Queensland has now passed necessary regulations which will enable hospitals to institute training programmes and enrolment of nursing aides.

TABLE V
SHOWING POPULATION OF AUSTRALIAN STATES AND THE PERCENTAGE OF ESTIMATED AUSTRALIAN POPULATION RESIDENT IN EACH STATE DURING CERTAIN YEARS (AT 31st DECEMBER), SINCE 1940

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	
1940	2,790,948	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	2,932,998	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	3,241,057	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	3,526,534	37.9	2,546,332	27.3	1,358,858	14.6	834,661	9.0	668,609	7.2	324,919	3.5	33,960	9,311,825
1960	3,877,261	37.3	2,888,290	27.8	1,502,286	14.5	957,022	9.2	731,033	7.0	355,969	3.4	55,272	10,391,920
1961	3,949,670	37.2	2,954,826	27.9	1,531,125	14.4	977,007	9.2	744,845	7.0	353,236	3.3	62,331	10,600,631
1962	4,019,407	37.2	3,010,130	27.9	1,552,875	14.4	995,491	9.2	766,385	7.1	358,019	3.3	69,544	10,809,474
1963	4,073,807	37.0	3,069,653	27.9	1,584,608	14.4	1,019,223	9.3	787,554	7.2	362,690	3.3	77,273	11,006,317
1964	4,137,236	36.8	3,136,128	27.9	1,614,812	14.4	1,048,358	9.3	806,300	7.2	366,354	3.3	84,522	11,227,619
1965	4,205,258	36.7	3,193,661	27.9	1,646,821	14.4	1,078,918	9.4	825,945	7.2	369,410	3.2	92,738	11,449,017
1966	4,266,492	36.6	3,247,478	27.9	1,674,796	14.4	1,100,322	9.4	850,100	7.3	373,684	3.2	99,962	11,651,343
1967 ¹	4,347,369	36.4	3,303,631	27.7	1,718,266	14.4	1,118,477	9.4	892,763	7.5	379,628	3.2	108,176	11,928,889
1968 ¹	4,430,240	36.4	3,355,881	27.6	1,751,828	14.4	1,136,387	9.3	930,756	7.6	386,031	3.2	117,221	12,173,299
1969 ¹	4,529,918	36.4	3,420,142	27.5	1,785,394	14.3	1,155,303	9.3	966,740	7.8	391,151	3.1	127,722	12,446,027
1970	4,623,897	36.4	3,480,833	27.4	1,820,045	14.3	1,177,807	9.3	1,001,315	7.9	395,573	3.1	139,763	12,713,369

¹ Including Aborigines.

DIVISION OF SOCIAL WORK

Social workers are now accepted members of the health team and the gradual increase in their numbers has resulted in an improvement in understanding and solving many of the social problems which have a bearing on the health of patients. The increase in staff has been at both departmental and hospital levels. Within the Department, the greatest

expansion over the years has been in the psychiatric and geriatric fields. These are areas where the particular skills of social workers lend themselves aptly in the care of patients. The Division of Psychiatric Services now has social workers covering all aspects of services for the mentally ill and the intellectually handicapped. In the Division of Geriatrics, social workers fill an essential role in the Community Home Care Programme.

Important appointments of social workers were made in the Casualty Departments at Royal Brisbane and Princess Alexandra Hospitals. In some instances, admission to hospital presents social problems and these appointments allow a much earlier step towards the solution of these problems.

In many fields of health the professional worker can often be assisted by well informed untrained personnel and it is interesting to record that volunteer workers at Royal Brisbane Hospital have entered a part-time training course so that their efforts may be even more worthwhile than they are at present.

VITAL STATISTICS

Population

The estimated population of Queensland at 31st December, 1970, was 1,820,045, an increase of 34,651 (or 1.9 per cent.) for the year. The estimated population living in the Brisbane Statistical Division was 865,000, an increase of 21,000 (or 2.5 per cent.) during 1970.

The population density per square mile is 2.73 persons for the whole of Queensland; 903.58 persons in the Brisbane Statistical Division and 1.43 persons for the rest of the State. 47.4 per cent. of the population of the State reside in the Capital City Statistical Division area.

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

	1965	1966	1967	1968	1969	1970
Commonwealth of Australia	19.7	19.3	19.4	20.0	20.3	20.5
Queensland	20.5	19.7	20.4	20.3	20.7	20.8
New South Wales	18.7	18.4	18.3	18.6	19.2	19.3
Victoria	20.1	19.9	20.0	21.1	21.0	21.2
South Australia	19.6	18.6	18.3	18.8	19.2	19.4
Western Australia	19.9	20.3	20.6	21.5	21.9	22.0
Tasmania	20.5	19.9	20.0	21.8	21.7	20.8
New Zealand	22.8	22.4	22.4	22.6	22.5	22.0
United Kingdom	18.3	17.9	17.4	17.1	16.6	*
United States of America	19.4	18.5	17.9	17.4	17.7	*
Canada	21.4	19.6	18.0	17.7	17.6	*

* Not available

Deaths

For the year 1970 deaths from all causes totalled 17,055 giving a crude death rate (deaths per 1,000 mean population) of 9.5 compared with 8.9 in the previous year. Table VII compares the crude death rates of Queensland, other States, and certain overseas countries since 1965.

Marriages

Registration of marriages during the year totalled 16,082 compared with 15,669 in 1969. The marriage rate was 8.9 per 1,000 mean population, the same as in the previous year. Marriages of minors during the year totalled 10,303, of whom 2,818 were males and 7,490 females.

TABLE VIII
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
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	0.96	0.69	1.67	1.56	1.62	1.50
1955	24.1	22.6	20.3	22.0	0.62	0.64	1.71	1.59	1.65	1.53
1956	23.5	22.5	22.7	21.7	0.89	0.56	1.72	1.61	1.66	1.55
1957	24.0	22.9	21.6	21.4	0.62	0.63	1.78	1.66	1.72	1.60
1958	23.6	22.6	19.4	20.5	0.47	0.50	1.79	1.67	1.72	1.60
1959	24.3	22.6	20.3	21.5	0.59	0.46	1.87	1.68	1.80	1.61
1960	23.6	22.4	21.0	20.2	0.68	0.53	1.84	1.68	1.77	1.61
1961	24.2	22.9	20.0	19.5	0.76	0.44	1.86	1.73	1.79	1.67
1962	23.2	22.1	21.1	20.4	0.64	0.36	1.79	1.66	1.72	1.61
1963	22.9	21.6	20.1	19.5	0.25	0.27	1.79	1.62	1.72	1.57
1964	21.8	20.6	19.2	19.1	0.29	0.33	1.68	1.53	1.61	1.48
1965	20.5	19.7	17.8	18.5	0.30	0.33	1.57	1.45	1.51	1.40
1966	19.7	19.3	17.7	18.2	0.40	0.30	1.47	1.40	1.42	1.36
1967	20.4	19.4	19.5	18.3	0.26	0.23	1.50	1.39	1.45	1.34
1968	20.3	20.0	20.3	17.8	0.31	0.28	1.48	1.41	1.43	1.36
1969	20.7	20.3	18.9	17.9	0.22	0.18	1.46	1.41	1.42	1.36
1970	20.8	20.5	17.9	17.9	0.21	0.26	1.44	1.39	1.39	1.35

(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.

Births

During 1970, births registered in Queensland totalled 37,530, an increase of 954 on the previous year. The crude birth rate was 20.8 compared with 20.7 in 1969. The births comprised 19,324 males and 13,206 females, giving a masculinity rating of 106.1.

The natural increase (excess of births over deaths) was 20,475, being equal to an increase of 1.1 per cent. of the population.

The birth rate in Queensland remains relatively high, as compared with most other States.

Diseases of the heart (5,940), malignant neoplasms (including neoplasms of lymphatic and haematopoietic tissue) 2,557 and vascular lesions affecting the nervous system (2,347) were again the major causes of death in the population.

There were 2,557 deaths from malignant neoplasms as compared with 2,378 in 1969. This is about 15 per cent. of all deaths.

In every 100 male deaths, 47 died of a degenerative heart disease or cerebrovascular lesion, 15 of cancer and 8 of accident. In every 100 female deaths, the respective figures are 50, 15 and 5. The total fatal accident rate was much higher in males than in females.

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

	1965	1966	1967	1968	1969	1970
Commonwealth of Australia	8.8	9.0	8.7	9.1	8.7	9.0
Queensland	8.6	8.9	8.7	9.3	8.9	9.5
New South Wales	9.3	9.6	9.2	9.5	9.1	9.5
Victoria	8.9	8.9	8.7	9.0	8.6	8.8
South Australia	8.3	8.5	8.2	8.8	8.2	8.7
Western Australia	7.7	8.1	7.7	8.2	7.8	7.7
Tasmania	8.3	8.5	8.6	8.6	8.5	8.1
New Zealand	8.7	8.9	8.4	8.9	8.7	8.8
United Kingdom	11.5	11.8	11.2	11.8	11.9	*
United States of America	9.4	9.5	9.4	9.7	9.5	*
Canada	7.6	7.5	7.3	7.4	7.3	*

* Not available

Infant Mortality

The infant mortality rate of Queensland and other States and certain overseas countries is shown in Table IX, while Table VIII is a composite 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 0.21 in 1970.

If the crude death rate had remained at the level prevailing in 1900, over 4,000 additional deaths would have occurred in Queensland during 1970. In addition, the expectation of life has been increased by 17 years during that period.

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

	1962	1963	1964	1965	1966	1967	1968	1969	1970
Commonwealth of Australia ..	20.4	19.5	19.1	18.5	18.2	18.3	17.8	17.9	17.9
Queensland ..	21.1	20.1	19.2	17.8	17.7	19.5	20.3	18.9	17.9
New South Wales ..	21.4	19.9	20.3	19.1	19.2	18.4	18.7	18.9	19.7
Victoria ..	18.5	18.9	16.9	17.5	17.4	16.8	14.4	15.0	14.5
South Australia ..	19.2	18.7	19.0	18.4	17.5	17.0	16.3	15.8	16.2
Western Australia ..	22.3	20.4	19.7	21.7	19.3	17.4	20.3	21.8	21.2
Tasmania ..	20.7	17.9	20.1	16.6	14.6	17.2	17.2	16.5	14.3
New Zealand ..	20.4	19.6	19.1	19.5	17.7	18.0	18.7	16.9	16.7
United Kingdom ..	22.4	21.8	20.5	19.5	19.6	18.8	18.7	18.6	*
United States of America ..	25.3	25.2	24.8	24.7	23.7	22.1	21.8	20.7	*
Canada ..	27.6	26.3	24.7	23.6	23.1	21.9	20.8	20.8	*

* Not available.

The causes of death of residents of Queensland during 1970 are shown in Table X.

TABLE X
SHOWING CAUSES OF DEATHS REGISTERED IN QUEENSLAND, 1970

Cause of Death	I.C.D. No.	1969	Males	Females	Total
Tuberculosis of Respiratory System ..	010-012, 019-0	46	27	9	36
Tuberculosis, other ..	013-018, 019-1-019-9	5	1	..	1
Diphtheria ..	032 ..	..	..	..	..
Whooping Cough ..	033 ..	..	..	..	..
Tetanus ..	037 ..	3	3	2	5
Acute Poliomyelitis ..	040-043 ..	..	..	..	..
Measles ..	055 ..	5	1	1	2
Infectious Hepatitis ..	070 ..	9	6	7	13
Other Infective and Parasitic Diseases ..	Remainder of 000-136 ..	122	67	46	113
Malignant Neoplasms ..	140-199 ..	2,146	1,334	972	2,306
Neoplasms of Lymphatic and Haematopoietic Tissue ..	200-209 ..	232	155	96	251
Neoplasms, Benign and Unspecified ..	210-239 ..	34	12	20	32
Diabetes Mellitus ..	250 ..	176	80	118	198
Other Endocrine, Nutritional and Metabolic Diseases ..	240-246, 251-279 ..	59	29	38	67
Anaemias ..	280-285 ..	38	21	22	43
Other Diseases of Blood and Blood-Forming Organs ..	286-289 ..	12	2	8	10
Mental Disorders ..	290-315 ..	114	73	54	127
Paralysis Agitans ..	342 ..	53	31	31	62
Other Diseases of Nervous System and Sense Organs ..	320-341, 343-389 ..	101	54	60	114
Hypertensive Disease ..	400-404 ..	223	105	144	249
Acute Myocardial Infarction with Hypertension ..	4100 ..	457	282	219	501
Acute Myocardial Infarction without mention of Hypertension ..	4109 ..	3,335	2,242	1,211	3,453
Other Ischaemic Heart Disease with Hypertension ..	4110-4140 ..	115	78	54	132
Other Ischaemic Heart Disease without mention of Hypertension ..	4119-4149 ..	1,146	710	516	1,226
Cerebrovascular Disease with Hypertension ..	4300-4380 ..	489	224	298	522
Cerebrovascular Disease without mention of Hypertension ..	4309-4389 ..	1,723	798	1,027	1,825
Other Diseases of Circulatory System ..	Remainder of 390-458 ..	1,182	607	627	1,234
Influenza ..	470-474 ..	14	142	91	233
Pneumonia, All Types ..	480-486 ..	485	294	220	514
Bronchitis, Emphysema and Asthma ..	490-493 ..	479	500	105	605
Other Diseases of Respiratory System ..	Remainder of 460-519 ..	120	89	66	155
Diseases of Oesophagus, Stomach and Duodenum ..	530-537 ..	90	50	35	85
Appendicitis ..	540-543 ..	13	3	3	6
Intestinal Obstruction and Hernia ..	550-553, 560 ..	41	30	43	73
Cirrhosis of Liver ..	571 ..	80	46	18	64
Other Diseases of Digestive System ..	Remainder of 520-577 ..	110	59	59	118
Nephritis and Nephrosis ..	580-584 ..	168	75	102	177
Infections of Kidney ..	590 ..	173	49	100	149
Diseases of Male Genital Organs ..	600-607 ..	40	56	..	56
Other Diseases of Genito-Urinary System ..	591-599, 610-629 ..	76	33	82	115
Complications of Pregnancy, Childbirth and the Puerperium ..	630-678 ..	8	..	8	8
Diseases of Skin and Subcutaneous Tissue ..	680-709 ..	10	10	4	14
Diseases of Musculoskeletal System and Connective Tissue ..	710-738 ..	71	35	59	94
Congenital Anomalies ..	740-759 ..	220	96	92	188
Certain Causes of Perinatal Mortality ..	760-779 ..	365	222	137	359
Senility without mention of Psychosis ..	794 ..	41	19	43	62
Symptoms and Ill-Defined Conditions ..	780-793, 795-796 ..	45	27	33	60
Motor Vehicle Traffic Accidents ..	810-819 ..	574	403	141	544
Accidental Falls ..	880-887 ..	176	86	102	188
Accidental Drowning and Submersion ..	910 ..	57	67	17	84
Other Accidents ..	Remainder of 800-949 ..	212	214	70	284
Suicide and Self-Inflicted Injury ..	950-959 ..	261	201	71	272
Homicide and Injury Purposely Inflicted by Other Persons ..	960-969 ..	31	11	12	23
Late Effect of Injury due to War Operations ..	999 ..	1	3	..	3
Total from All Causes ..	..	15,786	9,762	7,293	17,055

Diseases of the circulatory system, most of which were degenerative lesions of the heart and central nervous system, were responsible for 54 per cent. of all deaths. Most of these occur in old people and hence are at present largely unavoidable. However, an increasing number of deaths due to ischaemic heart disease are occurring in middle aged males. Some of these are preventable, because many middle aged men are overweight and are heavy smokers, both of which are known to increase the probability of death. Cancer accounted for 15.0 per cent. of deaths. Deaths due to motor vehicle traffic accidents numbered 544 (574 in 1969).

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Health Officer (Aboriginal Health): I. A. MUSGRAVE, M.B., B.S., (Qld), D.T.M. and H. (Syd.).

Chief Inspector of Foods: C. J. MURRAY

Chief Inspector of Environmental Sanitation: B. M. KEEFFE

Chief Inspector of Drugs: R. A. BURKE

DISTRICT HEALTH INSPECTORS

Townsville: W. J. T. LANE

Cairns: W. T. JOHNSTON

Toowoomba: J. H. CARNEY

Rockhampton: R. J. LOWRY

Mackay: W. R. MITCHELL

Bundaberg: H. R. HASSETT

SECTION OF EPIDEMIOLOGY

Tables XVIII and XIX show the reported incidence of the notifiable diseases for the fiscal year, while Table XX shows the incidence for the calendar year 1970.

During 1970-71, notifications totalled 2,070 (Brisbane 700 and country districts 1,370). Table XI sets out the figures for notifications for the last five years together with the increases and decreases in notifications and also includes the total notifications for infective hepatitis to indicate the influence this disease has had on the figures.

TABLE XI

SHOWING THE TOTAL NUMBER OF NOTIFICATIONS FOR ALL NOTIFIABLE DISEASES AS WELL AS THOSE FOR INFECTIVE HEPATITIS FOR THE YEARS 1966-1971

Year	Metropolitan	Country	Totals	Increase	Decrease	Infective Hepatitis
1966-67	1,209	1,984	3,193	545	..	1,236
1967-68	1,473	2,511	3,984	791	..	2,286
1968-69	1,129	1,706	2,835	..	1,149	1,229
1969-70	790	1,345	2,135	..	700	915
1970-71	700	1,370	2,070	..	65	994

The notifications for 1970-71 (excluding those for venereal disease) are 65 fewer than for 1969-70. This can be accounted for principally by the small numbers of cases of rubella and bacillary dysentery reported this year as com-

pared with last year. There were, of course, a few diseases in which reportings did increase to offset those in which there were decreases. The diseases chiefly implicated in the increases and decreases are set out below.

<i>Increases</i>		<i>Decreases</i>	
Brucellosis	9	Breast Abscess ..	6
Infantile Diarrhoea ..	37	Bacillary Dysentery ..	85
Infective Hepatitis ..	79	Malaria	4
Leptospirosis	9	Meningitis	28
Scarlet Fever	45	Q. Fever	17
Tuberculosis	7	Rubella	106

The picture is very similar to that shown in the 1969-70 report. The changes in reportings are in detail only and do not indicate any marked change in the overall pattern of

notifiable diseases in the State. Infective hepatitis and tuberculosis have both shown proportionately very small increases, neither of which need occasion any special comment.

As in past years the section is continuing to supply notes on current communicable diseases each month for publication in the News Bulletin of the Australian Medical Association. It would appear that the information provided is of value to practising doctors and that it does stimulate them to notify the case fully, accurately and promptly, although there is ample evidence that there is still room for improvement in this aspect of medical practice.

Diphtheria

One case of diphtheria was notified from a country area but upon careful checking this could not be confirmed and must be regarded only as a suspected case.

Infective Hepatitis

During 1970-71 a total of 994 cases of infective hepatitis was notified. This is 79 cases greater than in 1969-70 and represents 48.0 per cent. of the total notifications (excluding venereal disease) and somewhat higher than those for last year. The figures for the metropolitan area were 248 notifications or 35.4 per cent. of total metropolitan notifications which is rather lower than last year while the figure for country areas was 746 or 54.5 per cent. of extra metropolitan notifications and this was rather higher than for last year. The explanation is fairly obvious in the latter instance since three extra metropolitan areas, Mt. Isa, Longreach and Gladstone provided quite considerable numbers of cases at different times during the year and bolstered the figures for country areas.

Table XII sets out the incidence of infective hepatitis according to age groups. The age distribution has remained fairly constant through all of the years that this disease has been notifiable, that is, the preponderance of cases lies between the ages of 5 and 25 years.

TABLE XII
SHOWING AGE DISTRIBUTION OF 994 NOTIFIED PATIENTS WITH INFECTIVE HEPATITIS NOTIFIED DURING 1970-71

Age Group in Years	Number of Cases			Percentage of Total Cases
	Metro.	Country	Total	
0-4	6	31	37	3.72
5-14	89	218	307	30.89
15-24	70	203	273	27.47
25-34	31	152	183	18.41
35-49	25	79	104	10.46
50 years and over	21	49	70	7.04
Not stated ..	6	14	20	2.01
TOTALS ..	248	746	994	100.00

Table XIII shows numbers of cases notified month by month for the past two years. Numbers from both metropolitan and extra metropolitan sources fell sharply in April and May of 1971 but returned to usual levels in June 1971. The reasons for this were far from obvious.

TABLE XIII
INFECTIVE HEPATITIS NOTIFICATIONS MONTH BY MONTH 1969-70 AND 1970-71

Month	Metropolitan		Extra-metropolitan	
	1969-70	1970-71	1969-70	1970-71
July	17	20	39	70
August	20	13	39	53
September ..	38	25	73	62
October	34	34	54	70
November ..	35	27	51	74
December ..	24	21	36	76
January	33	22	46	58
February ..	48	23	47	61
March	21	21	46	77
April	19	18	29	31
May	9	7	44	28
June	16	17	97	86
TOTALS ..	314	248	601	746

The behaviour of this disease appears to be quite unpredictable except that it does tend to rise and fall in the same areas of the State from time to time.

Leptospirosis

Notifications rose by 9 to 61 this year, 6 being notified from the metropolitan area and the remaining 55 from country areas.

Table XIV sets out the significant statistical data associated with the cases. As in previous years, the majority of cases occur in males and are associated with their occupations of dairying, canecutting, slaughtering, etc. It will be noted also that the geographical distribution is consistent with the occupations listed, the cases occurring most frequently in the moister coastal regions.

TABLE XIV
SHOWING GEOGRAPHICAL LOCATION ACCORDING TO STATISTICAL DIVISIONS AND AGE GROUPS OF PATIENTS WITH LEPTOSPIROSIS NOTIFIED DURING 1970-71

Statistical Divisions	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	Males	Females
Metropolitan ..	1	2	3	..	..	..	..	..	..	6	2	4	6	..
Moreton	..	4	5	1	4	1	1	..	..	16	8	8	14	2
Maryborough ..	..	1	2	3	..	..	..	..	..	9	4	5	8	1
Downs	..	3	..	1	..	1	..	..	..	5	2	3	5	..
Roma	..	..	1	..	..	..	..	..	..	1	1	..	..	1
South Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton ..	..	..	2	..	..	2	..	..	..	4	1	3	4	..
Central Western ..	..	..	..	..	..	..	..	..	1	1	1	..	1	..
Far Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay	..	..	1	..	1	..	..	..	..	2	2	..	1	1
Townsville ..	..	..	..	1	..	..	..	..	..	1	..	1	1	..
Cairns	..	4	3	3	3	2	..	..	..	15	10	5	15	..
Peninsula	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western ..	..	..	..	..	1	..	..	..	..	1	1	..	..	1
TOTALS	2	15	18	9	9	6	1	..	1	61	32	29	55	6

Malaria

Again this year 70 cases of malaria were notified. This is closely similar to the number last year (74). All of this year's cases were imported from outside of Australia and occurred in members of the armed forces or persons returning from period of work or from holidays in malarious areas.

Again this year officers gave complete support to Professor Robert H. Black in the compiling of the Central Register of Malaria Cases in Australia. This is an on-going project.

Measles

Measles is not a notifiable disease but it is one in which the complications of bronchopneumonia, otitis media, and encephalitis can be very disabling or result in permanent disability. This is the reason why measles vaccination is desirable in children, since they develop an immunity without the risk of developing any of the complications. Further the immunization can be brought about at a convenient time, not at examination time or when the family intend to go on holidays. "Lirugen" live virus vaccine is used in Queensland and the campaign commenced in April 1970. Only 10,745 doses were distributed in the year under review which is quite disappointing.

Meningitis

Notification of meningitis fell by 28 this year to 81 (46 metropolitan and 35 extra-metropolitan). Viral meningitis still makes up a considerable proportion of the cases but there was no major outbreak at any centre this year. Table XV sets out some of the details with respect to types and age groupings.

TABLE XV
SHOWING THE NUMBER OF VARIOUS TYPES OF
MENINGITIS IN TWO MAJOR AGE GROUPS

Type	0-14 Years	15 and Over	Age not Stated	Total
Meningococcal ..	9	2	..	11
Influenzal ..	11	..	..	11
Aseptic ..	11	18	..	29
Pneumococcal ..	6	4	..	10
Others and Unknown ..	15	5	..	20
Totals ..	52	29	..	81

TABLE XVI
SHOWING DETAILS OF GEOGRAPHICAL LOCATION AND AGE DISTRIBUTION OF 129 CASES OF Q. FEVER
DURING 1970-71

Statistical Divisions	0-9	10-19	20-29	30-39	40-49	50-59	60-69	70 and over	Un- known	Totals	In Hos- pital	Not in Hos- pital or Not Stated	Males	Fe- males
Metropolitan ..	..	8	7	8	11	3	3	..	..	40	20	20	38	2
Moreton ..	..	2	4	6	4	1	1	..	1	19	6	13	16	3
Maryborough ..	1	..	3	2	3	1	1	..	..	11	7	4	9	2
Downs ..	..	2	2	..	6	2	..	1	..	13	3	10	11	2
Roma ..	..	..	1	1	..	..	..	..	..	1	1	..	1	..
South Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rockhampton ..	..	4	6	2	..	2	..	..	..	14	5	9	12	2
Central Western ..	..	..	..	1	..	..	..	..	..	..	..	..	..	..
Far Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Mackay ..	..	..	..	2	..	1	..	..	..	3	2	1	2	1
Townsville ..	..	..	..	1	..	1	..	..	..	2	1	1	2	..
Cairns ..	..	2	2	2	2	1	..	..	..	9	4	5	9	..
Peninsula ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
North Western ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals ..	1	18	25	23	26	11	6	1	1	112	49	63	100	12

Polioyielitis

No cases of poliomyelitis were reported from any part of the State this year.

Sabin live poliomyelitis virus vaccine still continues to be issued by the State Health Department and during the year it has been made available to private medical practitioners for use among their private patients. The numbers of doses of vaccine issued this year were very similar to those issued last year so that it would appear that we have reached a base line more or less equivalent to the natural increase in the State each year. The numbers issued were first dose, 45,247, second dose, 39,312, third dose, 35,184, fourth dose, 40,813, total, 160,656.

Q. Fever

This year 112 cases were notified as against 129 in 1969-70. Table XVI sets out the principal statistical material associated with these cases and as in the case of leptospirosis the overwhelming number of cases are in males and are associated with their occupations in the sheep, meat, dairying, slaughtering and wool industries. The area of greatest incidence are those associated with the industries listed.

Rubella

The number of cases of rubella fell once more this year to 58 as against 164 last year and 225 in 1968-69. Some detail of interest concerning the 58 cases are:—

Number not pregnant at onset ..	40
Pregnant at onset ..	18
Pregnancy terminated ..	7
Normal baby at term ..	4
Possible defect in baby ..	Nil
No information or not yet delivered ..	7

A start was made on the issue of "Cendevax" Rubella vaccine in October 1970, to local authorities for uses in campaigns of immunization of girls aged 12 to 14 years. The campaign is progressing satisfactorily and the total number of doses issued to 30th June was 24,175. This is equivalent to approximately half of the Queensland population of females aged 12, 13 and 14 years.

Tetanus

Only eight cases of tetanus were notified for the year. The ages of the cases are set out in Table XVII.

TABLE XVII
SHOWING THE INCIDENCE IN VARIOUS AGE GROUPS
AND DEATHS FROM TETANUS FOR THE TWO
PERIODS 1945-49 AND 1970-71

Age Group	1945-49		1970-71	
	Number	Percentage	Number	Percentage
Under 1 year ..	6*	3.75	..	..
1 to 14 years ..	63	39.38	1	12.5
15 to 29 years ..	35	21.87	1	12.5
Over 30 years ..	56	35.00	6	75.0
Totals ..	160	100.00	8	100.0
Deaths ..	89	56.00	1	12.5

* All neo-natal cases.

Only one of the notified cases died—a 19-year-old migrant from Spain who was injured in a motor accident and received lacerations to the face at Home Hill. He spoke little English and it was difficult even through an interpreter to get any information but apparently he was not sure about having ever received any tetanus immunizations.

It is at least reassuring to see so few cases occurring in the younger age groups. Since triple antigen first came into general use in 1953 the number of cases in younger persons has progressively declined and in fact there is no reason why this disease should occur at any age when immunization is so easy and many local authorities offer it free of charge or at trifling cost. In addition a combined adult diphtheria and tetanus prophylactic has now been introduced which is suitable for use in all persons over 8 years of age and protects against both of these diseases and is extremely safe to use.

TABLE XVIII

NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1970 TO 30TH JUNE, 1971
METROPOLITAN AREA

Disease	Months												Totals 1970-71	Totals 1969-70
	1970						1971							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis	..	..	..	..	..	..	..	..	..	..	..	..	..	2
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	1	..	..	1	1	1	..	..	2	1	..	2	9	4
Brucellosis	..	..	..	..	1	..	2	..	1	..	..	..	4	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	..	2	..	1	..	..	5	2	3	5	2	2	22	8
Diphtheria	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dysentery (Amoebic)	..	..	1	..	..	1	..	..	..	..	..	..	2	2
Dysentery (Bacillary)	4	..	..	..	..	..	..	..	8	6	1	1	20	74
Encephalitis	..	1	1	..	..	2	..	..	1	1	1	1	8	3
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective and Serum)	20	13	25	34	27	21	22	23	21	18	7	17	248	314
Hydatid Disease	..	1	..	..	..	..	1	..	..	..	..	..	2	..
Lead Poisoning	..	..	..	..	..	..	..	..	..	2	..	..	2	2
Leprosy	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Leptospirosis	..	..	..	1	..	..	..	2	1	..	2	..	6	2
Malaria	2	..	3	..	3	3	3	9	1	3	1	2	30	34
Melioidosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Meningitis	5	2	2	1	8	6	3	5	7	1	2	4	46	64
Neo-Natal Infections	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Ornithosis (Psittacosis)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polio-myelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections	..	..	2	..	..	..	..	..	..	..	..	..	..	1
Q. Fever	..	1	2	..	1	5	5	1	..	2	..	23	40	42
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	4	3	3	2	3	..	2	1	1	1	..	1	21	16
Rubella	3	4	6	2	8	8	..	2	..	1	..	..	34	68
Scarlet Fever	3	5	12	5	2	3	1	..	2	11	26	13	83	25
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	1	..	1	1	..	..	..	..	4	2
Tuberculosis	13	11	16	12	5	13	4	5	12	8	8	11	118	126
Typhoid Fever (Including Paratyphoid)	..	..	..	..	1	..	..	..	..	..	..	..	1	..
Typhus Fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Scrub	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tick	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	55	43	71	59	61	63	49	51	61	60	50	77	700	790

TABLE XIX

NOTIFIABLE DISEASES (EXCLUSIVE OF VENEREAL DISEASES) 1ST JULY, 1970 TO 30TH JUNE, 1971
EXTRA METROPOLITAN AREA

Disease	Months												Totals 1970-71	Totals 1969-70
	1970						1971							
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June		
Ancylostomiasis	..	1	..	..	..	..	1	..	..	..	..	..	2	2
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..	..	13
Breast Abscess	..	..	..	..	..	..	..	..	..	..	..	..	..	4
Brucellosis	..	..	..	1	1	2	1	2	1	..	1	..	9	..
Cholera	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	3	31	21	4	11	2	7	9	3	9	2	5	107	84
Diphtheria	..	..	..	..	..	1	..	..	..	..	..	..	1	..
Dysentery (Amoebic)	..	1	1	1	..	..	..	..	..	..	..	1	4	18
Dysentery (Bacillary)	..	..	5	3	3	..	2	1	1	1	4	3	23	54
Encephalitis	..	..	1	..	1	..	1	3	..	..	1	..	7	5
Filaria	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective and Serum)	70	53	62	70	74	76	58	61	77	31	28	86	746	601
Hydatid Disease	..	..	..	..	..	..	..	..	..	..	..	..	2	1
Lead Poisoning	..	..	..	..	..	..	1	..	..	..	1	..	2	..
Leprosy	..	..	..	..	..	..	..	1	..	..	..	..	1	..
Leptospirosis	3	2	1	2	1	..	2	5	9	13	12	5	55	50
Malaria	8	5	1	1	3	3	4	3	4	1	3	4	40	40
Melioidosis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Meningitis	9	3	2	..	2	2	1	6	4	1	4	1	35	45
Neo-Natal Infections	..	..	..	..	..	..	..	..	..	..	..	..	..	1
Ornithosis (Psittacosis)	..	..	..	1	..	..	..	..	..	..	..	1	2	..
Plague	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Polio-myelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Puerperal Infections	1	..	..	..	..	1	1	1	..	..	..	..	4	9
Q. Fever	2	2	5	9	4	3	11	3	2	10	2	19	72	87
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	2	1	4	4	..	2	..	1	1	2	..	..	17	18
Rubella	..	..	3	6	3	3	4	2	1	..	2	..	24	96
Scarlet Fever	1	4	3	2	2	6	1	1	3	..	3	..	26	39
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Tetanus	..	..	..	..	1	1	..	1	..	..	..	..	4	1
Tuberculosis	20	16	18	14	6	25	8	14	14	13	17	18	183	168
Typhoid Fever (Including Paratyphoid)	..	..	..	1	..	..	..	..	..	..	..	..	1	6
Typhus Fever—	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	..	..	1	..	..	1	..	..	..	2	..
Scrub	..	..	..	..	..	1	..	..	..	1	..	..	2	1
Tick	..	..	..	..	..	..	..	..	..	1	..	..	1	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	119	119	127	119	112	129	102	114	122	83	80	144	1,370	1,345

TABLE XX

NOTIFIED INCIDENCE OF COMMUNICABLE DISEASES IN QUEENSLAND (EXCLUSIVE OF V.D.)
SECTION 29 OF THE HEALTH ACT 1937-1971 DURING THE CALENDAR YEAR 1970

Disease									Metropolitan Area	Outside Areas	Total for Queensland 1970	Total for Queensland 1969
Ancylostomiasis	..	..	..	..	..	..	..	..	..	2	2	12
Anthrax	..	..	..	..	..	..	..	..	..	..	..	..
Breast Abscess	..	..	..	..	..	..	..	..	6	7	13	10
Brucellosis	..	..	..	..	..	..	..	..	1	6	7	3
Cholera	..	..	..	..	..	..	..	..	..	..	..	..
Dengue	..	..	..	..	..	..	..	..	..	..	..	..
Diarrhoea (Infantile)	..	..	..	..	..	..	..	..	6	107	113	106
Diphtheria	..	..	..	..	..	..	..	..	..	1	1	..
Dysentery (Amoebic)	..	..	..	..	..	..	..	..	2	11	13	12
Dysentery (Bacillary)	..	..	..	..	..	..	..	..	23	42	65	108
Encephalitis	..	..	..	..	..	..	..	..	7	5	12	11
Filariasis	..	..	..	..	..	..	..	..	..	..	..	..
Hepatitis (Infective and Serum)	..	..	..	..	..	..	..	..	286	714	1,000	886
Hydatid Disease	..	..	..	..	..	..	..	..	1	..	1	2
Lead Poisoning	..	..	..	..	..	..	..	..	2	2	4	1
Leprosy	..	..	..	..	..	..	..	..	1	..	1	1
Leptospirosis	..	..	..	..	..	..	..	..	2	48	50	50
Malaria	..	..	..	..	..	..	..	..	25	46	71	63
Melioidosis	..	..	..	..	..	..	..	..	..	..	..	2
Meningitis	..	..	..	..	..	..	..	..	61	40	101	211
Neo-Natal Infections	..	..	..	..	..	..	..	..	..	1	1	3
Ornithosis (Psittacosis)	..	..	..	..	..	..	..	..	..	1	1	2
Plague	..	..	..	..	..	..	..	..	..	..	..	..
Poliomyelitis (Paralytic and Non-Paralytic)	..	..	..	..	..	..	..	..	..	..	..	1
Puerperal Infections	..	..	..	..	..	..	..	..	1	8	9	7
Q. Fever	..	..	..	..	..	..	..	..	30	76	106	142
Relapsing Fever	..	..	..	..	..	..	..	..	..	..	..	..
Rheumatic Fever	..	..	..	..	..	..	..	..	20	22	42	41
Rubella	..	..	..	..	..	..	..	..	45	27	72	174
Scarlet Fever	..	..	..	..	..	..	..	..	43	32	75	60
Smallpox	..	..	..	..	..	..	..	..	..	..	..	..
Taeniasis	..	..	..	..	..	..	..	..	..	..	..	4
Tetanus	..	..	..	..	..	..	..	..	2	2	4	8
Tuberculosis	..	..	..	..	..	..	..	..	134	157	291	320
Typhoid Fever (Including Paratyphoid)	..	..	..	..	..	..	..	..	1	1	2	12
Typhus Fever—	..	..	..	..	..	..	..	..	..	..	..	..
Epidemic	..	..	..	..	..	..	..	..	..	..	..	..
Murine	..	..	..	..	..	..	..	..	..	1	1	..
Scrub	..	..	..	..	..	..	..	..	..	1	1	1
Tick	..	..	..	..	..	..	..	..	..	..	..	..
Yellow Fever	..	..	..	..	..	..	..	..	..	..	..	..
Totals	..	..	..	..	..	..	..	..	699	1,370	2,069	2,253

HANSEN'S DISEASE

Medical Supervision: M. H. GABRIEL, B.Sc., M.B., B.S. (Qld), D.P.H. (Syd.), A.R.A.C.I.,
Senior Health Officer

STATISTICS

	White Population			Coloured Population		
	Males	Females	Totals	Males	Females	Totals
In hospital at 1st July, 1970 ..	6	..	6	10	1	11
Admitted for first time ..	..	..	..	4	..	4
Re-admitted ..	..	..	..	1	..	1
Died ..	..	..	..	1	..	1
Discharged ..	2	..	2	3	..	3
In hospital at 30th June, 1971	4	..	4	11	1	12

All of the new admissions were full blood Aborigines. Only one was admitted to Fantome Island—a 57-year-old resident of Palm Island; all of the others were admitted to Ward S12 at Princess Alexandra Hospital because this was administratively more convenient and none of the people concerned had any affinity with the people at Fantome Island. Of these three men, two came from the Darling Downs in southern Queensland and one was a Mornington Islander; one was aged 18 years, one 45 years, and one 54 years.

The re-admitted patient followed the usual pattern of neglecting maintenance treatment and being detected on routine tests.

Approval has been given for the discontinuance of Fantome Island for the treatment of Hansen's disease patients and accommodation will be provided on Palm Island for both ambulatory and hospital patients.

When Fantome Island closes, this will put the treatment of coloured patients on to exactly the same basis as has applied to white patients since 1959 with complete success. This will remove yet one more of the stigmata that have applied to Hansen's disease patients for so many years.

The main problem in administering the controls on Hansen's disease patients and ex-patients lies in following up the patients discharged from hospital. These are so many and so widely scattered and some of the coloured folk especially move about so much and so rapidly that resources are really strained keeping track of them.

SECTION OF ENTHETIC DISEASES

Clinical Supervision: BARRY A. SMITHURST, M.B., B.S. (Syd.), M.R.A.C.P., M.P.H.

Notification of venereal disease during 1970-71 fell by 70 as compared with 1969-70. However, the figure is still a high one and is nearly as high as that for all other notifiable diseases together. The total of 1,880 cases represents a rate of 103.3 per 100,000 of mean population which is high when compared with the rate for the 1950's and the early 1960's.

Of the 1,880 cases notified 1,441 were in males and 439 in females. There was a very small rise of five cases in the attendances at the Brisbane male clinic while there was a fall of 51 in attendances at the female clinic as compared with the previous year.

Table XXI sets out a general statement of the numbers and types of cases notified, the distribution between the sexes and the numbers in metropolitan and extra-metropolitan districts.

Table XXI sets out an analysis of notified cases of venereal disease in Queensland since 1954-55. The marked rise in notification seen in 1968-69 has fallen away somewhat each year since but is still higher than in the years preceding 1968-69. The age distribution of cases has remained substantially as for the past several years but is different from that of the early 1950's by reason of the increased numbers in the younger age groups.

The ratio of cases of gonorrhoea to those of syphilis remains substantially unaltered from the last several years. Non specific urethritis remains a troublesome and recurring problem in males. It is not a venereal disease by definition but it is undoubtedly contracted during sexual contact. During the year under review 1,116 cases of non specific urethritis were treated at the Brisbane male clinic (as compared with 706 cases of gonorrhoea). In fact so large a part of the work of the clinic has this become that a grant has been made by the National Health and Medical Research Council to the Clinic for research into the causative organisms of this condition and some progress has already been made towards the more scientific treatment of the condition.

Clinical supervision of both the male and the female clinics is in the hands of Dr. Barry A. Smithurst and he, too, is responsible for the instruction of medical students in the diagnosis and treatment of the various venereal diseases.

Tables XXIII to XXVII set out details of the essential statistics in relation to various aspects of the epidemiology of venereal diseases in Queensland.

TABLE XXI—NOTIFIED VENEREAL DISEASES IN QUEENSLAND, 1970-71

	Metropolitan		Outside Centres		Whole State		Total
	Males	Females	Males	Females	Males	Females	
Gonorrhoea—							
Unspecified	..	8	..	..	..	8	8
Acute	770	192	509	93	1,279	285	1,564
Sub-acute	6	47	9	10	15	57	72
Chronic	..	1	2	5	2	6	8
Ophthalmia	..	1	..	..	..	1	1
Vulvo-vaginitis	..	1	..	2	..	3	3
	776	250	520	110	1,296	360	1,656
Syphilis—							
Unspecified	..	3	..	..	..	3	3
Primary	8	5	36	28	44	33	77
Secondary	3	1	18	10	21	11	32
Tertiary	4	1	1	2	5	3	8
Latent	16	9	7	14	23	23	46
Neuro	2	1	..	..	2	1	3
Heredo (Congenital)	..	..	..	..	..	..	..
	33	20	62	54	95	74	169
Other Forms—							
Soft Sores	10	..	2	..	12	..	12
Venereal Warts	37	..	1	4	38	4	42
Ulcerative Granuloma	..	..	..	1	..	1	1
	47	..	3	5	50	5	55
	856	270	585	169	1,441	439	1,880
	1,126		754		1,880		
			1,880				

TABLE XXII
NOTIFIED VENEREAL DISEASES, 1954-55 TO 1970-71

Year	Notifications				Age Distribution—Per Cent.			
	M	F	Total	Rate*	0-14	15-19	20-24	25+
1954-55	572	129	701	52.9	2.1	13.6	25.7	57.6
1955-56	675	132	807	59.7	1.7	14.7	27.7	55.9
1956-57	803	192	995	72.1	1.0	16.6	27.0	55.4
1957-58	855	163	1,018	72.6	1.1	16.2	25.6	58.1
1958-59	757	208	965	67.7	0.8	21.8	25.2	64.1
1959-60	872	149	1,021	70.5	1.0	24.1	28.5	47.3
1960-61	1,230	206	1,436	97.8	1.0	36.2	24.3	39.4
1961-62	1,272	253	1,525	99.8	0.7	35.9	28.3	35.1
1962-63	1,155	318	1,473	96.5	0.7	27.1	33.4	38.8
1963-64	1,038	284	1,322	84.0	1.1	29.0	31.9	38.0
1964-65	1,173	367	1,540	96.5	0.5	28.9	30.5	40.1
1965-66	1,235	417	1,652	101.2	0.7	23.0	34.4	41.9
1966-67	1,221	445	1,666	100.3	1.2	26.1	35.2	37.5
1967-68	1,163	491	1,654	97.2	0.8	23.9	34.5	40.8
1968-69	1,422	611	2,033	116.1	1.1	23.8	35.7	39.4
1969-70	1,403	547	1,950	110.2	1.2	25.3	33.1	40.4
1970-71	1,441	439	1,880	103.3*	0.9	26.5	32.8	39.8

* Per 100,000 mean Population

TABLE XXIII—CENTRES OF NOTIFICATION OF
VENEREAL DISEASES OUTSIDE METROPOLIS

Centre	Males	Females	Total
Atherton	1	..	1
Babinda	4	2	6
Boonah	1	1	2
Booval	1	..	1
Bowen	6	..	6
Bundaberg	10	1	11
Burketown	2	1	3
Cairns	86	25	111
Caloundra	1	..	1
Charleville	3	1	4
Charters Towers	4	2	6
Clermont	1	..	1
Cloncurry	7	..	7
Cooktown	9	7	16
Cunnamulla	3	..	3
Cooroy	2	..	2
Dalby	2	2	4
Edmonton	11	4	15
Emerald	7	1	8
Gladstone	..	2	2
Gordonvale	6	2	8
Gympie	1	1	2
Hughenden	1	..	1
Ingham	5	..	5
Innisfail	2	1	3
Ipswich	1	..	1
Julia Creek	4	2	6
Kilcoy	2	..	2
Longreach	1	..	1
Mackay	28	1	29
Mareeba	26	7	33
Maryborough	2	..	2
Mossman	5	..	5
Mount Isa	23	3	26
Mount Morgan	4	..	4
Murgon	12	4	16
Margate	1	1	2
Proserpine	2	1	3
Rockhampton	40	6	46
Sarina	5	..	5
Southport	3	4	7
Stanthorpe	3	2	5
Surfers Paradise	4	..	4
Thursday Island	57	56	113
Toowoomba	6	1	7
Townsville	177	28	205
Warwick	1	..	1
Wondai	1	..	1
Woody Point	1	..	1
Totals	585	169	754

TABLE XXIV—ALLEGED SOURCES OF INFECTION

Non-professional	1,522
Professional	54
Husband	19
Wife	23
Mother	3
Father	1
Unknown	258
Total	1,880

TABLE XXV
SHOWING AGE GROUP OF NOTIFIED CASES

Age Group	Males	Females	Total
Under 1 year	..	3	3
1-4 years	..	1	1
5-9 years	1	1	2
10-14 years	3	7	10
15-19 years	337	161	498
20-24 years	505	112	617
25-29 years	281	55	336
30-34 years	110	38	148
35-39 years	61	21	82
40-44 years	42	17	59
45-49 years	30	4	34
50-54 years	16	4	20
55-59 years	11	1	12
60-64 years	2	1	3
65 years and over	16	..	16
Not Stated	26	13	39
Totals	1,441	439	1,880

TABLE XXVI
MARITAL STATUS OF PATIENTS

—	Males	Females	Total
Single	1,202	271	1,473
Married	174	111	285
Separated	28	40	68
Widowed	11	8	19
Divorced	5	5	10
Not Stated	21	4	25
Totals	1,441	439	1,880

TABLE XXVII
SHOWING SOURCES OF NOTIFICATION

—	Males	Females	Total
Private Doctors—			
Brisbane	31	9	40
Outside Centres	211	43	254
Totals	242	52	294
Clinics—			
Brisbane	775	237	1,012
Outside Centres	80	27	107
Totals	855	264	1,119
Hospitals—			
Brisbane	50	24	74
Outside Centres	294	99	393
Totals	344	123	467
Totals All Sources	1,441	439	1,880
	1,880		

SECTION OF DRUGS AND POISONS

This section is responsible for the administration of those sections of the *Health Act 1937-1971* dealing with the control of poisons, restricted drugs, and dangerous drugs when offered for sale.

During the year amendments to section 130 of the *Health Act 1937-1968* and the Poisons Regulations were carried out. The amendments provide a separate offence of trafficking in dangerous drugs as distinct from mere possession with heavier penalties for drug offences, particularly trafficking and give the Court power to send offenders to a declared institution for an indeterminate period for treatment.

The Poisons Regulations were also amended to cope with the usages of certain drugs in relation to the amendments in section 130 of the *Health Act* to differentiate between the user and the trafficker or pedlar. Other amendments to the Poisons Regulations included restricting the use of clomiphene and other follicle stimulating hormones, for example, gonadotrophin, and the anti-Parkinsonian drug L. Dopa to the written approval of the Director-General.

Since the breaking and entering into chemists shops began to increase an amendment was made to Part K of the Poisons Regulations requiring a person who is authorised under Part D of the Poisons Regulations of 1967 to be in possession of dangerous drugs, to keep them in an approved receptacle or a place which the Director-General is satisfied will provide adequate security. Those persons authorised include medical practitioners, veterinary surgeons, pharmaceutical chemists, and dentists. Hospitals, both public and private, and nursing homes are also required to comply with this amendment.

Since this legislation is Commonwealth-wide, there have been long delays by manufacturers in supplying receptacles but

some firms now appear to have overcome this hiatus and the latest information to hand shows that these firms have a good reserve of stock.

All wholesale sellers of dangerous drugs have been checked by officers of this section and all have complied with the regulations.

During the year the Chief Inspector of Drugs and Poisons attended conferences concerning the Poisons Schedule Sub-Committee, the Convention on Psychotropic Substances, Therapeutic Substances, and the Working Party on Drugs of Dependence. Further progress has been made on the Code of Good Manufacturing Practice and the agreement on Therapeutic Goods Regulations.

The Drug Monitoring Scheme implemented last year by the National Standing Control Committee on Drugs of Dependence has been working well and has enabled this section to follow up information disclosed by it which otherwise would not have been known. Amphetamines are now included in the reporting and all purchases and sales within and out of Queensland are being closely watched.

This section forwarded 280 articles to the Government Analyst for examination. These covered a variety of products from cosmetics to dangerous drugs and vitamin tablets to mosquito coils.

Three chemists were proceeded against for five breaches of the Poisons Regulations. The offences all related to omissions in respect of transactions with dangerous drugs. Fines amounting to \$140 with \$17.50 costs of court were imposed.

Drugs, including dangerous drugs, in excess of 200,000 items surrendered by chemists and wholesalers, and also large quantities of toxic poisons such as arsenic and strychnine were destroyed during this financial year.

SECTION OF FOOD SUPERVISION

The prime objective of this section is a safe and wholesome food supply for the people, properly described, and presented in a manner affording the utmost protection against contamination. Its activities are concerned principally with the implementation of the appropriate legislation, food standards, and hygienic practices laid down in the *Health Act* and the various Regulations drawn up for these purposes, together with a supervisory and advisory role in relation to the conduct of public eating places and other retail food outlets, direct control of which is vested in Local Authorities.

Milk and Milk Products

Supervision has been exercised at milk processing factories, and all sources of public milk supply have been sampled regularly for chemical analysis and bacteriological examination. One person was convicted and fined \$40 with \$13.20 costs for selling milk adulterated with water.

While the quality of milk was maintained at a safe level, the bacteriological results returned from some provincial factories indicated a need for improvement. Corrective action taken has indicated that, except in one instance where faulty equipment was the causative factor, the lapses could be attributed only to deficiencies in routine plant sterilization and factory supervision.

The delivery of milk in improperly cleansed bottles was again the major source of public complaint. In relation to the vast number of bottles distributed, their incidence, as a percentage, is extremely low, but this affords little consolation to those persons encountering them. Every such incident reported was the subject of a full investigation, and the necessity for constant vigilance in this sphere was impressed continuously on management.

Routine surveys have been conducted of ice cream and related products, and, where necessary, action has been taken for the correction of the minor deficiencies disclosed. The general standard has been satisfactory.

Meat

One hundred and forty-five butchers were convicted and fined a total of \$6,957 with \$970.25 costs in respect of the sale of adulterated minced meat, sausage meat, and sausages. All of the offences, which were widely dispersed, were concerned with the presence of preservative in minced meat and the addition of preservative in excess of the permitted quantity in sausage meat and sausages. While the number of convictions was lower when compared with last year's total of one

hundred and eighty-one, there is no evidence to suggest that butchers generally have revised their attitude to these practices, or are deterred by the heavier penalties imposed in respect of second and subsequent offences.

One butcher was convicted and fined \$25 with \$2.50 costs for refusing to sell a sample of meat.

Hotels, Liquor Testing and Glasswashing

Facilities for the sale of food and liquor at hotels and other premises licensed under the Liquor Act have been maintained at a satisfactory level. Corrective action under the provisions of "The Food and Drug Regulations 1964" or by referral to the Licensing Commission in cases requiring extensive structural alteration has been taken in all instances where deficiencies have been encountered. Liquor booths at provincial showgrounds and racecourses, particularly in the smaller centres of population, continue to show improvement in construction and hygienic practices.

Testing of spirits on sale in liquor bars and booths to ensure compliance with the prescribed standards resulted in one conviction for the sale of adulterated rum, a fine and costs of \$31.70 being imposed.

Thirty persons, licensees or their employees, were convicted and fined a total of \$292.50 with \$81.30 costs for failing to supply a clean glass with each drink served.

Bread and Flour

Bread samples were submitted for examination from all parts of the State, and indicated a fair average quality. Samples of flour were secured regularly from flour mills. Appropriate action was taken for the correction of all defects disclosed in these surveys.

As a result of supervision of the wholesale production and distribution of bread, one person was convicted and fined \$15 with \$2.50 costs for smoking in a bakehouse, and three persons a total of \$50 with \$7.50 costs for failing to protect unwrapped bread in the course of delivery. One of the latter was also convicted and fined \$40 with \$10.90 costs for refusing to state his name when so required.

Soft Drinks, Cordials

An extensive State-wide survey revealed no major breaches of the prescribed standards. There was a considerable expansion in the home-marketing of fruit juices and fruit drinks, with some consequent confusion on the part of the purchasing public, brought about principally by over-zealous salesmen, as to the composition of the articles supplied. It is a basic principle

of food legislation that the label attached to any package of food shall convey a truthful description of the contents to the purchaser, and, while the labels involved were, in fact, in accordance with existing requirements, amending action is being taken which, it is confidently expected, will eliminate future doubt as to the fruit juice content of any such product.

Fish

Officers stationed at the Metropolitan Fish Market condemned and destroyed 77 tons 5 cwt. of assorted fish, prawns, and seafoods, and 1,300 crabs as being unfit for human consumption. A further 11 tons 6 cwt. were certified as unfit for consumption by officers at retail stores and various coastal receiving depots.

Routine bacteriological examination of seafoods disclosed persistently high levels of *E. coli* (type 1) in oysters harvested from centres outside the State, and additionally, in several instances, the marine organism *Vibrio parahaemolyticus*, not previously reported in oysters in this country but a recorded source of gastroenteritis in North Pacific waters, was isolated. Full reports of these incidents were supplied to the supervising authority for appropriate action.

A survey of the levels of mercury in fish and oysters did not confirm the extremely high figures reported as being obtained in some localities.

Unsound Foods

Inspectors certified as unfit for human consumption some 68 tons 11 cwt. of assorted foods, together with numerous items of no specified weight or damaged to an extent where no accurate weight could be recorded. These included unsound or contaminated foods encountered in the course of routine inspections, and foods damaged in transit or through fire, flood or refrigeration failure. They were destroyed under Departmental supervision.

Food Sampling

The comprehensive programme of legal sampling of foods undertaken, with its attendant power of prosecution in the event of non-compliance with standards, has undoubtedly been a major deterrent against deliberate adulteration. However,

continuous routine surveys of foods procured through normal trading channels or from the public are equally important in assessing general food quality and indicating appropriate spheres of activity. In this latter category, some 2,588 samples of a comprehensive range of foods were submitted for chemical analysis to determine composition, compliance with labelling requirements, or suitability for consumption, and 814 for bacteriological examination.

Complaints

All complaints received concerning foods or food premises were fully investigated, and appropriate corrective action was taken where necessary. Investigation of one incident involving the presence of glass fragments in confectionery resulted in a conviction for the sale of adulterated food, a fine and costs totalling \$29.70 being imposed.

Retail Food Premises

There is a growing awareness on the part of Local Authorities, particularly those in the heavily populated areas, of the importance of strict hygienic practices in the production and distribution of food at retail level, and surveys by Departmental officers have confirmed that Councils are fulfilling their responsibilities in the implementation of the Cafe Regulations and the Health (Food Hygiene) Regulations.

Uniform Food Standards

Queensland has continued its active support of the objective of uniformity in food standards throughout Australia, and the Chief Inspector of Foods attended four meetings of the Food Standards Committee of the National Health and Medical Research Council for this purpose. Several recommended uniform measures were included in the Food and Drug Regulations during the year, and further amendments are under consideration.

Liaison has continued with the Commonwealth in the matter of the proposed world standards for foods sponsored by the Codex Alimentarius Commission of the World Health Organisation, and comment on the first completed standards has been supplied to assist in a determination of the Australian attitude to the proposals.

SECTION OF ENVIRONMENTAL SANITATION

The framework of the Health Act provides for a co-ordinated system of inspectorial supervision. Local Authorities employ inspectorial staff to implement these provisions of the Health Act and its Regulations, relating to the prevention of disease, and the Health Department employs a separate inspectorial staff for the purpose of policing other legislation not capable of being satisfactorily controlled by Local Authorities. The latter staff also evaluate, on behalf of the Director-General who is responsible under the Act for safeguarding the public health of the State generally, the standard of environmental sanitation prevailing in Local Authority Areas.

The two separate systems of control are complementary to one another and do not lead to duplication of the inspectorial service in any manner. They depend for a successful end result on the capacity and willingness of Local Authorities to provide firstly, adequate inspectorial supervision, unhampered by the imposition on inspectors of extraneous duties, and secondly adequate finances for carrying out normal public health services.

While the general response by Local Authorities in this direction is highly commendable, there are still some instances where extraneous duties or inadequate financial support have hampered the inspector in achieving the objectives of his appointment—a safe environment, free of health hazards, for the residents of his Local Authority.

At the end of the financial year there were 197 health inspectors, an increase of 14 over last year's figures, employed by Local Authorities throughout the State. This increase was mainly associated with augmentation of inspectorial staff in Local Authorities along the coastal belt where rapid residential expansion is taking place. In addition 39 inspectors were employed by the Department.

From mandatory reports submitted by Local Authorities and from sanitation surveys carried out by Departmental inspectors, the following evaluations of the standards of particular facets of environmental sanitation can be made for the year:—

Collection and Disposal of Nightsoil

The recent widespread incidence of cholera in Pakistani refugee camps in India gives emphasis to the dangers associated with improper methods of disposal of human wastes. It was interesting to note several comments made from authoritative

sources that such widespread incidence of this dreaded disease was most unlikely to occur in Australia because of the safeguards that exist here in the strict control of nightsoil disposal methods.

Approximately 81 per cent. of the population in the Brisbane Metropolitan area, and an estimated 49 per cent. of the over-all State population is now provided with sewerage facilities, and the number of nightsoil removal services in operation is diminishing.

The increasing use of plastic sanitary pans, in place of metal pans, was noted during the year. The former have several distinct practical advantages over the metal product without losing any of the desirable features of an efficient and hygienic means of nightsoil removal.

Collection and Disposal of Refuse

Several important factors have begun to exert a marked influence during the year on the approach to refuse disposal.

The most important of these is the formation of the Disposal of Wastes on Land Committee by the recently formed Environmental Control Council. This Committee has begun investigations of the present methods of disposal of household, industrial and agricultural wastes, and the findings are awaited with considerable interest.

Other recent factors influencing refuse disposal methods are—

- The proposal to draft new legislation to control water pollution; and
- The extension of the provisions of "The Clean Air Act of 1963" to the whole of the State as from the twenty-sixth of September, 1970.

It has been the Department's policy for several years to take every precaution against water pollution at refuse disposal sites, and to discourage the burning of refuse and this new legislation will strengthen our endeavours in this direction.

Water Supplies

The quality of reticulated water supplies was closely supervised during the year. 4,454 bacteriological samples and 118 chemical samples were examined in the Department's Laboratory of Microbiology and Pathology and Government Chemical Laboratory.

Nineteen per cent. of the samples of treated water submitted from twelve cities with populations in excess of 10,000 and 27 per cent. of the samples submitted from smaller townships, failed to meet World Health Organisation bacteriological standards for public water supplies. It is quite evident from these results that a marked improvement in the quality of the water reticulated for human consumption is necessary. At the same time the constant increase in the number of check samples being submitted for examination, from 709 samples in the year 1963-64 to 4,454 in 1970-71, is indicative of a rapidly developing awareness of the need to provide a public water supply of good quality, and for a more scientific approach to problems in this essential public health service.

Eight public water supplies are now fluoridated in Queensland. These are at Townsville, City of Gold Coast, Dalby, Mareeba, Biloela, Proserpine, Killarney, Allora. The new mining township of Moranbah was also authorised in May 1971 to commence fluoridation of its reticulated supply.

Sale of Toys

The programme aimed at safeguarding children from the hazards of lead painted toys was continued and further stabilized during the year. The retail market in Queensland is now comparatively free of this public health danger, and again credit must be given to toy distributors and retailers for their willing co-operation with the Department in this matter.

Investigations were also made into the sale of a rather dangerous baby's musical rattle. The particular rattle investigated consisted of a series of sharp steel wires, which produced a musical note when struck by a centrally located oval piece of metal suspended between the wires. The sharp wires were protected only by a thin cardboard outer covering lined externally with thin colourful plastic material, and presented a danger to young infants. Action was taken to exclude this dangerous rattle from the Queensland retail market. Similar action was taken in respect of several plastic toys which presented a choking hazard to young infants by means of small plastic decorations insecurely attached to the article.

Swimming Pools

Six hundred and forty-five bacteriological water samples from swimming pools were examined during the year. The standard of public swimming pools was found to be satisfactory and gave very little cause for concern.

Aboriginal Settlements

Two health inspectors were engaged fully during the year on supervision of the hygiene and sanitation at Aboriginal settlements and mission stations.

Sterilization of Utensils in Barbers' Shops

Further investigations were made into the efficiency of ultra violet ray sterilizers for utensils used in barbering. This equipment was found to have limited efficiency only due to the incapacity of the sterilizing rays to penetrate brush fibres or even oil dampened metal implements. Special conditions were therefore applied to approvals given to the use of this type of equipment for sterilization of implements used by hairdressers.

Water Filters

A special investigation was also made into the advertised claims of certain household water filters. The claims of one such widely publicised filter were found to be grossly exaggerated and action was taken to modify these claims in accordance with the limited capacity of the filter.

Lead Poisoning Hazards in Glazed Pottery

Certain types of pottery glaze were found on investigation to present a rather serious health hazard in that they readily leached lead content to foods with high acid content such as fruit juices, tomatoes and vinegar. Investigations are continuing into the extent of this problem and where such pottery is found action has been taken to have it removed from the retail market.

Major Civil Disasters

In conjunction with the Officer in Charge of the recently formed Disaster Relief Organisation in Queensland a planned approach to safeguarding public health in times of major civil disasters has been drafted and submitted to the central authority.

Surcharging Sewers

The prolonged wet season in the Metropolitan area during 1970-71 summer period gave rise to an unprecedented number of complaints in respect of surcharging sewers in several suburbs. Investigations revealed that the cause of this surcharging may be due to illegal connection of storm waters to sewers, and action was taken through the Brisbane City Council to detect and eliminate this health hazard.

Weil's Disease Control

The control of the inspectorial staff engaged in this service, which has been handled by the Director of Industrial Medicine for many years was transferred to this Section during the year, with an extension of the scope of activity of the inspectorate to include environmental sanitation inspections in Local Authority areas in North Queensland.

Despite unfavourable field conditions during the year the incidence of Leptospirosis in the canefields was maintained at a low level due mainly to the continued increase in mechanical harvesting which has been manifested for several years. Mechanical harvesting procedures considerably reduce the exposure risk to Leptospirosis of those engaged in the industry, and has led to the change in the activities and control of the inspectors employed on the service.

The service in itself however is a very valuable asset in controlling rat infestation in the cane growing areas of North Queensland and will still be retained as a composite unit for this specific purpose and to meet any particular needs that may arise from time to time in this important sphere.

Hookworm Control

Two health inspectors, in conjunction with other general duties, are assigned with the responsibility of carrying out general investigations related to the incidence of hookworm disease in North Queensland. One of these inspectors is stationed at Cairns and the other at Townsville. During the year an extensive investigation and treatment campaign for Hookworm was carried out at Mornington Island by the inspector stationed at Townsville.

DIVISION OF TUBERCULOSIS

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

Assistant-Director: Vacant.

Chest Physician, Toowoomba: EDWARD ROBINSON, M.B., Ch.B., D.P.T., T.D.D.

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

Chest Physician, Townsville: W. A. OLIVER, M.B., M.R.C.P. (Lond.).

Chest Physician, Rockhampton: Vacant.

STAFF

A severe shortage of medical staff is being experienced in this Division; resignations have occurred unexpectedly in both country centres and in Brisbane. Positions are under advertisement and early appointments are expected. The appointment of Dr. N. Ribush to the Chest Clinic, Brisbane, is the only replacement so far. Drs. Thompson, Dale, Lacey, Nobbs and Wilkes have resigned.

GENERAL

(Tables XXVIII, XXIX, XXX, XXXI, XXXII, XXXIII)

The fall in the number of notifications recorded in recent years has declined. This decline was anticipated in last year's report when attention was drawn to the then current epidemic of viral influenza. The effect of this epidemic is shown by the notifications, by quarters, since 1st January, 1970:—63, 53, 92, 71, 57 and 75.

The influenza epidemic was at its peak in June, July and August 1970. It was widespread and severe, some persons being very ill. There was a small number of viraemic deaths, some in young people; the most common bacterial organism complicating the infection was the pneumococcus and there were, fortunately, few cases of staphylococcal pneumonia. It seems likely that the increased number of cases notified in the September quarter was due to the effects of the viral infection precipitating active tuberculosis in previously infected individuals and, clinically, some cases dated their symptoms from a typical attack of influenza. It is interesting, however, that there was no excess of relapse in previously treated patients.

An increase in the incidence of tuberculosis—reflected in death rates in periods before modern treatment was available—is well recognised following epidemic influenza, usually one or two years later. One would therefore anticipate that any effect on incidence would occur within a year of the epidemic. It seems likely therefore that in 1971-72 there should be a return to the downward trend of notifications in recent years.

An unusual number of cases of infection due to the bovine strain of mycobacterium tuberculosis (7) were found this year and reference is made to this in the report of the Director of Microbiology and Pathology. As usual it was possible to obtain histories of direct contact with cattle in most cases.

This year's Clinical Tuberculosis Conference was held in April in Perth, the fifth conference in the series. Queensland delegates were Dr. T. A. McDonald from the Brisbane Chest Clinic and Dr. Rupert Graff from the Chermide Hospital staff. Dr. Graff read a paper surveying the results of surgery for "coin lesions" at the Chermide Hospital, which was subsequently accepted for publication by the Medical Journal of Australia. Panel and Group discussion was again a feature of this meeting which has become a regular feature of the Australian medical scene.

Those working in the Division heard with regret of the death in April 1971 of Sir Harry Wunderly, K.B., M.D., F.R.C.P., F.R.A.C.P., first Commonwealth Director of Tuberculosis. Sir Harry was largely responsible for the arrangement between Commonwealth and States in 1948 which led to the formation of this Division and all it has achieved has been largely due to his original planning.

TREATMENT

The basic treatment of tuberculosis, whatever organ is involved, remains the same. Treatment is commenced with three drugs in combination, usually Streptomycin, Para-aminosalicylic acid and Isoniazid, and continued until tubercle bacilli disappear from the sputum. Streptomycin is then withdrawn and treatment continued with the other two drugs for a total period of two years. When intolerance or allergy requires an alternative to this scheme we fortunately now have available two excellent drugs—Rifampicin and Ethambutol—the use of which is steadily increasing. It may well be that before long P.A.S. may no longer be regarded as a "first-line" drug in favour of one of the other two. Following three-drug treatment for a period it is now possible, where circumstances permit, to avoid the daily administration of drugs, by the use of a scheme of "Intermittent Supervised Chemotherapy" whereby com-

binations of drugs are distributed twice weekly by a responsible person. Usually streptomycin and isoniazid are used, but ethambutol and isoniazid or rifampicin and isoniazid are also suitable. This system is particularly useful for persons who, experience has shown, cannot be trusted to take drugs daily and is in use on Aboriginal settlements in North Queensland and for the treatment of tuberculosis in alcoholic patients. Where patients are responsible for their own treatment daily treatment seems less likely to be overlooked than twice weekly, though this has not been proved.

ATYPICAL RESEARCH UNIT

(Tables XXVIII, XXIX, XXX)

In November 1970, the research unit moved into a new and well equipped laboratory at 535 Wickham Terrace. The present staff consists of one clinician, Dr. R. E. Tuffley, M.B., B.S., M.R.C.P. (Lond.), two bacteriologists, Mr. M. Reznikov, B.Sc., Mrs. J. Leggo, B.Sc., a secretary and technical assistant. Research into the epidemiology of the atypical mycobacteria is continuing on three broad fronts. Firstly, records are kept of clinical data relative to patients from whom atypicals have been isolated, each case being allocated to one of six clinical disease categories to allow assessment of the relative pathogenicity of each species of bacteria. In addition histories are taken to provide further epidemiological data. From these the relative importance of environmental and occupational factors in the genesis of primary infection with atypicals will be studied. Papers which demonstrate the overwhelming importance of the Battey-Avian species as both a primary and accidental pathogen are in preparation. In another, the relative pathogenicity of the different Battey serotypes is examined in the context of the patient's clinical category. Secondly, a search for Battey organisms in the environment continues. As it seems likely that pulmonary infections result from inhalation of contaminated dust particles, soil samples are under investigation and many have yielded Battey organisms which are being serotyped. Atypical mycobacteria isolated from house dust by Dr. E. Singer have been typed, the Battey-Avian strains serotyped and the results published. The ease with which Battey-Avian strains may be isolated from soil and house dust suggests that pulmonary infection almost certainly results from air borne bacteria. The relatively small number who become infected indicates the importance of personal factors in determining susceptibility. These are being studied as part of the epidemiology. Thirdly, investigation is being made of the tuberculin reaction patterns of school children with a view to determining both the source of infection and the environmental and geographical factors most likely to be associated with its acquisition. As a high proportion of 13-14 year olds are already positive to avian and human tuberculin, a study is in progress on 2,700 8-10 year olds throughout the State. Skin tests employing both human and avian tuberculin are repeated at four month intervals. The resulting response patterns are related to sociological and geographical factors, while the changes at the individual level are related to personal environment through the use of a questionnaire which each child fills in whenever the team visits his school. Two series of tests have now been completed and the results are being reviewed. This type of work would be impossible without the enthusiasm and dedication of the clinic sisters who implement it and thanks are specially due to Sister J. Parker in Brisbane, Sister B. Colledge in Townsville and Sister J. Ellis in Rockhampton for their part in this work.

Several subsidiary investigations have been prompted because of their relevance to the three main themes:—

1. When *M. intracellulare*, the Battey organism, infects pigs, small tuberculous lesions are found in the mesenteric lymph nodes and the lungs do not become infected. The discovery in 1967 of an endemic of tuberculous mesenteric adenitis at a piggery near Toowoomba stimulated interest in the ecology of the Battey serotype VI organism which was responsible. At this time the pigs were reared and fattened on deep litter (sawdust) which they consumed in large quantities. Unweaned piglets though kept on cement were fed a supplement of topsoil collected beside their shed. The laboratory has since isolated serotype VI from the deep litter in the pens. Epidemiologically it seemed that infection occurred orally. This hypothesis was tested and proved on pigs at the A.R.L., Yeerongpilly, using a freshly isolated culture of serotype VI

obtained from the Toowoomba piggery, and an account of this work is being prepared for publication. The possibility that a similar mechanism may operate to produce the tuberculin sensitisation of school children is under investigation and water taps are under scrutiny.

A survey is being made by Mr. M. Reznikov of the organisms which are responsible for mesenteric lymph node lesions in pigs. The Battey isolates obtained will expand our knowledge of the naturally occurring serotypes.

3. The percentage of 13-14 year old children who respond positively to a Heaf test using human P.P.D. tuberculin varies so widely that it was felt that these variations could not be due solely to variations in the percentage sensitisation to avian tuberculin. To explain this an hypothesis that sensitisation with different Battey serotypes might cause different degrees of cross-sensitisation to human P.P.D. is currently under test in guinea pigs. The alternative hypothesis, that variation in the rate of sensitisation to human P.P.D. merely reflects extensive variations in exposure to and sensitisation by atypical, is already under test in the repetitive tuberculin testing trials.

4. The meaning of a positive sputum test for atypicals is under investigation. Patients representing all clinical categories are being asked to submit one sputum specimen every fortnight. Only by this method can it be determined which patients are regular excretors. The meaning of occasional isolates can also be investigated to see if the recurrence of a positive sputum indicates reinfection or breakdown of a hitherto healed pulmonary lesion.

The work of the unit is not confined to our own laboratory. Many projects require the full co-operation of the Director and staff of the State Health Tuberculosis laboratory. This has been given unstintingly and is much appreciated.

LUNG CANCER

(Tables XXXV, XXXVI)

The consultative clinic with Queensland Radium Institute, Chermide staff, thoracic surgeons and Director of Tuberculosis continues. The results of treatment of carcinoma of the lung, except those detected and excised in a very early stage, remains unsatisfactory. While the use of radiation and cytotoxic drugs is of undoubted value as a palliative of symptoms of advanced disease, the only way in which substantial improvement in the present position may be achieved is by the avoidance of cigarette smoking. Squamous celled cancer of the lung is eminently preventable. The association between smoking and lung cancer is well known in the community but, as yet, a scheme to bring home to the individual his responsibility for his own health in this regard remains to be found.

COUNTRY CLINICS

Clinics primarily for the diagnosis and follow up of treated cases of tuberculosis are a major part of the divisional activities and are likely to become even more important as time goes on. During the year clinics were held regularly at the following centres:—

BRISBANE: Bundaberg, Maryborough, Gympie, Nambour, Caloundra, Ipswich, Southport, Cherbourg Aboriginal Community, Kingaroy and Redcliffe.

CAIRNS: Atherton, Herberton, Mareeba, Innisfail, Tully, Babinda, Mossman, Ravenshoe, Mt. Garnet.

TOWNSVILLE: Charters Towers, Cloncurry, Mount Isa, Proserpine, Ayr, Ingham, Bowen, Hughenden.

ROCKHAMPTON: Mackay, Longreach, Winton, Blackall.

TOOWOOMBA: Dalby, Roma, Charleville, Stanthorpe, Warwick.

These clinics also provide consultant service for the hospitals and practitioners in the country regions of the State. Though expensive in doctors and nurses travelling time they are a most useful part of our overall control programme.

MASS RADIOGRAPHY

(Tables XXXVII, XXXVIII, XXXIX, XL, XLI)

One X-ray unit has been operating in the country areas of the State during the last year and 60,739 persons have been X-rayed, covering a distance of over 5,000 miles. The Cairns region was completed in October 1970 and the survey then commenced in the Toowoomba area. Considerable difficulties were experienced in dealing with heavy rain and flood conditions in Southern Queensland between December and March of this year. For the first time in six years the unit was unable to keep its schedule and the visits to Meandarra, Condamine, Dirranbandi and Bollon had to be cancelled. The public was advised of this and the unit has since revisited these areas. During July, August and September of 1970 an aerial remote areas survey was carried out at Cooktown, Hopevale Mission, Gulf of Carpentaria Mission communities, Weipa and Thursday Island. A further survey in September 1971 will X-ray the Torres Straits Islands, Iron Range and Yarrabah Mission.

The Mobile X-ray units completed surveys in the metropolitan area during 1970 in the electorates of Nudgee, Aspley, Wavell, Nundah, Clayfield, Merthyr, Windsor, Kedron, Ashgrove, Baroona and part of Mt. Coot-tha.

The follow-up of non-attenders was carried out by correspondence in each of these areas and where this failed to produce results visits were made by the enforcement officer. It was necessary to personally contact 996 persons, of whom 274 were sent for X-rays and the balance had either been X-rayed elsewhere or were incapacitated.

Summonses were issued against two individuals, one being withdrawn, the other resulting in conviction and eventual chest X-ray.

There were 20 active cases detected amongst the defaulters, one of these being a person directed for X-ray by the enforcement officer. Reference to Table XL shows the high ratio of cases in comparison with those persons who attended without persuasion. This has been an invariable finding in past years of the compulsory survey and emphasises the need for careful follow-up of non-attenders.

SOCIAL WORK

(Table XLVI)

Today, changes in treatment and the shorter hospital stay of most tuberculous patients have altered the pattern of social work problems presented by tuberculous patients. Care is needed to prevent treatment becoming merely a matter of dispensing drugs. In the Chest Clinic many patients are classified as "social isolates" and come from rooms or dilapidated homes. Other problems arise in our society, in spite of a high standard of living, as socially underprivileged people still live in conditions conducive to chest infection. Many of these are from multi-problem families who exhibit many and varied forms of anti-social behaviour and are unprepared or unable to earn sufficient money to provide adequately for other needs. These people often are not accessible to help from the usual community facilities available and will probably remain the harbours of social pathology as well as various chest infections. Inadequate intellectual resources prevent tuberculous sufferers and their associates from taking precautions to limit the spread of infection, and poor housing and overcrowding are associated with inadequate personalities who cannot cope. The anti-social behaviour of the alcoholic provides suitable conditions for the spread of tuberculous infection and for developing other chronic chest diseases. Alcoholism gives rise to neglect of food intake, neglect of hygiene and lowered bodily resistance. Those who are isolated from a stable social group in the community move from one abode to another in quick succession and create difficulties for the domiciliary sisters and for the social worker.

A major problem stems from Parkinson's law of income—namely, that expenditure rises with income. When to this is added the pressure of hire purchase on those with lower incomes few families have a reserve to cope with unexpected illness. Some recognise this omission as a calculated risk which they take in order to provide facilities for a standard of living they really cannot afford. House and car repayments and household goods and furniture commitments are all expenses which the Tuberculosis Allowance cannot meet. Meagre savings dwindle quickly, repayments get into arrears and bets accumulate. A fair percentage of patients of working age are virtually unemployable, often presenting a combination of problems other than chest disease—physical or mental disabilities, difficulties in training or skill or previously poor work records. A fundamental problem associated with hospitalisation is separation from one's family and the community. Sometimes the patient needs to re-arrange his employment or his business to cope with his absence for a number of months. This may be achieved only at considerable financial expense, either by employing other staff to keep the business productive, or by losing his salary during the period of absence from work. Occasionally the patient may even lose his job and face the difficulty in re-employment when eventually he is fit to return to work. Many families have to undertake the process of re-arrangement of roles and tasks in order to bridge the gap caused by the absence of the patient. A very distressing factor for patients with children under 16 is that contact must often be broken for the entire period of hospitalisation. Fortunately this break is now shorter than it was in the past. These are some of the problems that confront patients seen by the Chest Clinic and Chermide Hospital social workers. Valuable financial and material assistance, without which the social workers could not function, have been provided by NAPTA, St. Vincent de Paul, Queensland Social Services League, the Salvation Army and various other welfare organisations. In addition the social workers have been greatly assisted by other State and Commonwealth Organisations, including the Queensland Housing Commission and the Commonwealth Department of Social Services. In Queensland the social effects of tuberculosis are fast becoming minor and because of the advance of medical science the social

effects are also lessening for the individual; but while the disease exists so too will its diagnosis provoke social crises with which the individual will often need help.

DOMICILIARY VISITING AND TUBERCULIN TESTING (Tables XLII, XLIII, XLIV)

Domiciliary visiting continues to be an interesting and necessary facet of the Chest Clinic work. Now that the patients' stay in hospital has become so much shorter they require closer supervision of their chemotherapy by the visiting sisters. In the metropolitan and adjacent areas 3,547 home visits were made in the last 12 months, 140 of these for recently notified cases. The others were for drug supervision and checking of patients who fail to keep appointments. Tuberculin testing and B.C.G. vaccination of the 8th Grade pupils in metropolitan and country schools continues. Contacts and special groups are tested and vaccinated with B.C.G. when necessary, either at the Chest Clinic or in the home. Tuberculin testing clinics are held at Ipswich, Wynnum, Redcliffe and Inala and contacts are vaccinated as necessary at the clinics held in country centres. The easy availability of these services to those living on the outskirts of Brisbane enhance their importance in the overall control of tuberculosis.

TUBERCULIN TESTING USING A NEW PRODUCT

During the latter months of 1970 tests to evaluate the effectiveness of a new tuberculin prepared for the Australian market were undertaken. Results are summarised in Tables XLIX, L. It will be seen that the new product correlates well with standard tuberculin (P.P.D. "S") in

detecting sensitivity to human P.P.D. but is less satisfactory in detecting sensitivity to avian P.P.D. than that formerly in use. A further study in another State of the Commonwealth is planned to confirm this result. Sister J. Parker will take part in this study to ensure that the techniques are comparable and that differences reflect a difference in the populations tested and not variations in technique.

CASE REGISTER

A summary of our case register position is given in Table XLVIII. The most satisfactory feature is that on 1st January, 1971, there were no cases registered who had been persistently infectious, with atypical *Mycobacterium tuberculosis*, for twelve months. This is the first time we have achieved this result. With the battery of drugs now available every case of tuberculosis may anticipate cure except those infected by atypical mycobacteria.

TUBERCULOSIS ALLOWANCE

(Table XLV)

The Tuberculosis Allowance scheme was once the envy of others. It has now been eroded away by progressive inflation till it has little advantage to induce the tuberculous to give up work and enter hospital over other Social Service benefits available. The shorter duration of time off work now compatible with the satisfactory treatment of tuberculosis has, however, made it less important to pay a differential benefit than it was. The number of patients in receipt of a Tuberculosis Allowance is now at an all time low.

TABLE XXVIII
SOURCE OF NOTIFICATIONS OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1971

Source	Pulmonary Cases	Non-Pulmonary Cases	Total Cases
Mass Community Surveys	49	..	49
Private Medical Practitioners:			
(a) direct	2	2	4
(b) via Chest Clinic	5	1	6
General Hospitals	21	4	25
Chest Hospitals, Annexes and Sanatoria	118	11	129
Chest Clinics	59	4	63
Repatriation Clinics and Hospitals	22	..	22
Death Certificates	2	1	3
Special Groups—			
(a) Mental Hospital Surveys	..	..	..
(b) Gaol Surveys	..	..	..
(c) Ante-Natal Hospitals	..	..	..
(d) Other	..	..	..
TOTALS	278	23	301
Less—Any Transfers-in Included Above	7	..	7
Total Notifications	271	23	294

TABLE XXIX
RE-ACTIVATED CASES OF TUBERCULOSIS FOR YEAR ENDED 30TH JUNE, 1971
SHOWING AGE, SEX AND STAGE OF DISEASE

Age Group	Males				Females				Persons				
	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Min.	Mod. Adv.	Adv.	Non-Pulmonary	Total Persons
0-4	..	..	..	..	..	..	..	..	..	..	..	..	..
5-9	..	..	..	..	..	..	..	..	..	..	..	..	..
10-14	..	..	..	..	..	..	..	..	..	..	..	..	..
15-19	..	..	..	..	..	..	..	..	..	..	..	..	..
20-24	..	..	..	..	..	..	..	..	..	..	..	..	..
25-29	..	..	..	..	..	..	..	..	..	..	..	..	..
30-34	..	..	..	..	..	..	..	..	..	..	..	..	..
35-39	1	1	..	..	..	..	..	..	1	1	..	..	2
40-44	1	1	..	..	..	1	..	..	1	2	..	..	2
45-49	..	..	1	..	..	..	..	..	1	..	1	..	1
50-54	1	..	..	..	..	..	..	..	1	..	..	..	1
55-59	1	1	..	1	..	..	..	..	1	1	..	1	3
60-64	1 (I)	1	..	..	..	..	..	..	1 (I)	1	..	..	2
65-69	..	1	..	..	..	..	..	..	..	1	..	..	1
70-74	..	..	1	..	..	..	..	..	..	..	1	..	1
75 and over	..	1	..	..	..	..	..	..	..	1	..	..	1
Not stated	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	5 (1)	6	2	1	1	1	..	..	6 (1)	7	2	1	16

NOTE—For purposes of this form a "re-activated case of tuberculosis" is a patient who requires treatment for pulmonary tuberculosis after having been conventionally considered as "cured". Quoting the Danish Index—"A patient is conventionally considered as "cured" if his pulmonary tuberculosis for three successive calendar years without treatment is proved to be abacillary by adequate bacteriological tests".

TABLE XXXI

NOTIFICATIONS DURING YEAR ENDED 30TH JUNE, 1971
SHOWING BACILLARY STATUS OF PATIENTS AT TIME OF
NOTIFICATION

Age Groups	Number of Patients Receiving Initial Treatment			Number of Retreatment Cases		
	Bacillary Positive	Atypical	Bacillary Negative	Bacillary Positive	Atypical	Bacillary Negative
0-4	..	1	4	..	..	..
5-9	..	..	1	..	..	..
10-14	..	..	2	..	..	..
15-19	2	..	1	..	..	..
20-24	6	..	6	..	..	..
25-29	12	2	4	..	..	..
30-34	6	..	5	1	..	..
35-39	8	1	4	2	..	..
40-44	16	3	8	2	..	..
45-49	20	..	10	2	..	..
50-54	17	2	6	1	..	..
55-59	21	..	11	2	..	1
60-64	22	..	10	1	1	..
65-69	10	..	12	1	..	..
70-74	11	2	10	1	..	1
75 and over	19	..	1	1	..	..
Not stated	..	..	2	..	..	..
Totals	170	11	97	14	1	1

TABLE XXXII

NUMBER OF TUBERCULOSIS NOTIFICATIONS AND RATE
(PER 100,000 MEAN POPULATION) QUEENSLAND

Year	Number of Notifications	Notification Rate
1949-1950	513	43.7
1950-1951	595	49.9
1951-1952	780	62.9
1952-1953	943	74.1
1953-1954	821	63.1
1954-1955	725	54.6
1955-1956	685	50.3
1956-1957	639	45.8
1957-1958	852	59.9
1958-1959	789	54.4
1959-1960	787	53.2
1960-1961	767	51.1
1961-1962	721	47.1
1962-1963	826	53.1
1963-1964	857	54.1
1964-1965	891	55.2
1965-1966	623	37.8
1966-1967	563	29.5
1967-1968	512	29.8
1968-1969	382	21.8
1969-1970	294	16.8
1970-1971	301	16.8

TABLE XXXIII

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

Calendar 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
1960	83	5.7
1961	72	4.7
1962	84	5.5
1963	80	5.1
1964	75	4.7
1965	42	2.6
1966	43	2.6
1967	58	3.4
1968	60	3.4
1969	51	2.9
1970	37	2.1

TABLE XXXV

SHOWING NUMBER OF NEW CASES OF CARCINOMA OF THE
LUNG SEEN AT THE CHEST CLINIC, BRISBANE

1st July, 1958 to 30th June, 1959	..	..	56
1st July, 1959 to 30th June, 1960	..	..	65
1st July, 1960 to 30th June, 1961	..	..	83
1st July, 1961 to 30th June, 1962	..	..	111
1st July, 1962 to 30th June, 1963	..	..	109
1st July, 1963 to 30th June, 1964	..	..	100
1st July, 1964 to 30th June, 1965	..	..	101
1st July, 1965 to 30th June, 1966	..	..	116
1st July, 1966 to 30th June, 1967	..	..	147
1st July, 1967 to 30th June, 1968	..	..	104
1st July, 1968 to 30th June, 1969	..	..	131
1st July, 1969 to 30th June, 1970	..	..	70
1st July, 1970 to 30th June, 1971	..	..	111

TABLE XXXIV

TUBERCULOSIS NOTIFICATIONS OF MIGRANTS YEAR ENDED
30TH JUNE, 1971

Arrival in Australia	British		Non-British	
	Number	Percentage of Total Notified Migrants	Number	Percentage of Total Notified Migrants
Within 1 year	8	11.4	6	8.6
Within 5 years	7	10.0	8	11.4
Over 5 years	19	27.2	22	31.4
Totals	34	48.6	36	51.4

Migrants (70) were 23.3 per cent. of all notified tuberculosis cases (301).

TABLE XXXVI

CASES OF LUNG CANCER FOUND BY M.M.R.

1959	..	..	..	..	3
1960	..	..	..	..	40
1961	..	..	..	..	50
1962	..	..	..	..	16
1963	..	..	..	..	68
1964	..	..	..	..	70
1965	..	..	..	..	66
1966	..	..	..	..	90
1967	..	..	..	..	93
1968	..	..	..	..	101
1969	..	..	..	..	50
1970	..	..	..	..	62
					709

TABLE XXXVII

COMPULSORY MASS CHEST X-RAY SURVEY OF PERSONS OVER 21 YEARS OF AGE FROM 1ST JANUARY, 1970 TO 31ST DECEMBER, 1970

Locality	Estimated Number of Persons over 21 years of Age	Number of Micro Films Taken	Number of Active Cases Discovered	Number of Cases per 1,000 Micro Films Taken	Inactive Cases	Non-specific Fibrosis	Intercurrent or Pneumonic	Cardiac Abnormality	Carcinoma	Other Tumour	Pneumococcosis	Bronchiectasis	Sarcoidosis	Other Diseases	No Significant Abnormality After Investigation	Under Investigation	Old Cases Re-discovered
Brisbane Metropolitan ..	120,281	120,487	24	0.2	314	457	70	529	36	12	12	50	12	446	1,664	..	..
Toowoomba Division ..	8,340	9,595	..	..	9	33	3	30	3	..	..	1	2	12	47	..	..
Cairns Division ..	47,653	51,556	13	0.3	1,018	215	45	477	18	3	13	28	4	641	691	..	..
Special Survey ..	17,208	17,723	5	0.3	74	54	7	25	5	..	..	4	1	41	186	..	..
Totals ..	193,482	199,361	42	0.2	1,415	759	125	1,062	62	15	25	83	19	1,140	2,588	..	..

TABLE XXXVIII

MASS X-RAY SURVEY—QUEENSLAND—YEAR ENDED 31ST DECEMBER, 1970

Age	Number X-rayed	Active		Inactive		Suspect Active		*Other Conditions	
		Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed	Number	Per 1,000 X-rayed
0-14 ..	728	..	..	2	2.7	..	..	7	9.6
15-19 ..	9,891	1	0.1	4	0.4	..	..	58	5.9
20-24 ..	23,029	1	0.04	12	0.5	..	..	154	6.6
25-29 ..	18,779	2	0.1	30	1.6	..	..	183	9.7
30-34 ..	16,775	3	0.2	42	2.5	..	..	211	12.6
35-39 ..	16,851	..	..	72	4.3	..	..	263	15.6
40-44 ..	18,663	5	0.3	113	6.1	..	..	349	18.7
45-49 ..	19,757	6	0.3	165	8.4	..	..	536	27.1
50-54 ..	17,295	7	0.4	150	8.7	..	..	554	32.0
55-59 ..	15,874	4	0.3	174	10.9	..	..	692	43.6
60-64 ..	13,038	3	0.2	203	15.6	..	..	673	51.6
65-69 ..	10,077	1	0.1	180	17.9	..	..	660	65.5
70-74 ..	7,992	2	0.3	122	15.3	..	..	631	78.9
75 and over ..	9,280	4	0.4	131	14.1	..	..	860	92.7
Not stated ..	1,332	3	2.3	15	11.3	..	..	47	35.3
Totals ..	199,361	42	0.2	1,415	7.1	..	..	5,878	29.5

* See Table XXXVII for details.

TABLE XXXIX

NUMBER OF X-RAY EXAMINATIONS CARRIED OUT—1ST JANUARY, 1970 TO 31ST DECEMBER 1970

	Chest Clinic	Mobile Clinic	Royal Brisbane Hospital	Princess Alexandra Hospital	Toowoomba	Rockhampton	Townsville	Cairns	Thursday Island	Total
Micro Films ..	28,083	199,361	4,814	12,380	3,156	1,206	3,317	1,088	..	253,405
Micro Re-rays ..	10,065	3,461	412	144	464	121	174	..	..	14,841
Other Large Films ..	15,325	182	2,913	..	2,668	3,194	4,121	4,151	969	33,523
Totals ..	53,473	203,004	8,139	12,524	6,288	4,521	7,612	5,239	969	301,769

TABLE XL

COMPULSORY MASS CHEST X-RAY SURVEY FOR YEAR ENDED 31ST DECEMBER, 1970

Attended Following Electoral Roll Check	Number of Persons X-rayed	Number of Cases of Active Tuberculosis Discovered	Rate of Active Tuberculosis Per 1,000 Micro Films Taken
Metropolitan ..	4,894	7	1.43
Country ..	2,440	13	5.3
Totals ..	7,334	20	2.7
Attended Within Specified Period ..	199,361	42	0.2

TABLE XLI

COMPULSORY MASS CHEST X-RAY SURVEY FOLLOW-UP
Persons X-rayed Following Electoral Roll Check

Year	Number of Persons X-rayed	Number of Cases of Active Tuberculosis Discovered	Rate of Active Tuberculosis Per 1,000 Micro Films Taken
1963 ..	5,498	22	4.0
1964 ..	8,602	19	2.2
1965 ..	4,298	12	2.8
1966 ..	7,231	19	2.6
1967 ..	10,120	21	2.1
1968 ..	6,854	20	2.9
1969 ..	5,819	17	2.9
1970 ..	7,334	20	2.7
Totals ..	55,756	150	2.7

TABLE XLII
TUBERCULIN TESTS AND B.C.G. VACCINATIONS FOR YEAR ENDED 30TH JUNE, 1971

Locality	Number Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	3,257	183	5.6	698	21.5	818	25.1	1,558	47.8	1,252	80.4	273	17.5	33	2.1
Metropolitan and Division Schools	17,815	793	4.5	3,513	19.7	1,803	10.1	11,706	65.7	11,522	98.4	14	0.1	170	1.5
Country	10,643	541	4.9	4,540	42.8	2,516	23.7	3,046	28.6	1,664	54.2	1,361	45.1	21	0.7
Country Schools	20,312	718	3.5	5,081	25.0	2,305	11.4	12,208	60.1	11,965	98.0	93	0.8	146	1.2
Totals	52,027	2,235	4.3	13,832	26.6	7,442	14.3	28,518	54.8	26,403	92.6	1,741	6.1	370	1.3

TABLE XLIII
TUBERCULIN TESTS AND B.C.G. VACCINATIONS OF MIGRANTS FOR YEAR ENDED 30TH JUNE, 1971

Locality	Number Tested	Did Not Return		Positive		Positive After Previous B.C.G.		Negative		B.C.G. Given		B.C.G. Not Given		B.C.G. Refused	
		No.	%	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
Metropolitan	339	18	5.3	112	33.0	69	20.4	140	41.3	121	86.4	17	12.2	2	1.4
Metropolitan and Division Schools	1,144	69	6.0	210	18.4	163	14.2	702	61.4	678	96.6	2	0.3	22	3.1
Country	787	43	5.5	543	69.0	89	11.3	112	14.2	66	58.9	46	41.1	..	..
Country Schools	546	22	4.0	92	16.8	105	19.3	327	59.9	315	96.4	4	1.2	8	2.4
Totals	2,816	152	5.4	957	34.0	426	15.1	1,281	45.5	1,180	92.1	69	5.4	32	2.5

TABLE XLIV
COMPLICATIONS FOLLOWING B.C.G. VACCINATIONS IN PERSONS—YEAR ENDED 30TH JUNE, 1971

Age Group	Number Given B.C.G.	Local Ulcer		Enlarged Glands		Incised Glands		Total Complications	
		No.	Per cent.	No.	Per cent.	No.	Per cent.	No.	Per cent.
0-2 years	537	75	13.9	3	0.55	2	0.4	80	14.9
3-14 years	7,025	37	0.5	..	..	1	0.01	38	0.5
Over 14 years	660	11	1.7	..	..	..	..	11	1.7
Totals	8,222	123	1.5	3	0.03	3	0.03	129	1.6

TABLE XLV
NUMBER OF TUBERCULOSIS ALLOWANCES BEING PAID IN QUEENSLAND AT 30TH JUNE, 1971
LOCATION OF PATIENTS

Receiving Treatment in Institution			Receiving Treatment Outside Institution			Total Persons Receiving Treatment		
Males	Females	Persons	Males	Females	Persons	Males	Females	Persons
45	9	54	38	9	47	83	18	101

PERIOD IN RECEIPT OF ALLOWANCE

Period		Males	Females	Persons
Under 1 year .. .. .	.. .. .	70	14	84
1-2 years .. .. .	.. .. .	6	2	8
2-3 years .. .. .	.. .. .	1	1	2
3-4 years .. .. .	.. .. .	..	..	..
4-5 years .. .. .	.. .. .	1	..	1
Over 5 years .. .. .	.. .. .	5	1	6
Totals .. .. .	.. .. .	83	18	101

TABLE XLVI

ANALYSIS OF SOCIAL WORKER'S ACTIVITIES

Number of new long term cases	49
Number of short contact cases	68
Number of cases reported from previous years	12
Number of cases carried forward from previous year	13
Total	142
Number of cases closed	110
Number of cases carried forward	32

TABLE XLVII

PROBLEM AND CASEWORK SERVICE

	A. Presenting Problem(s)	B. Basic Problem(s)
(a) Family Welfare	4	10
(b) Marital relationship	6	20
(c) Adult health—		
Medical	13	20
Psychiatric	4	14
(d) Child Health—		
Medical	1	10
Psychiatric	3	6
(e) Youth Welfare	3	6
(f) Alcoholism	8	15
(g) Employment	20	39
(h) Accommodation—		
Housing	12	20
Special service	10	14
(i) Financial circumstances	50	72
(j) Young chronic invalid	0	2
(k) Others—including migrant employment difficulties, de-facto and emotional adjust- ment to illness, and unmarried mothers	23	32

TABLE XLVIII
CASE REGISTER COUNT—APRIL 1971

Activity	Minimal	Moderate	Far Advanced	Non- Pulmonary	Primary	Pleural Effusion
Active	240	141	26	48	2	2
Quiescent	579	337	56	44	3	3
Inactive	1,471	633	106	106	16	12
Inactive—3 years	3,446	1,643	229	151	24	18

TABLE XLIX

STANDARD AVIAN 4 T.U.

235 TESTED.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
0	2		1	1	2	3	3	4	3	2	2																									
1																																				
2	1					1	3	1	2		1	1					1																			
3						1	2	3	1	1	1	1	2	1	1				1																	
4	1					1		1	1	1	3			3	1					1	1	1														
5					1			7	1	1	1	3			1								1													
6						3	2	3	5	3	2	3	4		1	1				1																
7							1		3	3	2	2	1		1	1	1				1				1			1								
8			1					1	2	2	1	3	1	2	1	1	2			1	1															
9							1	3	6	3	3	1	2	1		1	3	1	1	2																
10							1	1	1	1	3		2	2	3																					
11								1	1	4	1		2		1	1																			1	
12						1	2		3	4	1		2	2			1							1												
13							2		1			1																							1	
14										1	1	2	2	1																						
15								1		1	1	1				1						1														
16									1																											
17																																				
18																																				
19																																				

TUBERCULIN TESTING OF NEW TUBERCULINS.

TWO WAY TABLE SHOWING REACTION SIZES IN MILLIMETRES

TO STANDARD AVIAN TUBERCULIN AND TO NEW AVIAN TUBERCULIN.

TABLE L
NEW HUMAN 10 T.U.

267 TESTED.

NEW HUMAN 10 T.O.

	0	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	
0	4		1	9	9	2	3	5	1	1	1																									
1																																				
2	3			1	2	4	5	3	1	1						1																				
3						5	3	2	2	1	2	2			1																					
4				4	2	3	2	4	3	5	3		1	2																				1		
5			2	1	3	4	4		2	6	4	1		1	1																					
6			1		1	3	3	3	5	3	2	3	2	1	2				1																	
7					5	3	2	2	6	1	5	1	2	1	1				1																	
8						4	4	2	4	3	1		3	1																						
9						2		1	5	5												1														
10							1		3	1	2	1				1	1										1									
11						2	1		1	2	1		2				1																			
12							1	1			1			1		1																				
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TUBERCULIN TESTING OF NEW TUBERCULINS.

TWO WAY TABLE SHOWING REACTION SIZES IN MILLIMETRES

TO STANDARD HUMAN TUBERCULIN AND TO NEW HUMAN TUBERCULIN.

DIVISION OF INDUSTRIAL MEDICINE

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

Radiation Health Physicist: K. A. STEVENS, B.Sc. (Qld)

Technical Officer (Radiography): N. H. SERICO, M.I.R.

Industrial Health Inspector: J. W. MULCAHY, A.R. San. I.

This Division provides a service for the investigation of occupational health hazards. The scientific resources of the Government Chemical Laboratory are relied on for detailed delineation of physical and chemical data and the Laboratory of Microbiology and Pathology for biochemical and related studies. The Chest Clinic co-operates in X-ray surveys of men in dusty occupations, and a close liaison is maintained with the Department of Labour and Tourism, and its Division of Occupational Safety.

ROUTINE INSPECTIONS

The Industrial Health Inspector carried out 257 inspections of various industries. Of these, approximately 30 resulted in further investigations by the Director and the scientific team. Several were of more than usual interest and are reported below.

GENERAL

Several interesting investigations were carried out on situations carrying potential for unusual hazard. These included cadmium and mercury, and hazardous gases such as ammonia and methyl bromide.

Significant improvement in engineering and structural design have been undertaken in one large firm using lead compounds in the manufacture of synthetic pipes and roofing material, and in a firm using almost pure silicon dioxide in the manufacture of abrasive cleansing agents, following recommendations made over the years by this Division.

LEAD

A careful and constant check is kept on all known lead industries with a significant hazard. One hundred and twenty visits were carried out within such industries by the technical assistant during the year, and a considerable number of routine tests taken at indicated intervals from exposed workers. The accepted parameters are utilised including haemoglobin, coproporphyrin and delta-aminolevulinic acid output in urine, lead in blood and lead in urine levels. Stipple cell counts are still done in this laboratory though their usefulness is somewhat doubtful. During the year three cases of symptomatic lead-poisoning occurred in uncontrolled situations where lead was not suspected as a hazard by the firms concerned. One case occurred in the mechanical discing of ship's rudders and shafts protected with lead paint. Two cases occurred in the demolition of an old bridge by flame-cutting. Both men had a fall in haemoglobin to below 10Gm, A.L.A. and coproporphyrin figures in the dangerous range (above 4 mgm/100ml and above 1500 microgm/litre respectively) and lead in blood and urine concentrations of diagnostic levels (greater than 0.12 mg/100ml in blood and greater than 0.25 mgm/litre in urine). In neither case was lead suspected until symptoms occurred. An investigation by officers of the Division led them to believe that both jobs could have been undertaken without hazard if advice had only been sought.

NOISE

Eleven surveys of noise levels were undertaken in various industries. These ranged from heavy engineering to training centres for apprentices. It has been found that moderately damaging energies exist in many industries, but that severe noise problems are uncommon. It has been found that the greatest enthusiasm exists in the relatively non-hazardous situations such as apprentice training, and one can only conclude that motivation is the only requirement for institution of a hearing conservation programme. Levels in the probable damage zone were found in the driver position on caterpillar bulldozers used in forestry operations, and hearing protection was recommended.

DUSTY TRADES

Several quarries were investigated for dust hazard with the co-operation of the Mines Department. The Division has orientated itself towards the assessment of these hazards on R.S.A. (Respirable Surface Area) rather than P.P.C.C. using Disa (Diffraction Size Analyser), the favoured instrument in the South African mining industry. Very large numbers of samples can be taken and rapidly analysed, thus giving a very detailed assessment of particular situations.

An X-ray survey of 45 quarry workers revealed two cases of silicosis (Category 1-2) in men who had had 16-21 years exposure. One man with considerable exposure to asbestos fibre has developed marked pleural thickening over the right lung with linear fibrosis in the left lung. Biopsy revealed dense fibrous tissue but he is more than likely to develop a cor pulmonale. Another man with known asbestosis eventually developed an oat-cell carcinoma of the lung from which he expired. These two cases demonstrate the accepted association of dense pleural thickening, possible mesothelioma, and carcinoma of the lung with this very positive occupational health hazard.

MISCELLANEOUS

A possible cadmium hazard was investigated in the repair of magnets present in electricity meters. The magnets are coated with cadmium metal and brushing of the surface does produce some measurable amounts. However, this was far below the M.A.C. but cleaning of the magnets was considered safe only if always undertaken over down-draught exhaust.

Mercury vapour was investigated in surgeries where a number of dentists work together. Urinary excretions were all in safe limits, and environmental mercury varied between $\frac{1}{2}$ to $\frac{1}{4}$ of the suggested M.A.C. A pattern for safe procedure was drawn up for general application to dental surgeries.

ACTIVITIES

Dr. Rathus delivered an address on "The Effects of Pesticide Residues on Humans" at the 43rd A.N.Z.A.A.S. Conference held in Brisbane in May 1971.

Mr. Mulcahy gave several lectures to the Safety Officers' Course conducted by the Division of Occupational Safety of the Department of Labour and Tourism.

BOARDS

Official attendance was required at meetings of the Occupational Health Committee of the N.H.M.R.C., the Health, Welfare and Safety Board of the Department of Labour and Tourism, the Chest Board of the State Government Insurance Office and the Radiological Advisory Council of the Department of Health.

WEIL'S DISEASE CAMPAIGN

This unit was transferred to the Section of Environmental Sanitation during the year, as an expanded responsibility was considered to be in the best interests of the Department of Health and the capabilities of the officers concerned. The Director of the Division wishes to record his appreciation for their sterling service over many years with the realisation that the unit has achieved a great deal in the control of an occupational hazard in the North Queensland sugar areas which is beset with problems. Their functions in this regard will continue in all problem areas.

RADIATION HEALTH PHYSICS SECTION

General

In dealing with the problems associated with the use of radiation in Queensland the Radiation Health Physics Section has responsibilities in the following fields:—

- The licensing of the use of radioactive substances and irradiating apparatus as is required by "The Radioactive Substances Act of 1958" and the regulations under the Act.
- The general supervision of radiation health in the many and varied applications of ionising radiation in Queensland.
- Advising the Department of Health on the problems associated with the use of ionising radiation in Public Hospitals.
- The assessment of radioactive material.
- Education in the use of radiation.
- Investigation of possible health problems associated with other electromagnetic radiation e.g. microwaves and lasers.

(a) Licences and Registrations

During the year a total of 282 licences were granted for all uses of ionising radiation. This is an increase of 23 per cent. on last year. A further 4 per cent. increase in Certificates of Registration of Irradiating Apparatus took the number of registrations issued to 644. The total number of X-ray units covered by such registration is 841.

The Amendment to the Radioactive Substances Act which allows people other than registered medical practitioners and dentists to apply for a licence to use irradiating apparatus on human beings for the sole purpose of diagnostic radiography was promulgated on 29th October, 1970. Seventeen applications in relation to this amendment have been processed. As a result twelve of the applicants have been granted licences. These licences were granted on the recommendation of the Radiological Advisory Council of Queensland after the applicants had satisfied the sub-committee, set up by the Radiological Advisory Council of Queensland, of their competency.

(b) Supervision of Radiation Health

The Protection Film Service conducted by the Radiation Health Physics Section maintains a surveillance on occupationally exposed workers. The service at present covers 1,450 such workers throughout the State and the Territory of Papua and New Guinea. This is an increase of 10 per cent. on last year and takes the total number of processed and assessed films for the year to 17,400.

This regular monitoring of radiation workers and the prompt investigation into any abnormal exposures has ensured that, in 1971, no person exceeded the levels laid down in the regulations under the Radioactive Substances Act.

(c) Advisory Function

Users of ionising radiation continue to seek the advice of the Radiation Health Section on the design of facilities, methods of use of ionising radiation, and safe methods of handling ionising radiation.

The Radiation Health Physicist and the Technical Officer (Radiography) have advised the Department of Health on the design of departments of Public Hospitals which will house sources of radiation.

The functioning of the advisory work of the Technical Officer (Radiography) has produced great improvement in country hospital radiography. During the year, this officer has made over a hundred visits to 48 hospitals outside of the metropolitan area. In addition to advising operators on techniques, he has in many instances reorganised the X-ray Department to ensure better functioning. The service offered is greatly appreciated by the many hospitals he has visited. The continuation and expansion of this function is essential.

(d) Assessment of Radioactive Material

The Radiation Health Physics laboratory has continued to be used for testing and measurement of radioactive material for research, industrial and medical organisations.

The equipment acquired last year to build up a system for assessment of radon in mines has now been assembled, tested and calibrated.

(e) Education in the Use of Radiation

The Radiation Health Physicist has undertaken lectures on radiation health to medical and dental students at the

University, cadet radiographers, the Australian Chiropractor Society, the Australian Institute of Radiographers and the Australia Chemical Institute.

The Technical Officer (Radiography) is lecturer on radiographic technique to the cadet radiographers. He conducted a course for operators of X-ray units in country hospitals close to the metropolitan area.

(f) Microwave Heating

The laboratory has been equipped with a survey instrument for measurement of leakage from microwave heating devices. A limited number of surveys of domestic and commercial ovens have been undertaken and it is expected that work in this field will increase rapidly in the next year.

Survey of Genetic and Mean Bone Marrow Dose to the Australian Population

The Radiation Health Physics Section has assisted The National Health and Medical Research Council in the conduct of a survey to assess the Genetic and Mean Bone Marrow Dose to the Australian population from the medical and dental use of ionising radiation.

The first stage of this survey was carried out during the year when, over a set period, full details of uses of ionising radiation in medicine and dentistry were recorded together with patients age and sex. Analysis of this data is being undertaken on a National level so that the next stage, which involves physical measurement of dose on patients of selected users, can be undertaken.

Interstate and Overseas Visits

The Radiation Health Physicist visited Melbourne in November to attend a meeting of State and Commonwealth officers on the health problems of microwave heating devices.

At the invitation of the British Hospitals Export Council, the Radiation Health Physicist undertook a fortnight's visit to the United Kingdom to study hospitals equipment and design in relation to uses of radiation.

The Technical Officer (Radiography) attended the Annual Conference of the Australian Institute of Radiography in Melbourne at which he presented a paper on "Country Hospital Radiography". He extended his visit so that he could confer with officers with similar duties to his and to inspect facilities of interest to this State.

Committees

The Radiation Health Physicist continues to act as a member of the Radiological Advisory Council of Queensland. He is a member of the Radiation Health (Standing) Committee and the *ad hoc* Committee in the Diagnostic Use of X-rays in Medicine and Dentistry of the National Health and Medical Research Council. He serves as Chairman of the Consultative Radiation Protection Committee of the Royal Brisbane Hospital. He continues to act in an advisory capacity to the X-ray Special Committee of the Queensland Radium Institute. This year he has been appointed to the Conjoint Committee which controls the education of both diagnostic and therapy radiographers.

Both the Radiation Health Physicist and the Technical Officer (Radiography) serve on the sub-committee set up by the Radiological Advisory Council of Queensland to advise the Council on the competency of applicants under the latest amendment to the Radioactive Substances Act.

DIVISION OF MATERNAL AND CHILD WELFARE

Director: J. F. McFARLANE, M.B., B.S., M.R.C.P. (Edin.), F.A.C.M.A.

Deputy Director: J. J. B. REFSHAUGE, O.B.E., M.B., B.S., M.Sc., Dip. Ed., D.P.H.

Medical Officer: M. H. FRANKLIN, M.B., B.S.

Superintendent: D. GODSMARK, S.R.N.

Deputy Superintendent: E. ELLIS, S.R.N.

Thirty-seven thousand five hundred and thirty (37,530) babies were born during 1970 (the highest yearly number ever recorded) and of these, 28,324 newborns visited the Baby Clinics. This represents a 75 per cent. response. Total clinic attendances between 1st July, 1970 and 30th June, 1971 were 534,994—an increase of 19,780 (3.8 per cent.) as compared with the previous year.

The infant mortality rate during 1970 was 17.9 deaths per 1,000 live births, a drop from 18.97 deaths per 1,000 live births in 1969.

New Baby Clinics were opened at Ferny Grove; Goodna; Taroom; and Wandoan.

The total number of clinics is as follows:—

Metropolitan	15
Metropolitan sub-centres	73
Country centres	33
Country sub-centres	157

Special centres:—

Rail Car	6
Mobile Clinic No. 1	10
Mobile Clinic No. 2	18

At Flying Doctor Bases (56 stops)—

Charleville	1
Mount Isa	1
Townsville	1

Consolidation of the work of the service to the Aboriginal communities continues. Opal Joyce Wilding House, opened at Mount Gravatt, Brisbane, is visited regularly by a social service sister. Throughout the State, visits are made to over 20 Aboriginal communities and fringe areas. The health of babies on settlements receiving meal subsidies has improved during the year. In December 1969, Dr. J. McFarlane and Sr. June Beattie from Mount Isa (attached to the Royal Flying Doctor Service) attended a Workshop on Aboriginal Child Health organised for the Commonwealth Department of Health by Dr. Fred Clements—School of Public Health and Tropical Medicine, University of Sydney. As a result of these discussions, plans were made to study the growth and development pattern of Aboriginal children throughout Australia and Dr. J. McFarlane has designed a booklet to assist doctors, nurses and people interested in Aboriginal welfare in the assessment of the Aboriginal child at risk entitled "This is an Australian".

This booklet has received favourable mention, and many requests for copies have been received from all over Australia.

Dr. J. McFarlane left Australia on 19th April, 1971, to undertake a W.H.O. Fellowship which had been granted her.

Inspection trips were made by Dr. J. McFarlane, Miss D. Godsmark and Miss K. Elliott (Nurse Supervisor) during the year and the following centres and many of their sub-centres were visited:—

Ayr	Innisfail
Bowen	Mackay
Bundaberg	Maryborough
Cairns	Rockhampton
Chinchilla	Southport
Gladstone	Toowoomba
Ingham	Townsville

Of all the centres visited, the greatest development was found in Townsville, where a new residential centre is nearing completion.

With the opening of a Mothercraft Home in the grounds of the Royal Brisbane Hospital (an annexe of the Clayfield Home) facilities are now available for the training of Child Welfare Assistants and Sisters studying for their Child Welfare Certificate, in the care and management of the pre-school child. The Home is open seven days a week from 7.00 a.m. to 11.00 p.m. to care for the babies and pre-school children of nurses employed at the Royal Brisbane Hospital.

Dr. McFarlane appeared on Open Line programmes on Radio Station 4BH during the year. Various questions on maternal and child care posed by the listeners were answered.

A total of 35,072 Guthrie tests were performed on Queensland babies and two definite positive cases of phenylketonuria were discovered and are now under treatment. A total of ten positive cases have been discovered since the test was introduced in July-August 1968.

ANTE-NATAL SECTION

One thousand two hundred and five new patients attended at Caboolture, Woolloongabba, Inala and Fortitude Valley, making a total of 9,720 visits at the clinics, which are conducted by the medical staff of the Department. Four hundred and thirty-eight new patients, making a total of 3,784 visits, attended at Moorooka and Chermide where Dr. J. Campbell and Dr. C. Wilson conduct the clinics on behalf of the North Brisbane Hospitals Board. There were 1,278 attendances at talks to expectant mothers at Woolloongabba, Valley and Inala, and 136 expectant mothers saw films on childbirth at the Valley Clinic.

TABLE LI
SUMMARY OF ANTE-NATAL PATIENTS

Clinic	New Patients		Subsequent Visits		Post-natal Examination		Transfers		Papanicolaou Smears	
	1969	1970	1969	1970	1969	1970	1969	1970	1969	1970
Caboolture	41	42	223	191	17	18	3	6	19	20
Chermide	205	226	1,770	1,635	177	169	1	3	..	..
Fortitude Valley ..	240	250	1,935	1,995	125	102	5	5	133	158
Inala	393	473	2,824	3,310	187	173	23	15	253	252
Moorooka	207	212	1,386	1,417	145	119	3	5	..	..
Woolloongabba	324	440	2,308	2,601	112	98	3	7	141	150
TOTALS	1,410	1,643	10,446	11,149	763	679	38	41	546	580

ANTE-NATAL CORRESPONDENCE

	1969-70	1970-71
Transfers from R.B.W.H. to Caboolture	3	208
Letters sent to Inala Cases	201	92
Home Visits to Inala Cases	92	80
Letters sent to Woolloongabba Cases	213	218
Home Visits to Woolloongabba Cases	41	52
Letters sent to Valley Cases	43	42
Home Visits to Valley Cases	3	8
Letters sent to Caboolture Cases	9	9
Home Visits to Caboolture Cases	3	3
Talks to Mothers for Woolloongabba, Valley and Inala	1,065	1,278
Relaxing Exercises, Inala Cases	100	128
Attendances at film, Fortitude Valley Centre (3-9-70; 3-12-70; 4-3-71; 3-6-71)	179	136
Circular letters forwarded to Expectant Mothers (No. 1)	7,233	5,614
Circular letters forwarded to Expectant Mothers re "The Expectant Mother" book, (No. 2)	1,824	2,911
Response to Circular letter	2,100	2,064
Serial letters sent to Expectant Mothers	16,803	15,264
Letters received from Expectant Mothers	658	753
Special letters of advice sent on request	483	497
Copies of "The Expectant Mother" book sent on request	2,091	2,022
Requests from country centres and hospitals for the "The Expectant Mother" book	1,865	1,664
Copies of "Before and After—the Facts and Functions of Childbirth" sent on request	2,161	2,086
Requests from country centres and hospitals for copies of "Before and After—the Facts and Functions of Childbirth"	961	1,590
Copies of Baby Patterns sent	197	93
Copies of Maternity Belt Patterns sent	7	10
Visits to patients at Mater Mothers' Hospital weekly from 1-7-70 to 30-6-71	4,581	4,363

MOBILE CLINICS

Two clinic vans operate in the metropolitan area. Eighteen thousand, six hundred and fifty-five babies have been seen by the four sisters who conduct the service. The areas visited are as follows:—

VAN No. 1: Albany Creek, Boondall, Bunyaville, Chermiside, Everton Park, Ferny Grove, Jindalee, Lindum, Moggill, Tingalpa.

VAN No. 2: Bribie Island, Canungra, Deception Bay, Dunwich, Fruitgrove, Gailles, Garden City, Goodna, Kingston, Kuraby, Mt. Gravatt, Mt. Tamborine, Park Ridge, Petrie, Riverview, Rochdale, Runcorn, Sunnybank.

Frequent changes in itinerary are necessary as the building of new homes spreads to the periphery of Brisbane. As an area is established, the vans move further out, when facilities for a permanent sub-centre become available.

MOTHERCRAFT HOMES

Building of a new Clayfield Home to accommodate 18 babies under 18 months of age, and six mothers is nearing completion. It is interesting to note that 36 Aboriginal or Part-Aboriginal babies were admitted to the Rockhampton Home (mainly from Woerabinda Settlement) during the year, and seven to the St. Paul's Terrace, Brisbane, Home. To date, 2,525 sisters have been successful in obtaining their Child Welfare Certificates and 1,249 students have obtained their Certificates as Child Welfare Assistants.

TABLE LII

	St. Paul's Terrace		Clayfield		Toowoomba		Ipswich		Rockhampton	
	1969	1970	1969	1970	1969	1970	1969	1970	1969	1970
Babies Admitted	241	305	278	253	101	90	146	158	140	103
Mothers Admitted	98	119	146	86	32	16	63	55	28	46
Daily Average—										
Babies	15.1	14.7	14.1	12.9	8.2	7.7	7.3	7.6	8.9	8.5
Mothers	2	2.4	0.7	1.3	0.57	0.4	2	1.6	0.6	0.8

PRE-SCHOOL HEALTH SERVICE

Clinics are held at 22 metropolitan centres, three country centres, and at 27 kindergartens. In the metropolitan area, 3,329 new patients were seen and an additional 3,383 subsequent examinations were made. In the country, there were 705 new patients and 304 subsequent visits were made. The most frequently found abnormalities are enlarged tonsils, knock knees and flat feet, but 136 children had cardiac murmurs, and 71 had undescended testes.

LECTURES IN MOTHERCRAFT

During 1970, 15,066 students at 239 schools received mothercraft lessons and 12,138 obtained a pass of over 60 per cent. These courses are conducted by seven full-time sisters and 10 sisters in charge of country centres (Roma, Emerald, Railway Car, Charleville, Goondiwindi, Longreach, Mount Isa,

CORRESPONDENCE SECTION

Ante-natal and baby correspondence continues to be well used by country mothers in spite of the fact that many isolated areas are now visited by sisters attached to the Royal Flying Doctor Service. The service offered to mothers with new babies who are too distant from a centre to seek advice personally, was used by 1,454 mothers.

	1969-70	1970-71
Number of Birth Notifications received	2,026	2,050
Number of Circulars posted—		
(No. 1) within reach of a centre	671	781
(No. 2) not within reach of a centre	1,546	1,269
Letters to Correspondence in response to Circular No. 2	412	420
Letters of advice re feeding and management	1,581	1,454
Number of "Care of Mother and Child" sent on request and given	490	366
Number of pamphlets sent advising Immunization	2,018	2,050
Number of Birthday Cards sent during the year	267	259
Number of Telephone Calls re feeding and management	1,073	1,337

SOCIAL SERVICE SECTION

A total of 4,267 home visits were made by the social service sisters, and mothers were given advice in their homes until either baby or mother was well enough to attend a baby clinic.

	1969-70	1970-71
Social Service Visits	4,533	4,267
Number of newborns visited in Royal Brisbane Women's, Corinda, Boothville, Redcliffe, and Cleveland Maternity Hospitals and including newborns seen at home	10,427	11,242
Number of test feeds given	21	10
Attendances at Commonwealth Hostel at Wacol, visited twice monthly	143	115
Attendances at Opal Joyce Wilding Home (opened 17-6-70)	2	80

Biloela, Chinchilla and Charters Towers). The inclusion of mothercraft lectures to Opportunity Schools has been greeted with much enthusiasm from the teachers in the schools concerned. The students have been particularly interested and have maintained a high standard of work in regards to their ability. Help has been given during class time to compile successfully a Project Book for each student. Results in their special examinations were 110 passed out of the 119 who sat.

CONSULTANT CLINIC

At the consultant clinic at St. Paul's Terrace, 2,260 children attended and 4,490 mothers received advice by phone. At the baby clinics in the metropolitan area (Herschell Street, Woolloongabba and West End) a further 2,697 attended for medical advice.

SANDGATE HOME

A total of 1,016 children were examined for admission to the Sandgate Home, and of these 1,000 were admitted (624 families). The children stayed in the home for an average of 19.9 days. An epidemic of Chicken Pox occurred during the year.

RAIL CAR

Floods occurred during the year in areas visited by the rail car—Hughenden, Julia Creek, Winton, and Railway Sidings. Winton was isolated by floods and Julia Creek by washaways but an adequate service was maintained despite these disabilities. A total of 138 new babies attended, making a total of 4,174 visits in all.

SISTERS ATTACHED TO THE ROYAL FLYING DOCTOR SERVICE

A Maternal and Child Welfare sister is attached to each Flying Doctor Service Base in Queensland, and through the courtesy of the Royal Flying Doctor Service, visits are made to northern and far western areas which could not be reached using ordinary means of transport. Dr. T. J. O'Leary—Medical Superintendent and Dr. D. Cooke, Mt. Isa Base, Dr. E. Dorney, Charters Towers Base, and Dr. I. Pranganell, Charleville Base, willingly saw patients causing concern. This service to isolated communities is greatly appreciated. During the year, a total of 16,133 babies and children have been seen (this is apart from the total attendance at centres and sub-centres).

MARRIAGES

Registration of marriages in 1970 numbered 16,082, giving a marriage rate of 8.9 per 1,000 mean population. Minors married numbered 10,308, comprising 2,818 males and 7,490 females.

VITAL STATISTICS

Births registered in Queensland during 1970 numbered 37,530 compared with 36,576 in 1969. This is the highest number registered since 1961 (36,637). In Queensland, the rate per 1,000 mean population was 24.2 in 1961, 20.7 in 1969 and 20.8 in 1970.

Of the births registered during 1970, 19,324 were males and 18,206 were females, equivalent to 106.1 males for every 100 females.

INFANTILE MORTALITY

Deaths of infants aged under one year numbered 672 comprising 405 males and 267 females, compared with 691 in 1969. The infant mortality rate of 17.9 deaths per 1,000 live births was lower than the 1969 rate of 18.9.

The rates for the different parts of the State were Brisbane Statistical Division 15.2, other sub-tropical areas 17.8 and tropical areas 23.1 per 1,000 live births.

Deaths of infants within the first four weeks of life numbered 476 (293 males, 183 females), equivalent to 12.7 deaths per 1,000 live births.

Deaths of children aged one year and under two years

Deaths of children aged one year and under two years during the year 1970 numbered 51 representing a death rate of 1.4 per 1,000 children in that age group. There were 68 deaths in 1969 with a corresponding death rate of 2 per 1,000.

The chief causes of death were:—

Accidents	19
Pneumonia	7
Diarrhoeal disease	5
Congenital malformations	6
Meningitis	3

Of the 19 deaths (10 males and nine females) due to accidents, six were caused by drowning, three by accidental poisoning, and five by motor vehicle accidents. In 1969, 22 deaths were due to accidents.

Deaths of children aged two years and under five years

The deaths of children aged two years and under five years during the year numbered 94, representing a death rate 0.9 per 1,000 children in that age group. Deaths in 1969 were 76 with a corresponding death rate of 0.7 per 1,000.

The chief causes of death were:—

Accidents	28
Congenital malformations	10
Malignant neoplasms	5
Leukaemia	7
Diarrhoeal disease	3
Pneumonia	7
Congenital Metabolic Disorders	6
Cerebral spastic infantile paralysis	2
Meningitis	4

Of the 28 deaths due to accidents, eight were caused by motor vehicle accidents, 15 by drowning, one by fire, and two by accidental suffocation.

TABLE LIII

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

Metropolitan	1968-69	1969-70	1970-71
Chermside and Sub-Centres	15,760	19,919	21,091
Children's Hospital Clinic	473	238	..
Coorparoo and Sub-Centres	11,137	17,650	18,516
Fortitude Valley and Sub-Centres	18,052	20,530	21,239
Herschell Street and Sub-Centres	17,348	19,828	20,320
Inala and Sub-Centres	10,171	10,675	10,323
Ipswich and Sub-Centres	21,445	22,984	21,889
Margate and Sub-Centres	7,342	7,856	7,838
Mobile Clinic No. 1	5,842	7,290	9,646
Mobile Clinic No. 2	3,140	6,737	9,009
Moorooka and Sub-Centres	11,525	14,571	15,977
Mount Gravatt and Sub-Centres	15,504	16,004	15,045
Nundah and Sub-Centres	9,704	9,999	11,135
Paddington and Sub-Centres	10,379	11,265	11,222
Sandgate and Sub-Centres	5,645	5,626	6,129
West End and Sub-Centres	12,412	14,257	16,506
Windsor and Sub-Centres	7,885	9,304	11,992
Woolloongabba and Sub-Centres	14,596	14,289	13,999
Wynnum and Sub-Centres	13,769	16,197	19,054
Total Brisbane Statistical Division	212,129	245,219	260,930

Country	1968-69	1969-70	1970-71
Atherton and Sub-Centres	3,578	3,276	2,956
Ayr and Sub-Centres	8,025	9,116	9,468
Biloela and Sub-Centres	5,949	7,859	6,261
Bowen and Sub-Centres	5,272	4,827	5,421
Bundaberg and Sub-Centres	10,751	10,989	11,363
Cairns and Sub-Centres	14,015	16,706	16,486
Charleville and Sub-Centres	2,969	3,220	2,720
Charters Towers	3,651	3,421	3,274
Chinchilla and Sub-Centres	3,259	2,725	2,652
Dalby and Sub-Centres	3,852	3,599	3,346
Emerald and Sub-Centres	3,695	4,159	6,040
Gayndah and Sub-Centres	4,358	4,627	4,447
Gladstone and Sub-Centres	5,969	6,650	8,222
Goondiwindi and Sub-Centres	4,694	4,750	4,714
Gympie and Sub-Centres	6,782	7,116	7,426
Ingham and Sub-Centres	5,305	6,132	5,743
Innisfail and Sub-Centres	8,865	6,995	6,606
Kingaroy and Sub-Centres	3,785	3,889	4,312
Longreach and Sub-Centres	5,718	7,630	5,740
Mackay and Sub-Centres	17,238	20,536	21,916
Mareeba and Sub-Centres	4,854	5,210	4,828
Maryborough and Sub-Centres	11,107	10,801	11,318
Mount Isa and Sub-Centres	6,793	8,346	9,768
Murgon and Sub-Centres	2,258	2,930	2,609
Nambour and Sub-Centres	6,081	5,379	5,854
Railway Car and Sub-Centres	3,563	4,482	3,975
Rockhampton and Sub-Centres	18,846	18,259	19,068
Roma and Sub-Centres	5,692	5,083	4,939
Southport and Sub-Centres	14,984	16,379	17,570
Toowoomba and Sub-Centres	15,835	16,636	15,392
Townsville and Sub-Centres	24,621	29,387	31,253
Warwick and Sub-Centres	6,793	8,881	8,377
Social Welfare Service	5,443	4,676	4,267
Total Country	254,600	274,671	278,331
Brisbane Statistical Division	212,129	245,219	260,930
Country	254,600	274,671	278,331
GRAND TOTALS	466,729	519,890	539,261

TABLE LIV

DEATHS OF INFANTS UNDER ONE YEAR OF AGE FROM CONGENITAL MALFORMATIONS*

Congenital Malformations	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970
Monstrosity	4	6	10	9	3	8	7	11	12	13
Spina bifida and meningocele ..	16	14	19	13	12	8	18	7	16	8
Congenital hydrocephalus ..	16	15	5	4	9	6	12	7	13	6
Nervous system	5	..	5	5	2	4	1	4	4	6
Circulatory system	77	56	59	66	57	43	55	74	56	58
Cleft palate and harelip	2	1	1	..	..	1	2	1	..	1
Digestive system	11	17	10	18	17	23	14	11	12	11
Genito-urinary system	7	4	7	6	6	7	..	7	1	2
Bone and joint	2	..	4	2	2	2	3	9	8	5
Unspecified	9	17	12	18	15	9	11	19	31	19
Totals	149	130	132	141	123	111	123	150	153	129
Congenital malformations as a percentage of total infant deaths under one year of age	20.3	17.2	18.3	21.0	20.6	18.9	18.1	20.9	22.1	19.2

* Excluding congenital mental deficiency, hernia, mucoviscidosis.

TABLE LV

ACCIDENTAL DEATHS OF CHILDREN (AGED 1 AND UNDER 15 YEARS)

	1965		1966		1967		1968		1969		1970		Total
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	
Traffic Accidents	35	14	20	28	26	22	22	17	27	27	25	15	278
Firearms	5	..	5	..	2	1	2	1	1	2	3	1	23
Drowning	19	4	14	3	10	5	14	10	18	8	23	10	138
Falls	4	1	2	3	1	..	..	..	..	1	2	..	14
Other Accidents	24	12	25	14	22	14	15	9	19	8	17	12	191
	87	31	66	48	61	42	53	37	65	46	70	38	644
Totals	118	..	114	..	103	..	90	..	111	..	108	..	644

Accidental deaths of children in this age group numbered 108 in 1970 compared with 111 in 1969 and an average of 105 in the ten years 1961 to 1970 inclusive. The total deaths of children in this age group from all causes were 303 of which 35.6 per cent. were caused by accident.

MATERNAL MORTALITY COMMITTEE

Maternal deaths during the year numbered eight, equivalent to 0.21 deaths per 1,000 live births. This is the lowest maternal mortality rate ever recorded in Queensland. Of these, two were due to diseases and complications of pregnancy (excluding two cases of abortion) and four to complications of the Puerperium.

The cause of the four deaths due to complications of the Puerperium is:—

Sepsis	1
Phlebitis and Thrombosis	1
Cerebral Haemorrhage	1
Puerperal pulmonary embolus	1

TABLE LVI

MATERNAL MORTALITY RATES FOR EACH STATE AND TERRITORY OF AUSTRALIA FOR THE YEAR 1970

Australia	66	0.26
New South Wales	22	0.25
Victoria	18	0.25
Queensland	8	0.21
South Australia	7	0.31
Western Australia	3	0.14
Tasmania	3	0.37
Northern Territory	5	1.91
Australian Capital Territory	—	—

TABLE LVII

A COMPARISON OF MATERNAL MORTALITY, QUEENSLAND AND AUSTRALIA

Year	Maternal Deaths		Maternal Mortality Rate*	
	Queensland	Australia	Queensland	Australia
1911	98	615	5.77	5.03
1921	108	643	5.31	4.72
1931	108	650	6.06	5.48
1941	92	490	4.28	3.64
1951	35	203	1.18	1.05
1959	21	104	0.59	0.46
1960	24	121	0.68	0.53
1961	28	107	0.76	0.44
1962	23	85	0.64	0.33
1963	9	64	0.25	0.27
1964	10	75	0.29	0.33
1965	10	74	0.30	0.33
1966	13	66	0.40	0.30
1967	9	53	0.26	0.23
1968	11	68	0.31	0.28
1969	8	44	0.22	0.18
1970	8	66	0.21	0.26

* Per 1,000 live births.

TABLE LVIII—PERINATAL DEATHS—CAUSE OF DEATH BY PERIOD OF GESTATION—QUEENSLAND, 1970

Cause of Death	Foetal Deaths												Neonatal Deaths						All Perinatal Deaths					
	Period of Gestation						Period of Gestation						Period of Gestation						Period of Gestation					
	Under 28 Weeks			28 Weeks and Over			Under 28 Weeks			28 Weeks and Over			Under 28 Weeks			28 Weeks and Over			Under 28 Weeks			28 Weeks and Over		
	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.	M.	F.	T.
Chronic circulatory and genito-urinary disease in mother	1	2	3	3	12	29	5	17	14	32	9*	8	3	11	1	1	2	2	10	5	15	13*	7*	20*
Other maternal conditions unrelated to pregnancy	4	2	6	15	15	30	19	17	36	17	4*	12*	5	17*	5	3	8	24	22	16	40	30*	19	49*
Toxaemia of pregnancy	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Maternal ant.- and intra-partum infection	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Difficult labour with abnormality of bones, organs, or tissues of pelvis	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Difficult labour with disproportion	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Difficult labour with malposition of foetus	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Difficult labour with abnormality of forces of labour	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other complications of pregnancy and child-birth	13	12	25	35	25	58	18	26	44	16	12	28	24	67	29	24	51	35	32	26	58	61	50	111
Conditions of placenta	2	1	3	24	25	40	27*	17	44*	1	4	2	5	2	5	14	7	21	28	18	46	32*	19	51*
Conditions of umbilical cord	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Birth injury without mention of cause	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Haemolytic disease of newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Anoxic and hypoxic conditions not elsewhere classified	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other conditions of foetus and newborn	8	1	1	16	15	17	23	26*	49*	18	11	29	20	31	39*	26	19	45	35	28	63	62*	51*	113*
Genital diseases of foetus and newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Infectious diseases of foetus and newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Other diseases of foetus and newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
External causes of injury to newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Totals	39	31	70	154	152	306	197*	183*	382*	57	40	97	228*	135*	363*	96	71	167	382	287	669	490*	368*	858*

* Includes those deaths where period of gestation was unknown (12 Males; 10 Females).

TABLE LIX—PERINATAL DEATHS*—CAUSE OF DEATH BY STATISTICAL DIVISION OF USUAL RESIDENCE OF MOTHER—1970

Cause of Death	Brisbane		Moreton		Maryborough		Downs		Roma		South-Western		Rockhampton		Central-Western		Far-Western		Mackay		Townsville		Cairns		Peninsula		North-Western		Queensland		
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	Males	Females	Total
Chronic circulatory and genito-urinary disease in mother	6	5	2	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	7	20
Other maternal conditions unrelated to pregnancy	9	10	2	3	3	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	30	19	49	
Toxaemia of pregnancy	8	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	28	31	59	
Maternal ant. and intra-partum infection	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	2	3	5	
Difficult labour with abnormality of bones, organs, or tissues of pelvis	3	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	1	9	
Difficult labour with disproportion	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	6
Difficult labour with malposition of foetus	1	3	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	13	20	33	
Difficult labour with abnormality of forces of labour	..	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	8	4	12	
Difficult labour with other and unspecified complications	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	3	3	6	
Other complications of pregnancy and child-birth	29	25	4	3	6	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	61	49	111	
Conditions of placenta	30	14	8	1	4	4	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	65	43	108	
Conditions of umbilical cord	14	9	1	1	1	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	32	19	51	
Birth injury without mention of cause	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..
Haemolytic disease of newborn	2	7	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	6	11	17	
Anoxic and hypoxic conditions not elsewhere classified	28	11	2	3	1	2	3	1	1	2	3	1	1	5	2	1	1	1	1	1	1	1	1	1	1	1	1	57	28	85	
Other conditions of foetus and newborn	122	26	7	4	5	4	2	2	2	2	2	1	6	4	3	3	4	3	3	2	2	2	2	2	2	2	2	62	51	113	
Congenital anomalies	37	31	..	3	7	8	5	2	2	..	..	..	5	3	3	3	4	8	7	3	3	3	3	3	3	3	3	73	64	137	
Infections of foetus and newborn	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	3	7	
Other diseases of foetus and newborn	3	5	2	..	..	..	..	..	..	2	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	13	11	24	
External causes of injury to newborn	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	4	..	4	
Totals	200	155	35	17	29	28	44	25	5	4	9	7	37	23	12	10	1	2	15	8	25	30	44	38	12	8	22	13	490	368	858
Rate for 1,000 Births (Live and Still)	20.5	18.8	16.0	7.3	47.3	24.4	21.2	21.2	16.0	47.3	47.3	24.4	24.4	24.4	33.1	29.4	16.8	29.4	16.8	23.0	33.3	49.6	49.6	49.6	49.6	49.6	49.6	29.6	25.1	20.0	22.6

* Foetuses of not less than 20 weeks' gestation or 400 grammes weight not born alive and children who died within 28 days of birth.

† Including one of unspecified sex.

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Chief Dental Officer: D. PHILLIPS, L.D.Q.

STAFF

The appointment of additional sisters to meet growing school populations resulted in a proportionate increase in the number of children examined. This is particularly noticeable in the metropolitan area where greatest development has taken place, both in numbers of children and increased school accommodation. Whereas one sister had been fully occupied in vision and hearing tests at high schools, this work is shared by all sisters who now visit the high schools within their districts. In some country districts, this system is functioning and will extend to all districts when staff availability meets district needs.

The position of Medical Officer, Townsville, has still not been filled. The Director again carried out the medical examinations of trainees at the Townsville Teachers' Training College. Once more, temporary staff facilitated the early completion of all examinations within ten weeks.

Although the development of psychiatric and anxiety conditions in some trainees caused concern in the previous year, the incidence is even greater during the current period.

All dental districts have been staffed for a considerable part of the current year. This has been reflected in the increased dental work achieved, showing the importance of full staffing in meeting the dental needs of children towards a state of dental fitness.

SCHOOL VISITS

The number of children examined has increased after remaining fairly constant for the past six years. In the metropolitan area, school sisters examined 34,771 children, in the country 56,525, a total of 91,296. In addition, 16,550 metropolitan and 18,776 country children were examined for visual acuity, making an overall total of 126,622. Further examinations in high schools added 11,245, so that altogether 137,867 children were seen. Thus, on an average, each sister was able to see and examine about 4,500 children in the school year of forty-two weeks.

Owing to time lost during leave and the need to increase the services concerned with the on-going needs of teacher trainees, the number of examinations of school children by medical officers was less than usual.

The incidence of heart murmurs notified remained at 0.77 per cent. of children examined.

The early detection of disabilities in children during school medical examinations enables more effective and simple treatment early in the child's school life. This is particularly valid where operative procedures are carried out. It is gratifying to receive the commendation of specialists in some conditions found which, if undetected, could progress to severe proportions and indeed have a serious prognosis.

TABLE LX

DETAILS OF ROUTINE SCHOOL HEALTH SERVICES EXAMINATIONS

	Metro- politan	Country	Total
Children examined fully	34,771	56,525	91,296
Children examined vision only ..	16,550	18,776	35,326
Total number examined	51,321	75,301	126,622
Children examined by Medical Officers	8,365	6,308	14,673
Children examined for colour vision	10,411	18,626	29,037

TABLE LXI

DETAILS OF NOTIFICATIONS

	Metro- politan	Country	Total
Children with defects notified	2,446	3,845	6,291
Defects notified	2,621	4,181	6,802
Defects notified (non-urgent)	102	182	284
Colour vision defects notified	403	654	1,057
Total defects notified	3,126	5,017	8,143
Refractive errors notified	1,085	1,759	2,844
Squints	242	263	505
Other eye defects	178	204	382
Tonsil enlargements	24	94	118
Groin and scrotal swellings	182	343	525
Postural defects	249	158	407
Lower limb defects	35	49	84
Other defects (skin, etc.)	278	829	1,107
Heart murmurs	81	34	115

TABLE LXII

DETAILS OF HIGH SCHOOL EXAMINATIONS

	Metro- politan	Country	Total
Number examined (vision)	8,250	2,995	11,245
Defective vision	266	138	404
Squints	31	1	32
Other eye defects	133	26	159
Number tested audiometer	8,250	2,995	11,245
Hearing loss notified	55	22	77
Colour vision defects notified	10	13	23
Colour vision defects (mild) not notified	34	26	60

It will be seen that 6,291 children showed physical defects which were notified to parents. Disabilities of less urgent nature (284) were notified and 1,057 children showed a marked colour vision defect when tested with Ishihara plates. A further 287 children showed a mild red-green defect which did not warrant notification.

In urban areas served by Hospital Dental Clinics and therefore without school dental services, the sisters looked for obvious dental caries and for orthodontic conditions. In this field, 462 metropolitan and 1,090 country notifications were made with a total of 1,552. These figures only represent a particular group of children with obvious dental conditions.

Visual defects still predominate and were found in 3 per cent. of primary school children examined, while in the high school group, the incidence was 5.3 per cent. Children with severe defective vision and who cannot be helped to any great extent by glasses may require special facilities for learning. During the year, ten such children were referred to the Guidance and Special Education Branch, Education Department, for assessment and consideration for enrolment at Narbethong School for Partially Sighted Children.

Moderate to severe hearing loss was found in 0.8 per cent. of children examined, in both primary and secondary schools. However, at tertiary level (teacher training), the incidence rises to 1.4 per cent. It must be presumed that acoustic trauma becomes a factor in the older children, whether due to association with rifle fire or even the accepted high levels of entertainment noises today. Following complaints of excessive noise in the metalwork sections of technical training, a high school and the Eagle Farm Technical College were visited with Officers of the Division of Industrial Medicine. Noise levels were found to be within the normal safety limits, with one exception which would be adequately covered by the use of ear protectors which give full insulation against noise, yet permit reasonable conversation.

There is cause for continuing concern in the deterioration of posture in children. Although there has been a steady increase in the postural defects notified over the past ten years, the increase since 1969 is much greater and is principally in the Brisbane area. In 1969, 66 postural defects were noti-

fied principally scoliosis, this increased to 123 in 1970 and has more than doubled in the past year (249) and, with the fairly constant number of country referrals, the total number notified was 407.

TABLE LXIII
RESPONSE TO NOTIFICATIONS

	Notification Forms returned	Sought treatment	Nil	Left
Metropolitan ..	2,567	2,118	369	80
Country ..	3,606	3,027	487	92
Total ..	6,173	5,145	856	172

TABLE LXIV
AUDIOMETRY

	Primary Schools		High Schools		Teachers Trainees	Teachers for G.M.O.	Total
	Metropolitan	Country	Metropolitan	Country			
Number tested audiometer ..	35,429	54,435	8,250	2,995	2,403	195	103,707
Number tested whisper ..	355	4,127	..	..	..	..	4,482
Hearing loss notified ..	267	448	55	22	..	..	792
Referred to Commonwealth Acoustic Laboratory ..	..	..	..	..	32	..	32

The response to these notifications has been satisfactory. The variation between the notification forms returned (6,173) and the defects notified (6,802) is due to the May-June notifications not being returned until the next year.

Additional audiometers, loaned by the Commonwealth Acoustic Laboratory, have enabled a greater number of children to be tested. In all districts, the increased numbers

screened gave a total of 103,707, being 12,711 more than in the previous year, while the less satisfactory whisper tests were halved.

Immunisation against diphtheria and tetanus had been carried out in 91 per cent. of Grade 2 children and two-thirds of these received booster injections. Sabin poliomyelitis dosage and smallpox vaccinations followed previous patterns.

TABLE LXV
INOCULATIONS

	Total	Diphtheria	Tetanus	Booster Diphtheria	Booster Tetanus	Polio	Smallpox
Metropolitan ..	11,766	10,870	10,835	8,595	7,790	9,351	3,133
Country ..	17,092	15,428	15,463	10,779	11,271	13,919	5,934
Totals ..	28,858	26,298	26,298	19,374	19,061	23,270	9,067

GENERAL

From country areas, 99 referrals for specialist treatment were made with the assistance of the Bush Children's Health Scheme.

Medical Officers from the Division of Welfare and Guidance, provided two sessions per week at School Health Services, for initial consultations with parents of children with school or behaviour problems. The parents were interviewed and either counselled or advised to attend the Welfare and Guidance Division or their medical adviser, for further assistance.

Of 201 attending, 95 were given appointments with the Welfare and Guidance Division, 48 were referred to private practitioners and 14 to the Guidance and Special Education branch of the Department of Education. There were also 20 direct referrals to the Welfare and Guidance Division, mainly from country districts.

TABLE LXVI

	Metropolitan	Country	Totals
Parents interviewed ..	355	760	1,115
Home visits by Sisters ..	51	123	174
Social Work referrals ..	39	26	65

School Sisters discussed many such problems with parents at the school and on home visits while 65 more serious home problems required the assistance of the Division of Social Work.

SCHOOL DENTAL SERVICES

The retirement and resignation of dental officers during the latter part of this year offset the earlier appointment of two fellowship graduates, which had brought the effective strength of dental staff to twenty officers for a short period of time. This was the first occasion for many years that the full establishment of school dental officers had been recorded. This improved position permitted the appointment of second officers to Rail Dental Clinics, No. 2 and 3, which has resulted in acceleration of the itineraries of these units.

Rail Dental Clinics provide a dental service for children attending schools in the South Western, Central, North Western and Northern Tablelands districts of Queensland. In the thirteen remaining districts, dental officers travel by motor vehicle and use portable equipment.

Oral examinations of "Teachers-in-training" which continue to be undertaken at Teachers' Colleges were programmed in conjunction with College Principals. A team of four dental officers was assigned for this purpose.

The amount of conservation undertaken by dental officers continues at a constant level. Dental treatment was undertaken for 9,985 children during this year. Fillings averaged 2.8 per child whilst the extraction level of permanent teeth of 0.6 with 1.14 for temporary deciduous teeth gave an overall rate of 0.6 extractions per child.

When annual examination and treatment of children becomes a reality, conservation should be less extensive, extraction of permanent teeth progressively reduced, and better dental health more evident.

During the year dental officers visited 429 schools, where 31,952 children presented for oral examination. There are 50,351 pupils in the schools visited by dentists. Reports indicate that 38 per cent. of examinees were classified as having sound mouths; a pleasing feature being that 11 per cent. or 3,826 children showed no evidence of dental decay. The D.M.F. (Diseased, Missing and Filled) rate of 2.52 and the d.f. rate of 2.08 has remained at a level comparable with previous findings. The average numbers of defective permanent teeth per child is 0.98 with 1.14 being recorded for the temporary dentition.

Total operative procedures which numbered 62,886, included 27,972 fillings and 6,038 extractions. The average number of teeth treated per child was 2.7.

The education of child patients and parents to appreciate the importance of good dental health leads to the programme of preventive dentistry. In this field, dental officers advise on oral hygiene, the necessity for regular dental attention, and of benefits derived from fluoridation. Where necessary, officers also undertake topical application of fluoride solutions as a prophylactic procedure. Individual instruction in the preventive programme is supplemented with the use of dental health education pamphlets.

TABLE LXVII

ANALYSIS OF INCIDENCE OF DENTAL DEFECTS

Number of children examined, 31,952

	Diseased	Missing	Filled	Total Average per Child
D.M.F.	31,399	4,743	45,465	..
Average per child	0.98	0.14	1.4	2.52
d.f.	36,443	..	30,177	..
Average per child	1.14	..	0.94	2.08
Total				4.60

TABLE LXVIII

DETAILS OF DENTAL EXAMINATIONS

Number of children examined	31,952
Number of children under regular dental care—	
(a) Clinic	1,248
(b) School Dental Officer	10,081
(c) Private Dentist	14,762
Number with sound mouths—	
(a) Natural	3,826
(b) Operatively restored	8,910
Carious teeth saveable (permanent)	29,346
Carious teeth unsavable (permanent)	2,053
Temporary teeth carious	36,443
Permanent teeth lost or extracted	4,743
Six-year molars extracted	4,142
Permanent teeth filled	45,465
Temporary teeth filled	30,177

TABLE LXIX—DENTAL TREATMENTS

Number of schools visited	429
Number of children examined	31,952
Number of children treated	9,985
Number of permanent extractions	734
Number of temporary extractions	5,304
Number of fillings	29,380
Number of teeth treated	27,495
Number of operations	62,886

TEACHERS-IN-TRAINING

This year, to the numbers of teachers-in-training examined from the four Colleges, were added those attending the Queensland Institute of Technology, the Conservatorium of Music, those doing the Physical Education Course at the University, the 4-year Fellowship holders at the University and the Diploma of Education students. The total number examined was 2,368.

Plans are already under way to include next year, the several hundred more who will be enrolled as teachers-in-training at the Rockhampton Q.I.T. and the Toowoomba Q.I.T.

Thus there will be ensured a standard of medical, emotional and social fitness for the teaching profession throughout the State of Queensland carried out by School Health Services, in line with the practice in Southern States.

The screening of applicants' cards was again undertaken with the approval and assistance of the Department of Education and 134 students were investigated immediately after the Senior examination. Of these 26 were found to be unsuitable for the teaching profession. Early decisions and recommendations like these enable the students to seek admission to another vocation. Table LXX shows the conditions investigated.

TABLE LXX

PRELIMINARY INVESTIGATION OF APPLICANTS FOR SCHOLARSHIPS

History	Females	Males	Total	Failed
Chest condition	5	5	10	1
C.N.S. disability	3	3	6	3
Hearing loss	14	20	34	16
Heart condition	7	4	11	..
Orthopaedic condition	20	13	33	1
Psychological disorder	8	2	10	2
Speech defect	1	14	15	2
Kidney disease	1	4	5	..
Miscellaneous	8	7	15	1
Total	67	72	139	26

Of a total of 134 investigations, there were 139 defects and 26 applicants were failed outright. The "miscellaneous" condition which caused rejection was a type of dwarfism.

The co-operation of the Principals of the High Schools continues, not only when the sisters visit the schools to test vision and hearing, but also in having a greater awareness of the need to note on the applicants' cards speech defects, personality and character disorders which were often not mentioned in previous years.

The success last year in employing an extra medical team to help with the large intake at the beginning of the academic year was repeated this year, and most examinations were completed by 30th March, although a few are still outstanding.

Of the 2,368 students examined, 28 were found to be medically unfit. The reasons being as follows: Hearing loss 12, psychiatric disorder 12, keratoconus 1, severe orthopaedic defects 3.

Table LXXI details the type and incidence of all defects found at the entrance examination.

TABLE LXXI

TYPE AND INCIDENCE OF DEFECTS FOUND AMONG TEACHER TRAINEES

Condition	Number Referred	Mild Cases Not Referred	Incidence Total
Anaemia	23	..	23
Chest conditions	4	88	92
C.N.S. defects	2	..	2
Defective vision	39	370	409
Defective vision reports	377	..	377
E.N.T. conditions	16	49	65
Genito-urinary conditions	17	40	57
Hearing loss	32	5	37
Hernia, &c.	4	..	4
Heart murmur	39	63	102
Hypertension	4	..	4
Obesity	158	..	158
Orthopaedic defects	40	335	375
Pigmented moles	6	84	90
Psychological problems	34	74	108
Skin conditions	28	373	401
Speech defects	13	17	30
Underweight	41	..	41
Miscellaneous	7	..	7

A large number of students were referred to specialists and 444 certificates are still being held pending investigation or treatment or both. At the end of the year, at least 29 students had not been medically examined, despite repeated requests from this Department and instruction from the Department of Education.

The total number of conditions referred for investigation or treatment was 507 (the defective vision reports are omitted from this sum) and this represents 21.4 per cent. of those examined.

The most common condition found was obesity, 6.7 per cent. of those examined were deferred for a period to try to lose weight. This figure has increased steadily over the past few years yet the standards employed are exactly the same. In 1969, 2.4 per cent. were noted and 5 per cent. last year. This increase in the incidence of obesity has been noted throughout the world in all age groups. Various studies suggest that it begins during childhood and rarely in adolescence. Most frequently it is a reflection of previous dietary habits combined with psychological and physiological effects. Further study into this problem is proposed.

The incidence of orthopaedic defects is apparently increasing, with 40 students (1.7 per cent.) referred for attention this year (28, 1.2 per cent. last year). The reason for this is not clear, although this has been documented in the primary school report. The most common orthopaedic condition found was scoliosis. Fortunately in this age group, growth has been completed and the scoliosis is not likely to worsen. The curvature in the spine does not prevent full participation in the Physical Education programme.

The total number of orthopaedic defects found this year is less than last year as a more conservative approach was adopted in noting minor deviations from normal.

The incidence of unknown visual defects has decreased markedly, only 1.7 per cent being notified this year, compared with 3.3 per cent. last year. Hence the extension of the School Sisters routine testing into the High School is of the utmost value in early detection of refractive errors.

While hearing loss continues to be one of the most common causes for rejection, only 1.4 per cent. of those examined were investigated by the Commonwealth Acoustic Laboratory and then considered by the Hearing Standards Board. Those failed constituted 0.05 per cent.

The number referred for psychological assessment at the initial interview totalled 1.4 per cent., but a further 3.2 per cent. were noted for review at a later date.

Mention must be made of the increased number of students who are referred for investigation of dysphonia. Naturally the detection of this condition is of great importance in those training to become teachers. At the initial examination, four were referred to E.N.T. surgeons for laryngoscopy and others were referred during the review clinics, mentioned later.

Oral examination of teacher-in-training reveals that the standard of dental health is very satisfactory. The majority who presented for examination have been receiving regular dental attention. This is indicated by the level of 57 per cent. sound mouths. Of the total number examined 0.02 per cent. were referred for immediate dental attention. Good oral hygiene was evident.

Regular clinics were held for students to be reviewed and for those who wished to consult one of the medical officers. The number examined at these clinics was 547.

Students were reviewed for a variety of reasons, some as mentioned earlier because there was a weight problem, others because there was a doubt about the mental health of the student, some because they became dysphonic after a period of teaching practice, etc. Many came for advice about personal problems.

Last year, it was reported that investigations were being carried out to try to find a method of psychologically screening the trainees early in their training to overcome the unpleasantness of having to fail students after they were advanced in the course. No simple pencil and paper method has been found, so the liaison this Department has with the Teachers' Colleges, the University of Queensland, the Q.I.T. and the Conservatorium of Music has been more highly developed now so that any student who exhibits unusual behaviour patterns, whether it be frequent absenteeism or is causing concern for any reason is referred for assessment by one of the medical officers.

As a result of this, 46 more students were referred for psychological assessment at the Psychiatry Clinic. The main causes for referral were personality problems, and at present of all those referred this year (i.e. 80), 43 are under therapeutic trial.

This Department has also been responsible for the endorsement of approximately 425 medical certificates from country Government Medical Officers who examine teachers seeking appointment after marriage or on entry to the State. School Sisters in the country districts assisted with audiometric examinations for these teachers. In the Brisbane metropolitan area, the Government Medical Officer referred 195 to this Department for audiograms.

As has been pointed out, the co-operation between the Department of Education and this Department is very high, essentially due to the excellent support given by the Board of Teacher Education, the Principals of the various colleges, and the almost daily help given by the Deans of Women.

DIVISION OF PSYCHIATRIC SERVICES

- Director of Psychiatric Services: G. S. URQUHART, M.B., B.S. (Qld), M.A.N.Z.C.P., D.P.M. (Melb.)
 Deputy Director: N. CONNELL, M.R.C.S., L.R.C.P., M.A.N.Z.C.P., D.P.M.
 Medical Superintendent Wolston Park Hospital: O. E. ORFORD, M.B., B.S. (Qld), M.A.N.Z.C.P., D.P.M.
 Medical Superintendent, Baillie Henderson Hospital: M. H. L. DE GROOT, M.R.C.S., L.R.C.P., M.B., B.S., M.A.N.Z.C.P., D.P.M.
 Medical Superintendent, Challinor Centre: G. B. McCUTCHEON, M.B., Ch.B. (Aberdeen)
 Psychiatrist-in-Charge, Psychiatric Clinic: I. W. W. CHARLES, M.B., B.S. (Melb.), M.A.N.Z.C.P., D.P.M. (Melb.)
 Visiting Psychiatrist, Mosman Hall: IAN ATKINSON, M.B., B.S. (Melb.), D.P.M. (Melb.), M.A.N.Z.C.P.
 Administration Officer: W. L. MULLINS.

Certain aspects of the Division have been the subject of an inordinate amount of publicity. Because much attention has focussed on certain hospitals the activities of the Division within the community are apt to be overlooked. For this reason the first part of this report is devoted to the extensive activities being undertaken outside the confines of hospitals.

COMMUNITY SERVICES AND MENTAL HEALTH CONSULTATION

The term mental illness is regarded by many people in the community as being applied to certain severe and chronic illnesses necessitating admission to and treatment in mental hospitals. To a smaller number of people the term carries with it a certain hopelessness and fear. So often then we hear euphemisms such as "emotional disorder", "nervous breakdown" used to describe what is loosely and sometimes falsely thought to be less incapacitating forms of psychiatric disorder.

Modern methods of treatment provide a radical cure for some of the illnesses previously categorised as severe and chronic. In some other such illnesses treatment is now able to ameliorate symptoms and allow the patient to adjust satisfactorily to community living. Paradoxically many of what were previously regarded as less severe "emotional disturbances" are now responsible for a great deal of incapacity and much unhappiness and family distress. Such illnesses sometimes result from stresses beyond the person's capacity to bear. Very often the stress can be resolved by the intervention of a well-informed, well-intentioned and capable person.

This aspect of preventive psychiatry is very important in the field of mental health and this Division is developing specific services to meet community needs. Referral to and treatment by psychiatrists and other professional workers is important but is by no means the whole solution now or in the future. Such professional services are not always required and in some cases would not be the most effective agent for their resolution of the stress. The services that are of crucial benefit are—

- (1) professional officers should be available in a consultative capacity to the agency; and
- (2) the community should foster the development of groups of well-informed, well-intentioned capable persons.

During the last year this Division has been very active in these fields due largely to the work of the consultant social psychiatrist, Dr. F. Bryant. A regular consultation service at the Health and Welfare Building is provided every second week to social workers of various organisations. Consultation is provided for staff of the Division of Geriatrics and Community Home Care Programme in the form of telephone consultations and attending staff group meetings, particularly at the South Brisbane Centre, but also at the North Brisbane and other Centres. Other organisations that have availed themselves of consultative services include the Queensland Marriage Guidance Council, Brisbane and Toowoomba Centres; Life Line at Surfers Paradise; Community House, Inala; the Indooroopilly Community Counselling Service; Toowoomba Community Service Association; Nambour Christian Community Counselling Service; St. Vincent de Paul Society; The Australian Council for Social Services; the Queensland Council for Social Services; the Queensland Branch of the Institute of Human Relations; Speld, Toowoomba and the Clergy Doctor Group.

The Cabarlah Vietnam Wives' Association has received consultation on preventive intervention for the emotional problems which arise for the wives and families of servicemen who are overseas.

Patient centred consultation is being provided for a Lutheran Hostel at Nambour, Rangehaven Home, Toowoomba, the projects of the After-care and Rehabilitation Services of the Methodist Church, the W. R. Black Home, the Brookfield Friary and Morris House.

An important aspect of preventive mental health services is the provision of community information services. These ensure that existing organisations can be utilised more effectively. This has involved supporting the Surfers Paradise Life Line, and Community House, Inala, to offer a general community information service. In Toowoomba a Community Services Association was formed by representatives of various service groups. This organisation is at present developing a community information bureau. There are eighteen candidates undertaking the course for community information-giving. Support has been given to the establishment of Drug Contact in Brisbane. Other communities have been encouraged in exploratory moves towards developing community information services and include Ipswich, Mackay, Mount Isa, Nambour and the Brisbane City area.

Officers of this Division have participated in various programmes of education of both professional workers and voluntary agencies. These include post-graduate and undergraduate medical students, the clergy, theological students, psychology and social work students, non-commissioned police officers, nurses and student nurses of special hospitals and some public general hospitals, St. Vincent de Paul Societies, the Lutheran Church Men's Society and many of the organisations mentioned above. The Education Committee of the Queensland Mental Health Federation has been supported in their educational programmes being designed for voluntary helpers, administrators of voluntary organisations, and staff of information bureaux and counselling services. Through the Federation it is hoped that other organisations will be provided with a standard for teaching and service. Through the Council for Social Services the first programme for hospital volunteers is under way at the Royal Brisbane Hospital.

PSYCHIATRIC CLINIC—30 MARY STREET

There is no single aspect within the 1970-71 analysis that does not emphatically confirm increased services. The 26.7 per cent. additional new patients, as well as a 20 per cent. overall increase in patients attending, provides reassurance of the demand for the type of outpatient psychiatric services available at the Clinic as well as a confident feeling that public acceptance still runs high. However, this is to be balanced against the fact that Wolston Park Hospital has assumed regional responsibility for Ipswich and the conduct of the outpatients' service at the Ipswich General Hospital. Although these services were started by Dr. G. Waga from Wolston Park Hospital and further developed by Dr. Halwax a much warranted expansion of the service occurred when the responsibility for the Ipswich Clinic was taken over by Dr. John Roper who at that time was a full-time psychiatrist at the Psychiatric Clinic. Now the responsibility of the service has been re-assumed by the hospital and the Psychiatric Clinic relieved. The diminution of professional contact between the hospital and the Clinic is regretted but it appears more important at this stage for the Clinic to develop the specialist services such as school health, referrals, forensic work and community psychiatry.

The increased clinical activity means an increase in the work load in the dispensary and in the clerical administration.

Accommodation is certainly at a premium and it is only by tight programming of visiting staff that sufficient rooms are available for the interviewing of clients. Night clinics have reached saturation. Owing to recent pressures it has been necessary to place new patients on a waiting list, although the Clinic policy has always been to accommodate new patients on an urgency basis. Night clinics are held on two nights of the week, speech therapy on two nights but the limitation on the expansion of these services is the extent of welfare officer staffing.

Perhaps the most significant feature of the development of the Clinic has been the gradual proportional reduction of aftercare responsibilities of Wolston Park Hospital. This is reflected in the reduced participation by full time staff of Wolston Park Hospital. However, this is to be balanced against the group work which is playing an important role in the Psychiatric Clinic and at the present time a psychiatrist, psychologist and two social workers are conducting group therapy sessions for selected patients. The development of this kind of specialist service is seen as important in the view of the Clinic.

Consideration must be given to the nature of this service which is both literally and figuratively bursting at its seams but cognizance has to be taken of the development of regional services within the metropolitan area and whether such services should develop as out-growths of the Psychiatric Clinic or independently related only to the Central Clinic for specialist services and highly developed techniques.

THE CENTRAL ASSESSMENT CLINIC

During the first full year of operation of the Central Assessment Clinic for the Intellectually Handicapped as the focal point of referral for infants, children and adults for admission to Government training centres for the intellectually handicapped, there has been a steady increase in both the number of referrals and the sources from which referrals have been received. Community agencies and private practitioners have become aware of the Clinic's existence and also of the lengthy nature of waiting lists for admission to the training centres. This has resulted in referrals tending to become somewhat less specific with regard to the type of assistance requested and more reliant upon the Clinic's assessment of the situation. Referrals have also begun to be made at an earlier point in time, thus enabling the Clinic staff to institute counselling and to offer relief assistance in many cases before a crisis situation has developed. At the same time a majority of referrals during 1970-71 have involved family crises in some form and have required immediate action.

Thus, while the primary function of the Clinic has remained the assessment of intellectually handicapped individuals and the allocation of priorities for admission to residential centres, it has become increasingly necessary for the Clinic to extend the scope of its activity to include emergency-relief services and co-operation with community agencies to provide—

- (a) Effective means of crisis intervention;
- (b) Assistance to minimize stress during the inevitable waiting period for those individuals assessed as needing admission to long-term residential care, and
- (c) Assistance to facilitate management within the community in cases where long-term residential care was not considered appropriate.

Assistance with community management has been regarded as a proper function of the Clinic since it has acted as a preventative measure against the inappropriate placement, in co-operation with community agencies. The Clinic has further been required to become involved in community development and education in its unique position as a link between community care placement facilities.

Priority for admission to long-term residential care has been based upon considerations of relative need, rather than on chronological position on a waiting list. Furthermore, the existence of intellectual handicap alone has not been regarded as sufficient justification for admission to residential care but the primary intellectual handicap must be accompanied by an additional problem which is so severe that it prevents the maintenance of the intellectually handicapped individual within the family or community setting. Such a problem may be inherent in the severity of either the intellectual handicap or an associated physical handicap, or may be of a social or emotional nature.

The Central Assessment Clinic was temporarily accommodated at 30 Mary Street, Brisbane, but it is envisaged that it will occupy new premises at 50-60 Albert Street, Brisbane, from the latter part of 1971, thus enabling staff to offer more comprehensive services with the additional assessment

facilities provided. The Clinic functions under the medical supervision of the Director of Psychiatric Services and full-time staff comprise Psychologist: Miss R. N. Shepherd and Social Worker: Mrs. J. Condos. In addition, there is access through the Clinic to the services of part-time Speech, Occupational and Physiotherapists.

It has been considered advisable that the general medical care of an intellectually handicapped individual living in the community remain the responsibility of the same General Practitioner or Hospital Clinic caring for other members of the family, since it is naturally to such a service that the family makes application in the event of sudden illness or medical emergency. For this reason, it is essential that General Practitioners and Hospital staff be made aware of the existence and functions of the Central Assessment Clinic and similarly the Clinic has endeavoured to establish liaison with appropriate medical practitioners.

In most cases, referrals to the Clinic have been accompanied by details of previous medical investigations, which has assisted Clinic staff to assess and plan effectively for the future welfare of the retarded individual. However, where full medical investigations have not been able to be carried out because of difficulties in geographical location, the Clinic has been fortunate in having the co-operation of the Department of Child Health to which children from country areas may be admitted for combined assessment by the Department's medical staff and Clinic staff. In certain cases, the need for specialist medical services within the Clinic itself has become apparent, and it is hoped that a Specialist Paediatrician will be appointed as a member of the Clinic team.

The need for an increase in the number of present full-time Clinic staff has been highlighted by the pressures of the increasing case-load, and it is also hoped to appoint an additional full-time Social Worker.

The total case-load carried by the Central Assessment Clinic during the period 1st July, 1970, to 30th June, 1971, was 493. This total was composed as follows:—

(a) Infants (under 5 years)	123
(b) Children (5-16 years)	195
(c) Adults (over 16 years)	175
Total	493

Of the total number, 159 active cases were continued from the first four months of the Clinic's operation following its establishment in March 1970, and included the then current waiting lists for admission to Government Centres. A further 334 new referrals have been received by the Clinic over the past twelve months.

Requests at initial referral may be summarised as follows:—

A. INFANTS (under 5 years)—	Per cent.
(a) Request Permanent Placement	78
(b) Request Relief Placement	8
(c) Request Assessment and Assistance	14
(d) Request Inter-Centre transfers	nil
B. CHILDREN (5-16 years)—	
(a) Request Permanent Placement	41
(b) Request Relief Placement	30
(c) Request Assessment and Assistance	21
(d) Request Inter-Centre transfers	8
C. ADULTS (over 16 years)—	
(a) Request Permanent Placement	49
(b) Request Relief Placement	11
(c) Request Assessment and Assistance	24
(d) Request Inter-Centre transfers	16

In each age grouping, the most frequent request on referral was for permanent placement. This was especially marked in the case of infants, of which the Downs Syndrome infant is a classic example where parents were found to be acutely distressed and confused concerning their expectations of the infant's developmental potential, the nature and degree of care likely to be required, the needs of the infant, and existing community facilities and avenues of assistance available to them. This may be minimized by referral to the Clinic as soon as the condition becomes apparent. Parent counselling and practical assistance in the form of timely relief admissions and advice on home management have been found to be effective in maintaining infants within their own home environment with minimal family stress. The availability of short-term relief placements for young children at W. R. Black Home for Handicapped Children, Chelmer, has been of invaluable assistance in crisis prevention and intervention.

The past twelve months has also seen the creation of a Domiciliary Management Programme involving the whole Clinic team and in particular the services of part-time Occupational and Physiotherapists. This Programme has proved successful in facilitating the acceptance of intellectually handicapped children, and, in a few cases, adults, within their own home environments by advising the parent in techniques of physical management and the development of individual stimulation programmes so as to encourage maximum development and to prevent or minimize physical or behavioural deterioration. It is hoped that this Programme will be able to be extended, to meet the need for such a service apparent among many parents seen at the Clinic.

Applications for the admission of adults to residential care have largely been precipitated by incapacity or death of elderly parents. Liaison has therefore been established with some convalescent homes in the community since it has been felt in many cases that placement in a nursing home of an intellectually handicapped adult used to living at home would be more appropriate than admission to a larger Training Centre for adults. However, requests for placement of an adolescent or young adult have frequently been as a result of behavioural problems. It has been apparent that such problems are largely due to a family's lack of understanding of the needs of the intellectually handicapped young adult, and expectations have been found to be either too high or too low. Intensive casework with the aim of improving relations between the individual and his family has been successfully carried out in a number of cases, thus alleviating the need for placement. However, in view of the number of referrals and the complexity of presenting problems, the Clinic staff have found it necessary to become selective in involvement in casework, necessarily limiting counselling and therapy to cases in which the need was greatest and where such assistance was assessed as the primary need.

The establishment by the Methodist Church of Compassion Industries during this period has greatly assisted in the adjustment of mildly and moderately retarded young adults to normal community life by the provision of vocational training within a sheltered workshop environment.

An important function of the Clinic has been the co-ordination of inter-Centre direct transfers and exchange transfers, involving residents of Basil Stafford and Challinor Centres, the Treatment Centre for Handicapped Children, Chermide, and Baillie Henderson and Wolston Park Hospitals. This has been effective in re-allocating individuals to Centres where care and training appropriate to their needs were available. It has similarly been possible to arrange the transfer of several children from Chermide Centre to the Spastic Centre Hostel. The Clinic has also recently co-operated with staff at Basil Stafford Training Centre in the re-establishment in the community of mildly and moderately retarded children assessed as no longer in need of residential care and training.

During 1970-71, Clinic staff have been involved in lecturing to University students in several disciplines. Six students have been placed at the Clinic for practical experience and a further three students are engaged in preparing theses related to the work of the Clinic.

An essential function of the Central Assessment Clinic which runs through its various activities is the narrowing of the gap which formerly existed between the home and the residential centre and the establishing of a balance between the respective contributions which each can make to the care and training of the intellectually handicapped individual.

REGIONAL SERVICE—NORTH QUEENSLAND

The regional service commenced in September 1969, has been expanded by the appointment of a social worker, psychologist and occupational therapist. A secretary to this team has also been appointed. The unit is based on accommodation provided by the Townsville Hospitals Board. Services have been developed particularly in relation to the Prison, University, the Courts and to voluntary agencies. The unit is playing a major role in the upgrading of Clinical facilities at Mosman Hall.

Dr. Halwax resigned in January 1971. Dr. B. Blicharski relieved for six weeks since when Dr. Ian Atkinson has provided supervision on a sessional basis.

CENTRAL OFFICE

A very real need within the Division was filled this year by the appointment of Mrs. C. Schonfeld, Psychologist, whose functions are broadly those of statistician, research methodologist and epidemiologist. Whilst this load is more than any one person can carry indefinitely it is essential that

the groundwork for future development be properly and firmly laid. Mrs. Schonfeld has made in a relatively short time an admirable start in this direction. It will not be too long before the Division begins to move into line with its counterparts in other States in these areas producing facts and figures so necessary for its most efficient functioning.

It is with regret that we record the deaths of two Official Visitors during this year. Mr. Dan Kearney, Official Visitor to the Baillie Henderson Hospital had taken an active interest in patient welfare and in hospital development in that area for many years and had brought objectivity and sound judgment to the functioning of the service as a whole. Dr. S. A. McDonnell's death robbed us of the services of a clear thinking humanitarian who for many years as Divisional Chairman of the Queensland Branch of the Red Cross Society had shown his intense interest in the disadvantaged person in the community. Dr. McDonnell has been replaced by Dr. Robert Miller, a highly respected general practitioner and member of the Council of the A.M.A. Mr. Kearney's place has been taken by Toowoomba Magistrate, Mr. V. L. Bartlett.

PSYCHIATRIC HOSPITALS

Wolston Park Hospital, Wacol

The year 1970-71 has made more evident the on-going programme of renovation and construction of buildings.

Ellerton House, a new patients' accommodation complex of four 35-bedded units was opened on 6th December, 1970, by the Hon. S. D. Tooth, Minister for Health, and replaces the old outdated Female Ward 12. This complex is occupied by male and female patients who are supervised by male and female nursing staff under the control of a Male Nurse in Charge. Moves towards such integration have occurred over the last few years but this was the most advanced one of them all. Ellerton House has four dormitory accommodation areas—two male and two female—and is divided functionally into a short stay convalescent section and a longer stay rehabilitation section which is geared to the work assessment, work retraining, industrial therapy, domestic and social retraining areas which are endeavouring to prepare long stay patients for placement in hostels and outside employment.

Noble House became the Admission Centre in January. This centre of four wards is open and day-time observation is carried out mainly by "Programme Nurses" who are responsible for the daily activities of the patients. These nurses take "groups" and liaise with psychologists and social workers, occupational therapists, physical education and art therapists to give patients a comprehensive programme. The centre is well appointed and functions very well but poses some problems with that small percentage of severely disturbed who have to be transferred to closed wards for their own benefit.

The new main kitchen and the large central dining area with the clinical block, E.E.G. Department and Nurse Training School beneath is well advanced and should be occupied at an early date. The estimated cost is \$845,000.

Male Ward 11, a large and overcrowded ward was vacated in January and renovations and additions to cost \$390,500 were commenced in February.

The laundrettes for Noble House have been commenced at a cost of about \$10,300.

During the year the old Nurses' Training School was vacated to enable the Pathology Department to expand and the school is now housed in an old residence until the new school is completed adjacent to the new kitchen. A tribute is due to Miss Val Smith, tutor sister, who resigned during the year. Miss Smith was the first and only qualified nurse tutor to have worked in this Division. She joined the staff in 1958 in the midst of a brilliant nursing career. Her survival as a prisoner of war, her high nursing academic achievements and her experience both in Australian and Overseas nursing services made the emphasis she placed on nurse patient relationships a significant factor in the development of the hospital. Mrs. Boyd has been appointed as her successor and three additional nurse educator posts throughout the service have been established.

The hospital is indeed fortunate to welcome back Drs. Nicholas and Judith Cominos who have returned from Great Britain after three years of post-graduate study and experience. Dr. N. Cominos and Dr. J. Wood have been appointed senior psychiatrists. Dr. Wood whose early post-graduate work was done in association with Professor Malcolm Miller of Aberdeen came to us from Uganda where for the last five years he has been the consultant psychiatrist to that State under the aegis of the British Overseas Medical Development Committee.

The hospital has had a full complement of medical staff—eight psychiatrists and eight other medical officers. Unfortunately Dr. Kariks, the specialist pathologist, resigned in May. The medical staff, together with an increased establishment of psychologists, social workers, occupational therapists, physiotherapists and recreation officers has enabled the hospital to develop more programmes and increase clinical activities. *Pari passu* with this was the division of the hospital into 4 clinical units, headed by the senior psychiatrists. These units have now developed to the stage where nursing staff are being allocated to units rather than the whole hospital so that they may become a very essential part of each clinical "team". Trainee nurses are being attached to units according to the needs of their training year.

A measure of the professional competence, industry and intense interest of the medical and paramedical staff is the production of a fortnightly professional magazine called "Scope". This production is the result of the work of Miss Helga Zimmerman and Mr. David Illingworth, two of the psychologists. It has created a stimulus for all staff to become better informed on clinical matters.

The large overcrowded wards are becoming fewer and where they still exist programmes are being developed which are based on the "Activities of Daily Living" so that patients are cared for by, and are able to relate to, individual members of the nursing staff and thus are not lost in the multitude to be dehumanised or institutionalised.

The sporting facilities for patients are being used to advantage. The picturesque recreation ground on the Brisbane River is the venue each Saturday for picnics and sports. Outside teams willingly provide demonstrations of soccer, tennis, netball, etc. The Bowling Greens are in daily use by patients while there is a weekly Golf competition available to those who play or are learning to play golf.

The establishment of work assessment and work retraining areas and a central hospital employment agency has taken place during the year to enable patients to be placed in suitable work areas, assessed there, and upgraded where possible to other work areas to prepare them for similar employment in the community.

Industrial therapy has continued as a department within the hospital but should move out into the community workshop at Inala in August 1971. This has been built at a cost of \$100,000 by Industrial Therapy Limits Ltd.—a limited company initiated by Rotary Club of Rocklea. Suitable patients will go to work daily from the hospital and some will graduate to open employment from there.

A domestic and social retraining area has been established to prepare those long stay patients who are suitable for community or hostel accommodation and the social situations they will encounter outside of a hospital such as this. This innovation was considered necessary in anticipation of the opening of more hostels in the community in the near future.

The hospital has admitted almost 1,200 persons for treatment this year, yet the bed state has not increased. Because of the efforts of the hospital's therapeutic teams the patients actually in residence on 30th June, 1971, number only 3 more than on 30th June, 1970.

Wolston Park Hospital has continued to function as a University Teaching Hospital for medical students and social work and psychology students. These activities are expected to expand in 1972.

The security patients are still within the Wolston Park Hospital but with the opening of their own hospital at Wacol towards the end of this year more relief for ward accommodation will be provided allowing further activity in all spheres in 1971-72.

Baillie Henderson Hospital, Toowoomba

The public acceptance of this hospital has always been good. It has served the regional needs well and indeed voluntary patients outside its region have chosen to be admitted to it in preference to other hospitals.

Two press representatives visited the hospital during the year. They were given approval to make any inquiry or inspection they desired and made a comprehensive and thorough tour of the hospital.

It is pertinent to quote from an article by one of the journalists published some time after that visit. When on a return visit to see in detail the adult rehabilitation school at the Baillie Henderson Hospital, he concluded his article by writing—"It's when one sees these people that understanding dawns on one why the institution is called a special hospital. These are sick folk in need of special care. 'Mad? Not a bit'. They are individuals who have been beset by physical or

emotional disorders. Now they are convalescent, and soon will be discharged. If the community will make room for them in its ranks."

There is nothing more important to the mentally ill or to our society today than the acceptance of the view of mental illness so well expressed in this way. That such an article has been published has been worth all the difficulties of many years.

Baillie Henderson Hospital has played a particular role in the Mental Health Service. It has had several very diverse roles. Unlike Brisbane, Rockhampton, and Townsville, the city of Toowoomba did not have a reception house from which developed the general hospital psychiatric units. Medical staff from Baillie Henderson Hospital have provided an outpatient and a consultant service to inpatients at the general hospital. Effective inpatient services, however, have been the responsibility of the Baillie Henderson Hospital and the high standard of this service can be judged by the high proportion of voluntary admissions and the high discharge rate over many years. It has also provided a follow-up and after-care service at the hospital.

Another very different function of the Baillie Henderson Hospital has been to receive on transfer chronic patients from other hospitals. During the decade 1960 to 1970 Baillie Henderson Hospital admitted 4,109 patients and discharged 4,149. Of the admissions 656 or one in seven were chronic patients from other hospitals. Analysis of the patient population this year showed that one in five of the patients at Baillie Henderson Hospital had been in one of the State's mental hospitals for more than twenty years, and 40 per cent. for more than ten years. Almost half of the present population is constituted by persons who have been transferred to Baillie Henderson Hospital.

This hospital has not profited as greatly as either Wolston Park Hospital or Challinor Centre from the development of specific services for the intellectually handicapped. Rockville Training Centre has been absorbed into the Baillie Henderson Hospital during this present year and although the residents of Rockville have benefited from the skilled help of an increased medical, paramedical and trained nursing staff the difficulties of administration of the Baillie Henderson Hospital have been increased.

At the beginning of this year more than 40 per cent. of the patients were intellectually handicapped. Forward plans have been laid for the division of Baillie Henderson Hospital into two separate institutions but a greater flexibility of accommodation will be required. To this end three new 40-bed units have been planned and construction should commence at an early date.

Other factors are playing an important role in the changing nature of Baillie Henderson Hospital. Transfers are no longer based on the needs of the other hospitals. Resocialisation programmes have upgraded many patients to what Mr. Marney describes as convalescent. Both these factors will further reduce the patient population.

At the same time accommodation is being upgraded. B. Ward is being totally renovated. Additional bathroom and toilet facilities are progressively being installed. Much external painting of wards and other buildings has been done and floor coverings provided in most wards. Work has progressed satisfactorily in the heating of wards.

Alternative accommodation has been provided for the occupational therapist so that the demolition of F3 can proceed and construction of the new kitchen and clinical block can commence.

Four recreational officers have been appointed. An additional social worker and a fully trained teacher have also been added to the paramedical staff. Dr. J. Hede and Dr. J. Bryant have both been appointed to the visiting staff of the Toowoomba General Hospital.

An organ recital was arranged in September by the Toowoomba Chamber Music Society. The organist was Robert Boughen and Edward Talbot, baritone, also appeared. The concert was well attended. A large number of clergy attended the Seminar for Clergy arranged at the hospital and this provided a very stimulating two days. The Queensland Branch of the College of Psychiatrists held a scientific meeting at the hospital. Another important public function at the hospital was the Nurses' Graduation which was well attended and regarded by all as a very successful evening.

Mosman Hall, Charters Towers

This hospital has benefited greatly from the regional psychiatric team from Townsville. The visiting psychiatrist has been supported by a psychologist, social worker and occupational therapist. For the first time this nursing staff has had the opportunity to work together with paramedical services in Charters Towers.

As a result of a psychiatric assessment of each patient wards have been assigned specific goals. Fraser Ward was fully opened by occupation of the western wing which until now had not been used for patient accommodation. This unit is completely open and the patients have free access to the community. Residents are now in receipt of social service benefits. This has meant a tremendous uplift in the conduct and mode of living for those in Fraser Ward. The impact of the ability to purchase items for personal use has been felt throughout the whole hospital. It is gratifying to receive complimentary reports from retailers following shopping expeditions to the city of Charters Towers.

Gill Ward has been vacated and has become an activities centre. Macrossan Ward is presently the admission ward, Dalrymple a resocialisation unit and Clarke a nursing unit.

This year has seen much increased clinical activity. Admissions rose from 77 in 1969-70 to 127 in 1970-71. Despite this increase the average number daily resident has fallen to 218 illustrating a shorter length of stay for recently admitted patients.

The community participation in hospital activities is quite an outstanding feature of Mosman Hall. The Managing Secretary and the Chief Male Nurse and his wife, Mrs. Josey are responsible for a continuing programme of activities provided by citizens on a voluntary basis. Although the response of the patients to these visits may be sufficient reward to the visitors the Department wishes to record its appreciation of all those who give generously of their time and of themselves in these visits.

This hospital has now reached the stage where refurbishing of some wards is required. The buildings are in good condition but internal painting of some sections is necessary. Expansion of patient activities, especially in view of the development of a department under the supervision of a trained occupational therapist is also a priority need.

Having benefited from a wet season not experienced for many years the grounds surrounding the hospital buildings, and the ovals are most picturesque and make a fine setting for a hospital now clinically active and providing an increasing service in the northern region.

TRAINING CENTRES

Challinor, Ipswich

A year which might well be summarised by one word, "Identity".

Staff members have progressively developed awareness of the present and future role of the Centre, whilst the community has recognised and has demanded its right to be shown how to help. Almost every week one or more members of staff were called upon to lecture to various bodies, and few days passed without members of such bodies visiting the Centre.

The proudest achievement of the staff has been the placement in sheltered employment of 28 female and male residents. This is equalled only by the pride of the residents themselves who go to work in the community.

In collaboration with community groups, plans have been formulated to provide outside hostel accommodation. The first hostel will be completed and occupied before the end of 1971. Within the Centre there has been an expansion of simulated workshop and hostel accommodation. Grace House has become a hostel for 24 male residents of whom 16 commute daily to sheltered employment. Nursing staff have adopted the important role of house parents. The Karrala Houses are shortly to be resumed by the Division of Psychiatric Services and structurally are ready made hostels. One building will be used as a hostel for 16 female residents and the other building will be an integrated unit to admit people for short periods of stay for assessment and/or relief placements.

The New Ward Complex, costing over one million dollars, is well under way. All ground work has been completed and buildings are beginning to take shape. It is due to be opened early in 1972.

Perhaps the most important feature of the functioning of this Centre is the highly developed organisational programmes for residents. The system of dividing wards into functional units and the detailed, complex and comprehensive programming of each unit has led to the development of managerial skills in medical, paramedical and nursing staff. These skills are reflected in increased efficiency in the deployment of staff and the utilisation of resources. All these programmes are supervised and a pleasing result of this good

clinical management has been the production of excellent reports by each paramedical discipline detailing the achievements and the failures, and an analysis of how or why progress is or is not being made. It is difficult for anyone not closely associated with the development of this Centre to appreciate the very real progress made or the enormous difficulties experienced by the staff in creating what is virtually a new world for residents who previously would have become and induced to become pathologically dependent on the institution.

The first holiday placement of children took place this year with such measurable benefit that the whole question of holidays for children and adults must rate high priority in future planning.

Gratitude to Wolston Park Hospital must be recorded for the co-operation and help received, particularly with regard to student nurse training.

Basil Stafford, Wacol

The emphasis at the Centre during 1970-71 has been on returning those children and young adults who were considered suitable back to the community.

Many children are now living at home again attending either Opportunity or Subnormal Association Schools.

This was not an eviction of those who required further care but a graduation of those who had improved while under care and training at the Centre. Their places are being filled by others who can benefit in the same way. The Nursing Staff, Special Teachers, Social Workers and Psychologists who prepared these children for this move towards the community are to be congratulated.

For many who left, a pre-vocational plan for training children for possible sheltered workshop employment has been devised and is now being introduced.

In T.C.B. a covered play area has been markedly enlarged by the erection of awnings, while in T.C.A.1 and T.C.A.2 additional indoor recreational space has been provided.

The swimming pool is now under construction. The funds for this were raised by the Queensland Mental Welfare Association assisted by the Mentally Retarded Children's Younger Set, the Parents' and Friends' Association and the Mental Health Federation of Queensland, while the Department of Health has subsidised the costs.

The nursing staff, with some assistance from the above-named organisations, provided the funds to enable the Mental Health Federation to replace the 12-passenger bus used at the Centre. This was a most commendable effort by all concerned.

Outings are still the order of the day at the Centre. Picnics, sight-seeing, shopping, cinema trips, visits to Amberley Air Force Base, visits to inspect ships and submarines occur frequently and these handicapped children are brought into constant and effective contact with the world at large.

The Centre continues to provide relief placements for week-ends, holidays and sometimes longer periods enabling families to have a well-earned rest while at the same time the children are observed, assessed and treated with good results during these short-term placements.

Sister Lillian M. Lithgow, Charge Nurse of Ward T.C.B. was granted leave to undertake a special study tour of other Australian States. In her observations she concluded that the educational benefits were better at Basil Stafford Training Centre than at any Centre she visited; that physical training and drug therapy was also better; and that more work is done with parents. On the other hand she noted that some Centres had a higher staff ratio; and that we do not as yet recruit Nursing staff specifically for training in the field of the intellectually handicapped.

There is still much that can be done despite the progress of recent years but the enthusiasm and devotion of those who work in the area will ensure the continued progress of the Centre.

ALCOHOLISM SERVICES

Pavilion 4, Royal Brisbane Hospital

Work at the Alcoholism Clinic at the Royal Brisbane Hospital has continued without significant change in pattern over the past year. The only important staff change has been the departure of the Psychologist, Dr. I. M. Hills, on May 14th, 1971, who has not yet been replaced. However, the proposed research he was concerned in planning will continue in the charge of Mr. R. Daniels and the new psychologist.

The pattern of referral to the Clinic has altered somewhat—a smaller proportion is now coming from Lowson House and a higher one from Casualty Department, outside practitioners and agencies.

The main difficulty in extending the family group therapy which seems to be perhaps the most important aspect of the work, is the absence of enough trained Group Leaders. Although valuable help has been given by interested persons on a voluntary basis—especially the Franciscan Friars, sessional fees are not yet available for their remuneration.

Students from various disciplines and workers from several agencies are frequent visitors and their presence provides a welcome stimulus and some variety for the permanent staff. Their co-operation is appreciated.

A.A. continued to hold a weekly meeting in Pavilion 4 for the purpose, mainly, of making contact with individuals unfamiliar with its principles.

Very valuable help continues to be forthcoming from the Co-ordinating Committee on Alcoholism—particularly in the provision of films, literature, library and references. Regular contact with the officers of this Committee is most useful.

Wacol Rehabilitation Clinic

This clinic continues to function as a therapeutic community in the way broadly outlined in last year's report. Some programme changes were made in January 1971 and these are outlined below under the heading "Inpatient Care".

Staffing

Mrs. Margaret Mantle was appointed as Social Worker. She has proved a very valuable addition to the treatment team and has been primarily concerned with contacting patients' wives, initiating family therapy where possible and assisting patients to obtain suitable work and accommodation by her liaison with employment officers and community hostels. She has been able to do some home visits although her time for this work is obviously limited. Dr. Blicharski was absent in January and February (while Acting Psychiatric Supervisor, North Queensland) and was relieved by Dr. Ruth Smout. Charge Nurse Mr. N. Nutbean was appointed to a position at Mosman Hall and was replaced, after a period of sick leave, by Mr. R. Turner. Liaison with Pavilion 4 staff continues.

Staff Training

In-service training continues as an on-going process under the supervision of the training officer, Mr. Treacher. The use of a video taped outpatient group for training purposes was discontinued when arrangements to borrow suitable accommodation and cameras had to be discontinued. This was most unfortunate and it is hoped that this training technique may be used in the future.

Inpatient Care

Some changes in programme were made in January 1971. A survey by the Clinic Supervisor, Mr. Smiley, had shown that the majority of patients referred to this clinic were suffering from chronic alcoholism and many of these patients had a history of alcoholism for five, ten or fifteen years. Also many of them had personality disorders of moderate or severe degree. Patients are accepted for treatment who would be regarded as unsuitable, because of the severity of their problem, in some alcoholism clinics overseas (e.g., Edinburgh). In order to accommodate our techniques to the patients being seen, the following changes were made:—

1. Community meetings are run at a more practical and less anxiety provoking level.
2. Group Psychotherapy is conducted at a level suitable for the patients in each group. This programme is under the Training Officer's supervision and more use is made of group discussion of didactic material in the form of printed notes and video tape lectures. These lecture topics are proving a very valuable addition to a supportive treatment programme.
3. The taking of Antabuse (unless medically contra indicated) was made a compulsory part of the treatment programme.
4. The staff hierarchy and lines of communication were clarified. Staff meetings to decide matters of policy and to discuss staff problems had proved unsatisfactory. It was decided that an Executive (Medical Officer in Charge, Clinic Supervisor, Training Officer and Head Attendant) would meet each week to discuss clinic and staff problems.

It is felt that the changes in programme have enabled the clinic to function more effectively. It was predicted that any change for the better might be reflected in decreased

numbers of patients discontinuing treatment and increased attendance of patients at the follow-up clinics. The number of patients discontinuing treatment for the six months (January to June 1971) was twenty-five compared with the numbers for the previous six months of thirty-two and the corresponding six months of the previous year, sixty-one. The Thursday evening clinic attendance for the six-month period was: Patients 901, Relatives 191. These figures compare with the previous six months: Patients 818 and Relatives 140. These figures suggest that the programme changes have been effective improvements.

Outpatient Care

The number of visits by expatients and their relatives to Pavilion 4 for the year was 2,759. This represents a slight increase on last year's figure of 2,598. It was predicted in last year's report that these numbers would increase to unmanageable proportions, but this increase has not been seen. I feel these are two reasons for this—

1. The type of patients being referred for treatment. Reference will be made to this in more detail later in the report.
2. When the number of patients present exceeds the capacity of the staff to provide adequate attention, patients will default from returning to outpatients because their needs are not being met. It is felt that an increase in staff would be followed by a comparable increase in the numbers of patients attending regularly.

We were receiving voluntary help from Rev. M. Harriman who is no longer able to attend, and at present Mr. Allan Soares of the Co-ordinating Committee on Alcoholism is attending regularly as part of his training.

Residence and Hostels

The Residence, now named Crana House, has celebrated its second anniversary. Throughout the year Mr. Smiley continued his supervision of this project and recently he has been helped by Mr. R. Lomassney. The Residence has continued to be an outstanding success. An "Aftercare" Fund has been built up to \$600 at the Wacol Clinic and is now available to help establish a second residence when this is indicated.

A hostel (Olivet House) has been opened by St. Vincent de Paul under the initial guidance of Mr. Smiley. This hostel is more supportive in nature and is proving to be very successful. During the year we have also had discussions with the Temperance League who are interested in establishing a hostel. We feel that the development of community hostels for help with aftercare of alcoholic patients is a very important part of an alcoholism treatment service.

Number of Patients treated

TABLE LXXII
ADMISSIONS AND DISCHARGES, WACOL
REHABILITATION CLINIC

	Male	Female	Total
Number of patients on books at 30-6-70	60	14	74
Admissions, 1970-71—			
First admission	198	32	230
Second admission	67	11	78
Two or more previous admissions	18	6	24
Total Number of Admissions	283	49	332
Breakdown of total number of admissions—			
Voluntary	246	35	281
Committed	13	4	17
Regulated	24	10	34
			332
Average number Daily Resident, 1970-71	37.5	5.5	43
On books as at 30-6-71	43	8	51

TABLE LXXIII

ATTENDANCES AT PAVILION 4 OUTPATIENTS' DEPARTMENT BY EX-WACOL REHABILITATION CLINIC PATIENTS

A. NUMBER OF PATIENTS AND RELATIVES PRESENTING FOR TREATMENT

	Patients			Relatives		
	Male	Female	Total	Male	Female	Total
New	54	13	67	5	6	11
Seen previously	168	18	186	3	12	15
Totals	..	..	253	..	..	26

B. NUMBER OF OUTPATIENTS' VISITS BY PATIENTS AND RELATIVES

	Patients			Relatives		
	Male	Female	Total	Male	Female	Total
2,015	413	2,428	72	259	331	
Combined Total	..	..	..	..	2,759	
1969-70 Total	..	..	..	..	2,598	

TABLE LXXIV

ADMISSIONS AND PATIENTS FOR TREATMENT AT WACOL REHABILITATION CLINIC—COMPARISON OF YEARS 1969-70 AND 1970-71

	1969-70	1970-71
First admissions	254	230
Second admissions	89	78
Two or more previous admissions ..	22	24
Totals	365	332

	Male	Female	Male	Female
Average number of Daily Residents	47.74	7.78	37.5	5.5
Total	55.52	43		
Number of Outpatient Visits to Pavilion 4	2,598	2,759		

It will be seen that the marked increase in number of admissions over three previous years has now stopped and the number of admissions was slightly fewer than last year. The proportion of voluntary admissions and first admissions has remained much the same. There has been a slight increase

in the numbers attending outpatients. In last year's report it was stated that "With improving community attitudes we expect this increase in demand on treatment facilities to continue." In fact the demand has not continued to increase. With an estimated 35,000 alcoholics in Queensland, it is felt that this is not due to lack of potential patients. As referred to earlier, patients are not being referred for treatment early in the process of their alcoholism. As their prognosis deteriorates markedly with chronicity this is most unfortunate. The Annual Report from Pavilion 4 for this year indicates a decrease in the number of relatives being seen and I understand this is partly because patients being referred do not have intact families or have never married. Again this group of patients has a poorer prognosis. The Pavilion 4 report table for Source of Referrals indicates that the majority of referrals are from medical sources. Many of these referrals would have physical or mental complications from their alcoholism. It is considered more desirable to attract referrals from employers and family welfare agencies as soon as alcoholism begins to interfere with family life or economic functioning. In fact there were no referrals at all from employers. It is felt that education of the community in general, and potential referral sources in particular, regarding the early referral of alcoholics for treatment should be a high priority in the coming year.

Research

Mr. G. Smiley has conducted a pilot study in the use of behaviour therapy techniques in treating alcoholics. It is envisaged that a more comprehensive study may be done in the near future.

Visitors

Visits by social work and medical students, workers from various helping agencies and the clergy have continued. Dr. Fabian Bryant arranged a visit of Public Health Nurses to the clinic, Mr. V. Liga, Social Services Department, Fiji, also visited the clinic. Dr. Gabrynowicz of the Addiction Treatment Board, South Australia, arranged for Sister P. Wyles to work at the Wacol Clinic for one month. Her visit was very much appreciated and she apparently returned to Adelaide with glowing reports concerning our clinic. It is hoped that at a future date we will be able to send nurses from our clinic to visit interstate clinics on a similar basis. Mr. R. Lomassney was able to pay a brief visit to the Gresswell Treatment Centre in Melbourne during his holidays.

Lectures and Conferences

Mr. G. Smiley attended the Summer School in Melbourne and visited treatment facilities for alcoholics and drug dependants in Melbourne. Dr. Blicharski attended the Conference of the Australian and New Zealand College of Psychiatrists on "Aggression".

Lectures were given by Mr. Smiley to Psychology and Social Work students and he also spoke at the University Seminar on Drug Dependence prior to the opening of the Drug Referral Centre. Dr. Blicharski lectures to D.P.M. students and addressed a Roman Catholic Clergy Seminar on Alcoholism.

Other Activities

Co-operation with A.A. has continued.

The Co-ordinating Committee on Alcoholism has provided valuable assistance. It has established a professional programme sub-committee of which Dr. Blicharski is Chairman, and it is felt that this committee will be of great value in assisting and educating professionals who come in contact with alcoholics, establishing programmes in industry for referral of alcoholics to treatment and promoting early referrals from other agencies. The weekly sessions at Ipswich Hospital were discontinued, at least temporarily, during the year.

MENTAL HEALTH STATISTICS—EXPLANATORY NOTES

It has been the continuing aim of the Division to have a statistics system in its Hospitals and Centres which would yield statistics uniform as between institutions and directly comparable with those of other States. This was in part achieved with the introduction of a Mental Health Statistics System based on a Central Records Office (Brisbane) into all in-patient units of the Division on 1st July, 1969.

In the following tables, admissions and re-admissions are defined with respect to the individual units within the system rather than the total system, i.e. a patient is regarded as a re-admission only if there has been a previous admission to that unit, regardless of previous admissions to other units in the system.

This is consistent with the orientation towards administration (as opposed to patient-oriented statistics) that is reflected in the use of duplicated admissions in the tables this year, i.e. a patient who is admitted twice during the year is counted twice in the tables.

The categories of admissions and discharges have been expanded in these tables to distinguish those patients transferred from other hospitals or training centres within the Division from those admitted from the community (the community being defined as any place other than the three hospitals and centres of the Division).

TABLE LXXX
PSYCHIATRIC HOSPITALS
SHOWING ADMISSIONS, RE-ADMISSIONS, DISCHARGES, AND DEATHS DURING THE YEAR ENDED 30TH JUNE, 1971

	WOOLSTON PARK HOSPITAL										BAILLIE HENDERSON HOSPITAL										MOSMAN HALL										GRAND TOTALS																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																									
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	Totals		Male			Female			Totals		Male			Female			Totals		Male			Female			Totals		Male			Female																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																										
	V	R	F	V	R	F	M	F	Total	V	R	F	M	F	Total	V	R	F	M	F	Total	V	R	F	M	F	Total	V	R	F					M	F	Total																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																																			
On the Books as at 1st July, 1970	252	703	85	161	449	3	1,040	613	1,653	129	371	2	154	316	..	502	470	972	27	200	6	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233	..	233

NOTE.—The total average number daily resident does not necessarily equal the sum of average number daily resident for males and females due to rounding off.

TABLE LXXVI
CENTRES FOR THE TRAINING OF THE INTELLECTUALLY HANDICAPPED SHOWING ADMISSIONS, RE-ADMISSIONS,
DISCHARGES AND DEATHS DURING THE YEAR ENDED 30TH JUNE, 1971

	BASIL STAFFORD TRAINING CENTRE										CHALLINOR CENTRE										ROCKVILLE TRAINING CENTRE										GRAND TOTALS				
	Male					Female					Totals					Male					Female					Totals									
	V		R		F	V		R		F	V		R		F	V		R		F	V		R		F	V		R		F				Total	
On the Books as at 1st July, 1970	175	11	..	..	..	186	78	264	141	87	5	167	53	..	233	220	453	52	3	..	59	3	..	55	62	117	474	360	834	..	..	..			
ADMISSIONS—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
(a) First Admissions	1	..	..	..	..	1	..	1	14	..	..	2	..	..	14	2	16	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
(b) Transfer from a Training Centre ..	3	..	..	..	..	3	..	3	6	..	..	7	..	..	7	7	14	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
(c) From community	47	..	..	..	..	47	18	65	13	..	..	9	..	..	13	9	22	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
Total First Admissions	51	..	..	..	..	51	18	69	33	..	1	18	..	..	34	18	52	7	..	..	21	..	..	7	21	28	92	57	149	..	..	..			
(b) Re-admissions	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..			
(a) Transfer from a Training Centre ..	..	..	..	..	..	..	..	..	1	..	..	..	..	..	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
(b) Transfer from a Psychiatric Hospital	17	..	..	..	..	17	1	18	..	..	..	2	..	..	..	2	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
(c) From community	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Total Re-admissions	18	..	..	..	..	18	1	19	1	..	..	2	..	..	1	2	3	4	..	..	5	..	..	4	5	9	23	8	31	..	..	..	..		
TOTAL ADMISSIONS	69	..	..	..	..	69	19	88	34	..	1	20	..	..	35	20	55	11	..	..	26	..	..	11	26	37	115	65	180	..	..	..	..		
TOTAL UNDER CARE DURING YEAR ..	244	11	..	..	..	255	97	352	175	87	6	187	53	..	268	240	508	63	3	..	85	3	..	66	88	154	589	425	1,014	..	..	..	..		
DISCHARGES	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
(a) Transfer to a Training Centre ..	14	..	..	..	..	14	1	15	3	1	..	4	..	..	1	..	11	..	..	..	1	..	..	..	1	1	15	2	17	..	..	..	..		
(b) Transfer to a Psychiatric Hospital ..	2	..	..	..	..	2	..	2	..	..	..	..	..	..	4	7	11	6	..	..	9	..	..	..	9	15	12	16	28	..	..	..			
(c) Discharged to community	47	..	..	..	..	47	14	61	9	11	..	6	1	..	20	7	27	..	..	..	4	..	..	..	4	6	25	92	..	..	..	..			
(d) Died	2	..	..	..	..	2	..	2	5	2	1	4	1	..	8	5	13	2	..	..	..	..	..	..	..	2	12	5	17	..	..	..	..		
TOTAL DISCHARGES	65	..	..	..	..	65	15	80	17	15	1	14	5	..	33	19	52	8	..	..	14	..	..	8	14	22	106	48	154	..	..	..	..		
On Books 30th June, 1971—	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Admission Classification	179	11	..	..	..	190	82	272	158	72	5	173	48	..	235	221	456	55	3	..	71	3	..	58	74	132	483	377	860	..	..	..	..		
Present Classification	187	3	..	..	..	190	82	272	226	..	9	221	..	..	235	221	456	58	..	..	74	..	..	58	74	132	483	377	860	..	..	..	..		
Average number daily resident	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Proportion of number of patients remaining on Books to each 1,000 population as at 30th June, 1971 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		
Proportion of Admissions per 10,000 of population for year ending 30th June, 1971 ..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..		

NOTE.—The total average number daily resident does not necessarily equal the sum of average number daily resident for males and females due to rounding off.

TABLE LXXVII
FORMS OF MENTAL DISORDERS IN PATIENTS ADMITTED DURING TWELVE MONTHS ENDED 30TH JUNE, 1971 GROUPED BY SHORT DIAGNOSIS

FORMS OF MENTAL DISORDERS IN PATIENTS RECEIVING TREATMENT	WOLSTON PARK HOSPITAL										BAILLIE HENDERSON HOSPITAL										MOSMAN HALL						GRAND TOTALS			
	Male					Female					Totals					Male					Totals									
	V			R		F	V			R		F	V			R		F	V			R		F	Total					
	V	R	F	V	R	F	V	R	F	V	R	F	V	R	F	V	R	F	V	R	F	V	R	F	M	F				Total
1. Senile and pre-senile dementia	5	19	..	6	32	..	24	38	62	4	4	..	21	7	..	8	2	10	10	4	7	..	4	39	40	79				
2. Alcoholic psychoses	3	20	..	..	..	..	21	12	35	2	16	..	16	8	..	16	7	17	17	1	4	..	11	50	13	63				
3. Other organic psychoses	16	48	1	32	122	..	45	36	101	2	6	..	2	3	..	36	33	69	69	13	32	..	5	78	43	121				
4. Schizophrenia and paranoid states	54	139	5	37	198	..	198	154	352	23	13	..	21	9	..	9	15	24	24	2	2	..	45	279	187	466				
5. Depressive psychoses	..	..	..	..	..	..	9	10	19	6	3	..	13	9	..	9	15	17	17	4	4	..	4	22	25	47				
6. Other functional psychoses	..	4	7	7	10	..	11	17	28	3	..	..	4	5	..	8	19	24	24	2	2	..	3	22	26	48				
7. Depressive neurosis	12	7	..	12	12	..	24	24	48	16	2	..	33	2	..	18	35	53	53	1	1	..	2	44	59	103				
8. Other neuroses and psychoneurotic disorders	..	..	..	..	..	..	13	5	18	4	2	..	7	1	..	6	8	14	14	..	..	..	19	13	32					
9. Alcoholism	95	145	5	2	30	..	240	36	278	36	13	..	5	2	..	13	13	26	26	3	1	..	35	324	45	369				
10. Other personality disorders	(a) 15	20	17	12	23	..	52	35	87	8	5	..	9	4	..	13	13	26	26	3	1	..	4	69	48	117				
(b) 1	..	..	..	..	1	..	2	1	3	..	..	..	..	..	..	..	..	..	..	..	..	..	2	2	1	3				
(c) 2	..	8	7	5	25	1	17	31	48	..	..	..	..	..	..	..	..	..	..	..	..	..	22	31	53					
11. Transient situational disturbances and behaviour disorders of children	1	4	1	..	4	..	6	4	10	1	..	..	3	1	..	1	4	5	5	..	..	..	7	8	15					
12. Non-psychotic mental disorder associated with physical condition	..	..	..	..	..	..	11	4	15	5	1	..	5	..	..	6	5	11	11	..	..	..	17	9	26					
13. Mental Retardation	..	2	8	1	4	..	30	21	51	6	7	..	16	3	..	13	19	32	32	6	5	..	54	40	94					
14. No Psychiatric Diagnosis	..	2	2	..	3	..	4	3	7	1	3	..	1	1	..	4	1	5	5	..	..	..	8	4	12	4				
15. N Y D ..	..	..	..	..	..	..	3	4	7	4	..	..	..	..	..	..	..	..	..	..	..	..	3	1	4	..				
TOTALS	243	445	44	100	333	1	732	434	1,166	119	81	..	122	37	..	200	159	359	359	58	69	..	127	1,059	593	1,652				

NOTES:—(a) Personality disorders (101) other than (b) and (c). (b) Sexual Deviation (302) and Special Symptoms, &c. (306). (c) Drug Addiction (304).

TABLE LXXVIII
CLASSIFICATION OF RESIDENTS ADMITTED TO TRAINING CENTRES
DURING TWELVE MONTHS ENDING 30th JUNE, 1971

	Basil Stafford Centre			Challinor Centre			Rockville Centre			TOTALS		
	M	F	Total	M	F	Total	M	F	Total	M	F	Total
Behaviour Disorder*	6	3	9	..	..	..	1	2	3	7	5	12
Mental Retardation—												
Moderate	20	7	27	4	6	10	3	11	14	27	24	51
Severe	18	2	20	9	9	18	..	3	3	27	14	41
Profound	4	2	6	2	1	3	..	..	..	6	3	9
Other including NPD†	21	5	26	20	4	24	7	10	17	48	19	67
Totals	69	19	88	35	20	55	11	26	37	115	65	180

* Accepted practice is not to admit residents to a Training Centre who are of "borderline" or "mild" mental retardation unless they have a co-existent disorder which is in most instances a "behaviour disorder" of one kind or another. Conversely if a resident is moderately, severely or profoundly retarded then the preferred classification is mental retardation even though there is a co-existent disorder.

† These numbers include residents admitted and found to have "no psychiatric diagnosis", others "admitted for social reasons only" and in the case of Rockville Training Centre (previously an Epileptic Home) some with a diagnosis of epilepsy.

TABLE LXXIX
AGE GROUPS OF THOSE PATIENTS ADMITTED TO THE HOSPITALS DURING THE YEAR ENDED
ENDED 30th JUNE, 1971

Age as at 30th June	WOLSTON PARK HOSPITAL			BAILLIE HENDERSON HOSPITAL			MOSMAN HALL			GRAND TOTALS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 5 years	..	..	..	..	..	..	..	..	..	..	..	..
5 years and under 10 years	..	..	..	..	1	1	..	..	..	..	1	1
10 years and under 15 years	1	1	2	5	7	12	..	..	..	6	3	9
15 years and under 20 years	29	17	46	7	9	16	4	..	4	40	26	66
20 years and under 25 years	63	33	96	9	6	15	7	..	7	79	39	118
25 years and under 30 years	49	34	83	15	21	36	5	..	5	69	35	104
30 years and under 35 years	53	31	84	19	10	29	12	..	12	84	41	125
35 years and under 40 years	67	30	97	24	15	39	17	..	17	108	45	153
40 years and under 45 years	95	54	149	26	11	37	15	..	15	136	65	201
45 years and under 50 years	104	54	158	19	12	31	13	..	13	136	66	202
50 years and under 55 years	100	41	141	19	14	33	14	..	14	133	55	188
55 years and under 60 years	51	40	91	12	18	30	11	..	11	74	58	132
60 years and under 65 years	35	21	56	8	11	19	8	..	8	51	32	83
65 years and under 70 years	22	18	40	11	15	26	4	..	4	37	33	70
70 years and under 75 years	20	23	43	9	2	11	4	..	4	33	25	58
75 years and under 80 years	19	12	31	5	2	7	2	..	2	26	17	43
80 years and under 85 years	14	17	31	4	5	9	3	..	3	21	21	42
85 years and under 90 years	5	5	10	4	2	6	1	..	1	10	7	17
90 years and under 95 years	4	1	5	1	1	2	1	..	1	6	2	8
95 years and over	..	..	..	..	..	..	..	..	..	..	..	..
Unknown	1	2	3	3	..	3	6	..	6	10	2	12
Totals	732	434	1,166	200	159	359	127	..	127	1,059	593	1,652

TABLE LXXX
AGE GROUPS OF THOSE PATIENTS ADMITTED TO TRAINING CENTRES DURING THE YEAR ENDED
30th JUNE, 1971

Age as at 30th June	BASIL STAFFORD TRAINING CENTRE			CHALLINOR CENTRE			ROCKVILLE TRAINING CENTRE			GRAND TOTALS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 5 years	5	2	7	..	1	1	..	..	..	5	3	8
5 years and under 10 years	25	6	31	3	3	6	..	..	..	28	9	37
10 years and under 15 years	19	7	26	10	6	16	..	..	..	29	13	42
15 years and under 20 years	10	4	14	5	4	9	..	3	3	15	11	26
20 years and under 25 years	5	..	5	5	3	8	1	..	1	11	5	16
25 years and under 30 years	2	..	2	..	1	1	..	2	2	4	9	13
30 years and under 35 years	..	..	..	4	..	4	3	1	4	7	1	8
35 years and under 40 years	..	..	..	..	..	..	1	1	2	1	1	2
40 years and under 45 years	1	..	1	2	..	2	..	2	2	3	2	5
45 years and under 50 years	2	..	2	..	1	1	2	4	6	4	5	9
50 years and under 55 years	..	..	..	1	..	1	..	3	3	1	3	4
55 years and under 60 years	..	..	..	..	..	..	..	5	5	..	5	5
60 years and under 65 years	..	..	..	..	..	..	1	2	3	1	2	3
65 years and under 70 years	..	..	..	..	..	..	1	..	1	1	..	1
70 years and under 75 years	..	..	..	..	..	..	..	..	..	..	..	..
75 years and over	..	..	..	..	..	..	..	1	1	..	1	1
Unknown	..	..	..	..	1	1	..	..	..	..	1	1
Totals	69	19	88	35	20	55	11	26	37	115	65	180

TABLE LXXXI

AGE GROUPS OF THOSE PATIENTS REMAINING ON THE BOOKS AT 30TH JUNE, 1971

Age as at 30th June	WOLSTON PARK HOSPITAL			BAILLIE HENDERSON HOSPITAL			MOSMAN HALL			GRAND TOTALS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 5 years	..	..	..	..	..	..	..	..	..	..	..	..
5 years and under 10 years	..	..	..	1	3	4	..	..	..	1	3	4
10 years and under 15 years	..	..	..	4	7	11	1	..	1	5	7	12
15 years and under 20 years	..	..	..	5	22	27	5	..	5	45	48	93
20 years and under 25 years	35	26	61	17	41	58	10	..	10	101	75	176
25 years and under 30 years	74	34	108	24	35	59	7	..	7	106	78	184
30 years and under 35 years	75	43	118	22	23	45	17	..	17	118	60	178
35 years and under 40 years	79	37	116	33	32	65	14	..	14	149	67	216
40 years and under 45 years	102	35	137	28	44	72	26	..	26	179	115	294
45 years and under 50 years	125	71	196	35	44	79	27	..	27	209	122	331
50 years and under 55 years	147	90	237	40	56	96	29	..	29	216	146	362
55 years and under 60 years	143	78	221	46	38	84	23	..	23	212	116	328
60 years and under 65 years	95	42	137	29	17	46	21	..	21	145	59	204
65 years and under 70 years	42	30	72	16	16	32	20	..	20	78	46	124
70 years and under 75 years	30	37	67	9	4	13	4	..	4	43	41	84
75 years and under 80 years	25	14	39	3	7	10	3	..	3	31	21	52
80 years and under 85 years	11	22	33	1	4	5	2	..	2	14	26	40
85 years and under 90 years	4	7	11	3	5	8	1	..	1	8	12	20
90 years and under 95 years	3	1	4	..	..	..	1	..	1	4	1	5
95 years and over	..	..	..	..	..	..	..	..	..	..	..	..
Unknown	11	6	17	163	10	173	28	..	28	202	16	218
Totals	1,148	651	1,799	479	408	887	239	..	239	1,866	1,059	2,925

TABLE LXXXII

AGE GROUPS OF THOSE PATIENTS REMAINING ON THE BOOKS AT 30TH JUNE, 1971

Age as at 30th June	BASIL STAFFORD TRAINING CENTRE			CHALLINOR CENTRE			ROCKVILLE TRAINING CENTRE			GRAND TOTALS		
	Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
Under 5 years	4	2	6	..	..	..	..	..	..	4	2	6
5 years and under 10 years	33	18	51	14	18	32	..	..	..	47	36	83
10 years and under 15 years	66	28	94	39	47	86	1	..	1	106	75	181
15 years and under 20 years	51	30	81	27	31	58	..	3	3	78	64	142
20 years and under 25 years	14	2	16	34	22	56	7	9	16	55	33	88
25 years and under 30 years	6	..	6	31	15	46	9	6	15	46	21	67
30 years and under 35 years	1	..	1	20	9	29	7	2	9	28	11	39
35 years and under 40 years	1	..	1	12	12	24	2	11	13	15	23	38
40 years and under 45 years	1	..	1	11	11	22	10	3	13	22	14	36
45 years and under 50 years	3	1	4	19	15	34	5	10	15	27	26	53
50 years and under 55 years	1	..	1	6	16	22	5	15	20	12	31	43
55 years and under 60 years	..	1	1	5	15	20	3	8	11	8	24	32
60 years and under 65 years	1	..	1	9	3	12	7	2	9	17	5	22
65 years and under 70 years	..	..	..	1	3	4	1	1	2	2	4	6
70 years and under 75 years	..	..	..	4	..	4	..	..	..	3	..	3
75 years and over	..	..	..	3	..	3	..	2	2	..	..	..
Unknown	8	..	8	..	4	4	1	2	3	9	6	15
Totals	190	82	272	235	221	456	58	74	132	483	377	860

TABLE LXXXIII
PSYCHIATRY CLINIC

COMPARISON OF 1969-70 FIGURES WITH THOSE FOR 1970-71

Type of Service	1969-70	1970-71
SESSIONS		
Psychiatrists		
Full time	765	1,019
Private	1,253	1,585
W.P.H.	813	460
Total	2,831	3,064
Speech Therapists	161	138
TOTAL SESSIONS	2,992	3,202
CONSULTATIONS		
Psychiatrists		
School Health Services	333	393
Forensic	653	723
Other	12,580	13,511
Total	13,566	14,627
Speech Therapists	778	703
Psychologists	353	523
Social Workers	2,528	2,231
Group*	..	290
TOTAL CONSULTATIONS	17,225	18,374
New patients seen	1,028	1,303
Total patients seen	2,673	3,203
Clinic E.E.G.'s	80	115

TABLE LXXXIV

PAVILION 4, ROYAL BRISBANE HOSPITAL
SHOWING REFERRAL SOURCES OF NEW PATIENTS AND RE-REFERRALS

	Male	Female	Totals
Medical—			
(a) Doctors within R.B.H.—			
Lowson House	149	27	176
Casualty	67	1	68
Medical Wards	32	6	38
Total	248	34	282
(b) Local Medical Officers	92	12	104
Self Referred	29	11	40
Spouse, relative or friend	22	5	27
Alcoholics Anonymous	14	..	14
Social Work Agencies	16	3	19
Court, Police Probation Officer	16	..	16
Employer	..	..	..
Life Line	8	1	9
Clergy	8	2	10
Co-ordinating Committee on Alcoholism	7	1	8
St. Vincent de Paul	31	..	31
Other Sources	2	..	2
Total	493	69	562

* This is the first year that group consultations have taken place.

TABLE LXXXV
SHOWING PATIENTS AND RELATIVES PRESENTING FOR TREATMENT

	Patients			Relatives		
	Males	Females	Totals	Males	Females	Totals
New	439	71	510	156	230	386
Seen previously .. .	301	40	341	12	43	55
Total	851			441		
Combined Total				1,292		

TABLE LXXXVII
SHOWING ATTENDANCES OF PATIENTS AND RELATIVES AT GROUP MEETINGS AND INTERVIEWS

Patients			Relatives		
Males	Females	Total	Males	Females	Total
15,866	2,959	18,825	715	1,914	2,629
Combined Total			21,454		
Group meeting attendances			21,454		
Pavilion 4 interviews			4,168		
Lowson House interviews			465		
			26,087		

TABLE LXXXVI
SHOWING NUMBER OF ADMISSIONS AND AVERAGE NUMBER DAILY RESIDENT

Admissions			Average Number
Male	Female	Totals	Daily Resident
222	39	261	9.4

TABLE LXXXVIII
COMPARISON OF PROFESSIONAL STAFFING FOR 1961 AND 1971

Year ending 30th June	Establishment 1961	Establishment 1971	Actual on 30-6-1971
Director	1	1	1
Deputy Director	1	1	1
Medical Superintendents	3	3	3
Deputy Medical Superintendents	2	..	..
Psychiatrists—			
Full time	..	14	12
Part time	..	7	10
Other Medical Staff—			
Full time	18	14	12
Part time	14	11	7
Psychologists—			
Full time	4	21	17
Part time	1	..	..
Social Workers—			
Full time	..	18	17
Part time	..	..	..
Occupational Therapists	4	10	8
Special Teachers	..	18	17
Speech Therapists—			
Full time	3	3	2
Part time	..	3	3
Psychotherapists	..	3	2
Recreation Officers	2	12	12
Welfare Officers	2	4	4
Dentists	1	2	1
Total Full time	40	124	109
Total Part time	15	21	20

TABLE LXXXIX
MENTAL HEALTH REVIEW TRIBUNAL—1970-1971

Applications adjourned from 1969-70	5	
Applications awaiting hearing as at 30-6-70	..	5
Applications received by the Tribunal during 1970-71—		
From patients	31	
From nearest relatives of patients	3	
From others	..	34
	..	39
Applications heard by the Tribunal during 1970-71—		
Refused	21	
Refused, but recommended for leave, &c.	5	
Recommended for discharge	1	
Adjourned <i>sine die</i>	1	
Otherwise adjourned as at 30-6-71	1	29
Applicants who failed to appear before Tribunal	6	
Applications awaiting hearing as at 30-6-71	4	10
	..	39

TABLE XC

EXPENDITURE BY WORKS DEPARTMENT ON MAJOR WORKS DURING 1970-71

Wolston Park (Brisbane)—

Loan Fund—	\$
Professional Fees Account New Kitchen and Cafeteria	4,377.88
Erection of New Ward Building Female Ward 12	276,778.96
Supply and Installation Sewerage Communitors	7,710.91
Enclosing Fire Escapes	11,850.00
Fire Precautions to Female Wards 3 and 4	21,147.60
Erection of Kitchen, Cafeteria and General Activities Building	358,880.09
Alterations and Improvements to Toilet Facilities at General Laundry	8,771.00
Supply Furniture and Equipment	28,407.83
Provision of Shelter and Ground Improvements	7,882.02
Professional Fees Account Remodelling Male Ward 11	6,672.00
Erection of Laundry Building to Male Ward 12	10,230.38
Professional Fees Account Provision of Fire Protection	6,064.58
Erection of Residence for Managing Secretary	10,652.00
Remodelling Male Ward 11	62,433.05
Fire Alarm Installation to Basil Stafford, Female Ward 9 and Wards TCA, TCB	25,244.80
Installation Combined Auto Fire Alarm and Sprinkler Systems W/C Water	63,746.00
Provision of Steam and Condenser Reticulation to Kitchen/Cafeteria	15,812.00
Consolidated Revenue Fund—	
Replacement of Water Main Crossing Site of New Kitchen and Cafeteria	2,522.51
Replacement of Floor to Laundry	7,763.45
Renewal of Water Mains	3,676.25
External Painting of Nurses Houses 2 and 3	9,028.94

Baillie Henderson Hospital (Toowoomba)—

Loan Fund—	
Erection of New Laundry	14,457.44
Erection of Recreation Shelters	4,670.04
Provision of Enclosures to Fire Escape Male Ward B and Female Ward 2	6,620.70
Installation of High Temperature Hot Water Generator and Associated Works	36,217.55
Modifications of Bathrooms in Nurses Quarters	13,041.94
Laying of Vinyl Tiles to Male Ward E and Female Ward 5	11,026.63
Professional Fees Account Kitchen/Cafeteria	6,923.65
Professional Fees Account New Ward	5,670.00
Professional Fees Account New Kitchen/Cafeteria Building	6,000.00
Ward Heating Stage	81,903.30
Restoration and Remodelling Covered Ways and Verandahs	19,451.34
Renovations to Toilets	7,210.41
Remodelling Male Ward B	46,530.43
Additional Toilet Facilities Female Wards 1 and 2, Male Ward A	7,020.86
Temporary Accommodation for Occupational Therapy	6,300.00
Sprinkler System and Site Ring Main Pipework Female Ward 1 and Early Warning and Thermal Fire Alarm Systems, Female Ward 1	8,996.04
Consolidated Revenue Fund—	
Repairs	6,784.28
Internal Painting Nurses Quarters	2,566.39
External and Roof Painting Ward 5	6,311.23
Repairs, Replacements and Improvements to Various Residences	5,155.96
External and Roof Painting—Covered Ways	6,182.23
Replacement of Flushing Valves to all Wards	3,265.44
External and Roof Painting Ward E	6,682.62
Repairs to Roadways	4,109.78

Challinor Centre (Ipswich)—

Loan Fund—	
Renovations to Bathroom Dagmar House	5,033.42
Professional Fees Account New Ward to Replace Arthur Pavilion	23,187.62
Remodelling Blair Pavilion	37,543.34
Professional Fees Account New Ward	9,205.39
Provision of Fire Escapes to Ellen House	10,512.81
Provision of Fire Exits and Ramps to Francis House	8,063.01
Insulation of Ceiling—Ellen House	4,004.13
Erection of New Ward Complex and Supply of Furniture and Equipment	102,249.42
Fire Alarm Early Warning System to Ellen and Francis Houses	8,500.00
Consolidated Revenue Fund—	
Installation of Electricity and Hot Water Services, New and Improved Bathroom Accommodation—Dagmar House	8,244.92
Internal Painting Grace House	5,755.90
Replacement of Floor to Allison House	5,109.28

Mosman Hall (Charters Towers)—

Consolidated Revenue Fund—	
Replacement of Refrigeration Plant, &c.	6,370.50

Basil Stafford Training Centre (Wacol)—

Loan Fund—	
Enclosing Two Sides of Verandahs to Main Dining Room	5,342.20

Wacol Rehabilitation Clinic—

Loan Fund—	
Erection of Recreation and Visitors Room	13,291.63
Consolidated Revenue Fund—	
External Painting of Male and Female Clinics	5,239.28

TABLE XCI
FINANCIAL STATEMENT OF THE DIVISION OF PSYCHIATRIC SERVICES FOR THE YEAR ENDED 30TH JUNE, 1971

	Psychiatric Hospitals			Training Centres for Intellectually Handicapped			Rehabilitation Clinics	Director's Office and Psychiatry Clinic	Total for Division
	Wolston Park (Brisbane)	Baillie Henderson (Toowoomba)	Mosman Hall (Charters Towers)	Challinor (Ipswich)	Basil Stafford (Wacol)	Rockville (Toowoomba)			
(A) EXPENDITURE FROM CONSOLIDATED REVENUE FUND—									
Health Department	\$ 4,772,666	\$ 2,404,881	\$ 546,943	\$ 1,553,880	\$ *	\$ †	\$ *	\$ 254,546	\$ 9,532,916
Works Department	35,867	65,038	7,251	22,572	1,720	1,771	6,173	1,407	141,799
	4,808,533	2,469,919	554,194	1,576,452	1,720	1,771	6,173	255,953	9,674,715
Less—									
Sales	3,408	4,461	1,507	3,126	..	..	..	..	12,502
Payments by Commonwealth—									
(i) Pharmaceutical Benefits	86,570	50,239	11,187	22,938	770	..	..	1,094	170,934
(ii) Capital Subsidy	31,389	6,287	717	11,697	..	..	..	..	51,954
	121,367	60,987	13,411	37,761	770	..	..	1,094	235,390
Net Expenditure	4,687,166	2,408,932	540,783	1,538,691	950	1,771	6,173	254,859	9,439,325
Average number daily resident	1,417	860	218	447	223	119	47	..	3,331
Gross cost per patient per annum	2,855.02	2,524.71	2,542.17	3,526.74	*	†	*	..	2,904.45
Net cost per patient per annum	2,782.63	2,462.41	2,480.66	3,442.26	*	†	*	..	2,833.78
Gross daily cost per patient	7.82	6.92	6.96	9.66	*	†	*	..	7.96
Net daily cost per patient	7.62	6.75	6.80	9.43	*	†	*	..	7.76
(B) LOAN FUND EXPENDITURE—									
Works Department	966,437	317,013	8,708	226,679	14,031	2,074	15,917	891	1,551,750
(C) COLLECTIONS—									
Payments by Repatriation Department—									
For Wacol Repatriation Pavilion	201,049	..	..	..	..	..	..	..	201,049
Maintenance Charges—									
Other	279,674	206,801	30,353	111,234	42,107	37,308	..	..	707,477
	480,723	206,801	30,353	111,234	42,107	37,308	..	..	908,526

* Included under Wolston Park Hospital.

† Included under Baillie Henderson Hospital.

DIVISION OF YOUTH WELFARE AND GUIDANCE

Senior Medical Director: B. J. PHILLIPS, M.B., B.S. (Qld.), D.P.M. (Lond.)

Regional Supervisors: D. I. NASSER, M.B., B.S., D.P.M. (Qld.), July–October, 1970—(Townsville Centre)
W. S. WRIGHT, M.B., Ch.B., B.A.O. (Q.U. Belfast), D.P.M., R.C.P. (Lond.), R.C.S. (England)—(Townsville Centre)

Medical Directors: A. B. SHEARER, M.B., B.S. (Qld.), M.R.C.P. (Lond.), D.P.M. (Qld.)—(Institute of Child Guidance)

J. FOLEY, M.B., B.S., D.P.M. (Qld.)—(Wilson Youth Hospital)

Child Guidance Specialists: P. G. MITCHELL, M.B., B.S., D.P.M. (Qld.)—(Warilda Centre)

B. J. L. KIMBELL, M.B., B.S., D.P.M. (Qld.)—(Toowoomba Centre)

P. J. EDWARDS, M.B., B.S. (Qld.), D.P.M. (Melb.)—(Mary Street Centre)

The Division of Youth Welfare and Guidance gives a child guidance service directly to the community, to general hospitals and to child welfare services. It also carries out extensive preventive measures. In Brisbane these child guidance services are specialised in different institutions and clinical centres but in the country the Child Guidance Centres have to be more comprehensive.

In Brisbane there are the Institute of Child Guidance and the Mary Street Youth Welfare and Guidance Centre which give a service to the community. The Institute of Child Guidance also gives a service to the Royal Children's Hospital as the Institute is part of the Royal Brisbane Hospital Board's complex of hospitals.

The medical and psychiatric services to the Department of Children's Services in Brisbane centre around Wilson Youth Hospital which is a child psychiatric institution for the assessment and treatment of the disturbed cases among the children appearing before the Children's Court, and Warilda Child Guidance Centre which is similar to Wilson Youth Hospital but cares for neglected children. Assessment, medical diagnosis, treatment, if necessary, and recommendations about the children to the Director of Children's Services are given in respect of all children entering these institutions and those who are sent for consultations with the doctor by the Welfare Officers. In Toowoomba and Townsville these services are given by the Youth Welfare and Guidance Centres which are situated in the grounds of the general hospitals.

Approximately one-third of the population of the State (1,800,000 approximately) comprises children under the age of 17 years. It has been estimated in various parts of the world that about 10 per cent. of these children need child psychiatric treatment. There are lots more children who are disturbed and need psychiatric assessment and many have psychosomatic disorders, in the treatment of which, the physician will often need the help of the child psychiatrist.

The figures above show why there are such heavy demands on the services of child psychiatry and why, although there were 68,011 interviews, examinations, tests, &c., conducted by the Division of Youth Welfare and Guidance in the year 1970-71, there is still a long waiting list for appointments. More clinics are being opened in the near future and a much needed in-patient section is planned for the Institute of Child Guidance. These should help to ease the situation.

An important event in child guidance has been the approval to establish suburban clinics in the metropolitan area. The suburban clinics will be small and give a service more directly to a limited local area. This will mean better communication with general practitioners, clergymen, teachers and other professional persons concerned with children. These clinics should be opening in the latter half of 1971.

Staff changes during the financial year showed an increase of medical officers. Dr. D. Nasser went overseas at the end of 1970 to further his studies. Dr. W. Wright of Adelaide has been appointed Regional Supervisor of North Queensland in his place. There was one resignation from Dr. P. Cary who went overseas. The new medical officers who joined in 1971 were Dr. J. Carter, Dr. R. Heap and Dr. E. Nixon.

As mentioned above, extensions to buildings are planned. These include an in-patient section and more out-patient accommodation at the Institute of Child Guidance and the rebuilding of the Townsville Centre. Accommodation for suburban clinics in Brisbane will be bought or constructed. A new site is being chosen for the rebuilding of the Toowoomba Centre.

It will be noted that a large number of children attend the Youth Welfare and Guidance Division, and that the number of tests, treatments, interviews, examinations, &c., for the year was 68,011. These figures indicate that there is a large number of emotionally disturbed children in the community. This also supports the estimation that 10 per cent. of the child population is emotionally disturbed.

Child Guidance Clinics and Child Psychiatry Clinics treat disorders of thinking, emotion and behaviour in children. This includes most of the conditions which make children aggressive, miserable, unhappy and maladjusted. The approach to treatment of these conditions is a family approach and child guidance has been termed "Family Guidance—Child Centred". This mode of treatment is traditional in child guidance and the whole family has been treated in this manner since the time of Freud. The results of child guidance treatment of disturbed children and families are usually very good as the surveys of treatment results previously described in annual reports have shown.

The Institute of Child Guidance, Spring Hill, Brisbane

The Institute of Child Guidance is the Royal Brisbane Hospital Board's hospital for child psychiatry. It gives a service to the Royal Brisbane Hospital and the Royal Children's Hospital. Two child psychiatry consultants from the Institute visit the Royal Children's Hospital for consultations concerning the in-patients and out-patients. These duties are carried out by Dr. Irene Phillips and Dr. A. B. Shearer. The Institute of Child Guidance has the largest out-patient section and 670 new cases were seen in the last financial year.

The Institute of Child Guidance has a day hospital for children who are too disturbed for out-patient treatment. They are admitted to the day hospital on a daily basis much like going to school, and, in some respects, the day hospital can be looked upon as a day centre for emotionally disturbed children. Efficacy of this form of treatment is undoubtedly very high as in the day hospital many patients who would otherwise be admitted into an institution, can be treated from their homes. There is, however, still a need for in-patient treatment and as mentioned above, plans are being made for an in-patient unit. This should be able to treat many of the cases which normally would go to adult type institutions.

The Institute has a busy treatment load and there were 16,202 examinations, interviews, treatment sessions, &c., conducted by the various professions working in the Institute.

It will be noted that the reasons why children were referred to the Institute of Child Guidance and to Mary Street are very similar. This can be seen from the figures in Table 3. It will be noted how the figures are fairly parallel. The reason why the Institute gets more school problems than Mary Street is that the Institute has the day hospital and cases of school refusal, playing up in school, not mixing or unpopular at school, &c., are likely to be sent here.

The ages of children and the diagnosis of the disorder they had when at the Clinic are seen in the Tables.

Mary Street Youth Welfare and Guidance Centre

Over the past few years, attempts have been made to develop the Mary Street Clinics as a centre for the south side of Brisbane. It has been found, however, that patients do not seem to care which centre they go to and often like to go to the one which is more convenient for transport. There is also a tendency for the younger children to go to the Institute because of the facilities which are there.

The E.E.G. Section of the Division is located at Mary Street and it is hoped that in the near future accommodation can be made for it at the Institute of Child Guidance, thereby enabling the Mary Street Centre to have the nucleus of a day hospital.

The Mary Street Centre admitted 504 new cases in the year and the total number of examinations, interviews, treatments, &c., was 9,824. The reason why the treatment sessions were so far below that of the Institute was that Mary Street Centre has no day hospital nor has it the same number of staff.

TOOWOOMBA YOUTH WELFARE AND GUIDANCE CENTRE

The centre in Toowoomba is functioning on a full-time basis and there have been some staff changes over the last year. However, the clinic is now fully staffed again.

The Toowoomba Centre also gives a consultant service to the Westbrook Training Centre and the psychiatrist from Toowoomba saw 146 patients at Westbrook for the Director of the Department of Children's Services.

The Toowoomba Youth Welfare and Guidance Centre is a very busy clinic and sees patients from the Downs, the south-west line, and southern inland regions.

TOWNSVILLE YOUTH WELFARE AND GUIDANCE CENTRE

The Townsville Centre sees patients from North Queensland and is also a very busy centre. Three hundred and forty-six new cases were seen during the financial year and nearly 2,000 examination, treatment sessions, &c., were completed. This was in spite of staffing vacancies and the absence on leave of some staff members. However, the Townsville Clinic is now fully staffed and operating at full capacity. Dr. Wright rejoined the Townsville Clinic in the beginning of 1971 and has been appointed Supervisor in the place of Dr. Nasser who went overseas. Dr. Wright is well-known in Townsville and his return to become Supervisor of the Northern Region was welcomed.

WILSON YOUTH HOSPITAL

Wilson Youth Hospital and the Warilda Child Guidance Centre are Children's Services Department institutions in which the Division of Youth Welfare and Guidance has the responsibility for assessment, treatment and clinical activities. This has been working successfully for many years. The Division of Youth Welfare and Guidance also gives a consultative service to Westbrook Training Centre and to Carramar Centre in Townsville. The Warilda Centre also has an out-patient section to which the Children's Services Department can send any child whom they think needs child psychiatry treatment.

Wilson Youth Hospital is a child psychiatric hospital for the diagnosis and treatment of emotionally disturbed children who are under the care of the Director of the Department of Children's Services or have been referred by the Children's Court. The boys are in residence at Wilson Youth Hospital proper and the girls have been cared for in Karrala House which is in the grounds of Challinor Centre in Ipswich. This service for delinquency is conducted from Wilson Youth Hospital. The Children's Court, the supervision services and the psychiatric treatment of children are conducted from Wilson Youth Hospital. The clinic also gives reports to the Children's Court.

There is an out-patient section to Wilson Youth Hospital Clinic where pre-delinquents or delinquents can be seen. The in-patient section is staffed by therapists, nurses, orderlies, and others who have the responsibility of direct care and treatment of the children.

During the financial year, Wilson Youth Hospital saw 417 new cases at the out-patient section and in the residential part of the hospital.

WARILDA CHILD GUIDANCE CENTRE

Warilda is a Department of Children's Services centre for the reception, assessment and treatment of neglected children. Many of the children have been sent there because of domestic problems and some are illegitimate.

The Child Guidance Clinic at Warilda assesses and treats all the children admitted into the Institution and there is also a limited out-patient service to the Department of Children's Services and to Church Homes. This is an important service and it is proposed to expand the service when further accommodation is built. The largest number of patients seen at Warilda Centre consists of young children and babies.

WESTBROOK TRAINING CENTRE

The psychiatrist from the Toowoomba Youth Welfare and Guidance Centre visits Westbrook once a week as a consultant. He advises on the behaviour and medical treatment required by the boys in the Institution. Cases needing psychiatric treatment are sent to Wilson Youth Hospital or the mental hospitals. The psychiatrist visiting Westbrook also reports on the suitability of children being discharged and advises on their rehabilitation. During the financial year, 214 boys were seen.

ELECTROENCEPHALOGRAPHY SECTION

The E.E.G. Section is situated at the Mary Street Centre and is very busy as 1,163 investigations were completed during the financial year. This was an increase in the number from last year.

It will be noted that the figures in Table XCVIII showing the E.E.G. work are remarkably consistent from year to year. Approximately half of the E.E.G. investigations done would have significant abnormalities.

The investigation of children's brain function by the E.E.G. is an essential part of child psychiatry. Many of the sub-clinical dysfunctions of the brain can produce disordered behaviour in children and it requires a careful clinical examination and probably an E.E.G. investigation to elucidate the details.

MENTAL HEALTH ACTIVITIES

Child psychiatry or child guidance is really "Family Psychiatry—Child Centred" and often the treatment is structured along these lines. The orthodox or classical child guidance clinic consisted of three professions working very closely together. This consisted of the psychiatrist, the psychologist and the social worker. Child guidance clinics are not so rigidly structured these days and the emphasis is now more on early treatment and prevention.

There is a large preventive role to child psychiatry and more attention has been paid to this over the last ten years. Primary prevention is not as yet on a sound scientific basis in psychiatry, but an important and practical method is the early detection and treatment of cases. This tends to prevent the spread of the "psychiatric contagion". It is considered that by the mere treatment of families by child guidance some children will be prevented from growing up into disordered personalities, addicts, alcoholics or severe neurotics. This is largely brought about by "reflected prevention", where the treating of the family is preventive psychiatry in that improvement is reflected onto other members of the family and the whole family is adjusted for the better.

Another aspect of early diagnosis and treatment is that it is good economy as conditions treated early are more likely to be corrected. This saves time and money and allows the child to adapt to his community better and to profit more advantageously from his education.

School Health Surveys

In this preventive method children with disturbances are referred by the nurses of the Division of School Health Services to the head office in the Health and Welfare Building where a medical officer from the Division of Youth Welfare and Guidance "screens" the families for mental health disorders. In this a consultation is given to the medical staff of the School Health Services concerning the treatment of the child. Some children are referred to Child Guidance Clinics, the Social Work Department, Children's Hospitals, general practitioners, or elsewhere.

Together with other consultations to Children's Hospital, &c., 237 such consultations were given during the financial year. It is felt that this is an important procedure for the early detection and treatment of families where children have a psychological disorder.

Services to the Kindergartens

A member of the medical staff of the Division of Youth Welfare and Guidance goes in a systematic fashion to kindergartens accessible in the metropolitan area. During these visits, the doctor conducts discussion groups with the mothers on child problems and gives mental health consultations to the Directors of the kindergartens. During the year, 38 visits were made to kindergartens and sessions were conducted along these lines. This is an important procedure in prevention and the doctor is able to direct children at an early age to a child guidance clinic or elsewhere for treatment.

Consultations to Institutions

Institutions caring for children can take their problems to centres. Wilson Youth Hospital will deal with the delinquent children and Warilda Centre with the neglected children. This service is largely for treatment and consultation concerning children in the various denominational homes. It is hoped that a mental health type of consultation for homes will be able to be re-instituted when more staff is available.

Teaching

The Division of Youth Welfare and Guidance conducts in-service training for child psychiatrists. Also some members of the staff co-operate in the postgraduate training of general psychiatrists. The general in-service training course is conducted on Thursday afternoons at the Institute of Child Guidance at which the staff of the clinics are involved with lectures, discussion groups, seminars, etc. Sometimes clergymen, welfare officers, police officers and other attend these courses.

Members of the staff are also involved in teaching in some form for the various University faculties such as Medicine, Psychology, Social Work, Speech Therapy and Occupational Therapy. During this year, the Division of Youth welfare and Guidance, in co-operation with the Health Education Council officers, conducted a course for the training of Health Educators in Drug Abuse. A considerable number of the Division's staff attended these lectures with considerable benefit.

COMMUNITY EDUCATION IN MENTAL HEALTH

Metropolitan Area

Visits to and discussions with parents and children in various groups are conducted each year as a preventive measure. Discussion groups with parents concerning the bringing up of children are very important and members of the clinics in the metropolitan area have gone frequently to such groups as the Parents and Citizens' Associations, Mothers' Groups, and Organisations of many kinds who are interested in such topics as youth problems, juvenile delinquency, alcoholism and drug addiction in children and adolescents, &c. With the parents of young children, the talks centre around the problem of bringing up children, problems in commencing school and so on. The lectures concerning teenagers are usually on such problems as sex education, drug addiction, juvenile delinquency and other socially deviant problems. Members of the staff of the Division of Youth Welfare and Guidance in co-operation with the Queensland Health Education Council conduct seminars, lectures, discussions and so on matters such as drug addiction.

Toowoomba Area

Dr. Kimbell and the staff at the Toowoomba Centre have been active in giving talks on many problems to the community. Lectures to teachers and others on speech problems have been given to various institutions including kindergartens and mothers in the Y.W.C.A.

Social problems have been discussed with groups at the Wheat Research Institute and some kindergartens. Discussion groups or lectures have been given to assembled local teachers of primary schools, opportunity schools and kindergartens. Parents and Citizens' Association meeting attached to primary and secondary schools have also been given talks. Lectures have been given to the students and staff of the Institute of Technology on drugs and talks on child problems have been conducted at various kindergartens. Talks have been given to the mothers of the Mothercraft Association and also to the members of the Sub-normal Association.

Townsville Area

Dr. Wright and his staff at the Townsville Clinic have been very active in community education and have conducted a large number of talks on various subjects. They also have given lectures to nurses and other groups. Lectures, visits and discussion groups carried out by Dr. Wright and his staff over the year have been as follows:—

- Regular consultations at "Carramar" Child Care Centre.
- A Lecture on Drug Dependence at a teacher's seminar.
- Lectures on Psychiatry (3) to Nurses at Townsville Hospital.
- Lectures on Child Guidance (3) to various Mothers Groups at Kindergartens.
- Lectures on the Scope of Child Guidance to Doctors at the Townsville Hospital.
- Lectures on Asthma in Childhood to the Asthma Foundation.
- Lectures on Drugs to the Rotary Youth Leadership Seminar.
- Speaking at the "Under Fives Week".
- Lecture on the "Value of the Assessment Team" to the Deaf Children's Association.
- Lecture on Child Guidance to the Lions Club of Ayr.
- Lecture on Autism to the Childbirth Education Association.
- Lectures—Psychology (3) to Nurses in 1970 and again in 1971.
- Lecture on "When Father Goes Away" to the Army Wives Club.
- Lecture on Child Guidance to the Mothers Club, Kindergartens, &c.

"Social Work" to the Senior Pupils at St. Margaret Mary's School and to the Senior Pupils at St. Patrick's College.

Other community activities have been in the form of work on such associations as S.P.E.L.D. and the "Welfare Forum". There have also been regular consultations at the Bush Children's Home.

GENERAL COMMENTS

The work loads at various centres approximate that of previous years, except for the increase in the number of patients and treatment sessions. The number of examinations, tests, &c., seems to be increasing at a rate of about 10,000 or so a year.

The reasons for children being referred to the Child Guidance Clinics follows the same pattern as in previous years and the source of referral of new patients is approximately the same. Approximately half of the patients are referred by their own parents and the other section is referred by various professional agencies with medical services predominating.

The reasons for referral of children seem to follow a fairly consistent pattern over the years and this also refers to the age group of the children attending. It seems that the largest number is somewhere around the 8-year age group. It will be noted that, except at the Wilson Youth Hospital which deals more or less with teenagers only, most of the children referred to the ordinary community clinics are school children.

The diagnoses of cases appearing at the clinics are listed in Table 8. It will be noted that the numbers of the diagnoses are not the same as the numbers of patients appearing because one child may have several disorders. However, the pattern of disorders has been fairly consistently the same for some years.

The duration of symptoms before the patient arrives at the clinic is surprisingly long and by the time he is taken on for assessment and treatment, the case will certainly be a genuine one. It can be noted that in some clinics the symptoms for which the child was referred can be over three years duration and this happens in approximately half of the cases.

The nature of the diagnosis and the length of time these symptoms have been present before the child comes to the Clinic indicates the gravity of the cases treated. As there is a considerable relief, if not cure in many of these cases, it illustrates the effectiveness of "family therapy—child centred".

ACKNOWLEDGEMENT

The Division of Youth Welfare and Guidance would like to express appreciation for the help given by other Government Departments, both State and Commonwealth, who have co-operated with the Division throughout the year. These Departments include other Divisions of the Health and Medical Services Department, the Department of Children's Services and various public hospitals, especially the Royal Children's Hospital.

Appreciation is also expressed for the help and co-operation of various sections of the Education Department, particularly the Guidance and Special Education Branch and the headteachers of various schools, both State and private. The co-operation of the Children's Court Magistrate, of the Juvenile Aid Bureau, and other such Departments is much appreciated, as is the help given by the staffs of the various Church Homes and other institutions caring for children.

TABLE XCII

SHOWING TOTAL NUMBERS AND SEX OF NEW CASES FROM THE VARIOUS CENTRES DURING 1970-71

Name of Centre	Male	Female	Total
Institute of Child Guidance ..	453	217	670
Mary Street Centre ..	331	173	504
Wilson Youth Hospital Clinic ..	297	120	417
Warilda Child Guidance Centre ..	147	140	287
Toowoomba Centre ..	207	108	315
Westbrook Training Centre ..	146	..	146
Townsville Centre ..	215	131	346
Totals ..	1,796	889	2,685
Consultations for other Departments, i.e. School Health Services, Children's Hospital, &c. ..	139	98	237
GRAND TOTALS ..	1,935	987	2,922

TABLE XCIII
SHOWING NUMBER OF EXAMINATIONS, INTERVIEWS, TREATMENTS, &c., BY THE VARIOUS PROFESSIONS

Centre	Psychiatrists	Psychologists	Social Workers	Speech Therapists	Child Guidance Therapists	Medical Consultants	E.E.G.	Totals
Institute of Child Guidance	6,018	2,865	780	1,885	3,300	1,003	351	16,202
Mary Street Centre	5,240	1,576	545	1,812	..	268	383	9,824
Wilson Youth Hospital	14,268	308	293	..	4,428	..	233	19,530
Warilda Child Guidance Centre ..	2,687	717	..	1,176	..	1,031	41	5,652
Toowoomba Centre	2,344	59	362	1,850	..	..	36	4,651
Westbrook Training Centre	211	1	..	..	..	..	2	214
Townsville Centre	957	494	536	4	..	..	1	1,992
Karrala House	5,436	37	..	..	3,803	..	..	9,276
Work Done for Outside Centres ..	517	37	..	..	..	..	116	670
Totals	37,678	6,094	2,516	6,727	11,531	2,302	1,163	68,011

TABLE XCIV
SHOWING REASONS FOR REFERRAL OF PATIENTS TO VARIOUS CENTRES

Reasons	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
Aggressive Behaviour Against Persons (Assault, Cruelty, Attempted Homicide, &c.) ..	17	16	8	1	5	6	4
Aggressive Behaviour Against Property (Destruction, Vandalism, Fire-setting, &c.) ..	3	6	3	..	..	1	2
Antisocial Behaviour at Home or School (Unco-operative, deceitful, lying, disobedient, running away, &c.)	87	74	66	13	36	17	18
Stealing	11	12	103	2	8	63	13
Sexual Symptoms	6	4	21	..	5	4	8
School Problems (Lack of progress, not mixing or unpopular, resistance to study, school refusal, truancy, &c.)	160	94	26	3	68	..	97
Speech and Language Disorders	73	78	3	2	75	..	22
Psychosomatic and Sensory Disorders	40	35	4	2	30	..	21
Organic Brain Disorders and Mental Deficiency ..	26	13	2	1	7	..	15
Neurotic or Emotional Symptoms (Hyperactivity, tantrums, fears or phobias, jealousy, sibling rivalry, &c.)	135	177	20	9	63	..	79
For Psychiatric Assessment only (concerning education matters, employment, certification, discharge from institutions, &c.)	49	4	49	245	13	..	2
For Psycho-diagnostic Testing, E.E.G., &c. only ..	41	2	..	..	1	..	28
Mixed Symptoms	125	158	132	11	37	55	124

TABLE XCV
SHOWING SOURCES OF REFERRAL OF NEW PATIENTS

Sources	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
Parent or Guardian	310	345	68	6	128	..	106
Private Medical Practitioners	126	37	9	3	114	..	108
Public Hospitals	98	8	1	..	29	..	30
School Health Services	10	50	1	..	3	..	3
Maternal and Child Welfare Service	5	5	..	..	..	..	3
Other Health Department Agencies (Psychiatric Clinic, Social Work Division, &c.)	10	13	3	2	7	50	5
Commonwealth Government Departments (C.A.L., Vocational Guidance, &c.)	..	..	1	..	..	..	6
Children's Court Magistrate	..	..	104	4	4	11	..
Department of Children's Services	8	3	156	254	3	135	28
Residential Institutions Caring for Children ..	2	..	14	13	..	..	..
Education Department	38	35	6	..	19	..	16
Non-State Education Agencies	25	2	..	..	3	..	9
Welfare Organisations Caring for Children ..	30	1	2	4	4	..	32
Other Agencies (Juvenile Aid Bureau, "Life Line," Marriage Guidance Council, &c.)	15	5	53	1	1	..	3

TABLE XCVI

SHOWING AGES OF NEW PATIENTS FOR THE YEAR ATTENDING THE VARIOUS CENTRES OF THE DIVISION

Age Group	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
Up to 18 months	1	..	..	152	1	..	4
18 months and under 3 years	12	16	..	20	8	..	21
3 years and under 5 years	106	72	2	21	46	..	36
5 years and under 8 years	239	152	3	25	106	..	108
8 years and under 12 years	213	172	52	39	72	..	107
12 years and under 15 years	85	72	237	24	66	14	53
15 years and under 18 years	14	20	123	6	16	132	17
Total	670	504	417	287	315	146	346

TABLE XCVII

SHOWING DURATION OF ILLNESS OF CASES ATTENDING THE VARIOUS CENTRES
(ESTIMATION OF DURATION BY PARENT)

Duration	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
Less than approximately 6 months	69	31	132	29	43	34	31
Approximately 6 months to 1 year	59	44	70	17	42	24	34
Approximately 1 year to 1½ years	70	36	49	14	16	9	29
Approximately 1½ years to 2 years	25	23	12	2	26	23	5
Approximately 2 to 3 years	89	86	72	7	29	13	37
More than 3 years	296	284	78	20	153	42	148
Duration not known (Includes those Referred for Assessment Only)	62	..	4	198	6	1	62
Totals	670	504	417	287	315	146	346

TABLE XCVIII

SHOWING NUMBERS AND RESULTS OF SELECTED PATIENTS REFERRED FOR E.E.G. INVESTIGATION

Details of E.E.Gs.	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic (In-patients)	Wilson Youth Hospital Clinic (Out-patients)	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre	Adult Psychiatric Clinic	Totals
No. of E.E.Gs. done at each Institution	351	383	136	97	41	36	2	1	116	1,163
Percentage at each Institution of Total Number of E.E.Gs. done	30.2%	32.9%	11.7%	8.3%	3.5%	3.1%	0.2%	0.1%	10%	100%
No. of abnormal E.E.Gs. done at each Institution	170	183	58	44	16	23	..	1	47	542
Percentage of abnormal E.E.Gs. done at each Institution	48.4%	47.8%	42.6%	45.5%	39%	63.9%	..	100%	40.5%	46.6%*

* Percentage of Total.

TABLE XCIX
SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES

Diagnostic Categories	Institute of Child Guidance	Mary Street Clinic	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
States of Diminished Consciousness and Neurasthenic States	1	..	..	..	..	..	..
States of Clouded Consciousness	1	..	..	..	1	..	..
States of Mental Deficiency or Dementia—I.Q. below 70	28	7	9	8	15	..	21
States of Intellectual Subnormality—I.Q. 71-80 ..	58	31	31	27	1	4	45
Paroxysmal Disturbance of Consciousness ..	14	5	5	..	2	2	5
Special Organic Brain Syndromes—"Minimal Dysfunction, &c."	60	45	7	2	12	1	3
Mixed Organic Mental Syndromes	35	6	3	1	6	1	6
States of Deviant Maturation	7	..	..	1	..	..	21
Disorders of Speech—							
Mutism and Deaf Mutism	2	6	..	..	1	1	9
Delayed onset, retarded development of speech, dyslalia	68	64	2	9	70	..	29
Disorders of articulation, phonation and co-ordination of speech	10	15	1	1	18	2	6
Disorders of communication (comprehension of speech, and expression of speech, aphasia, &c.)	9	1	1	..	5	..	3
Disorders of Reading and Calculation (dyslexia, dyscalculia, &c.)	38	27	2	..	5	..	20
Mixed Speech and Communication Disorders ..	12	9	..	..	11	..	20
Disorders due to Retarded or Arrested Development of the Brain	6	3	..	..	5	4	3
Disorders due to Degenerative and Hereditary-familial Diseases of the Brain	1	2	..	..	..	..	..
Disorders due to Physical Agents—Trauma ..	2	3	..	..	1	..	7
Disorders due to Physical Agents—other than Trauma	1	..	..	..	..	..	..
Disorders due to Chemical Agents (poisoning, anoxia, drugs, &c.)	..	..	..	..	..	..	1
Disorders due to Infective Agents (Meningitis, Encephalitis, &c.)	1	1	..	..	..	..	2
Disorders due to Metabolic and Endocrine Dysfunctions	..	..	..	..	..	..	3
Disorders due to Haemopoietic Factors (Anaemia, RH Incompatibility, &c.)	1	..	1	..	2	..	2
Disorders due to Disturbance of Brain Physiology (Headaches, Migraine, &c.)	4	1	1	..	3	..	..
Disorders due to Isolation and/or Sensory Deprivation	..	2	1	..	3	..	..
Mixed Brain Disorders	2	..	..	..	..	..	3
Psychosomatic Disorders—							
Skin Reactions	1	..	..	..	..	..	2
Respiratory Reactions	13	8	3	1	1	..	3
Cardiovascular Reactions	1	..	..	..	..	..	..
Haemic and Lymphatic Reactions	1	..	..	..	18	..	19
Gastro-intestinal Reactions	13	10	..	1	18	..	19
Genito-urinary Reactions	28	68	2	11	28	..	26
Nervous System Reactions	2	..	..	..	6	..	6
Psychogenic Reactions of Organs of Special Sense	8	..	2	..	..	..	..
Mixed Psychosomatic Reactions	1	1	..	..	1	..	4
Psychological Reactions to Physical Disorders—							
Reaction to Deformity (loss of limb, spasticity, &c.)	15	..	2	..	..	..	11
Reaction to Chronic Infectious Diseases (e.g. Rheumatic Fever)	1	2	1	..	..	..	1
Reaction to Sensory Loss	13	2	1	..	1	..	3
Reaction to Endocrinopathies (e.g. obesity) ..	1	..	..	..	..	..	1
Reaction to Chronic Diseases (e.g. diabetes, coeliac disease)	2	..	1	..	..	..	..
Reaction to other Physical Disorders (e.g. Gastro-enteritis, Pregnancy, &c.) ..	3	..	1	..	..	..	..
Reaction to Mixed Physical Disorders	..	1	..	..	..	..	4
Transient Situational Behaviour Disorders—							
Behaviour and Emotional Reactions—							
Adult Type Situational Reaction (e.g. showing anxiety)	21	11	31	..	1	4	3
Situational Adjustment Reaction of Infancy or Early Childhood	46	7	3	..	7	..	8
Situational Emotional Reactions (e.g. temper tantrums, sibling rivalry, &c.) ..	91	103	8	12	30	4	79
Situational Neurotic Trait Reactions (e.g. tics, spasms, phobias, &c.)	14	14	..	..	8	..	8
Situational Habit Disorders (e.g. habitual manipulations, thumbsucking, nail-biting, &c.)	4	8	..	..	10	..	11
Mixed Behaviour and Emotional Reactions ..	17	15	..	1	8	..	46

TABLE XCIX—*continued*
SHOWING DIAGNOSES OF CASES ATTENDING THE VARIOUS CENTRES—*continued*

Diagnostic Categories	Institute of Child Guidance	Mary Street Centre	Wilson Youth Hospital Clinic	Warilda Child Guidance Centre	Toowoomba Centre	Westbrook Training Centre	Townsville Centre
Transient Situational Behaviour Disorders— <i>continued</i>							
Conduct Disorders—							
Antisocial Behaviour (e.g. deceitfulness, lying, disobedience, &c.)	34	45	29	21	8	9	19
Aggression Against Persons	24	37	11	6	29	5	3
Aggression Against Property	2	1	2	..	..	2	4
Stealing	12	13	85	7	10	72	1
Disorders Related to Sexual Behaviour ..	4	4	25	..	4	7	6
Disorders Related to School (e.g. general lack of progress, truancy, school refusal, &c.)	83	85	31	4	63	1	82
Mixed Conduct Disorders	46	63	171	12	27	45	91
Personality Disorders—							
Inadequate, Immature	121	36	65	4	61	23	2
Schizoid	22	15	3	..	14	3	2
Cyclothymic	2	3	..	..	..	..	..
Paranoid	1	1	3	..	15	1	1
Anxious	6	20	8	..	33	7	7
Overly Inhibited, Introverted	5	32	30	4	4	3	1
Overly Independent	1	1	..	1	3	3	1
Emotionally Unstable, Hysterical, Extroverted	28	8	11	1	15	3	1
Aggressive (including passive-aggressive and oppositional)	74	76	35	6	28	13	2
Compulsive, Obsessional	10	4	1	..	7	..	1
Antisocial Sociopathic (i.e. "Psychopath") ..	1	2	2	..	1	15	2
Dyssocial Personality	..	..	29	..	5	27	..
Sociopathic with Sex Deviation or Addiction	..	..	1	..	..	..	1
Mixed Personality Disorders	23	87	21	..	..	..	1
Psychoneuroses—							
Anxiety State	3	13	4	..	4	1	..
Dissociative Reaction	..	..	1	..	..	..	..
Conversion Reaction	1	..	..	..	1	..	..
Phobic Reaction (including School Phobia) ..	9	13	..	..	10	2	6
Obsessive-Compulsive Reaction	1	2	..	..	1	..	..
Neurotic Depressive Reaction	..	5	5	1	6	..	1
Mixed Psychoneurotic Reactions	1	..	..	..	4	..	1
Psychoses—							
Affective Psychotic Disorders	..	..	1	..	1	..	..
Schizophrenic Disorders (Adult and Adolescent)	1	..	1	..	2	2	..
Schizophrenic Disorders (Childhood types) ..	..	..	1	..	..	..	..
Miscellaneous Psychoses (e.g. Autism, Paranoid Psychoses, Involutional Psychoses) ..	2	..	1	..	..	..	..
Diagnosis not yet Defined	12	..	..	..	..	..	..
No Diagnosis—Testing Only	56	2	..	..	..	..	46
Diagnosed as "Normal"	44	30	3	190	2	..	123

DIVISION OF DENTAL SERVICES

Director of Dental Services: A. J. HOOLE, B.D.Sc. (Qld.)

Acting Director of Dental Services from 8th March, 1971, G. R. McKELVEY, B.D.Sc. (Qld.)

INTRODUCTION

The Public Dental Service furnished by Queensland Dental Hospitals and Dental Clinics, continued to improve and expand during the year, and this trend can be confidently expected to continue as the many projects in various stages of preparation are brought to completion.

QUEENSLAND DENTAL CLINICS

At the close of the year, regular public dental services were being provided at 141 centres as follows:—

Base Dental Clinics, including three full-time Dental Clinics associated with Dental Hospitals	46
Itinerant Dental Clinics attached to Hospitals	37
Other centres, including Missions, Aboriginal Settlements, Bush Nursing Centres, A.I.M. Hostels and nineteen Welfare Institutions	49
Part-time Dental Clinics attached to Hospitals but serviced by private Dentists	6
Aboriginal Settlements serviced by private Dentists	1
Part-time Clinic services operated in private Dentists' surgeries	2
Total	141

Reference to the accompanying map demonstrates the extremely wide distribution of Dental Clinics in the State, many in remote locations. In large areas of the State where population densities are low, the Clinic Service alone provides dental treatment for the communities concerned.

DENTAL STAFF

The "Dental Team" concept of modern dental practice acknowledging the importance of the combined efforts of Dentist, Dental Assistant and Dental Technician, is well recognised, and the value of other supporting staff, particularly clerical staff, is not overlooked. However, the magnitude of the service can best be demonstrated by reference to the existing approved establishment for Dentists within the services as listed below.

Approved Establishment—(Dentists)—Queensland Dental Hospitals and Dental Clinics	
NORTH BRISBANE HOSPITALS BOARD—	
Brisbane Dental Hospital, Mobile Dental Clinic and Sandgate Dental Clinic	31
Children's Dental Hospital	13
	44
SOUTH BRISBANE HOSPITALS BOARD—	
South Brisbane Dental Hospital, Wynnum Dental Clinic and Inala Dental Clinic	25
	69
WOLSTON PARK SPECIAL HOSPITAL (including CHALLINOR CENTRE)	
	2
	71
COUNTRY DENTAL CLINICS—	
Full-time Dentists	60
Part-time Dentists	5
Part-time Consulting Specialists	2
	138

It is gratifying to recall that staffing has not been a major problem during the year. Although the inevitable staff resignations and retirement have occurred from time to time, and it may not always have been possible to make an immediate replacement, the year ended with only one unfilled vacancy for a dentist.

NEW EQUIPMENT

Dental equipment has made tremendous strides in recent years, and the Dental Service has progressively taken advantage of these new trends to improve the service provided to patients, and to increase efficiency. "New Concept" equipment has been supplied during the year to a number of Clinics.

In those instances where full "New Concept" equipment has not been deemed necessary, progressive up-dating of equipment has continued.

PROJECTS

Mitchell: A new full-time Dental Clinic was completed and commenced operations during the year.

Ingham: Remodelling of the Ingham Dental Clinic was completed.

Miles and St. George: Agreements were reached with private dental practitioners in these towns to provide Dental Clinic services to eligible patients in the Dentists' own surgeries.

Department of Aboriginal and Island Affairs: Further significant progress was made during the year in providing, under Commonwealth Grant, new dental facilities at a number of communities. Thus Dental Clinics at Bamaga, Hopevale and Lockhart River have been completed, while work is nearing completion on Clinics at Aurukun, Mitchell River and Woorabinda. It is anticipated that the new Clinics at Edward River, Mornington Island and Weipa will also be completed in the first half of the new financial year.

Approval was granted during the 1970-71 financial year for the following:—

Thallon: The establishment of a Dental Clinic at Thallon which is expected to be operating early in the new financial year.

Mundubbera: The establishment of a new Dental Clinic for which initial plans have been prepared.

Injune: The preparation of sketch plans for the establishment of a new Dental Clinic.

Laidley: The preparation of sketch plans for the establishment of a new Dental Clinic.

South Brisbane: The preparation of sketch plans which are currently under consideration for the new South Brisbane Dental Hospital.

Mareeba: The conversion of the former C.W.A. Mothers' Hostel to a Dental Clinic, and accommodation for the Dentist, was approved, and working drawings are now under consideration.

Barcaldine: Provision of a second surgery at the Barcaldine Dental Clinic—preparation of sketch plans and estimate of costs to be arranged. Quotations have also been invited for works to improve accommodation and facilities for dental staff at the Barcaldine Hospital.

Longreach: A tender was accepted for remodelling of Longreach Dental Clinic.

Atherton: The inclusion of a Dental Clinic in the overall developmental programme for the Atherton Hospital.

Central Highlands: The establishment of an itinerant Dental Service based on Emerald servicing also Clermont and Springsure.

PREVENTIVE DENTISTRY

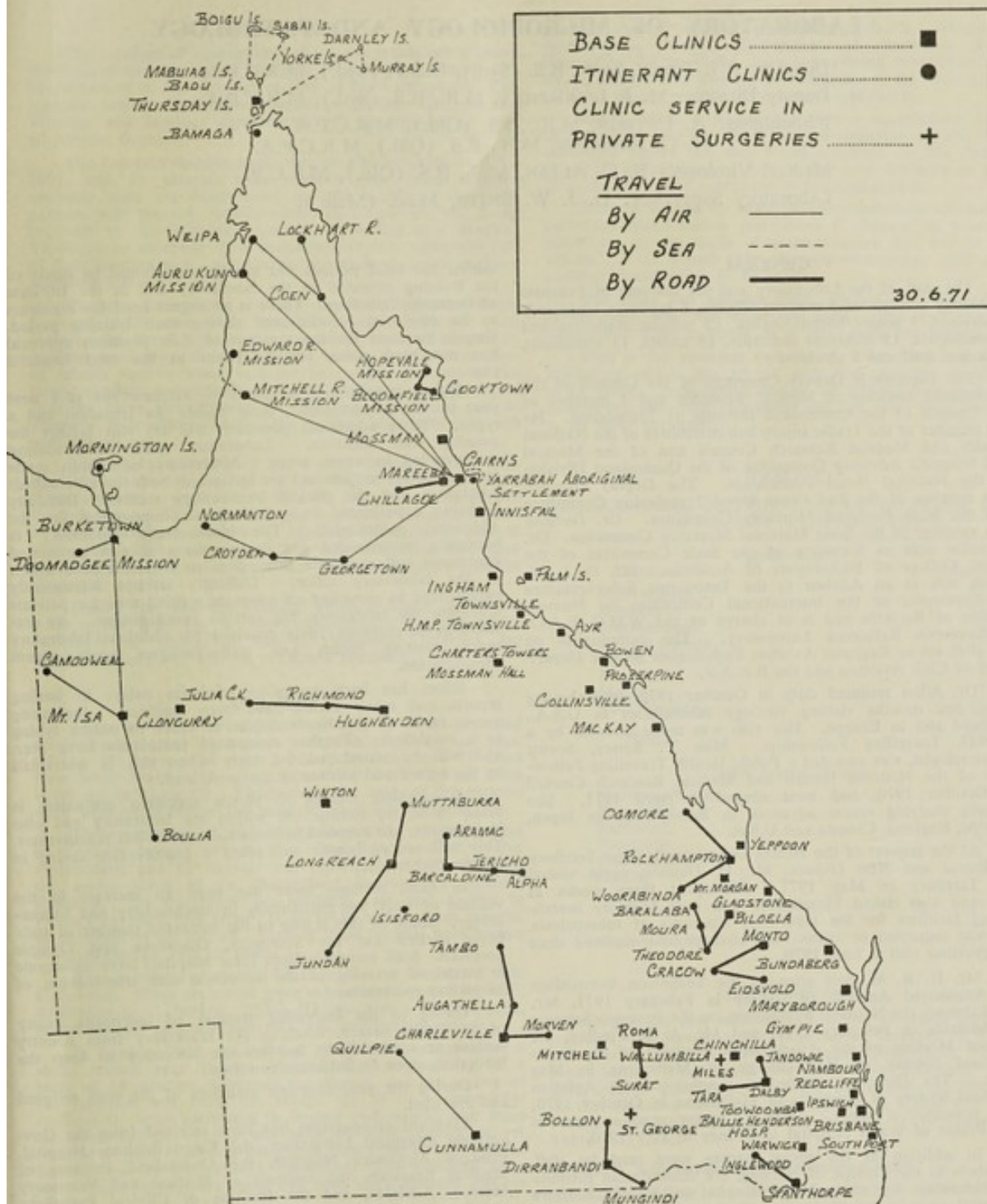
Although the major dental diseases, dental caries and periodontal disease, are experienced by the vast majority of the Australian population, sufficient knowledge is in the hands of the dental profession regarding the causes of these diseases for them to be, for the most part, preventable. However, for this to be achieved, the co-operative action of both Dentist and patient is required, and problems of communication must be surmounted.

Actual professional preventive treatment measures, such as topical fluoride applications, are regarded as extremely important and their practice within the Clinic Services is increasing, and this trend will continue.

Additionally, a mounting programme of dental health education for Dental Hospital and Dental Clinic patients is being organised, and in this regard the Director of Dental Services, the Acting Director of Dental Services, and the Chief Dental Officer, School Health Services, have been members of an *ad hoc* Committee set up to design new publications to be produced by the Queensland Health Education Council for distribution throughout the profession. This new material is designed to assist communication between Dentist and patient, so that the results of research into prevention of dental disease can be passed on to the public.

Although the task of achieving dental health is a formidable one, tangible results are being achieved in many quarters, inspiring even greater efforts.

The most important single preventive measure in any public dental health situation continues however, to be fluoridation of communal water supplies. Regrettably, a



minority only of Queensland cities and towns have availed themselves of this safe, simple, reliable and inexpensive benefit.

VISITS OF INSPECTION

During the year, the Director of Dental Services and the Acting Director of Dental Services, visited various areas of the State, submitting reports and recommendations in relation to the Dental Services of the centres concerned.

The areas visited included the following:—Toowoomba; Dalby; Roma; Mitchell; Injune; Surat; Chinchilla; Kingaroy; Murgon; Cherbourg Settlement; Mundubbera; Eidsvold; Monto; Gayndah; Gympie; Stanthorpe; Inglewood; Texas; Goondiwindi; Bollon; St. George; Cunnamulla; Wallumbilla; Warwick; Cairns; Mossman; Mareeba; Ayr; Townsville; Innisfail; Bowen; Etna Creek Prison; Woorabinda; Rockhampton and Yeppoon.

LIAISON

The attendance of the Director of Dental Services (or the Acting Director of Dental Services) at meetings of the Dental Board, the Board of the Faculty of Dentistry, the Dental Health Education Workshop held in Sydney in August, 1970, the *ad hoc* Committee of the Queensland Health Education Council, and similar gatherings, provided, apart from the

primary reasons for such attendances, an opportunity to establish a suitable liaison with all segments of the dental profession—a most important factor in the successful operation of the State's Dental Services.

TABLE C

STATISTICS—QUEENSLAND DENTAL CLINICS 1970-71

Attendances—	
Adults	279,966
School children	209,801
Pre-school children	15,994
Total	505,761
Teeth extracted	
Fillings	210,159
Dentures	25,037
Dentures repaired	11,132

The extent and value of the dental work performed in Dental Hospitals and Dental Clinics throughout Queensland is shown in the above statistics.

LABORATORY OF MICROBIOLOGY AND PATHOLOGY

Director: J. I. TONGE, M.B., B.S. (Syd.), D.C.P. (Syd.), M.R.C.P.A.

Deputy Director: M. J. J. O'REILLY, M.B., B.S. (Syd.), M.R.C.P.A.

Pathologists: A. DAVISON, M.B., B.S. (Qld.), M.R.C.P.A.

N. G. JOHNSTON, M.B., B.S. (Qld.), M.R.C.P.A.

Medical Virologist: B. C. ALLAN, M.B., B.S. (Qld.), M.R.C.P.

Laboratory Supervisor: D. J. W. SMITH, M.Sc. (Melb.).

GENERAL

The staff of the Laboratory and the Institute of Forensic Pathology consists of 5 medical officers, 1 graduate laboratory supervisor, 5 senior bacteriologists, 13 science graduates and technologists, 15 technical assistants, 16 cadets, 13 attendants, 8 clerical staff and 3 cleaners.

The Director is Deputy Chairman of the Council of the Queensland Institute of Medical Research and a member of the Council of the Queensland Institute of Technology. He is a member of the Traffic Injury Sub-committee of the National Health and Medical Research Council and of the Medical and Scientific Advisory Committee of the Queensland Division of the National Heart Foundation. The Deputy Director is a member of the Red Cross Blood Transfusion Committee and the State Perinatal Mortality Committee. Dr. Davison is a member of the State Maternal Mortality Committee. Dr. Johnston acts as Secretary of the State Committee of the Royal College of Pathologists of Australia. Mr. D. J. W. Smith acts as an Advisor to the Taxonomic Sub-committee on *Leptospira* of the International Committee on Nomenclature of Bacteria and is in charge of the W.H.O./F.A.O. Leptospirosis Reference Laboratory. The pathologists on the staff act as Regional Aviation Pathologists for the Department of Civil Aviation and the R.A.A.F.

Dr. Allan resumed duty in October 1970, after having spent five months visiting virology laboratories in U.S.A., England and in Europe. Her visit was made possible by a W.H.O. Travelling Fellowship. Miss Y. Battey, Senior Bacteriologist, was awarded a Public Health Travelling Fellowship of the National Health and Medical Research Council in October 1970, and went abroad in April 1971. She intends studying recent advances in Bacteriology in Japan, Europe, England, Canada and U.S.A.

At the request of the Health Department of the Territory of Papua and New Guinea, Mr. D. Dawson again visited the Territory in May 1971. He spent three weeks at Lae and also visited Finschhafen and Port Moresby investigating facilities for the laboratory diagnosis of tuberculosis. He was requested to assess what changes had occurred since his previous visit in June 1970.

Mr. H. R. M. Self attended the Technicon Symposium on Automated Analysis in Sydney in February 1971, Mr. N. Stalman, the National Symposium on the Forensic Sciences in Adelaide in February 1971, and Mr. A. B. Findlay, the Second Meeting of the Asian-Pacific Division of the International Society of Haematology in Melbourne in May 1971. The Director attended a meeting of the Aviation Medical Society of Australia in Melbourne in October 1970, and presented a paper. Miss Y. Battey read a paper at the Prince of Wales Hospital in Sydney in July 1970.

In addition to the above, papers were read by staff members to the College of Nursing, the Australasian Institute of Technology and at the Mater Hospital and Royal Children's Hospital.

The medical staff give a series of lectures on Forensic Pathology in the University of Queensland and post-mortem demonstrations for medical and dental students as well as for police recruits. Lectures on various specialized subjects are also given at the Police Training College and at the Queensland Institute of Technology.

The laboratory is the W.H.O./F.A.O. Leptospirosis Reference Centre for Australasia, the Tuberculosis Reference Laboratory for Queensland and one of the two Australian Reference Laboratories for the Atypical Mycobacteria. Strains and cultures from interstate and overseas have been investigated and identified. Reference cultures and antisera are maintained and have been supplied to other laboratories on request.

The staff has engaged in various research projects in the laboratory and at the Institute of Forensic Pathology, some in association with the Queensland Institute of Medical Research and the University of Queensland.

There has been active participation in all evaluation trials conducted by the Royal College of Pathologists of Australia and unrestricted approval for training has been granted to the laboratory by the College. Pathology registrars and technologists attend the laboratory for experience and

tuition for brief periods but greater use should be made of the training potential in the laboratory and at the Institute of Forensic Pathology. There is an urgent need for registrars to be employed on the staff during their training period. Despite requests for the creation of such positions approval has not been given for this item in the next financial year.

It has been found necessary to increase the staff next year by six, a pathologist, three cadets, an attendant and a typist. These additional personnel will tax still further the existing staff facilities. Laboratory space is becoming overcrowded in some areas. Alterations have been made to the virology section and are in train in both the tuberculosis laboratory and the clinical bacteriology section. Difficulty is being experienced in providing accommodation for the additional pathologist. The biochemistry laboratory is becoming overcrowded and the provision of new automated equipment will aggravate this. Similar problems have arisen in the laboratory office. Difficulty is not infrequently experienced in providing an adequate waiting area for patients attending the laboratory for various investigations. As was stated in the previous report, provision for additional laboratory space, waiting rooms and staff facilities needs urgent consideration.

Effort has been made to minimise delays in issuing reports and many forms have been modified. Increasing use is made of the Xerox copier in order to reduce typing to a minimum. Further automated techniques have been and will be introduced but only when this is warranted by the nature and volume of the work load.

A complete change to plastic specimen containers is being made for routine use within the laboratory and also in diagnostic kits supplied to hospitals and medical practitioners. This will reduce labour and effect a considerable saving in freight charges.

In most sections there has been an increase in the volume of work but particularly in biochemistry and haematology. Some of this is due to the increased number of tests being carried out for Southport, Gladstone and Gympie hospitals. Staff members from these hospitals have undergone a period of training in the collection and transmission of laboratory specimens.

Owing to the increasing number of specimens, many of an urgent nature, reaching the laboratory from country centres at weekends, it has become necessary to keep the laboratory open on Saturday mornings.

During the year fourteen members of the staff resigned and one died.

Excellent co-operation has been received from the Government Chemical Laboratory, the Royal Brisbane Hospital, Princess Alexandra Hospital, the Queensland Institute of Medical Research, the Institute of Medical and Veterinary Science, Adelaide, and the Institute of Clinical Pathology and Research, Lidcombe, N.S.W.

We are indebted to Dr. R. Doherty of Q.I.M.R., Dr. R. Hawkes of Prince Henry Hospital, Sydney, Mr. T. D. St. George of C.S.I.R.O. and to Dr. F. Warburton of the Commonwealth Serum Laboratories, for assistance to the Virology section.

The death of Mr. H. E. Brown occurred in Brisbane on 10th March, 1971. Mr. Brown joined the staff of the laboratory as an assistant in 1913 and worked under Dr. Harris until 1923. During the period 1923-1935 as no medical officer was available, Mr. Brown, with a small staff to assist him, kept the laboratory functioning effectively. After Dr. E. H. Derrick was appointed Director of the Laboratory in 1935, Mr. Brown assisted him in the investigation of the fevers occurring at the Brisbane Abattoirs. This work culminated in Dr. Derrick's elucidation of Q. fever as an entity in 1937. Mr. Brown became a Senior Bacteriologist and Technical Supervisor and retired in December 1960. He had given 47 years of faithful service to the laboratory.

Dr. E. H. Derrick, the former Director of this laboratory, has recently been admitted as a Fellow of the Australian Postgraduate Federation. The citation for this award was prepared by Sir Macfarlane Burnet and he paid tribute to Dr. Derrick's major contribution to the study of infectious disease of man.

SCIENTIFIC

The serological investigation of infectious diseases is being reorganised and the scope extended. All tests in future will be performed in the Serology section of the Laboratory. The separate request and report forms at present used by the Virology and Serology departments will be replaced by new all-purpose forms.

The Serology section took over rubella serology in April 1971, and all patients with requests for routine rubella antibody tests are interviewed and bled there. However, patients with possible rubella-associated illness are still being received at the Virology section, to enable the Medical Virologist to supervise their investigations and lessen the risk of their meeting with and infecting the many pregnant patients attending for other tests.

Requests for rubella serology are becoming increasingly frequent, 4,529 sera being tested this year, a 61 per cent. increase on the 2,816 in the preceding year. The recommended pre-testing of adult women before the administration of rubella vaccine would still not be possible because of the large numbers potentially involved. However, all actual requests from practitioners for the test are being met at present. It is anticipated that the number of rubella tests will continue to rise.

With the availability of more viral antigens from commercial sources the range of serological tests for viral infections will be increased. As well, arbovirus serology will be undertaken. This large task has previously been performed by the Queensland Institute of Medical Research, as part of their epidemiology programme, but it is now clear that these tests should become a part of this laboratory's routine diagnostic service.

Testing for Australia antigen, which is found in patients with serum hepatitis, is now established. All sera from patients with acute or chronic hepatitis, referred for biochemical testing, will be examined routinely.

Q. FEVER

There were 131 recent infections with Q. fever diagnosed serologically during the year, a reduction of 22 on last year. Of the 131 cases, 114 were from Queensland and 17 from New South Wales. The geographical distribution of the cases is set out in Table C1. Eighty-three per cent. of the patients were working in either the meat or dairying industries.

Three patients had high complement fixing antibody titres to *Coxiella burnetii* (Phase I). One had an aortic valve replacement and *C. burnetii* was subsequently isolated from the aortic valve at the Queensland Institute of Medical Research. Of the other two patients one had a rise in Phase I antibody titre from 1:8 to 1:128 within three months of the onset of the disease. Both of these patients were known to be alcoholics with cirrhosis.

Nine members of the C.S.I.R.O. staff were vaccinated with *C. burnetii*. When their sera were subsequently tested for C.F. antibodies to *C. burnetii* (Phase II) one had a titre of 1:32, seven had no antibody and one was anticomplementary.

In January 1958, an outbreak of Q. fever occurred on a sheep station near Tambo, Queensland. At least 15 of a team of 34 shearers developed the disease, and the source of the infection was from the sheep. In 1970, a survey for residual Q. fever antibodies in human and animal sera from the same station property was made by medical students. A total of 61 sera (six from kangaroos, two from cows, 35 from humans and 18 from sheep) was tested. Low antibody titres were found in the sera from one cow, eight humans and six sheep.

Polyarteritis nodosa of infancy associated with Q. fever

In January 1971, a female infant 5 months old from the Eidsvold district became ill with fever, conjunctivitis, cough and a rash similar to measles, which in a few days became urticarial. She was transferred to Brisbane because of her failure to improve. A neutrophil leucocytosis (77 per cent. in a total count of 35,800 per mm³) was present. On 20th January, her serum was tested in this laboratory and had a complement fixation titre of 1:512 with *C. burnetii*, all other serological tests being negative. The test was repeated on 2nd February and a titre of 1:256 was obtained. She was then given tetracycline with gradual clinical improvement except that gangrene of the fingers of the left hand developed. She became afebrile on 11th February and was allowed to return home soon after.

Towards the end of February the cough, fever and anorexia recurred, and she was readmitted to the Eidsvold hospital on 1st March where she died 8 hours later. An autopsy was performed 22 hours after death. The principal findings were bilateral pleural effusions, ascites, adhesive pericarditis and polyarteritis nodosa of the coronary and renal arteries. The right coronary artery had aneurysms up to 2 cm. in diameter which were filled with antemortem thrombus. Fibrosing infarction of the posterior interventricular septum and posterior left ventricular wall was present and both

kidneys showed numerous irregular infarcts. Microscopic examination showed involvement of numerous arteries throughout the body, the main lesion being destruction of the elastic lamina and marked proliferation of the intima which in some places occluded the lumen completely.

Blood collected at autopsy gave a complement fixation titre with *C. burnetii* of 1:256 but injection of this blood, numerous tissues and also blood collected on 2nd February failed to infect mice or guinea pigs and attempts to isolate virus or any other organisms were unsuccessful.

Sections stained by Macchiavello's technique showed very numerous small bodies resembling *C. burnetii* in vacuolated histiocytes in the walls of some arteries, but not in other organs. It is hoped that electron microscopy will enable positive identification to be made.

The child had had no direct contact with animals and at no time was fed on cow's milk. She had, however, frequently visited relatives on a farm with her parents.

This is the youngest case of Q. fever diagnosed in this laboratory and is one of the very few recorded deaths due to Q. fever. Polyarteritis nodosa of infancy is a well documented but extremely rare entity and has never been attributed to Q. fever previously.

TABLE C1
GEOGRAPHICAL DISTRIBUTION OF Q. FEVER CASES
(1st July, 1970, to 30th June, 1971)

QUEENSLAND					Number
District					
Metropolitan	..	..	..	..	48
Moreton	..	..	..	..	14
Maryborough	..	..	..	..	9
Darling Downs	..	..	..	..	16
Cairns	..	..	..	..	8
Townsville	..	..	..	..	1
Mackay	..	..	..	..	3
Rockhampton	..	..	..	..	15
Total	..	..	..	..	114
NEW SOUTH WALES					Number
Northern Rivers	..	..	..	..	4
Tenterfield	..	..	..	..	4
Tamworth	..	..	..	..	1
Newcastle	..	..	..	..	3
Coff's Harbour	..	..	..	..	1
Dubbo	..	..	..	..	4
Total	..	..	..	..	17
GRAND TOTAL	..	..	..	..	131

LEPTOSPIROSIS

During the year serological evidence of recent leptospiral infection was found in 164 patients, an increase of 45 over last year. Of these 127 were from Queensland, 36 from New South Wales and one from New Guinea. The geographical distribution of these cases and the serogroup of the causative serotypes are set out in Table CII. The occupational distribution of the patients is summarised in Table CII also.

W.H.O./F.A.O. Leptospirosis Reference Centre

Cultures from the laboratory reference collection have been sent on request to New South Wales, Victoria, Tasmania, South Australia, Northern Territory, New Zealand and Ceylon as well as to a number of institutions in Queensland. Instruction has again been given in laboratory diagnostic techniques to medical officers and technicians visiting the laboratory.

Three *Leptospira* strains received last year from the Department of Agriculture, Launceston, Tasmania, have been typed as serotype *hardjo*.

The investigation of the cause of abortion in some cattle herds is being continued by the Commonwealth Department of Primary Industry in Darwin. A total of 460 bovine sera, 116 of which were repeat samples were tested for the Department. Significant agglutination titres were obtained in 317 sera, with antigens of the Hebdomadis, Tarassovi and Pomona serogroups. 238 reacted with the Hebdomadis serogroup whilst only 26 reacted with Pomona serogroup.

Six of ten bovine sera from the Institute of Medical and Veterinary Science, and all of eight bovine sera from the Department of Agriculture in Adelaide had significant titres to Hebdomadis serogroup. The highest titres obtained within the group were the *hardjo* serotype.

Sera from eight kangaroos, six wallabies and 16 water rats were tested for the C.S.I.R.O. in Canberra as part of an investigation of the unexplained death of some kangaroos and wallabies. All sera were negative for leptospiral

TABLE CII
GEOGRAPHICAL DISTRIBUTION AND SEROGROUP
OF INFECTING LEPTOSPIRES IN 164 INFECTIONS
(1st July, 1970 to 30th June, 1971)

Serogroup	Number
Coastal area of Queensland, North of Rockhampton—	
<i>Canicola</i>	4
<i>Pyrogenes</i>	2
<i>Australis</i>	3
<i>Pomona</i>	4
<i>Grippotyphosa</i>	1
<i>Hebdomadis</i>	17
<i>Tarassovi</i>	1
<i>Celledoni</i>	2
Total	34
Coastal area of Queensland, Rockhampton to New South Wales border—	
<i>Icterohaemorrhagiae</i>	1
<i>Pyrogenes</i>	1
<i>Pomona</i>	39
<i>Hebdomadis</i>	33
<i>Tarassovi</i>	3
Total	77
Darling Downs and Western Queensland—	
<i>Icterohaemorrhagiae</i>	1
<i>Pomona</i>	6
<i>Hebdomadis</i>	8
<i>Tarassovi</i>	1
Total	16
New South Wales—	
<i>Icterohaemorrhagiae</i>	1
<i>Pomona</i>	16
<i>Grippotyphosa</i>	1
<i>Hebdomadis</i>	16
<i>Tarassovi</i>	2
Total	36
New Guinea—	
<i>Hebdomadis</i>	1
TOTAL	164

OCCUPATIONAL DISTRIBUTION OF LEPTOSPIROSIS
INFECTIONS
(1st July, 1970 to 30th June, 1971)

Occupation	Number
Meat Industry	47
Dairy Industry	74
Sugar Industry	2
Other Occupations	14
Unspecified	27
Total	164

antibodies except for one water rat in the serum of which a significant agglutination titre to serogroup *Pomona* was detected.

In the last Annual Report the case was recorded of a pig farmer from Kilkivan who developed acute renal failure two or three days after a *pomona* infection. The disease

was of such severity that renal dialysis was necessary before complete recovery occurred. Further work was done on the sera from this patient for Dr. Bain of Princess Alexandra Hospital. The serum was separated into five fractions and leptospira agglutination tests performed on each. It was shown that the agglutinating ability was associated largely with the IgM fraction.

The changing epidemiological pattern of Leptospirosis in Southern Queensland

Human leptospirosis in Southern Queensland has been considered, until recently, to be due mainly to infection with serotypes *pomona* and *tarassovi*.

In the four years, July, 1965–June, 1969, *pomona* infections varied between 71 per cent. and 74 per cent. of the total for the area, each year, whilst *tarassovi* infections ranged between 6 per cent. and 15 per cent. Infections due to members of a number of other serogroups combined, amounted to only 11 to 15 per cent. of the total.

In the last two years, however, July, 1969–June, 1971, there has been a dramatic increase in the incidence of *Hebdomadis* group infections which previously amounted to only 3 to 6 per cent. of cases. In the year 1969–70 they increased from 6 per cent. in the preceding year to 19 per cent. This year, 1970–71, there has been a further increase to 44 per cent. of the total infections.

The increased incidence of *Hebdomadis* group infections has been associated with a reduction in the number of *pomona* infections. The proportion of the latter fell from 74 per cent. in 1968–69 to 57 per cent. in 1969–70 and further to 48 per cent. in the 1970–71.

This change may be attributed to the spread of *hardjo*, a *Hebdomadis* group serotype, throughout the cattle population. Serotype *hardjo* was first isolated from cattle in Queensland in November, 1966, and it now appears to be widespread in many cattle herds both in Queensland and in other States. The concomitant reduction in the number of human *pomona* cases, also stemming from contact with infected cattle suggests that serotype *hardjo* is now overtaking *pomona* as the predominant serotype in cattle. The increase in *Hebdomadis* group infections that we have observed in man is real and not merely apparent owing to the recent addition of serotype *hardjo* to the antigen screen. Other cross-reacting *Hebdomadis* group serotypes which were and still are used in screening tests in this laboratory, show the same increase in incidence of infections with this group, as does the newly introduced *hardjo* strain. See Table CIII.

Since a similar increase in the incidence of *Hebdomadis* group infections has been noted in man in Northern New South Wales, it is apparent that the *Hebdomadis* serogroup and particularly serotype *hardjo* should be included as antigens when either human or bovine sera are being tested for evidence of leptospirosis.

Apart from the initial isolation by Mr. Sullivan of the Animal Research Institute in Queensland, further isolations of *hardjo* from cattle have been recorded in Queensland and Tasmania.

BRUCELLOSIS

Brucellosis was diagnosed serologically in 47 patients during the year, 34 from Queensland and 13 from New South Wales. A four-fold rise in titre in paired sera or a titre of 1:128 or greater in a single serum was regarded as being diagnostic. These cases represent an increase of 17 on the previous year.

One of the patients, a dairy farmer, became ill 12 hours after he had accidentally pricked his hand whilst assisting a veterinarian who was inoculating his cattle with *Brucella abortus* strain 19.

The geographical and occupational distribution of these cases is set out in Table CIV.

TABLE CIII
SEROGROUP OF LEPTOSPIRES IN HUMAN LEPTOSPIROSIS IN SOUTHERN QUEENSLAND

Leptospiral Serogroup	1965–66		1966–67		1967–68		1968–69		1969–70		1970–71	
	No.	%	No.	%	No.	%	No.	%	No.	%	No.	%
<i>Pomona</i>	47	71	63	72	61	74	64	74	39	57	45	48
<i>Tarassovi</i>	7	11	13	15	17	10	4	6	7	10	4	4
<i>Hebdomadis</i>	2	3	..	..	8	5	4	6	13	19	41	44
Other groups	10	15	12	13	19	11	15	14	10	14	3	4
Total	66	..	88	..	105	..	87	..	69	..	93	..

PSITTACOSIS

Three cases of psittacosis were diagnosed from Brisbane, Warwick and Biloela respectively. A complement fixation titre of 1:128 with *Miyagawanella ovis* was regarded as significant. In each case, the patients had pulmonary involvement and a known close association with birds.

MYCOPLASMA PNEUMONIAE

Sixteen human infections due to *Mycoplasma pneumoniae* were diagnosed serologically. A fourfold rise in complement fixation titre in paired sera or a titre of 1:128 or greater in a single specimen was regarded as diagnostic. Of the 16 cases, three were from New South Wales and 13 from Queensland, nine of the latter being from Brisbane.

TYPHUS

Five cases of scrub typhus were diagnosed serologically. An antibody titre of 1:128 with *Proteus* OXK in a single serum or a fourfold rise in titre in paired sera together with a consistent clinical history was regarded as being diagnostic. Of the two cases from Queensland one was a scientist who had been collecting *Leptotrombidium deliense*, in the Dayman Point area. He developed a febrile illness soon after returning to Brisbane. The diagnosis was confirmed by the isolation of a rickettsia in mice at the Queensland Institute of Medical Research. The other Queensland patient had been camping in the bush near Cairns.

There were eight patients in whose sera titres of more than 1:128 to *Proteus* OX19 were found. Four of these had greater than fourfold rises in titre in paired sera. Although confirmatory complement fixation titres with *Rickettsia mooseri* were obtained in only one case, it would seem from the history that five of the eight patients probably had murine typhus. The distribution of those with murine typhus was Rockhampton (1), Toowoomba (1), Atherton (1), Brisbane (1) and Launceston, Tasmania (1).

The history and serological results in the other three patients were more consistent with Queensland Tick Typhus, and their infections apparently occurred in Ayr, Rockhampton and Canungra. The last case was from the Army Jungle

Training Centre where scrub ticks (*Ixodes holocyclus*) were numerous and were known to have bitten a number of soldiers. The area in which the patient had become infected could be located accurately and ticks from this area were collected by the staff of the Queensland Institute of Medical Research. Subsequently *Rickettsia australis* was isolated from a pool of 10 ticks after intraperitoneal inoculation of suckling mice. This represents the first recorded isolation of *R. australis* from its long-suspected vector.

There is a need for a satisfactory *R. australis* C.F. antigen to aid in the differentiation between Murine and Queensland Tick Typhus.

SYPHILIS SEROLOGY

Sera from 148 native Army recruits in the Territory of Papua and New Guinea were tested with the Kolmer and Reiter protein complement fixation, the V.D.R.L. and F.T.A.-A.B.S. tests. It was found that 31, (21 per cent.) had reactive F.T.A.-A.B.S. tests, some with reactive reagin and Reiter tests also. 21 (14 per cent.) had reactive reagin tests only and two reacted with the Reiter test alone.

BACTERIOLOGY

Staphylococcal Phage Typing

During the year only one hospital outside the metropolitan area submitted cultures for phage typing. Phage type 88 has been added to the basic set and some cultures have been typed with this new phage. There is still a relatively high proportion of non-typeable strains.

Enteric Pathogens

Salmonella species were isolated from 35 patients and also from 11 of 206 meat inspectors as part of a routine examination. No isolations from food were made during the year. The serotypes and source of these cultures are listed in Table CV. The typing of these strains was done at the Institute of Medical and Veterinary Science, Adelaide. The only isolations of *S. typhi* have been from a known carrier. The identification of two *S. typhi* cultures from Port Moresby was confirmed.

Shigella sonnei was isolated from four patients and *Sh. flexneri* from three.

Enteropathogenic *E. coli* were cultured from 43 young children. These were typed as follows:—

Serotype 026/B6 (5), 055/B5 (4), 086/B7 (3), 0111/B4 (2), 0119/B14 (1), 0125/B15 (4), 0126/B16 (9), 0127/B8 (10), 0128/B12 (5).

An *Arizona* species was isolated from one patient with gastroenteritis.

Marine Vibrios

In an outbreak of gastroenteritis which occurred on a tropical island resort between December, 1968 and March, 1969, involving 385 persons, the causative organism was found to be *Vibrio parahaemolyticus* (Battey et alii: Med. J. Aust. (1970), 1, 430).

TABLE CV

SALMONELLA SEROTYPES ISOLATED
(1st July, 1970 to 30th June, 1971)

Salmonella Type		Patients	Meat Inspectors
Serotype	Serogroup		
<i>S. typhimurium</i> ..	B	7	2
<i>S. derby</i> ..	B	..	2
<i>S. chester</i> ..	B	2	..
<i>S. saint-paul</i> ..	B	1	..
<i>S. arechavaleta</i> ..	B	1	..
<i>S. singapore</i> ..	C ₁	1	..
<i>S. potsdam</i> ..	C ₁	1	..
<i>S. birkenhead</i> ..	C ₁	1	..
<i>S. muenchen</i> ..	C ₁	1	..
<i>S. anatum</i> ..	E	15	2
<i>S. give</i> ..	E	..	1
<i>S. senftenberg</i> ..	E	1	..
<i>S. havana</i> ..	G	..	1
<i>S. onderstepoort</i> ..	H	..	1
<i>S. bahrenfeld</i> ..	H	1	..
<i>S. adelaide</i> ..	"O" 35	1	2
<i>S. wandswoth</i> ..	"O" 39	1	..
Untyped ..	"O" 1, 51	1	..
Total ..	..	35	11

TABLE CIV
BRUCELLOSIS INFECTIONS ON SEROLOGICAL EVIDENCE
(1st July, 1970 to 30th June, 1971)

Locality	Number
Queensland—	
Brisbane ..	18
Ipswich ..	1
Toowoomba ..	3
Cooroy ..	2
Wondai ..	1
St. George ..	1
Gympie ..	3
Maryborough ..	2
Mackay ..	1
Townsville ..	1
Cairns ..	1
Total ..	34
New South Wales—	
Byron Bay ..	1
Lismore ..	2
Grafton ..	1
Coff's Harbour ..	2
Taree ..	4
Newcastle ..	1
Tenterfield ..	2
Total ..	13
Total ..	47

OCCUPATIONAL DISTRIBUTION OF BRUCELLOSIS CASES
(1st July, 1970 to 30th June, 1971)

Occupation	Number
Meat Industry ..	20
Dairy Industry ..	18
Other ..	4
Unspecified ..	5
Total ..	47

As a result of this it was decided to test for the presence of this organism in oysters received at the Fish Board. From 16 samples examined, *Vibrio parahaemolyticus* was isolated from seven. All the oysters came from New South Wales. Four of the strains have to date been confirmed as *V. parahaemolyticus* and have been serotyped by Dr. R. Sakazaki in Japan.

This organism is the causative agent in over 50 per cent. of cases of food poisoning in Japan and is always associated with raw sea foods or sea water. It is important to note that this potential pathogen is halophilic and is not isolated on ordinary media.

Miss Battey has been studying identification and serotyping techniques with Dr. Sakazaki in Japan and it is hoped to carry out an extensive survey of sea foods on her return.

Neisseria gonorrhoea

Strains of *N. gonorrhoea* resistant to penicillin continue to occur. This year 77 of 240 cultures (32 per cent.) were found to be relatively insensitive to penicillin, i.e. sensitive only to 0.125 I.U. or greater.

Guthrie Tests

The Guthrie test for phenylketonuria has been carried out on 36,783 blood specimens this year. Two newborn infants have been found to have high phenylalanine levels and have been referred for treatment.

Bacteriology of Waters

During the last five years there has been a great increase in the number of waters submitted for bacteriological examination. This year 6,667 samples have been tested, an increase of 27 per cent. on last year. Some of this increase is due to samples from the Department of Local Government from local waterways.

Mycology

Apart from *Candida* species the following fungi have been cultured:—*Microsporium canis* (3), *Trichophyton mentagrophytes* (4), *Epidermophyton floccosum* (1), *Microsporum gypseum* (1), and *Aspergillus* species (1).

PARASITOLOGY

Of two tapeworm segments submitted for identification one was found to be *Taenia saginata* and the other *Dipylidium caninum*. The former specimen was from a female adult at Lowood and the latter from a young child at Bundaberg.

Apart from routine specimens, surveys have been carried out at various missions and Aboriginal settlements at the request of Dr. Musgrave and the Department of Aboriginal and Island Affairs. The results of these surveys are set out in Table CVI.

THE MYCOBACTERIOLOGY LABORATORY

Mycobacterium tuberculosis was isolated from 118 patients during the year. This is an increase on last year when isolates were obtained from 93 patients. Of the 118 patients, 89 were new infections, 15 had been treated previously and no information was available concerning treatment in 14 patients from New Guinea.

Eighty cultures of *M. tuberculosis* were received for confirmation and sensitivity tests from other laboratories. The distribution of these is as follows:—Cairns (19), Townsville (16), Rockhampton (16), Toowoomba (1), Brisbane Chest Hospital (18), Royal Brisbane Hospital (4), Repatriation Hospital (1) and the Angau Hospital in Lae, New Guinea (4). In the previous year 75 such cultures were received for confirmation.

One interesting case encountered, was a 74-year-old male with positive smears and a culture of *M. tuberculosis* from the bone marrow. A positive culture was also obtained from his sputum. The patient was thought to have had apical pulmonary tuberculosis in 1954, although this was never confirmed bacteriologically and he had received no treatment. He died from cryptogenic miliary tuberculosis with an associated leukaemoid reaction in the blood. This was the first occasion on which cultures of *M. tuberculosis* have been obtained from bone marrow in this laboratory.

M. bovis was isolated from seven patients. Two of the cultures were sent for confirmation from Rockhampton and one from Cairns, the others were from sputa submitted to this laboratory. Two of the patients were meat workers, one was a cattle spayer and the remainder were elderly pensioners whose previous occupation was not known. B.C.G. (attenuated *M. bovis*) was isolated on two occasions from lymph nodes in young children.

M. ulcerans was isolated from two patients. One was a 34-year-old male from Cairns with ulceration on his back, the other was a nine-year-old girl from Sarina with ulceration of the left arm.

Sensitivity tests

A total of 302 sensitivity tests were carried out during the year. Of these 55 were on atypical mycobacteria with 1st, 2nd and 3rd line drugs and 198 cultures of *M. tuberculosis* were tested with 1st and 2nd line drugs. Sensitivity tests were also made on cultures of *M. bovis*, *M. ulcerans* and B.C.G. strains. In addition 38 cultures were received for sensitivity testing to various special drug combinations.

Sensitivity tests were made on 157 cultures of *M. tuberculosis* from previously untreated patients to determine the primary drug resistance of these strains. A resistance ratio of 8 or greater was regarded as indicating resistance. The results are set out in Table CVII, which also includes for comparison the results with 38 strains of *M. tuberculosis* from previously treated patients.

In a Commonwealth wide evaluation of H37RV and wild strains used for sensitivity testing, it was found that those strains in use in this laboratory were completely sensitive.

Rifampicin Sensitivity tests

Sensitivity tests with Rifampicin on a variety of mycobacteria have been made. The results, to date, are set out in Table CVIII. The resistance ratio (R.R.) method was used. R.R. values of less than 4 are usually indicative of sensitivity, those equal to 4 are regarded as showing probable resistance and those with R.R. greater than 4 as resistant.

TABLE CVI
PARASITOLOGY SURVEYS AT ABORIGINAL SETTLEMENTS AND MISSIONS (1970-71)
(Expressed as percentages)

	Mornington Island	Palm Island			Hopevale Mission	Normanton	Bloomfield River	Yarrabah	Arakun
		August 1970	November 1970	January 1971					
Number of persons examined ..	160	109	166	141	385	74	96	165	94
Parasite									
<i>Entamoeba histolytica</i> cysts ..	3	6	10	13	13	9	1	12	3
<i>Entamoeba coli</i> cysts ..	9	36	66	47	54	39	16	42	20
<i>Giardia lamblia</i> cysts ..	20	7	15	16	12	34	12	32	22
<i>Ascaris lumbricoides</i> ova ..	0.7	18	62	35	1	..	2	11	..
Hookworm ova ..	23	..	..	..	0.3	..	..	..	..
<i>Strongyloides stercoralis</i> larvae	5	..	0.6	..	..	..	..	1	..
<i>Enterobius vermicularis</i> ova ..	..	1	..	..	1	..	..	..	..
<i>Trichuris trichiura</i> ova ..	38	72	65	76	52	20	76	85	18
<i>Hymenolepis nana</i> ova ..	24	10	4	6	7	36	2	18	9
No ova or cysts detected ..	24	16.5	8	13	22	24	16	7	45
Total persons examined ..	1,390								
Total specimens examined ..	1,508								

TABLE CVII
DRUG RESISTANCE OF *M. tuberculosis*
(1st July, 1970 to 30th June, 1971)

	Patients			
	Untreated 157		Treated 38	
	No.	%	No.	%
Resistant to Strep. only	0	0	1	2.6
Resistant to P.A.S. only	0	0	0	0
Resistant to I.N.A.H. only	0	0	2	5.2
Resistant to Viomycin only	1	0.6	1	2.6
Resistant to Cycloserine only	1	0.6	0	0
Resistant to Ethionamide only	0	0	0	0
Resistant to Ethambutol only	0	0	0	0
Resistant to Strep. and P.A.S.	0	0	0	0
Resistant to Strep. and I.N.A.H.	0	0	1	2.6
Resistant to P.A.S. and I.N.A.H.	0	0	3	7.8
Resistant to Strep., P.A.S. and Cycloserine	1	0.6	0	0
Resistant to P.A.S., I.N.A.H. and Ethionamide	1	0.6	0	0
Overall resistance to Strep.	1	0.6	2	5.2
Overall resistance to P.A.S.	2	1.2	3	7.8
Overall resistance to I.N.A.H.	1	0.6	6	15.8
Overall resistance to Viomycin	1	0.6	1	2.6
Overall resistance to Cycloserine	2	1.2	0	0
Overall resistance to Ethionamide	1	0.6	0	0
Overall resistance to Ethambutol	0	0	0	0

TABLE CVIII
SENSITIVITY TESTING WITH RIFAMPICIN TO 30-6-71

Culture	Resistance Ratio			
	RR < 4	RR = 4	RR > 4	Total
<i>Mycobacterium tuberculosis</i>	21	1	0	22
<i>Mycobacterium bovis</i>	2	..	..	2
<i>Mycobacterium ulcerans</i>	1	1	2	4
<i>Mycobacterium kansasii</i>	1	1	..	2
Atypical strains (mostly Battey-avian)	1	..	70	71
Total	..	..	..	101

Atypical Mycobacteria

Reference strains of the various groups, sub-groups and species of the atypical mycobacteria have been sent to various laboratories on request. Cultures have been received for identification and serotyping from New Zealand and other Queensland laboratories. Identification of atypical mycobacteria from a total of 221 patients has been made. In Table CIX the distribution of the different types is set out.

The potential pathogens *M. scrofulaceum* (Group II) and *M. intracellulare* (Battey)—*M. avium* complex (Group III) have been grouped together in this table. This has been done because it has been found that the biochemical tests (colour, catalase and amides), which are used to differentiate these mycobacteria overlap in many instances. It has been shown by serotyping that an organism which biochemically belongs to the *Scrofulaceum* group can have a Battey serotype. The reverse situation also applies.

Atypical mycobacteria were isolated from lymph nodes of four young children under the age of three years. The classification of these four strains is set out hereunder.

Organism Classified by Biochemical Reaction	Serotype
<i>M. Scrofulaceum</i>	Not Completed
<i>M. Intracellulare</i>	Unclassified
<i>M. Scrofulaceum</i> — <i>M. Intracellulare</i> Overlap	Yandle (Battey)
<i>M. Scrofulaceum</i>	Gause (II)

One case of particular interest was that of a 58-year-old man who was admitted to Princess Alexandra Hospital in December, 1970, with cerebro-vascular disease. He had a history of alcoholism and had had a gastrectomy. He

TABLE CIX
CLASSIFICATION OF ATYPICAL MYCOBACTERIA
ISOLATED
(1st July, 1970 to 30th June, 1971)

Classification	Number of Patients	Probable Significance
Group I (Photochromogen) <i>M. kansasii</i>	6	Potential pathogen
Group II and III— <i>M. scrofulaceum</i> , <i>M. intracellulare</i> <i>M. avium</i> complex	143	Potential pathogen
Group II <i>M. gordonae</i>	28	Usually non-pathogenic
Group III <i>M. terrae</i>	9	Occasionally pathogenic
Group IV <i>M. fortuitum</i> complex	12	Usually non-pathogenic
Group IV <i>M. smegmatis</i>	1	..
Group IV Unclassified	2	..
Mixed isolations	20	..
Total	221	..

developed consolidation of the mid and lower zones of his right lung and despite antibiotic therapy died on 2nd February, 1971.

An organism classified by this laboratory as *M. smegmatis* was isolated from the pleural fluid and subsequently from post-mortem lung tissue. The culture was sent to Dr. W. Schaefer of the National Jewish Hospital at Denver for confirmation. He reported that the culture was not agglutinated by *M. fortuitum*, *M. abscessus* or *M. peregrinum* antiserum nor did it absorb their agglutinins. The culture was agglutinated by the antisera of type Davis of *M. intracellulare* and by *M. smegmatis* antiserum. He considered the strain to be characteristic of a certain type of *M. smegmatis*.

At post-mortem the patient was found to have a lipid pneumonia. The lipid was presumed to be extrinsic in origin and probably secondary to the brain stem cerebro-vascular disease. There was also old cystic infarction of the basal ganglia and evidence of the previous gastrectomy.

Spencer in his textbook "Pathology of the Lung" states, "Certain forms of inhalation lipid pneumonia, particularly that due to milk, may be complicated by a saprophytic growth of atypical acid-fast mycobacteria in the pneumonic areas. The synergistic action of lipids in milk and the normally saprophytic mycobacteria is responsible for some of the extensive damage caused by lipid pneumonia in patients with achalasia of the cardia". A similar case was reported by Gibson. (J. Path. Bact. (1953), 65, 239).

Atypical Mycobacteria in House-Dusts

In the early 1960's, atypical mycobacteria were recovered from vacuum-collected house-dusts by workers at the Queensland Institute of Medical Research. Although the isolates were identified in accordance with a scheme developed by Dr. Singer and Miss Rodda of the Q.I.M.R., it was not possible to correlate their identity with the various species which have been defined during the past decade. It is of importance that among these newly-defined species, there are some which are potential pathogens, while others are generally of no clinical significance.

In an attempt to determine whether there are potentially pathogenic species of atypical mycobacteria in house-dusts, several of the Q.I.M.R. strains were identified in this laboratory, using present-day biochemical methods. The strains had been lyophilized and stored under refrigeration for about ten years. The findings are of great interest, as over half of the strains identified were found to belong to species which are commonly implicated in mycobacterial disease in Queensland.

As a continuation of the study, the potential pathogens found in house-dusts were investigated serologically at the Mycobacterial Research Unit. A large percentage of the strains belonged to serotypes which are often recovered from patients with tuberculosis-like disease. It was concluded that a person's everyday environment is a possible source of disease-causing atypical mycobacteria.

This study is the subject of two papers recently published in The Medical Journal of Australia (Vol. 1, No. 13, 27th March, 1971, pp. 679-682).

Serotyping

As this laboratory is the Central Reference Laboratory for the State, it was considered necessary to introduce serotyping as an additional available test. Reference antisera and cultures were provided by the Mycobacterial Research Unit,

and subsequently antisera have been prepared in this laboratory. On request, cultures of the *M. avium*-*M. intracellulare*-*M. scrofulaceum* complex submitted to this laboratory, will be identified serologically.

Visit to New Guinea

At the request of the Director of Tuberculosis in Papua and New Guinea, Mr. D. Dawson visited the Territory in May, to provide in-service training at various laboratories. This visit follows a similar one in June, 1970, and again expenses were met by the National Association for the Prevention of Tuberculosis in Australia (Qld. Div.) Mr. Dawson spent three weeks at the Angau Memorial Hospital in Lae—the central laboratory for the Morobe District. As well, assistance was given at Butaweng Hospital near Finschhafen, and at Taurama and Gemo Hospitals in Port Moresby.

A report has been submitted to N.A.P.T.A. and the Director of Tuberculosis in the Territory. There are several problems associated with provision of paramedical services in New Guinea. In most cases the staff consists only of indigenous people, who have had little or no formal training in Medical Technology, and also the laboratory facilities are generally limited. It is intended that only the basic techniques be employed in the Tuberculosis Laboratories, i.e. smear examination and culture. At this stage it would not be possible to attempt sensitivity testing.

The Brisbane laboratory receives cultures from several centres in the Territory for sensitivity testing and identification, and on request, stock cultures of mycobacteria have been provided.

VIROLOGY

The Virology laboratory received 2,950 specimens for attempted virus isolation and 5,431 sera for antibody studies. The number of accessions again rose this year, the comparable figures for last year being 2,661 and 4,581 respectively.

Three hundred and fifty-nine virus strains were isolated from 322 patients (Table CX). In 193 patients diagnostic increases of antibody to an infecting virus were demonstrated, and in another 77 suggestively high antibody levels were found in convalescent sera (Table CXI).

Viruses were isolated from patients with a variety of illnesses, the details of which are shown in Table CXII.

The most common illness which was diagnosed as being due to enterovirus infection was hand-foot-and-mouth disease, occurring mainly in children. The epidemic lasted from June to December, 1970. Coxsackievirus A16, the classical agent causing this syndrome, was found in 15 patients, mainly in vesicle fluid and from mouth ulcers and faecal specimens. For the second year in succession no obvious summer enterovirus epidemic occurred.

Difficulty was encountered in identifying the coxsackievirus A16 isolates. Typing was clear by a complement fixation test, but neutralization of the isolates in monkey kidney tissue culture was not satisfactory. This difficulty was presumably due to aggregation of viral particles, as treatment of the virus suspension with sodium deoxycholate made clear neutralization possible.

Specimens from clinical poliomyelitis cases in New Guinea were examined, and a variety of enteroviruses was found. No information is available as to the stage of illness at which faecal samples were collected. It is assumed that the various serotypes found represent the background enteroviruses circulating in the population from which these patients came.

We continue to find many group A coxsackieviruses in children, particularly those with respiratory infections, but as far as pathogenicity is concerned, are unable to interpret these findings.

The severe epidemic of influenza, caused by the A₂/Hong Kong strain, which began in early June 1970, continued through July, since when no further infections have been diagnosed in Queensland patients. The virus was isolated however, from patients referred from New Guinea up till late September, 1970. Influenza B became epidemic, but to a much smaller extent, from late July till mid-November, 1970.

Queensland again experienced a rubella epidemic in spring and early summer in 1970. This is the third year in succession in which moderately severe epidemics have occurred. Each successive epidemic causes an increasing number of pregnant women, who have been in contact with rubella cases, to be referred for serological follow up.

In an attempt to increase the isolation rate of rubella virus from products of conception, explant cultures were attempted in 22 cases. Ten cultures failed, three due to bacterial contamination and seven having minimal or no outgrowth of cells. The growth failures were in placental fragments from full term deliveries. In the instances where fragments of amnion were also used, good growth occurred and all explants from fetuses were successful, except for one with bacterial contamination.

Rubella virus was recovered from four explants. From only one of these was the virus isolated by the standard technique of grinding the tissue and inoculating it into RK13 tissue culture.

Sixteen patients were referred because they had been given rubella vaccine during or just prior to pregnancy. As the infectivity and pathogenicity of the vaccine strain for fetuses is not yet known, it is desirable that these patients be thoroughly investigated. Of the 16 women only five are known to have been non-immune at the time of vaccination. Five continued to term and gave birth to apparently normal babies. In ten cases the pregnancy was terminated and in one a spontaneous abortion occurred.

No virus was isolated from four full-term placentas or from nasopharyngeal swabs from these babies, or from 11 abortuses. Explants were successfully established from three placentas and four abortuses.

Arbovirus activity was again prominent in late summer and autumn of 1971, as shown by the large number of cases of epidemic polyarthritis referred, and by the demonstration of antibody rises to Ross River virus in 32. In this illness the first serum is often not taken until the patient has been ill for some time, so that antibody peaks have already occurred, and the low number of positive diagnoses probably does not reflect the actual number of cases. The arbovirus serology was done at the Queensland Institute of Medical Research.

Two more strains of bovine papular stomatitis virus were isolated from lesions on the hands of people handling cattle. The isolations, in bovine tissue culture, were performed at the C.S.I.R.O. Long Pocket Laboratories.

Australia antigen tests are now being done by a gel diffusion method. Forty patients were tested and antigen found in one, a patient with clinical infectious hepatitis. Before the test was established here, the Queensland Institute of Medical Research tested 72 sera, referred from this laboratory and found antigen in two, both from patients with hepatitis.

TABLE CX
VIRUS ISOLATIONS
(1st July, 1970 to 30th June, 1971)

Virus	Number of Patients with Virus Isolates	Number of Viruses Isolated
Echoviruses	16	16
Coxsackieviruses	38	48
Polioviruses	6	6
Untyped enteroviruses	15	18
Adenoviruses	21	24
Influenza viruses	64	65
Parainfluenza viruses	27	27
Respiratory syncytial virus	6	6
Herpesvirus hominis	83	90
Rubella virus	40	53
Mumps virus	3	3
Bovine papular stomatitis virus	2	2
Varicella-zoster virus	1	1
Total	322	359

TABLE CXI
SEROLOGICAL DIAGNOSIS OF INFECTION WITH
VIRUSES AND WITH *Toxoplasma gondii*
(1st July, 1970 to 30th June, 1971)

Infecting Agent	Type of Test	Number of Patients with Diagnostic rise	Number of Patients with Suggestive High Titre	Total Number of Sera Tested
Influenza type A ..	CF	17	56	399
Influenza type B ..	CF	2	3	399
Rubella virus ..	HI	132	4*	4,529
Mumps virus ..	CF	9	7	111
Arboviruses group A†	HI, CF	32	N.A.‡	825
Arboviruses group B†	HI, CF	1	N.A.‡	825
<i>Toxoplasma gondii</i> ..	CF	Nil	7	308
Total		193	77	7,396

* Congenital, high titres at the age of six to nine months.

† Tested at the Queensland Institute of Medical Research.

‡ Not Applicable.

TABLE CXII
VIRUS ISOLATIONS FROM CLINICAL CASES
(1st July, 1970 to 30th June, 1971)

Diagnosis	Virus	Number of Cases	Positive Specimens
Aseptic meningitis, encephalitis	Echovirus 2	1	1 C.S.F.
	Echovirus 9	1	1 C.S.F.
	Echovirus 11	1	1 faecal specimen
	Echovirus 13	1	1 faecal specimen
	Coxsackievirus A4	1	1 faecal specimen
	Coxsackievirus A9	1	1 C.S.F.
	Untyped enteroviruses	3	1 C.S.F.
			2 faecal specimens
			1 throat swab
	Mumps virus	2	1 C.S.F.
Paralytic illness			1 urine
	Echovirus 9	1	1 faecal specimen
	Echovirus 15	1	1 faecal specimen
	Coxsackievirus A5	1	2 faecal specimens
	Coxsackievirus A8	1	1 faecal specimen
	Coxsackievirus A16	1	1 faecal specimen
	Coxsackievirus B4	1	1 faecal specimen
	Poliovirus 1	1	1 faecal specimen
	Poliovirus 2	1	1 faecal specimen
	Untyped enteroviruses	1	1 faecal specimen
Respiratory infection	Influenza A ₂ /Hong Kong	48	36 throat swabs, gargles
			12 lungs
	Influenza B	16	17 throat swabs, gargles
	Parainfluenza 1	9	9 throat swabs, gargles
	Parainfluenza 2	3	2 throat swabs, 1 lung
	Parainfluenza 3	13	13 throat swabs, gargles
	Respiratory syncytial virus	6	6 throat swabs, gargles
	Untyped myxoviruses	2	2 throat swabs
	Herpesvirus hominis	14	14 throat swabs
	Adenoviruses	11	11 throat swabs
	Echovirus 20	1	1 faecal specimen
	Coxsackievirus A4	4	4 throat swabs
	Coxsackievirus A8	2	2 throat swabs
	Coxsackievirus A9	1	1 throat swab
	Coxsackievirus A16	2	2 throat swabs
	Coxsackievirus B2	1	1 throat swab
	Poliovirus 1	2	2 throat swabs
	Untyped enteroviruses	3	3 throat swabs
	Mumps virus	1	1 nasal swab
Gingivo-stomatitis	Herpesvirus hominis	30	34 mouth swabs
Hand-foot-and-mouth disease	Coxsackievirus A16	15	13 vesicle swabs
			7 mouth swabs
			3 faecal specimens
Other vesicular rashes	Herpesvirus hominis	25	25 vesicle swabs
	Bovine papular stomatitis virus	1	2 vesicle swabs
	Varicella-zoster virus	1	1 skin lesion (at autopsy)
Genital ulceration	Herpesvirus hominis	12	13 vulval or penile swabs
Erythematous rashes	Rubella virus	33	13 throat swabs
			10 nasal swabs
			10 nasal and throat swabs
			3 vaginal swabs
			7 uterine curettings
			1 placenta
	Coxsackievirus A9	1	1 throat swab
	Untyped enteroviruses	2	2 faecal specimens
	Adenoviruses	2	1 faecal specimen
			1 nasal swab and throat swab
Cot deaths	Echovirus 14	1	1 bowel
	Echovirus 22	1	1 bowel
	Coxsackievirus A9	1	1 bowel
	Coxsackievirus B1	1	1 bowel
	Untyped enteroviruses	2	2 bowels
Neonatal and congenital infections	Rubella virus	7	3 throat swabs
			1 throat and nasal swab
			1 liver, lung, throat swab
			1 eye
			1 lung
			2 spleens
	Echovirus 6	1	1 faecal specimen
	Herpesvirus hominis	1	1 throat swab
			1 lung
			1 adrenal
Eye infections	Adenoviruses	5	5 eye swabs
	Herpesvirus hominis	1	1 throat swab
			1 eye swab

TABLE CXII—continued
VIRUS ISOLATIONS FROM CLINICAL CASES—continued
(1st July, 1970 to 30th June, 1971—continued)

Diagnosis	Virus	Number of Cases	Positive Specimens
Miscellaneous infections	Echovirus 1	1	1 faecal specimen
	Echovirus 11	1	1 faecal specimen
	Echovirus 14	1	1 faecal specimen
	Echovirus 16	2	1 faecal specimen
			1 throat swab
	Echovirus 17	1	1 faecal specimen
	Coxsackievirus A4	2	2 faecal specimens
	Coxsackievirus A6	1	1 faecal specimen
	Coxsackievirus A8	1	2 faecal specimens
	Poliovirus 2	2	2 faecal specimens
	Untyped enteroviruses	4	5 faecal specimens
			1 throat swab
	Adenoviruses	3	3 faecal specimens
			2 throat swabs

HAEMATOLOGY

There has been a 10 per cent. increase in the volume of work in this section over last year. Full testing of antenatal patients for the presence, type and level of antibodies in the maternal circulation, capable of causing damage to foetal red cells, has commenced. This has led to a marked increase in the work load.

The investigation of haemorrhagic disease is now well established and recently a young girl was discovered to have Christmas disease. There is an increasing number of patients with abnormal types of haemoglobin presenting at the laboratory and it will be possible to perform routine haemoglobin electrophoresis in the near future.

During the year the detection of circulating anti-nuclear factor by the use of immunofluorescence was begun and is now a routine procedure.

BIOCHEMISTRY

In the last Annual Report a 20 per cent. increase in the volume of work was noted, and during this present year a further 25 per cent. increase has occurred. It is of significance that the number of tests requested on each patient has also increased. For the year 1969-70 the number of tests per patient was approximately 2.4 and this has now risen to 3.2.

Wherever possible automated equipment is being used and a second autoanalyser is now needed to handle the expected increase in the volume of work. Space within the laboratory is already taxed and provision for expansion will be necessary in the near future.

Most of the specimens submitted to this section come from country areas, often over long distances, and the suitability of blood and urine specimens for some biochemical investigations is a constant problem. Many specimens arrive without adequate documentation and difficulty has been experienced in interpreting some results, when details of drug therapy is not known. A better laboratory and consultant service could be provided if practitioners and hospitals gave more satisfactory clinical data.

Every effort is made to deal with urgent requests from the country as soon as possible but, at present, some difficulties are experienced at week-ends. All reports of an urgent nature are telephoned promptly. Every effort is made to maintain accurate quality control.

THE INSTITUTE OF FORENSIC PATHOLOGY

This year 1,135 coronial autopsies were performed, an increase of 32 on the previous year. Many of these have required numerous ancillary investigations, before a death certificate could be issued. There has been a 36 per cent. increase in the number of sections cut from autopsy material. The cryostat has, in some cases, proved invaluable in allowing a quick histological diagnosis. The Government Analyst and his staff have assisted greatly in making toxicological examinations and their close co-operation is much appreciated. Blood and urine alcohol estimations are made as a routine in all traffic accident fatalities over the age of 14 years who die within 12 hours of the accident.

The collection of transparencies of pathological and medico-legal interest is steadily increasing. These are of value for reference and as teaching aids. The X-ray equipment

is not infrequently used as an ancillary aid to the autopsy. It is hoped that in the near future special equipment will be available for dental X-rays.

Coroners outside the metropolitan area have been requested to forward copies of post-mortem reports for review by the medical staff of the Institute. Unfortunately, to date, only about one-third of these reports are being received. The 580 reports received this year have been bound in folders and those of particular interest are coded for reference. This system enables some check to be maintained on the standard of the autopsies carried out throughout the State. In many cases the standard of the autopsies is not satisfactory, and some obvious faults in technique have been identified. Government Medical Officers are encouraged to use the booklet on Post-mortem Technique issued from the Institute and on occasions memoranda have been issued pointing out how technique may be improved. It is fully appreciated that many who are called upon to perform coronial autopsies in country areas lack experience, have many calls on their time and are often faced with difficult problems of interpretation. They are encouraged to forward tissues for histological examination and to use the ancillary aids available in this and the Government Chemical laboratory, before issuing premature and sometimes inaccurate certificates as to the cause of death. Tissues from 147 autopsies have been received during the year. The staff of the Institute are available to give advice, by telephone, concerning medico-legal problems, when required.

Once again it is emphasised that Government Medical Officers especially those newly appointed, should undergo a period of training in autopsy technique. Every effort should be made to improve the facilities for autopsies since in many centres these are sub-standard.

Data concerning 908 traffic accident fatalities which occurred in the metropolitan area between 1st July, 1963, and 30th June, 1968, are at present being assembled for publication. An attempt is being made to study by statistical analysis any significant changes in the pattern of injury in traffic accident victims over the period 1935 to 1968, since complete records are available for this period.

The report on road accidents involving articulated vehicles (semi-trailers) in Queensland during the period 1965-1967, has been completed and published.

The research project conducted in association with Professor Whitlock and Mrs. Armstrong of the Department of Psychological Medicine in the University of Queensland has been completed and published.

This study has investigated the age and drinking habits of persons killed in road traffic accidents, and at the same time the evidence of alcohol-caused liver damage in these subjects was checked. Over a period of 14 months the records and the accident data of 120 fatalities in Brisbane were examined. A social worker obtained data about past health, drinking habits and other details from friends and families of the deceased. Among 46 drivers and motor cyclists there was a preponderance of younger men, many of whom were regarded as moderate drinkers, but who often showed high blood alcohol levels. Only six of the drivers could be classified as abnormal drinkers. The 48 pedestrians were somewhat older than the drivers and often had been drinking heavily. Twenty-five passengers were also killed as a result of these accidents. There were 31 single vehicle accidents, predominantly involving younger men, many of whom had been drinking beforehand.

Only six subjects showed cirrhosis of the liver, of whom two were drivers. We were not able to confirm that major liver damage resulting from alcohol was a common finding among drivers killed on the roads. The overall impression was that young men, not necessarily alcoholics or heavy drinkers, made a disproportionate contribution to driver fatalities after an unusual amount of alcohol had been consumed. In the light of these results and the social worker's investigations, a number of recommendations have been made to try to reduce drunken driving and to assist the families of the victims of road accidents.

PUBLICATIONS

- ALLAN, B. C. (1971): "Immunization against Rubella", Correspondence Med. J. Aust. 1, 1406.
- DAWSON, D. J. (1971): "A simple identification scheme for Mycobacteria", Aust. J. Med. Technol. 2, 7.
- DAWSON, D. J. (1971): "Potential pathogens amongst strains of Mycobacteria isolated from house-dusts", Med. J. Aust. 1, 679.
- REZNIKOV, M. and ROBINSON, E. (1970): "Serologically identical Battey Mycobacteria from sputa of healthy piggery workers and lesions of pigs", Aust. Vet. Jnl. 46, 606.
- REZNIKOV, M. and DAWSON, D. (1971): "Serological investigation of strains of *Mycobacterium intracellulare* ('Battey' bacillus) isolated from house-dusts", Med. J. Aust. 1, 682.
- TONGE, J. I. Obituary of Dr. R. A. O'Brien (1970). Med. J. Aust., 1, 102.
- Pathology (1971), 3, 158.
- TONGE, J. I. (1971): "Road accidents involving articulated vehicles, (Semi-trailers) in Queensland (1965-1967)", Med. J. Aust. 1, 995.
- TONGE, J. I., O'REILLY, M. J. J., DAVISON, A. and JOHNSTON, N. G., (with WHITLOCK, F. A., ARMSTRONG, J. L. and BILTOFT, R. P.), 1971: "The drinking driver or the driving drinker? Alcohol, Alcoholism and other factors in Road Accidents", Med. J. Aust. (in the Press).
- WALLACE, R. B. and BATTEY, Y. M. (1971): "*Vibrio parahaemolyticus* in oysters", Correspondence, Med. J. Aust. 1, 982.

Submitted for Publication

- REZNIKOV, M., LEGGO, J. and DAWSON, D. J.: "Investigation by seroagglutination of strains of the *Mycobacterium intracellulare*-*M. scrofulaceum* group from house-dusts and sputum in South-Eastern Queensland."

2. STATISTICAL SUMMARY, 1970-71

TABLE CXIII

1. BACTERIOLOGY

A. SPECIMENS OF HUMAN ORIGIN (NON-TUBERCULOUS)

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Swabs—				
Throat and Nose	575	196	123	894
Urethra, Cervix, Anus, Bartholin's Glands	3,906	6,482	239	10,627
Ear	75	25	33	133
Eye	27	11	11	49
Other	319	108	117	544
Pus	239	97	137	473
Miscellaneous Fluids	8	4	1	13
Cerebrospinal Fluid	47	45	7	99
Serous Exudate	..	627	..	627
Serous Exudate (Dark Ground)	..	40	..	40
Sputum	848	795	263	1,906
Blood	71	..	5	76
Urine	10,492	10,492	2,839	23,823
Faeces	1,503	718	128	2,349
Chest Aspirations	3	3	..	6
Culture Identification	..	20	3	23
Miscellaneous	35	19	1	55
Total, 1970-71	18,148	19,682	3,907	41,737
Total, 1969-70	16,080	17,628	3,854	37,562

TABLE CXIII—continued
TUBERCULOSIS SECTION

Specimen	Examination			Totals
	Culture	Microscopy	Animal Inoculation	
Sputum	11,601	11,601	..	23,202
Sputum (Medi-Haler)	730	730	..	1,460
Gastric Aspiration	83	..	36	119
Urine	525	..	208	733
Pus	56	56	56	168
Pleural Fluid	71	71	70	212
Cerebrospinal Fluid	33	33	33	99
Miscellaneous Fluid	15	15	15	45
Tissues Including Lung	83	83	79	245
Bone Marrows	12	12	12	36
Miscellaneous	11	14	11	36
Cultures	..	..	15	15
For Animal Inoculation Only	..	..	105	105
Total	13,220	12,615	640	26,475
Asbestos Bodies	..	..	..	7
Culture	Confirmation of <i>M. tuberculosis</i>	..	..	102
.. .. .	Sensitivity Testing	..	..	382
.. .. .	Identification (atypical strains)	..	..	310
.. .. .	Total, 1970-71	..	..	27,276
.. .. .	Total, 1969-70	..	..	33,915

MYCOLOGY

Specimen	Examination			Totals
	Culture	Microscopy	Antibiotic Sensitivity	
Skin	115	112	2	229
Nail	19	19	1	39
Miscellaneous	76	64	4	144
Identification of Fungi	2	..	..	2
Total, 1970-71	212	195	7	414
Total, 1969-70	161	158	3	322

B. FOODS AND WATERS

Specimen	Examination			Totals
	Culture	Plate Count	Reductase	
Water	6,667	6,667	..	13,334
Milk	1,611	1,611	1,611	4,833
Cream	149	149	149	447
Other Milk Products	114	114	..	228
Meats and Fish	261	261	..	522
Miscellaneous	130	130	..	260
Total, 1970-71	8,932	8,932	1,760	19,624
Total, 1969-70	7,352	7,352	1,540	16,244

C. VARIOUS MATERIALS

Specimen	Object of Examination				Number
Disinfectants and Antiseptics	Rideal-Walker Co-efficient	..	..	..	74
Bottles	Sterility	..	..	..	104
Miscellaneous	Sterility	..	..	..	148
.. .. .	Culture	..	..	..	148
Sewerage Effluent	Culture	..	..	..	285
.. .. .	Coliforms	..	..	..	285
.. .. .	Total, 1970-71	..	..	..	1,044
.. .. .	Total, 1969-70	..	..	..	269

TABLE CXIII—continued

2. PHAGE TYPING

	Number
Cultures Prepared	1,225
Coagulase Tests	820
Antibiotic Sensitivity Tests	1,225
Cultures Phage Typed at R.T.D.	1,225
Cultures Phage Typed at 1,000 or 100 R.T.D.	728
Total, 1970-71	5,223
Total, 1969-70	4,973

3. SEROLOGY

	Number
Serum Agglutination (Screen)—	
<i>Salmonella typhi</i> (O)	100
<i>Salmonella typhi</i> (H)	6,118
<i>Salmonella paratyphi</i> (H)	6,118
<i>Salmonella schottmulleri</i>	6,118
<i>Proteus</i> OX19	6,174
<i>Proteus</i> OXK	6,174
<i>Proteus</i> OX2	59
<i>Brucella abortus</i>	6,166
<i>Leptospira</i> —	
<i>Serotype icterohaemorrhagiae</i>	6,876
<i>Serotype canicola</i>	6,802
<i>Serotype broomii</i>	6,752
<i>Serotype zannoni</i>	6,802
<i>Serotype robinsoni</i>	6,752
<i>Serotype australis</i>	6,802
<i>Serotype bratislava</i>	6,752
<i>Serotype pomona</i>	6,802
<i>Serotype grippityphosa</i>	6,802
<i>Serotype medianensis</i>	6,802
<i>Serotype kremastos</i>	6,802
<i>Serotype swajizak</i>	6,752
<i>Serotype tarassovi</i> (hyos)	6,802
<i>Serotype celledoni</i>	6,802
<i>Serotype autumnalis</i> (2 strains)	13,083
<i>Serotype javanica</i>	52
<i>Serotype ballum</i>	52
<i>Serotype cynopteri</i>	52
<i>Serotype bataviae</i>	52
<i>Serotype hardjo</i>	1,454
<i>Serotype hebdomadis</i>	28
<i>Serotype panama</i>	50
<i>Serotype shermani</i>	50
<i>Serotype patoc</i>	50
Serum Agglutination Tests (Quantitative)	2,536
Paul Bunnell Tests	6,271
Mono Spot Tests	34
Leptospiral Strains typed—	
Agglutination Tests Performed in Typing	90
Absorption Tests Performed in Typing	14
Antisera prepared	15
Complement Fixation Tests—	
Q. Fever— <i>Coxiella burnetii</i> (Phase I)—	
Routine	117
Quantitative	21
Q. Fever— <i>Coxiella burnetii</i> (Phase II)—	
Routine	6,314
Quantitative	438
Typhus Fever— <i>Rickettsia mooseri</i> (Soluble)—	
Routine	35
Quantitative	3
O.L.G.V. Virus Group— <i>Miyagawanella ovis</i> —	
Routine	6,255
Quantitative	431
Primary Atypical Pneumonia— <i>Mycoplasma pneumoniae</i> —	
Routine	5,694
Quantitative	344
Kolmer Wassermann (Serum)—	
Routine	20,265
Quantitative	650
Reiter Protein (Serum)—	
Routine	3,458
Quantitative	252
Kolmer Wassermann (C.S.F.)	334
Reiter Protein (C.S.F.)	13
V.D.R.L. (Serum)	20,329
V.D.R.L. (C.S.F.)	336
F.T.A.—A.B.S. Tests	534
Total, 1970-71	221,835
Total, 1969-70	212,604

TABLE CXIII—continued

4. BIOCHEMISTRY

Specimen	Examined for	Number
Blood and/or Serum	Total acid phosphatase	253
	Prostatic acid phosphatase	42
	Albumin	690
	Alkaline phosphatase	2,497
	Amylase	89
	Bilirubin	2,331
	Calcium	717
	Chloride	844
	Cholesterol	2,236
	Cholinesterase (B)	83
	Cholinesterase (S)	185
	CO ₂ combining power	72
	Creatinine	475
	C. reactive protein	45
	C.P.K.	59
	Dibucaine number	21
	Protein electrophoresis	2,826
	Fluoride number	21
	Glucose	702
	Glutamic oxalacetic transaminase	938
	Glutamic pyruvic transaminase	2,503
	Iron	195
	Iron binding capacity	129
	Lactose dehydrogenase	224
	Lipids	27
	Lipoprotein electrophoresis	108
	Phosphate (inorganic)	528
	Potassium	827
	Protein	4,193
	Sodium	874
	Thymol turbidity	2,025
	Thymol flocculation	2,025
	Triglycerides	473
	Urea	6,407
	Uric acid	3,154
	Zinc sulphate turbidity	2,025
	Miscellaneous	36
		40,879
Urine	Albumin	10,492
	Sugar	10,492
	A.L.A.	151
	Bence-Jones protein	5
	Calcium	29
	Creatinine	20
	Diastase	7
	5 H.I.A.A.	3
	Inorganic phosphate	14
	Porphyryns	14
	Protein (total)	22
	Urobilinogen	14
	V.M.A.	27
	Miscellaneous	15
		21,305
Faeces	Fat content	172
	Occult blood	60
		232
C.S.F.	Colloidal gold	586
	Chloride	37
	Globulin	32
	Glucose	42
	Protein	41
		738
Functional Tests	Creatinine clearance	12
	Diagnex blue	24
	Glucose tolerance	303
	Urea clearance	17
	Urea concentration	17
		373
Miscellaneous	Sweat electrolytes—	
	Qualitative	1
	Quantitative	5
	Calculus	58
		64
	Total, 1970-71	63,591
	Total, 1969-70	50,658

TABLE CXIII—continued
5. HAEMATOLOGY

	Number
Cell Counts—	
Red Cells (Total)	2
Red Cells (Stippled)	12
Reticulocytes	123
White Cells (Total)	16,990
White Cells (Differential)	16,688
Platelet count	660
Eosinophils count	25
Haemoglobin	23,994
Haematocrit	1,791
Sedimentation Rate	3,863
Coagulation Time	112
Bleeding Time	112
Prothrombin Time	477
Red Cell Fragility	—
L.E. Cells	7
Latex Slide Test (R.A.)	992
Blood Grouping (A.B.O.)	6,599
Blood Grouping (Rh)	6,599
Rh Antibodies	2,484
Coombs Test	151
Marrow Smears	30
Examination of Smears	15,749
A.N.F.	235
Haemorrhagic Studies	148
Folic Acid	71
B ₁₂	55
Total, 1970-71	97,969
Total, 1969-70	89,229

6. PARASITOLOGY

Specimen	Object of Examination	Number
Faeces	Amoebae (Cysts and Vegetative)	2,041
	Helminth ova	2,041
	<i>Trichomonas vaginalis</i>	572
Pus	<i>Plasmodium</i> sps.	46
Blood	Identification	66
Helminth		
	Total, 1970-71	4,766
	Total, 1969-70	3,401

7. VIROLOGY

A. SERA	Total Received (1970-71) 5,431
	Total Received (1969-70) 4,581

Infecting Agent Tested For	Type of Test	Number of Sera Tested
Influenza type A	Complement fixation	399
Influenza type B	Complement fixation	399
Rubella virus	Haemagglutination inhibition	4,529
Mumps virus	Complement fixation	111
Arboviruses group A*	Haemagglutination inhibition	825
Arboviruses group B*	Haemagglutination	825
<i>Toxoplasma gondii</i>	Complement fixation	308
Total, (1970-71) number of tests		7,396
Total, (1969-70) number of tests		4,558

* Tests for arboviruses performed by Q.I.M.R., Brisbane.

B. SPECIMENS FOR VIRUS ISOLATION

Total received (1970-71)	2,950
Total received (1969-70)	2,661

TABLE CXIII—continued
8. VARIOUS TESTS

	Number
Guthrie Test	36,783
Slide Test (Pregnancy)	1,921
Slide Test (Pregnancy) (Quantitative)	10
Casoni Test	5
Seminal Fluid Assessment	23
Total, 1970-71	38,742
Total, 1968-89	37,117

9. HISTOLOGY

Tissue Sections Prepared	Number
Human—	
Biopsy (specimens received 9,368)	13,768
Medico-Legal Tissues	689
Animal Tissues	2
Total, 1970-71	14,459
Total, 1969-70	15,087

10. MEDICO-LEGAL

Specimen	Object of Examination	Number
Clothing and Various Articles	Blood	405
	Grouping	129
	Spermatozoa	477
Vaginal Smears	Spermatozoa	171
Swabs	<i>N. gonorrhoeae</i>	2
	Spermatozoa	28
Tissues	<i>N. gonorrhoeae</i>	1
	Blood and Grouping	1
Blood	Identification	20
	Histopathology	689
Bloodstains and Scrapings	Grouping	32
	Presence of Blood	87
Hair	Determination of Blood Group	69
	Identification	24
Skeleton	Identification	16
Saliva	Grouping	1
Finger Nail Scraping		4
	Total, 1970-71	2,156
	Total, 1969-70	1,731

11. POST MORTEMS

			Number
Post-mortem Examinations	..	Total, 1970-71	1,135
		Total, 1969-70	1,103

TABLE CXIII—continued
12. INSTITUTE OF FORENSIC PATHOLOGY

Specimen	Examination	Number
HISTOLOGY		
Tissue	Paraffin	4,086
	Frozen Sections	736
	Histochemical Tests	290
	Total, 1970-71	5,112
	Total, 1969-70	3,752
BIOCHEMISTRY		
Whole Blood	Barbiturates	68
Serum	Proteins	24
	Chlorides	24
Urine	Barbiturates	52
	Chromatography	16
	Total, 1970-71	184
	Total, 1969-70	191
BACTERIOLOGY		
Swabs—		
Brain	Culture	7
Middle Ears	Culture	36
Respiratory System	Culture	111
Bowel	Culture	35
Stomach	Culture	10
Blood	Culture	29
C.S.F.	Culture	11
Faeces	Culture	6
	Total, 1970-71	245
	Total, 1969-70	259
Microscopic Examination—		
Tissues	Diatoms	5
Smears	Spermatozoa	6
RADIOGRAPHY		
Radiographs		42

TABLE CXIII—continued
13. MATERIAL SUPPLIED

TO HOSPITALS, PRIVATE PRACTITIONERS AND LOCAL AUTHORITIES			
Diagnostic kits for tuberculosis	656		
Diagnostic kits for bacteriology	30,167		
Diagnostic kits for haematology and serology	12,283		
Diagnostic kits for biochemistry	3,167		
Diagnostic kits for virology	2,495		
Diagnostic kits for histopathology	3,141		
Bottles for Alcohol Estimation (Blood and urine)	2,078		
Total, 1970-71	53,987		
Total, 1969-70	48,233		

14. MEDIA

Slopes	71,386
Plates	84,865
Tubes and bottles	155,878
Total, 1970-71	312,129
Total, 1969-70	376,753
Chemical Solutions	4,621 litres
Stains	241 litres
Total, 1970-71	4,862 litres
Total, 1969-70	4,140 litres

15. ANIMAL BREEDING STATION

	1970-71	1969-70
Animals Provided—		
Guinea-pigs	998	533
Rabbits	63	76
Mice—Litters	3,152	2,804
Weaned	547	441
Animal Breeding—		
Rabbit (40 ml.)	936	1,078
Guinea-pig (8 ml.)	270	287
Sheep (400 ml.)	44	48
Supplied to other Institutions—		
Mice	60	1,519
Stock on hand (1st July, 1970)—		
Guinea-pigs	341	312
Rabbits	145	174
Mice	1,452	1,238
Sheep	5	4

QUEENSLAND GOVERNMENT CHEMICAL LABORATORY

Director, Government Analyst and Chief Inspector of Explosives: I. L. B. HENDERSON, B.Sc., F.R.A.C.I.
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The Government Chemical Laboratory provides a chemical, analytical and advisory service for State Government Departments. By a long standing arrangement with the Commonwealth Government it provides a complete service for the Commonwealth Departments of Customs and Excise and of Primary Industry and also carries out work for the Defence Forces and other Commonwealth Departments. A restricted analytical service is also provided for the Territory of Papua and New Guinea. Payment is received for all services rendered other than those for State Departments.

The number of samples examined from all sources during the twelve month period was 32,615 and the table below (Table CXIV) shows the sources and the numbers of samples submitted:—

TABLE CXIV
SHOWING SOURCES AND NUMBERS OF SAMPLES

Source	Number
State Departments—	
Health	8,846
Health (explosives)	1,763
Police, Coroner, Government Medical Officer, Laboratory of Micro-Biology and Pathology	4,212
Industrial Medicine	151
Mines	269
Geological Survey	2,468
Coal Board	861
Assay Laboratory, Cloncurry	1,061
Irrigation and Water Supply	2,611
Local Government	1,395
State Stores Board	239
Works	796
Housing Commission	2,804
Others	623
Commonwealth Departments—	
Customs and Excise	999
Primary Industry	3,454
Public	63
	32,615

Certificates of analysis were issued for all these samples.

The Laboratory staff position is now more satisfactory in actual numbers although there is still some lack of experience in the middle graduate and diplomate ranks due to difficulty in recruiting and holding staff some years ago. Time will overcome this problem but it emphasises the necessity for the State to be able to continuously offer salaries and conditions commensurate with those available in outside industry. The Laboratory at present has five scholarship holders undertaking courses in Industrial Chemistry at the Queensland Institutes of Technology, Brisbane and Darling Downs.

The Food and Drug laboratory and portion of the Mining laboratory have been re-painted and have had new floor coverings laid during the year and it is anticipated that a further portion of the Mining laboratory will be modernised in the 1971-72 period. Plans are presently being drawn up in conjunction with the Works Department for a major reconstruction of laboratories when this Laboratory takes over the area on the sub-basement floor to be vacated next year by the Agricultural Chemical Laboratory. Little additional space will be gained in this move, however, since most of the area will be required for the Water and Waste Water, Commerce and Paint laboratories when their present building in Alice Street is demolished to make way for the Riverside Expressway.

Two major pieces of equipment recently purchased—a 3.4 metre Ebert Emission Spectograph and a Philips X-ray Fluorescence Spectrometer—have now been installed in the Spectrographic laboratory but are not yet in service pending completion of the air conditioning system in this laboratory. New Gas Chromatographs have been purchased for the Forensic laboratory, one specifically for blood alcohol determination and the other for general drug work; these will be invaluable in meeting the increasing demand on this section which carries out much legal work involving many Court appearances. Unfortunately the purchase of additional specialised equipment for pesticide residue determinations had to be deferred owing to withdrawal of funds previously

allocated for this purpose, but it is hoped this equipment will be obtained during the 1971-72 financial year. Other equipment obtained included a Nephelometer, necessary for the determination of traces of non-ionic detergents, and a Leitz Ash Fusion Microscope used as a standard method for determination of the fusibility temperature of coal and coke ash.

Senior officers have attended meetings of the National Association of Testing Authorities, the Dangerous Goods Sub-Committee of the Australian Port Authorities Association, the Oil and Colour Chemists Association, the Australian Water and Waste Water Association, a conference on Forensic Toxicology, a symposium on the Forensic Sciences, and an all State conference called by the Assistant Comptroller-General of Customs (Laboratories) on drugs of abuse.

All explosives and fireworks entering the State from both overseas and Australian sources have been inspected, sampled and tested for safety purposes and some four tons of explosives were condemned and destroyed. Two thousand eight hundred rounds of ammunition were also condemned and destroyed. A report on the administration of "The Explosives Acts, 1952 to 1963," is appended.

Sectional reports which follow show in some detail the scope of the work carried out by the Laboratory.

SECTION 1 FOOD, DRUGS & WATERS TABLE CXV

Table CXV gives the source and number of the samples submitted.

Department	Number of Samples
Health	8,616
Irrigation and Water Supply	2,611
Other Government Departments	502
Local Government	1,401
Public	98
Total	13,228

TABLE CXVI

Summary of samples of foods, drugs and articles examined for the Department of Health.

Nature of Sample	Number of Samples
Beverage	1,025
Bread	584
Cereal	122
Confectionery	19
Fish	38
Fruit	55
Ice Cream	47
Ice Block	32
Meat	803
Meat Pie	26
Milk—official	3,190
Milk—unofficial	91
Milk product	261
Oil, edible	22
Pickle and sauce	28
Spirituos liquor	16
Vegetable	22
Other food	229
Cigarette	40
Cleanser or disinfectant	30
Cosmetic	54
Crockery	85
Drug	700
Paint	92
Pesticide	28
Toy	66
Miscellaneous	187
TOTAL	7,892

Included in the category of other foods are surveys of foods not covered by the other classifications listed. There were surveys of jelly crystals, coconut, icing sugar, flavouring essences, honey, dessert mixes, pepper, curry powder, vinegar and baking powder.

Among the miscellaneous samples were water filters, disposable underwear, air freshener sprays, poison baits, soils and vegetation, crayons, marking ink, beer glasses, plastic tableware and flooring materials.

A further 212 samples were analysed for other Government Departments, the Territory of Papua and New Guinea, hospitals or the public.

Many alterations of food standards were made in 1970 and 1971. Such changes are for the purpose of development of uniformity in food standards throughout Australia.

TABLE CXVII

Legal samples taken by Inspectors in accordance with the provisions of the Health Act.

Nature of Sample	Number Examined	Passed	Failed
Milk	3,191	3,142	49
Minced Meat	484	345	139
Sausage	219	148	71
Cream	72	72	0
Bread	9	5	4
Spirituuous Liquor	6	2	4
Soft Drink	2	2	0
Fruit Juice	2	2	0
Waste Beer	2	0	2
Icing Sugar	1	0	1
Paint	17	17	0
Toy	8	0	8
Drug, Poison	5	5	0
TOTALS	4,018	3,740	278

MILK

The milk supply was again adequately inspected and 3,190 legal samples were taken for analysis. Results obtained from these showed continuance of the good quality reported in the previous year and only 48 samples were unsatisfactory in any respect.

Failure of the 48 samples was due to deficiency in milk-fat 30, deficiency in milk solids other than fat 11 and presence of added water 7. The watered milks were obtained at Brisbane 2, Surfers Paradise, Theodore, Toogoolawah 2, Wynnum.

The average milk-fat was 3.91 per cent. All pasteurised milk satisfied the prescribed phosphatase test.

Iodine preparations, used to sterilize milk equipment are a possible source of contamination and were found present in milk on two occasions. Even small proportions may be of significance to health and care must be exercised to guard against any entry of these preparations into milk.

Chlorinated pesticides were determined in 60 samples, representing all factories, and were, generally, of a low level. Much higher proportions were found in 20 samples of human milk examined for Maternal and Child Welfare Division.

The flavoured milks (73 samples) were all of the required standard but faults were found in labelling—the presence of artificial colour was not declared in six samples and the name of the flavour was not stated in another. All of the 128 creams were of prescribed standard. One sample of cheese spread deficient in milk-fat was the sole failure in the ten cheese samples and one of the nine butters contained excess water. The chlorinated pesticide content of the butters was very low in six samples but much greater in the others, the highest being 1.2 parts per million.

Yoghurts 18, modified milk drinks, condensed milk and butter milk were all satisfactory.

Unclean milk bottles are still too prevalent judging by numerous specimens referred by customers.

MEAT

Legal samples of minced meat and sausages numbered 703 out of the total 803 submissions.

Preservative is prohibited in minced meat but many butchers continue to use sulphur dioxide in spite of regular sampling and severe fines. In this year, 139 of the 484 samples revealed this adulteration.

Sausages and sausage meat are allowed to contain sulphur dioxide but not more than 3.5 grains to the pound. It was found that 52 of 219 samples contained excess sulphur dioxide. Also, 31 samples were deficient in meat content, two contained excess starch and three contained excess fat.

A large variety of unofficial samples was investigated including many different kinds of sausage. One minced meat contained artificial colour and two samples of chicken paste contained small proportions (1.6 and 2.0 per cent.) of powdered bone. Corned silverside lost 44 per cent. of its weight on cooking. A sample marked "Spam" was found to be ham meat. No preservative was present in four samples of steak.

The meat content of the meat pies in a survey of 24 samples was found to be too low.

FISH

Estimation of mercury in 12 samples of canned tuna gave one at 0.3 part per million, one at 0.1 part per million and the remainder at lower levels. In two samples of oysters there was only 0.025 and 0.035 part per million of mercury. Bream caught locally (Caloundra and Toorbul Point) were found to contain 0.012 and 0.016 part per million of mercury, respectively.

Smoked eels (2) were examined for presence of parasites but none were found.

No artificial colour was detected in fish fillets.

Mullet (4) were tested for taint—two were normal, one had a slight taint and one a definite taint.

Sulphur dioxide was estimated in two samples of prawns and another sample was found to be in sound condition.

FLOURS, CEREAL

Included in 122 samples were 107 flours and meals intended for baking of bread. Eight samples failed to meet the prescribed standards—three high-protein flours had insufficient protein and four meals, for wholemeal or brown bread, were deficient in wholemeal. One sample marked "low protein" was actually "high protein". Self-raising flours were of required composition. Wheat germ, rye flour, arrow-root were sound and genuine. Pesticides were investigated in two samples of oats and small proportions of malathion were found but no chlorinated pesticides or mercury compounds. Tests for mercury were also made on samples of bakers' flour and none was found.

BREAD

Loaves of bread examined for the Health Department numbered 584 and were taken from about 180 different bakeries throughout Queensland, comparatively few from the Brisbane area.

Analysis showed 36 loaves were below the prescribed standard of composition. These were—16 milk, 6 wholemeal, 8 brown and 3 protein-rich breads and 3 fruit loaves.

In respect of quality, most of the loaves were considered as "fair average". This classification implies only the absence of gross and readily discernible faults. Few of the loaves were so attractive in appearance or appealing in odour and flavour to be elevated to a good quality grade. Poor quality in some breads was due to underbaking, doughy streaks in the crumb and the presence of large holes in the crumb. Ten loaves (from two bakehouses) were condemned because of the presence of "rope".

The dry solids content was determined in 94 loaves submitted by the Department of Weights and Measures and the presence of milk solids was checked in 36 of the loaves.

BEVERAGES

There were a record number of submissions (1,025), including 782 soft drinks, 116 cordials, 33 fruit juice drinks, 31 fruit juices, 14 bases for drinks or cordials, 23 teas, 16 coffee preparations, 3 cocoa powders and also 7 complaint samples of soft drinks.

Among the soft drinks only 27 were found unsatisfactory. Excess preservative was present in 8 instances and non-permitted colouring was used in one product. Deficiency in the required 5 per cent. of juice occurred in 13 fruit drinks and deficiency in quinine in 3 quinine tonics. One drink bore the prohibited title "Sparkling Cocktail" and one was completely unlabelled. Complaints of explosion of bottles and injury from broken glass were received. Pressure in a large number of bottles was measured.

The cordials included two with excess preservative and one with mould on the surface. Low calorie cordials containing cyclamate sweetening agent were not labelled "Take on Medical Advice Only" as required by the regulations.

Interest was shown in the "fruit juice" drinks now being marketed and enquiries from the public were mainly relative to the vitamin C content. Unlike the fruit drinks (5 per cent. juice) with no vitamin C these fruit juice drinks contained higher proportions (23 per cent. up to 65 per cent.) of juice and provided substantial dosages of vitamin C. They are therefore a commendable product but unfortunately some purchasers were deceived into believing they were 100 per cent. juice. This position should be rectified by new regulations which require a statement in the label declaring the percentage of juice present. Some of the samples claimed to be "glucose enriched" but the glucose content was trivial.

Fruit juices including concentrated juices were examined and eleven of the fruit juices were below the 100 per cent. standard. Seven of these came from one manufacturer and indicated the concentrate being used was overrated.

The bases for making drinks and cordials conformed with requirements. A preparation called "Orange Sherbet" had no orange juice and was therefore only "orange flavoured" and it did not effervesce with water.

Concern was aroused by the appearance on the market of a number of drinks of low alcohol content. These were found to conform to the standard for non-excisable fermented drinks (below 2 per cent. proof spirit). The labelling of some products was incorrect—the word "lager" was disallowed, the term "non-alcoholic" is false and misleading and the labels must carry the title "Brewed Soft Drink".

Tea samples conformed with the prescribed standard and were free from foreign matter. Instant coffees, coffee and milk, essences of coffee and chicory and cocoa powders were without fault.

Complaints were caused by sediments from bacterial and yeast action, the presence of fungus, grease and sand. A bad odour in a canned drink was due to sulphuretted hydrogen. The can was internally lacquered tinplate with an aluminium top and electrolytic action had resulted in reduction of sulphur dioxide.

FRUIT AND VEGETABLES

A survey of dried fruits (20) showed all within the permitted limit for sulphur dioxide. A sample with insects and webbing was deteriorated and unfit for human consumption, dried apricots with dirt were condemned and a packet of mixed fruits was very dry and of poor quality. The red and green inclusions in dried mixed fruits were artificially coloured gum acacia confections. The proportion of such "non-fruit" additives would seem to need limitation.

Frozen fruits (14) were of good quality.

The strawberry content of one can of strawberries in syrup was far too low and four other brands were tested and found satisfactory.

A carton of cherries was heavily contaminated with the fungicide Ziram (140 parts per million) and was unfit for consumption.

A sample of apples contained 0.02 part per million of fenitrothion.

A small packet of white powder in a case of grapes was potassium metabisulphite.

Excess preservative, sulphur dioxide, was present in four samples of pickled onions from eleven samples received.

Frozen sliced beans contained negligible proportions of chlorinated pesticide and no organic phosphate was detected.

Two complaint samples of tomatoes had appreciable levels of chlorinated pesticides and also 0.05 and 0.10 part per million of mercury.

For the Department of Primary Industry (Commonwealth) export apples (15 samples) were analysed for arsenic and mercury, the highest result in each case being 0.05 part per million for arsenic (As_2O_3) and 0.04 part per million for mercury.

OTHER FOODS

Confectionery (18) conformed with the standard except one contained non-permitted colouring.

Ice cream (47), ice blocks and flavoured ice (32) were all satisfactory.

Vegetable oils (6) were genuine and of required standard. No significant pesticide content was found.

Margarines (11) were of correct composition.

Buttered sandwiches (3) were spread with butter. "Buttered" pikelets were spread with margarine.

Mould counts were made on 14 tomato sauces and 7 exceeded the permissible count.

Jelly crystals (27) were at fault only in respect of a few labelling details. Pitting of aluminium jelly moulds was due to the presence of particles of iron in the aluminium metal.

One of 10 flavouring essences failed, being an essence of lemon deficient in lemon oil.

Desiccated coconut is required to contain 60 per cent. of oil and 3 of the 14 samples had less than this proportion.

Icing sugars (8) included 2 containing starch which is not allowed in icing sugar. Prepared icing (2) did not declare in the labels the ingredients used.

Peppers (7) were free from foreign matter and conformed with the prescribed standard.

One baking powder contained excess sulphate; a second baking powder and a cream of tartar were satisfactory.

Eggs were tested for mercury and had less than 0.01 part per million.

Honeys (7), curry powder (4), dessert mixes (5), vinegars (4) custard powders (2) and spices (2) showed no serious fault.

DRUGS

Again a prominent feature of this work was the destruction of dangerous drugs. The task of clearing out surplus stocks of these drugs from pharmacies continues at a sharp pace and 631 packages were received during the year. The drugs were counted and burnt and a certificate issued for each consignment. The total number of individual tablets, ampoules and capsules was not tallied but is expected to be over half a million. This disposal must be rapidly eliminating one source of these drugs for the illegal user.

Drugs and preparations (69) submitted for analysis were, as usual, a heterogeneous group.

Sodium fluoride (16 samples) were checked for suitability for use in water supplies.

Identification was made of four unknown tablets and an unknown liquid preparation.

Headache powders (3) were of the stated composition.

Infant soothing powders (5) and ingredients (5) were analysed and the preparations were correctly labelled.

Among the other submissions were—analgesic liniment, calamine lotion, eczema cream, mouth ulcer remedy, stomach powder, gastritis mixture, chlorodyne, nerve tonic, vitamin tablets, boil mixture, cough syrup and tincture of iodine.

Opinion was given on the appropriate scheduling for many drugs and formulations.

In addition, investigations were made on behalf of hospitals into conformity with B.P. standards or correct labelling of—haemodialysis concentrates (6), formaldehyde solutions (6), tubocurarine injections (2), bovine albumin (2), and water for injections.

For the Department of Lands four samples of Strychnine powder were assayed for strychnine content.

CLEANERS

These samples were for a wide range of usages and included laundry detergents, spray-on spot removers, cleaners for toilet bowls, windcreens, frypans, beer lines and beer glasses, barbers' clippers.

The claims advanced for these products were considered in relation to the compositions disclosed by analysis. The presence of any substances of poisonous nature was noted and the appropriate classification in the Poisons Schedules was reported to ensure correct labelling. Eight products contained scheduled poisons.

COSMETICS

The majority of the 54 cosmetics consisted of various types of hair and scalp preparations (31), including shampoos, dandruff treatments, hair creams and pomade and hair spray. Medicaments were cationic detergents, hexachlorophene, resorcinol, pine tar, selenium sulphide and zinc pyridinethione. One sample claimed to be a hair nutrient which is prohibited.

Soaps (6) were checked for special ingredients claimed to be incorporated and were checked for presence of certain bacteriostats which are not permitted.

Sun tanning preparations (3), toothpastes (2) and skin conditioning formulations (8) were examined and the only objection raised was concerning the name of one product as "skin food" which is a prohibited claim.

TOYS

Examination of 58 unofficial samples revealed some unsatisfactory articles and resulted in the taking of 8 legal samples.

The presence on toys of paint containing lead is prohibited and the embargo is rigidly enforced. The co-operation of vendors in having toys tested before offering them for sale

ensures that almost all toys are free from lead. Almost all failures were due to inclusion of small mirrors backed with paint containing red lead.

Volatile liquids in "drinking" birds and other figures were identified and were freon and methylene chloride. The filling material (flock) in a rag doll was found to be clean. The plasticizer in bracelets and necklace was investigated. One set of toys for babies was considered capable of causing physical injury.

MISCELLANEOUS

Lead was not found in 37 paints but was present in 19 out of 55 samples of paint scrapings.

Crayons (49) were free from lead and arsenic.

Glazed crockery (85 samples) cups, mugs and kitchenware were investigated in regard to the possible yielding of lead to foods contained therein.

Pesticide formulations (28) included dichlorvos diffusers, aerosol sprays, insect repellents, ant trap and rat bait.

Air fresheners (9) were basically freon-propelled perfumed alcohol. Some included small proportions of cationic detergent, one a small proportion of orthophenyl phenol.

Cigarettes (39) were examined for residues of chlorinated pesticides and considerable proportions were present.

Strychnine (90 milligrams) was present in one suspected bait, 5 others were harmless.

Disposable pants and nappies (7) were tested and found to be not disintegrable and therefore likely to cause blockage if disposal was by septic or sewerage pedestals.

Water filters and purifiers (6) were criticised in regard to efficiency and claims.

WATER AND WASTE WATER SUB-SECTION

During the year 5,124 samples of water, sewage, industrial waste and mud were examined. State Government Departments submitted most of these, but others came from Commonwealth Government Departments and the public.

The number of pollution-survey samples received from the Department of Local Government increased considerably to 1,395 samples. An average of six determinations per sample was made. Because of this, eight officers in the section were fully occupied in the examination and analysis of these samples, and determinations of pesticides and mercury in various samples involved officers in other sections of the laboratory.

Although refrigeration space was enlarged considerably last year, the increase in the number of samples requiring preservation by cold storage is taxing the available refrigeration and "deep freeze" facilities.

Copies of the Department of Local Government's sampling programmes have been supplied to the Waters section and this has allowed suitable preparation to be made for the reception and handling of the samples when they are submitted.

The method originally used to determine the nitrate content of saline water samples has been discarded in favour of one which is based on the reduction of nitrate to nitrite by Cadmium, and the subsequent estimation of the nitrite content. The equivalent nitrate figure is then calculated. The original method required the use of considerable amounts of silver sulphate (a very expensive salt) to remove chlorides present in saline samples.

Samples collected from the Brisbane River at the same three locations were forwarded regularly by the Department of Harbours and Marine for the determination of their salinity and suspended matter contents.

Surface, sub-artesian and artesian water samples totalling 2,611 were received from the Irrigation and Water Supply Commission. Three officers of the subsection are fully occupied at present in carrying out the analyses of these waters to enable assessments to be made of their suitability for domestic use, stock-watering, and irrigation purposes.

The Health Department submitted 724 samples during the year. These were mainly from town water supplies which have received varying degrees of treatment before reticulation. Regular sampling, and determination of the fluoride content of water from towns which fluoridate their drinking water indicated that the correct dosage of fluoride was maintained at all times.

Several samples of rain water collected from the roofs of buildings in rural areas were examined for the suspected presence of pesticides as a result of aerial spraying or dusting in the vicinity of the buildings. In one instance very small amounts of organo-chloride compounds were found.

SECTION 2 FORENSIC

The principal role of this section is to provide an analytical service for the Police Department and the Coroners throughout Queensland. The scope of the work performed covers the determination of drugs and poisons in organs and other biological specimens, alcohol and drugs in blood specimens from motor vehicle drivers, testing of reagents and preparation of standard solutions used in conjunction with the "Breathalyzer", identification of hallucinogenic, dangerous and restricted drugs and examination of the wide variety of samples submitted by members of the Criminal Investigation Branch to assist them in their investigations.

The diverse nature and importance of the samples requires the services of skilled and experienced chemists who can select techniques and methods that can withstand searching examination in Courts of Law. As this workload increases with population growth and as the Police Department makes greater use of scientific services each year in the investigation of crime then the need for more experienced chemists in this section presents a continuing problem. Members of the section attended the various Courts throughout the State on 73 occasions.

The sensitivity of a new gas chromatograph recently installed should enable the detection and determination of certain modern drugs which are effective in low dosages and consequently are present in biological fluids at very low levels.

In October, the Senior Chemist attended the Annual Conference of Forensic Toxicologists held in Sydney and in February he attended the Second National Symposium of the Forensic Sciences held in Adelaide.

An increase in the number of post mortem cases completed has resulted from the combined effects of extra staff, increase in the number of cases received and reduction in the backlog of cases uncompleted.

Examinations of visceral specimens received in connection with 290 post-mortems were completed during the past twelve months. The majority of these were at the request of Coroners throughout Queensland.

Poisons and drugs in quantities which could have a significant bearing on the cause of death were found in specimens from 172 of these post mortem examinations. Alcohol was frequently found associated with these drugs and poisons.

Barbiturates were again the most commonly found drugs (128 cases) either singly (92), multiple (9) or in combination with one or more other types of drugs (27). The cases in which barbiturates were found singly were—pentobarbitone (54) amylobarbitone (22) quinalbarbitone (7) barbitone (4) phenobarbitone (3) butobarbitone (1) and thiopentone (1). Amongst the other drugs found associated with barbiturates were—carbromal (12) chloral (3) diazepam (3) paracetamol (2) and one each of methaqualone, ethchlorvynol, glutethimide, imipramine, amitriptyline, nor-triptyline and salicylates.

Cases in which toxic levels of other drugs were found (33) included chloral (9), alcohol (8) imipramine (2) amitriptyline (2) chlorpromazine (2), nor-triptyline (2), and one each of dextropropoxyphene, glutethimide, primidone, methaqualone, chloroquine, diazepam, lanatoside C and salicylates.

Cases in which toxic levels of agricultural or pastoral poisons were found (5) included strychnine (2) arsenic (1) dieldrin (1) and coumaphos (1).

Cases in which toxic levels of other miscellaneous poisons were found (6) included carbon monoxide (3) cyanide (1) hydrochloric acid (1) and lysol (1).

Of the remainder examinations, drugs in therapeutic quantities were found in 49 cases and 69 cases did not reveal any poison or drug but were considered necessary to exclude these as a possible cause of death.

Eighteen specimens were examined in connection with the deaths of animals. Amongst the specimens submitted were suspected baits and viscera from dogs.

The Administration of Papua and New Guinea submitted specimens, mainly in connection with post mortem examinations.

This year again has resulted in a marked increase in the number of dangerous and restricted drugs (104) submitted for identification. Amongst the more numerous drugs submitted were cannabis (33), amphetamines (16), ephedrine (7), L.S.D. (4), barbiturates (4) and procaine (2). Five samples of mushrooms were examined for the presence of psilocybin. Four syringes were examined for the presence of narcotics and three pipes for the presence of cannabinoids.

Other samples examined at the request of the Police Department were—stains on clothing and textiles, fire residues and petroleum products in connection with arson charges, soils for comparison tests and a sample of sugar contaminated with sodium carbonate.

Biochemical specimens examined were submitted by the Institute of Forensic Pathology, Government Medical Officers, Police Department, Director of Industrial Medicine, Hospitals and Medical Practitioners. The nature, significance and number of such specimens are shown in Table CXVIII.

TABLE CXVIII

Nature of Specimen and Significance	Number of Specimens
Blood for Alcohol and/or Drugs (taken under the Traffic Act)	1,240
Blood and Urine for Alcohol (taken in connection with Traffic Deaths)	498
Blood, Urine and Gastric Contents for Alcohol and/or Drugs	655
Urine, Blood and Bones for Lead	626
Hair, Nails and Urine for Arsenic	45
Miscellaneous	17
Total	3,081

The table below shows the number and range of the alcohol content of the blood specimens tested under the *Traffic Act* 1970-71. The distribution of the results and the average show little significant change when compared with the previous two years.

TABLE CXIX

	1970-71	1969-70	1968-69
Total number of specimens	1,240	1,289	1,429
Average level (mgm/100ml.)	200	199	204
% of results below 80mgm/100ml.	4.8	4.7	4.3
% of results below 100mgm/100ml.	8.1	7.8	7.2
% of results 150mgm/100ml. and over	79.4	85.3	79.4
% of results 300mgm/100ml. and over	7.4	6.7	8.7

Nine specimens of blood obtained under the provisions of the *Traffic Act* contained no alcohol but significant quantities of drugs (usually barbiturates) and a further two specimens contained alcohol greater than 100 milligrams per 100 millilitres together with a significant quantity of drug.

SECTION 3

MINING AND SECONDARY INDUSTRIES

Table CXX gives the sources and numbers of samples reported:—

TABLE CXX

Department	Number Reported
Mines—	
Geological Survey Office (ores, minerals, and geochemicals)	1,855
Geological Survey Office (coal)	613
Coal Board	861
Mines Inspectorate and Gas Engineer	269
Government Assay Laboratory	1,061
Health	146
Miscellaneous Government Departments	176
Public	63
Total	5,044

The usual wide variety of analyses and investigations, involving over 15,000 separate determinations, were carried out.

The numbers of coal and geochemical samples submitted by the G.S.O. has fallen short of that office's forecast for 1970-71 by many thousands. The time between receipt and report of coal samples improved again this year, the average being 7 to 8 weeks. Many of these samples require a full ash analysis, which itself takes approximately two weeks to complete.

In the first five months of 1971, only 15 coal samples were received, whereas 102, for a total of 1,167 determinations, were received near the end of June, 1971. Under these

conditions trained staff are often directed to other sections of the laboratory, where they can be usefully employed. Understandably these sections are reluctant to return this staff when they are required to cope with a sudden inflow of work at a later date. As has been stressed before, efficient staffing requires a reasonably steady, or steadily increasing, inflow of samples. A wildly erratic inflow produces only frustration and delay.

Few new geochemical samples were submitted, most of the geochemical work, involving extra determinations on old samples. One such request required the determination of mercury at below the part per million level. After an initial literature search, it was finally decided to use a flameless atomic absorption technique. Published methods for rocks were generally inapplicable as many of the samples were soils and their contained organic matter interfered badly. After considerable investigational work and instrumental modification, a general method was evolved which allowed accurate analyses to be performed rapidly at as low as the part per billion level. This method, with appropriate modification, was subsequently used to estimate mercury in water for the Department of Local Government, in air and urine for the Director of Industrial Medicine, and in food, including fish, for the Health Department.

Some clays submitted by the G.S.O. were found to have good bloating characteristics and should make excellent lightweight aggregates.

Tests on some perlite samples showed that they could, by suitable heat treatment, be expanded so that their specific gravity was decreased from 2.4 to less than 0.5.

A complete analysis of a suspected meteorite submitted by the G.S.O. showed its composition to be similar to that of previously reported specimens of meteoric iron.

As the Cloncurry Assay Office no longer has the services of an assayer, samples received there are crushed and forwarded to this laboratory for analysis. Policy is to complete this work within five working days of receipt, so that prospectors suffer as little delay as possible before receiving their results. Approximately 1,000 samples have been analysed this year for gold, silver, copper and a variety of other elements, for a total of over 2,600 determinations.

Apparatus has been assembled to estimate the heat of hydration of cement, at the request of the Department of Irrigation and Water Supply. The estimation is time consuming—twelve samples required the services of a technician for several weeks.

As forecast previously, work for the Directorate of Industrial Medicine has increased in both scope and quantity, partly because of an increasing awareness on the part of both management and men of the hazards of many modern industrial chemicals and, to some degree, as a result of the increase in local industrialisation.

A commonly encountered fault was in the quality of compressed air supplied to face masks used by workers in a variety of industries. The air frequently contains objectionable quantities of oil vapour, because of poor maintenance of compressors and filters, often associated with poor design of the supply lines.

The static electricity generated on synthetic fibre garments has given rise to some novel accidents. When discharged to earth, the charge may produce sufficient energy to cause ignition of combustible materials. Fires in a Brisbane match factory were traced to this origin.

After a gas explosion in a manhole in George Street, Brisbane, in July, 1970, which resulted in the death of one person and the injury of many others, public awareness of the danger of leaking gas increased considerably. A fortnight later, a complaint of leaking gas in the same street resulted in an investigation by an officer of this section, in company with officers of the Government Gas Engineer. Gas was traced along P.M.G. manholes for the length of two city blocks, until finally maximum concentrations were found in manholes in North Quay. Gas company officials were thereby enabled to discover a break in a gas main and effect repairs. The prompt action of police in closing the area to the public and of P.M.G. officers in opening manholes to ventilate the system probably prevented a repetition of the previous disaster.

At the request of the Railways Department, an officer travelled the line from Moura to Gladstone to measure the level of diesel fumes reaching the cabin of the third locomotive in a 2,000 ton coal train. It was found that the maximum allowable concentrations of noxious gases were not reached, but that at times it was possible for the levels to attain nuisance value.

The Diffraction Size Analyser has continued to be used in the evaluation of the dust hazard in mines and quarries and to correlate the respirable surface area of dust with other parameters, such as the number of particles and mass per unit volume of air.

A wide variety of problems was submitted by the Coal Mines Inspectorate. One unusual investigation followed the occurrence of several severe explosions within the partitions of a suburban Ipswich house, when electrical switches were operated. Explosive gas, identified as methane, was found in the partitions. Initially it was thought that the gas had found its way from a leak in a nearby septic tank to a point under the concrete slab floor of the house, thence past plumbing openings into the partitions. However, the gas was found to quantitatively resemble that in an underlying coal seam rather than that generated in the septic tank. Advice was given on methods of sealing the slab floor and venting it safely to the exterior.

Considerable work has been done on developing a method for analysis of pressurised samples of natural gas condensate for the petroleum engineers of the Mines Department, and analyses are now being routinely reported of hydrocarbon composition up to compounds containing eight carbon atoms. A total of forty compounds, including paraffins, naphthenes and aromatics, are being quantitatively estimated.

Work on the new spectroscopic complex is nearing completion and it is expected that operation of the instruments will commence in the very near future.

The usual miscellany of tests have been performed for, and consultative assistance given to a number of Departments such as Harbours and Marine, Local Government, Irrigation and Water Supply, Works, Housing Commission, State Stores, Golden Casket and Gas Engineer and to several Commonwealth Departments in addition.

SECTION 4

GOVERNMENT CONTRACTS

This section provides a scientific and technical advisory service on matters relating to contracts by various Government Departments.

The extent of the work varies from the performance of a single test to a comprehensive collaboration with the purchasing authority through the preparation of specifications, evaluation of tenders to the acceptance of the delivered product. Sometimes deviation from the specification is immediately apparent yet in other cases a detailed scientific investigation is required to reveal deficiencies. Contractors know that their product is liable to examination by the Government Chemical Laboratory and this cannot fail to have a pronounced effect.

Discussions between officers of this laboratory and suppliers often is of considerable value. New products are often examined to determine their value for institutional requirements.

The following table shows the number of samples received from various departments. It gives little indication of the amount of work required because of widely differing demands of different samples.

TABLE CXXI
SAMPLES EXAMINED AND REPORTED

Department	Number of Samples
State Stores Board	239
Railways	34
Public Works	799
Qld. Housing Commission	2,804
Health	18
Others	3
Total	3,897

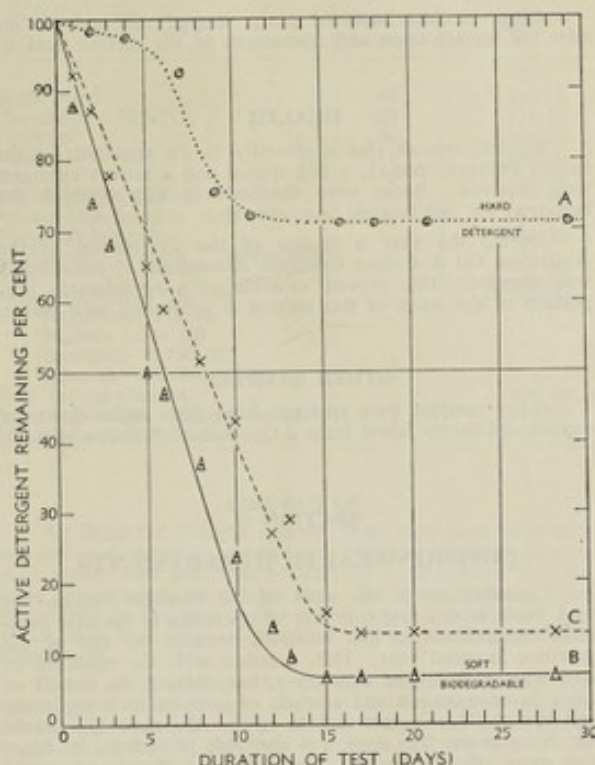
STATE STORES BOARD

Textiles of a wide variety (including material for uniforms, sheeting, waterproof sheeting, blankets, &c.), polishes, insecticides, germicides, detergents, cotton wool, toilet paper, glue for school use, linseed oil, clinical thermometers, nurses uniforms, orange juice, &c., were examined.

Specifications for germicidal cleansers were revised to upgrade germicidal and cleansing properties. The price of various products varies very considerably and detailed bacteriological examination (conducted by the Laboratory of Microbiology and Pathology) and chemical examination is necessary if a satisfactory product is to be chosen at the lowest price.

Specifications for some insecticides were prepared. Consideration was given to efficacy, toxicity and cost.

Detergents were examined and specifications were revised to introduce the biodegradable type in line with current trends. The following graph was prepared from analytical results of samples received and shows the relative rates of biodegradability of anionic detergents, of the dodecyl benzene sulphonate type, in sewage.



- A Hard detergent of the type marketed previously.
 B State Stores specification detergent (93 per cent. degradable in 17 days).
 C Widely advertised detergent claiming special Biodegradability (87 per cent. degraded after 17 days).

A degradation of more than 80 per cent. in about 17 days is considered satisfactory. Detergents prepared to the State Stores specification were of this type. Almost all anionic detergents available in Australia are now biodegradable. The product C which, in advertising, is claimed to have special biodegradable properties was not found to be as fully degraded in 17 days as other much cheaper products.

Wool blankets, issued to Institutions, need to be laundered frequently and are sterilised by boiling. Previously, difficulty has been experienced with shrinkage. However, following our recommendation, all blankets now purchased are chemically treated to make them shrink resistant. Such blankets do not continue to shrink after the first few washes and are much more satisfactory.

RAILWAYS

Samples received included fabrics for uniforms—cotton shirting and wool polyester material, pocketings and linings. A number of pairs of trousers were examined which showed gross loss of strength and very poor resistance to abrasion. This was caused by chemical or moist heat damage to the fabric during manufacture and fortunately only a small number of garments were affected.

PUBLIC WORKS

Examination of paint used by contractors on Government buildings was the main work carried out. This was necessary to ensure that the paint used was of the type and composition specified.

Samples of water, &c., were received in connection with a dark brown discolouration occurring in swimming pools. The discolouration was found to be due to copper salts, introduced into the water to control algae, interacting with amines in the epoxy paint used on the walls of the pool.

Other samples included carpet from a new Government building and rubber protectors for chair legs.

HOUSING COMMISSION

Paint taken from private contractors provided the bulk of the samples. Generally, the quality of the paint samples was in good agreement with the quality specified.

Again the absence of lead in any paint sample received from the Housing Commission or Works Department showed how complete the change from lead paint has been, following legislation, especially since paints based in lead pigments were considered by many to be indispensable not very long ago. Methods using Atomic Absorption have very largely displaced older methods for pigment analysis in this section.

Other samples included putty, linseed oil, and roofing tiles for identification and assessment of the surface coating.

HEALTH

Surgical sutures (for conformity to the standards of the British Pharmacopoeia), a bed spread and a nurse's cardigan, were received. Socks were examined to help establish the best type for institutional requirements.

During the year a session of the Convention of the Australian Oil & Colour Chemists Association at Broadbeach was attended. This proved valuable as a considerable proportion of the work of this section is concerned with paints.

OTHER SAMPLES

Other samples were received from flour mills—flour for export; upholstery fabric from a Queensland Woollen Mill.

SECTION 5

COMMONWEALTH DEPARTMENTS

Consolidation of the work of the Customs Section has been made in this first full year of operation in the new basement accommodation first occupied towards the end of the previous financial year. This, together with the retention of staff with accumulated experience, has reduced the period of delay in examination and analysis of samples to a minimum and the position in this section is now the most favourable for many years. The section is also able to perform its function more efficiently within the centralised laboratory system by consultation between members of different sections with varying backgrounds of experience leading to more rapid problem solutions than would be obtained by a Customs Section in isolation. Likewise there is a reciprocal contribution from this section to other sections. The fields of mineral, food, toxicological and gas analysis, at times, all touch on the many facets of scientific work for Customs purposes. Aerial pollution, with resultant fall-out emanating principally from the adjacent construction work of the Riverside Expressway continues to be a nuisance as well as accelerating the deterioration of laboratory equipment. The consequent foreboding of what may be expected at the completion of this work is thus most unfavourable to the western laboratory section.

The preparation area of the Pesticide Residue Section devoted to micro-analytical techniques, remains in cramped unsuitable accommodation. The continual threat and occasional occurrence of accidental contamination of premises, equipment and samples from the areas immediately surrounding will continue until all preparation is removed to an area suitably isolated. With this object in view the planning for such removal is now in hand. Plans and specifications have been prepared for air conditioning the basement room used for pesticide detection and determination by gas liquid chromatography and this necessary facility is also envisaged for the relocated preparative area. It is hoped that the air control equipment for the first area will be installed in the early part of the new financial year before summer arrives.

The new equipment obtained during the year for use, in conjunction with other sections, was a mobile constant temperature water bath for operation in the range of 60–140°F. This product, designed to laboratory requirements and built in Brisbane, at reasonable cost, has performed satisfactorily. It demonstrates the success of local proficiency in this field.

Dissection of the origin of samples received from the Customs and Excise Department during the year is as follows:—

Tariff Classification including Investigations	Investigations	Investigations
Excise		822
Prevention and Detection		58
Petroleum Products		42
Miscellaneous		45
		32
		999

The increase of 16 per cent. in tariff samples was balanced against a decrease of approximately 50 per cent. of excise samples as compared with the previous year.

In addition eighteen samples of various types were examined, these being derived from other sources. They included samples of Noodles from the Quarantine Service of the State Department of Primary Industry, which were examined for egg content. This was done by the use of the rapid method of cellulose acetate strip electrophoresis to diagnose with certainty the presence of egg protein. This method was also used to confirm that the only protein present in "Soya Bean Milk" was that of soya bean. The presence of cow's milk protein would result in an importation ban as the product would then be "filled milk". In addition the lipid content of the product was shown to be soya bean oil.

Most of the samples now reported under the heading of "Excise" are derived from investigations of illicit processes of distillation, brewing or liqueur manufacture or of spirituous liquids illegally obtained.

Apart from technical advice on materials for Tariff Classification, assistance is also rendered in matters relating to scientific and allied equipment.

The pesticide section has extended its work from that of primary products for export to examination of river muds, water, human milk, blood and cigarettes. Most of the details of the results appear in the reports of the respective sections, the pesticidal examination in most instances being only one facet of an overall examination. For the Commonwealth Department of Primary Industry, 1,117 samples were examined for pesticides. These consisted of 857 beef fat samples and 260 egg samples. In addition five samples of blood were analysed for pesticide for Industrial Hygiene purposes.

PRIMARY INDUSTRY

Two thousand six hundred and one samples were received from the Commonwealth Department of Primary Industry. These were largely foodstuffs intended for export.

The Dairy Branch submitted samples of milk, ice cream, cheese, casein, dried milk, butter, ghee, &c.; liquid whole egg was examined for moisture content, extraneous matter and efficacy of pasteurisation—a test involving determination of enzyme activity.

The Fruit and Vegetable Branch submitted samples of canned fruit, jam, curry powder, pepper, tomato sauce, &c.; Passionfruit juice was analysed for preservative but none was found. A preservative is sometimes used which decomposes rapidly leaving no trace which can be determined analytically.

The Meat Export Branch sent in samples of honey, canned meat, meat tenderiser, &c.

Most of the samples were of good quality; they conformed to the specification and were suitable for export.

A considerable amount of time was devoted to the determination of added flavouring in butter. Diacetyl is responsible for a lot of the flavour of butter but is not a permitted additive. It is commonly present in small quantities (less than 0.5 parts per million) being formed by the bacteriological decomposition of lactose in the butter making process. There was a considerable variation in the proportion of diacetyl present in the products examined—continental type butters are particularly high. The analysis, however, indicated that the diacetyl had been formed in fermentation and was not added as diacetyl.

"THE EXPLOSIVES ACTS, 1952 TO 1963"

LEGISLATION

The following explosives were classified by Order in Council and authorised for use in Queensland:—

IMPERIAL CHEMICAL INDUSTRIES OF AUSTRALIA AND NEW ZEALAND LTD.—

Iregel

DU PONT (AUSTRALIA) LTD.—

Du Pont Hi Drive

HERCULES POWDER CO. INC.—

Superseis

Superseis Blasting Caps

PROTECTOR PATENT DEVELOPMENT AND MARKETING COMPANY PTY. LTD.—

Skorpion Anti Theft Device

OSWALD BRADLEY LTD.—

Indoor Table Bombs

In addition the following explosives were redefined within the same classification on behalf of Imperial Chemical Industries of Australia and New Zealand Ltd.:—

Nobel Drimix
Anforce
Anpower
Amex
Econex

No amendments were made to Regulations although several are contemplated following discussion and agreement as to uniform requirements between States at the recent Conference of Australasian Chief Inspectors of Explosives.

IMPORTATION

A total number of 96,390 cases (approximately 2,410 tons) of commercial explosives was imported into Queensland during the twelve months under review. This was some 10,000 cases greater than in the preceding twelve months and included two substantial shipments from the United States. These overseas shipments are unloaded at Port Alma from whence the explosives are conveyed by rail to the several bulk magazines.

However, the greater portion of explosives used in Queensland is manufactured in Victoria and transported to the State either by ship or by rail.

All explosive received has been in good condition and the packaging of both Australian and overseas manufactured explosive has been of satisfactory standard.

Ammonium Nitrate/Fuel Oil explosive has continued to be widely used. It is more economical than the older conventional dynamite type explosives, particularly when large quantities are involved, and is manufactured under license at the site of operation.

MAGAZINES

The four Government Bulk Magazines at Helidon, Bajool (Rockhampton), Brookhill (Townsville), and Queerah (Cairns) have operated satisfactorily during the year.

The abnormal and prolonged wet weather during the summer months made road access difficult to those magazines situated on the lower ground at the Bajool reserve and steps have been taken to improve this situation. Arrangements have been made to have additional large warning signs erected at Bajool where the railway siding crosses the Bruce Highway. Work will be carried out on the railway siding into the Queerah reserve during the 1971-72 financial year. Further sealing of roadways in the Helidon magazine reserve has taken place, the railway siding has been cleared of weed growth, and the firebreaks re-graded.

At the Brookhill reserve an area of 520 acres previously held by the Railway Department has now been transferred to the Lands Administration Board and, now known as R. 652, comes under the control of the Minister for Health for explosives purposes.

Following a request from the Department of the Navy, storage space has been made available at the Queerah magazines for naval explosives.

The upsurge in coalmining activity in the Central Queensland area has made heavy demands on the storage capacity at the Bajool magazine and it appears that provision of additional capacity may be necessary.

The Inspector of Explosives has visited all four bulk magazines during the year and has also been present at the unloading of bulk shipments of explosives at Port Alma.

DESTRUCTION OF EXPLOSIVES

The following explosives were condemned as unsafe for use and were destroyed under the supervision of the Inspector of Explosives:—

2" Blasting Gelatine	.. .. .	2 cases
2" Tonal	.. .. .	14 cases
3" Tonal	.. .. .	3 cases
2" Special Gelatine 60 per cent.	.. .. .	146 cases

In addition a number of cases of delay action electric detonators and of igniter cord were recalled by the manufacturers and subsequently destroyed. A small proportion of the electric detonators had either defective delay elements or fuseheads and the igniter cord had inconsistent burning rate.

LICENSES AND FEES

Table CXXII shows licenses issued or renewed as at 30th June, 1971, and fees and charges collected:—

TABLE CXXII

Category	Number of Licenses	Fees
		\$
Importation	46	460.00
Manufacture (ANFO)	109	654.00
Carriage	40	240.00
Storage	188	998.00
Sale	71	284.00
Fruit Ripening Rooms	29	159.00
Ammunition Imports	..	977.10
Fireworks Imports	..	694.80
Explosives Imports, Accessories, &c.	..	2,271.85
Magazine Storage Charges	..	13,982.00
(Helidon—7,054.40)	..	..
(Bajool—5,024.80)	..	..
(Brookhill—1,250.00)	..	..
(Queerah—652.80)	..	..
Heat Testing Charges	..	806.50
Sampling Charges—Regulations 12(4)	..	1,319.90
Miscellaneous Collections	..	58.23

FIREWORKS

All fireworks brought into the State have been inspected, sampled and tested in conjunction with the Customs Department which does not issue a clearance until advised that the State requirements have been met. No fireworks have been condemned in the past twelve months and importers of fireworks have been most co-operative in their dealings with the Department.

Retail sales of fireworks are now restricted to the two weeks prior to the Queen's Birthday holiday and during this period inspections are made of both large and small stores to ensure that safe practices are being carried out in the display and handling of fireworks.

In accordance with a resolution passed at the recent Conference of Chief Inspectors of Explosives action is being taken to further restrict the size of "bunger" type fireworks permitted in Australia.

AMMUNITION

All civil ammunition entering the State is inspected and tested before release for sale to the public and appreciation is expressed to the Ballistics Section of the Police Department for its co-operation in this testing.

Water corrosion was the cause of 1,800 rounds of .303 Mark 7 Safety Ammunition being condemned and a further 1,000 rounds of .303 tracer projectile ammunition was destroyed as this is not permitted to be used in the State.

GENERAL

Inspections of explosives magazines and fruit ripening rooms were carried out in the following towns and areas of the State:—

Townsville
Rockhampton
Gladstone
Miriam Vale
Bundaberg
Maryborough
Gympie
Beenleigh
Warwick
Metropolitan Area

The Chief Inspector and the Field Inspector attended the 10th Australian Explosives Conference held in Perth in October, 1970. These Conferences are held triennially and enable open discussion on problems which arise in the administration of the various Explosives Acts and Regulations, thus allowing uniform policies to be agreed upon and adopted by all States. A number of resolutions were passed at the Perth Conference including one that, in the interest of safety for children, will require the marking of individual detonators with warning words. Arrangements were made for the Field Inspector to visit and inspect the fireworks factory of Howard and Sons, Box Hill, New South Wales and the explosives factory of Nobel (Australasia) Pty. Ltd. at Deer Park, Victoria, while en route to the Conference.

DIVISION OF GERIATRICS

Director of Geriatrics: M. CHEONG, M.B., B.S. (Qld), M.R.C.P. (Edin.)

Medical Officers: G. J. POWELL, M.B., B.S. (Qld)

R. C. ROGERS, M.B., B.S. (Qld)

M. P. SMITHURST, M.B., B.S. (Qld)

G. A. S. DOUGLAS, M.B., B.S. (Melb.)

Senior Public Health Nurse: P. M. FARRELL, S.R.N., F.C.N.A.

Senior Social Worker: E. P. DOBBYN, Dip.Soc.Stud. (Qld)

The last twelve months has seen continued expansion of the work of the Division of Geriatrics. This expansion has supported the principle of the provision of health and welfare services for the aged people living in the community by further development of the Community Home Care Service. A decision to extend to the towns and surrounding districts of Maryborough, Bundaberg, Gympie, Nambour and Redcliffe was taken early in the financial year and it became operative in June with the appointment of four public health nurses, who are undergoing a six weeks of in-service training in Brisbane. This is regarded as a pilot project for the delivery of this type of health service to towns of smaller population. When the surrounding districts are included it will be realised that one public health nurse will serve a total population of approximately 50,000 people of whom some nine per cent. are over the age of 65 years.

Dr. G. A. S. Douglas commenced duty on 21st June, 1971, as Medical Officer, Division of Geriatrics. He is in charge of the day to day operations of this new development.

Three public health nurses were appointed from the towns of Maryborough, Bundaberg and Gympie. Their local knowledge of their own communities will be of the utmost importance in helping all of the service agencies in the community to co-ordinate their efforts on behalf of those aged persons who require some help to continue to enjoy the benefits of living in their own homes in their own community.

COMMUNITY HOME CARE SERVICE

Table CXXIII shows a summary of twelve months' operation of Community Home Care Service in metropolitan Brisbane.

Two thousand two hundred and eighty-one persons were referred to this service in Brisbane in the last year. There were only 438 cancellations of domestic help during the year, these being due to death of 85 persons and alternative arrangements for care.

After 20 months of operation it is becoming clear that an accurate assessment of the needs of an individual is an absolute requirement of the provision of a home help service. At the end of June, 1971, this service employed 316 part time home helps.

With the co-operation of the Queensland Council on the Ageing there has been a major co-ordination of the Meals on Wheels services in Brisbane. The Council has accepted the responsibility of acting as the co-ordinating body.

Community Home Care Service continues to receive excellent assistance from all of the developed community services in providing the best possible service for the old person in his own home.

The value of the public health nurse in the investigation of needs of elderly people with physical disability hardly requires emphasis. An essential feature of a Community Home Care Programme is the availability of a social worker to provide a case work service when necessary. The Medical Officers in Charge of the two offices of the Community Home Care Services have given excellent service in supervising the work of these offices and providing a consultant service to the homes of the elderly in Brisbane when necessary.

There has also been expansion of Community Home Care Service to Redcliffe and the offices are in the old Redcliffe Community Hospital. A public health nurse is regionalised to the Redcliffe Peninsula and the part time services of a social worker will be available.

TABLE CXXIII
COMMUNITY HOME CARE SERVICE

Referrals	1970						1971						Totals
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	April	May	June	
Total Referred	257	172	191	190	224	153	173	168	225	144	178	206	2,281
SOURCE OF REFERRAL—													
Self Referred	62	46	50	60	63	31	54	42	45	44	49	64	610
General Practitioner	52	32	37	33	40	37	35	37	38	35	31	49	456
Hospital	40	43	45	33	43	26	24	25	46	15	23	20	383
Social Worker	41	20	19	24	32	24	21	31	40	25	20	29	326
Community Services	25	18	16	11	20	22	15	22	23	9	15	21	217
Health Department	6	3	12	7	8	4	5	6	13	..	7	8	76
Other	20	2	4	11	2	1	..	..	..	..	..	..	40
ACTION TAKEN—													
Medical Officer	36	29	34	31	27	17	15	15	16	5	9	5	237
Public Health Nurse	195	118	129	128	159	108	106	116	170	99	124	159	1,611
Social Worker	43	27	42	36	39	27	36	38	38	33	30	33	427
HOME HELP—													
Number of New Patients per Month	52	47	42	50	56	49	53	28	38	40	40	45	540
Total Receiving Home Help	488	515	555	587	609	661	711	729	758	744	753	795	..
Number of Hours Worked	7,123	7,154	7,917	8,380	8,713	7,249	6,426	7,852	8,513	7,984	8,815	7,522	93,659
Number of Home Helps Employed	222	236	241	283	281	289	278	287	289	291	291	316	..
CANCELLATIONS—													
Death	11	11	12	6	6	3	5	5	5	14	3	4	85
Convalescent Homes	10	3	15	6	4	5	5	6	2	17	8	14	95
Hospitalisation	6	3	15	6	4	5	5	6	2	17	4	7	80
No continuing need	13	15	17	15	9	4	19	15	11	27	22	11	178

TABLE CXXIV

ADMISSIONS TO THE GERIATRIC UNIT AND SOURCES OF ADMISSION DURING THE YEARS 1969-70 AND 1970-71

Sex	Total	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Private Homes	Royal Brisbane Hospital	Other Local Hospitals	Country Hospitals	Convalescent Homes	Eventide
Males—									
1969-70	260	120	..	100	34	4	2	..	..
1970-71	250	81	..	90	43	16	14	6	..
Females—									
1969-70	448	214	1	173	36	13	1	10	..
1970-71	438	191	3	146	50	24	16	8	..
Totals—									
1969-70	708	334	1	273	70	17	3	10	..
1970-71	688	272	3	236	93	40	30	14	..

GENERAL

Dr. Glenda Powell was granted special leave to proceed to Edinburgh where she was successful in passing the examination for Membership of the Royal College of Physicians of the United Kingdom, taking her special subject in Edinburgh in Geriatrics.

The Director of Geriatrics was invited to read a paper on "The Value of the Public Health Nurse" at the A.N.Z.A.A.S. Conference in Brisbane in 1971.

During the year the Director has continued inspections of the nursing homes conducted by the State in Brisbane, Rockhampton and Charters Towers, and in January, 1971, he visited Sydney with two architects from the Department of Works to inspect aged persons villages being built by the Church of England to assist the architects in the planning of aged persons homes in Queensland.

There have been several overseas visitors to this Division during 1971, the most notable being Dr. Nathan Shock, President of the International Association of Gerontology, and Dr. P. S. Wilkins, a consultant physician in geriatric medicine from Portsmouth, who was a United Kingdom Churchill Fellow.

At regular meetings Dr. Fabian Bryant, seconded from the Division of Psychiatric Services, advised the staff on psychiatric problems of clients referred to the Community Home Care Service.

GERIATRIC UNIT, PRINCESS ALEXANDRA HOSPITAL

Tables CXXIV and CXXV show the details of admissions to and discharges from the Geriatric Unit during the last twelve months. Six hundred and eighty-eight patients were admitted during the period under review. Of these, 39.5 per cent. were admitted from Princess Alexandra Hospital compared with 13.5 per cent. from Royal Brisbane Hospital. In addition 34.3 per cent. of patients admitted to the Unit (236) came from their own homes. This latter figure is comparable with 38.5 per cent. in the previous year.

It will be noted that 30 patients (4.3 per cent.) were admitted from country hospitals. This remains the only geriatric unit in Queensland at the present time and must serve the needs of the whole State.

There were 708 patients discharged over the twelve months, and of these 388 (54.8 per cent.) were discharged

to their own homes. These figures emphasise the importance of adequate assessment and rehabilitation of the elderly patient.

DAY HOSPITAL

Three hundred and ninety-four patients were treated at the day hospital during the last year. One hundred and eighty-three patients were discharged, compared with 142 in the previous year. A continuing assessment of all patients is carried out every two months to ensure that the facility is used for the maximum benefit of the patients attending.

Two important reasons for admission are hemiplegia (69.5 per cent.) and arthritis (11.1 per cent.).

This continues to be a therapeutic day hospital. The majority of patients attending (91.8 per cent.) receive physiotherapy. Approximately one-third require occupational therapy treatment. A smaller proportion attend for speech therapy. Only five per cent. are attending for social reasons. The average length of stay was six months. It will be noted that 66 patients (16.7 per cent.) were referred to the day hospital by the medical officers of the Community Home Care Service.

The maximum use is made of the day centres at the Metropolitan Senior Citizens Club at Fortitude Valley and at the Bar Jai Club at Clayfield when discharge from the day hospital is advised.

The need for more day hospital places in Brisbane remains clear and the need for decentralisation of this type of treatment is obvious.

WARD S.9

This ward is being used for the rehabilitation of the young brain-injured patient, with injuries due to the trauma of motor vehicle accidents or disease.

Forty-six patients were admitted to this 24-bed ward during the last twelve months, and 45 patients were discharged. The average length of stay is six months.

It will be noted that 16 of these patients were discharged to their own homes and that when necessary the services of the Industrial Rehabilitation Department of the Commonwealth Department of Social Services were sought to assist those patients who were recovering from their disability.

TABLE CXXV

DISCHARGES, DEATHS, TRANSFERS FROM THE GERIATRIC UNIT DURING THE YEARS 1969-70 AND 1970-71

Sex	Total	Princess Alexandra Hospital (Acute Section)	Princess Alexandra Hospital (Chronic Section)	Private Homes	Royal Brisbane Hospital	Other Local Hospitals	Country Hospitals	Convalescent Homes	Eventide	Deaths	AOR	Kings-home
Males—												
1969-70	256	16	16	134	1	11	1	23	14	38	1	1
1970-71	270	24	5	142	5	14	5	26	19	30	..	..
Females—												
1969-70	451	25	20	245	2	27	3	67	6	55	..	1
1970-71	438	17	37	246	4	22	11	63	9	29	..	..
TOTAL—												
1969-70	707	41	36	379	3	38	4	90	20	93	1	2
1970-71	708	41	42	388	9	36	16	89	28	59	..	..

TABLE CXXVI

WARD S.9

SOURCES OF REFERRAL—

	1969-70	1970-71
Princess Alexandra Hospital—		
Acute Section	18	17
Royal Brisbane Hospital ..	10	16
Local Hospitals	3	4
Country Hospitals	2	3
Geriatric Unit	1	4
Day Hospital	..	..
Spinal Injuries Unit	1	..
Convalescent Homes	3	1
Home	4	1
	42	46

DISCHARGED TO—

Princess Alexandra Hospital—		
Acute Section	6	11
Princess Alexandra Hospital—		
Chronic Section	4	8
Royal Brisbane Hospital ..	..	1
Eventide	..	1
Country Hospitals	1	1
Deceased	2	2
Home	24	16
Convalescent Homes	1	3
Local Hospitals	1	1
Kingshome	..	1
	39	45

AVERAGE LENGTH OF STAY—

AGE GROUPS—	4 months	6 months
Under 40	60%	54%
40 and over	40%	46%

TABLE CXXVII
DAY HOSPITAL

	1969-70	1970-71
Total Number of Patients Treated	412	394
AGE GROUPS—		
Under 60	143 34.8%	143 36.3%
60-69	122 29.7%	124 31.5%
70-79	112 27.2%	91 23.1%
80-89	35 8.3%	33 8.4%
90 and over	..	3 0.7%
DIAGNOSIS—		
Hemiplegia	249 71.3%	240 60.9%
Fractures	13 3.1%	13 3.3%
Parkinsonism	7 1.7%	8 2.0%
Arthritis	37 8.9%	44 11.1%
Amputations	10 2.4%	12 3.0%
Head Injury	15 3.6%	17 4.3%
Heart Diseases	13 3.1%	15 3.8%
Other Diseases	94 22.8%	83 21.0%
SOURCES OF REFERRAL—		
Geriatric Unit Inpatient Wards	250 60.6%	234 59.4%
Community Home Care Service	27 6.5%	66 16.7%
Health Department	5 1.3%	..
Local Medical Officers ..	24 5.9%	24 6.0%
Princess Alexandra Hospital—		
Acute Section	30 7.2%	21 5.3%
Royal Brisbane Hospital ..	22 5.3%	14 3.5%
Geriatric Outpatients ..	54 13.2%	38 9.6%
TREATMENT—		
Speech Therapy	103 25.0%	119 30.2%
Occupational Therapy ..	170 41.2%	142 36.0%
Physiotherapy	366 88.8%	362 91.8%
Social Reasons	25 6.0%	19 5.0%
Medical Consultations ..	19 4.5%	34 8.6%
DISCHARGED TO—		
Local Medical Officers ..	80 56.4%	150 38.0%
Geriatric Outpatients ..	19 13.3%	10 2.5%
Deceased	19 13.3%	8 2.0%
Convalescent Homes, Mount	..	..
Olivet, &c.	8 5.7%	11 2.8%
Admitted to Hospital ..	16 11.3%	4 1.0%
Total Discharged from the Day		
Hospital	142	183
Average Length of Attendance	7 months	6 months
Highest Daily Attendance ..	76	75
Lowest Daily Attendance ..	40	33
Average Daily Attendance ..	57	50

PERMANENT CARE WARDS

Ward S.6A contains 30 beds for the permanent care of male patients. Fourteen male patients were admitted during the last year.

Ward S.6B contains 42 beds for the permanent care of female patients. There were 46 admissions to this ward during the last year.

It is noted that 22 patients out of 30 patients in Ward S.6A are under the age of 60 years, representing 70 per cent. of the population.

In Ward S.6B, 12 patients out of a population 38 (31 per cent.) are under the age of sixty years.

TEACHING

The Geriatric Unit is used by the University of Queensland for the clinical teaching of students of the Faculties of Medicine, Physiotherapy, Occupational Therapy, Speech Therapy and Social Work. Regular visits have been made by trainee nurses from the nursing training schools in Brisbane from all the hospitals and the staff of the Geriatric Unit have been pleased to assist with this teaching responsibility.

There have also been visits by overseas visitors, the most notable being Dr. P. S. Wilkins, a Consultant Physician from Portsmouth who was a United Kingdom Churchill Fellow.

PUBLIC HEALTH NURSES

The tables CXXVII, CXXIX, CXXX show some details of the work of the Public Health Nurses employed by the Division of Geriatrics to staff the Community Home Care Service. This work has been done by the Senior Public Health Nurse and seven public health nurses.

The Senior Public Health Nurse is responsible for the training of the public health nurses and acts as liaison officer with all agencies in the community, particularly the domiciliary nursing services. She also visits the Geriatric Unit at Princess Alexandra Hospital and serves as the co-ordinating link between the hospital and her staff in the community. A very realistic picture of a patient's abilities and disabilities is gained from hospital staff and this information is relayed to the regionally based nurses who can then implement the recommendations made by the hospital medical and paramedical staff.

With the expansion of the Community Home Care Service to the country towns of Maryborough, Bundaberg, Gympie, Nambour and Redcliffe, the Senior Public Health Nurse was again concerned in the organisation of a six-week in-service training course in Brisbane for four nurses which commenced on 31st May, 1971.

COMMUNITY HOME CARE SERVICE

TABLE CXXVIII

STATISTICS OF WORK OF THE PUBLIC HEALTH NURSES

	Home Visits	Male	Female	Total
New Referrals	..	567	1,225	1,792
Follow-Up Visits	..	1,797	5,097	6,894
Total number of visits ..	..	2,364	6,322	8,686

TABLE CXXIX

AGE RANGE NEW REFERRALS

Under 40	51
40-49	70
50-59	123
60-69	324
70-79	671
80-89	496
Over 90	57

TABLE CXXX

SOURCE OF REFERRAL

Princess Alexandra Hospital ..	353
Other Hospital	30
Department	28
General Practitioner	378
Social Workers	309
Domiciliary Nurses	116
Meals on Wheels	33
Relative	272
Friend or Neighbour	65
Self	162
Other	46

During the year, 1,792 new referrals were investigated. Of these 244 (13 per cent.) were under 60 years of age.

SOCIAL WORK REPORT

Prior to April, 1971, the social work staff in the Division of Geriatrics consisted of the Senior Social Worker stationed in the Health Department, and one social worker in each of the metropolitan Community Home Care centres. The social worker from "Eventide" continued to devote two days a week to community referrals from the Sandgate and Redcliffe Peninsula area. Since April when two new social work positions were filled, it has been possible to release this social worker for more pressing needs within "Eventide" and with two staff now stationed in each centre a more adequate service can be given for the steadily increasing number of referrals from all sources.

Sources of referral of new cases are set out below in order of priority. Eight hundred and seventy-nine cases were registered during the year and 97 cases were either brought forward or re-opened from the previous year.

Health Department—	
Director of Geriatrics	229
Medical Officer and public health sisters from Community Home Care Centres ..	179
Minister's office and Director-General ..	21
Others, including Health Officer	5
	434
Client or Associate direct to Social Worker ..	160
Other Social Agencies and Domiciliary Services including—St. Vincent de Paul, Lifeline, Domiciliary Nursing Services, Meals on Wheels, Service Clubs ..	93
General Practitioner	71
Hospital Social Workers	70
Commonwealth Department of Social Services "Eventide" (Staff and former residents returned to the community)	24
Others including Ministers of Religion and Solicitors	6
Public Curator's Office and Consumer Affairs Bureau	5
State Immigration	5
Total Number of Cases	879

As was anticipated, the widening community contacts as a result of the establishment of the Community Home Care centres have resulted in an increase in the number of direct referrals to the social workers there. It is however interesting to note that almost half the total number of referrals still come initially to the Health Department and indicate that in many cases a direct casework service relating to needs of elderly clients and their families is desired. Although a limited number of these cases are carried by the Senior Social Worker, most, after an initial office interview or 'phone contact are referred to the social worker at the appropriate centre.

Social work referrals are registered as a single case whether one person, a married couple or a family group are concerned so the actual number does not indicate the wider circle of relatives or associates who are often involved and whose problems are often more pressing and more indicative of social breakdown. Case records show that in approximately one-third of the cases carried, the main focus of help was on the general welfare of the family. Precipitated by, or concurrent with, the problem of elderly relatives, were such problems as housing and finance, marital discord, unemployment or general difficulties relating to the mental or physical health of not only the aged person but also children and grand-children.

The assessment of all applications for admission to "Eventide" Homes has again proved a worthwhile and significant aspect of the work. Many applicants are seen by social workers in a mental institution or hospital but where the person is still living at home or is in a Nursing Home where financial difficulties or lack of family support have created difficulties then a social assessment is valuable in determining priorities and urgency in admission. Many families are found to be caring for senile or seriously ill relatives needing

intensive nursing care; other aged persons are found to be living in social isolation, unable or unwilling to procure institutional care within their means. Social reports forwarded to the social worker at "Eventide" when the patients are admitted enable her to give both them and their families a continuity of support and advice.

The social worker at "Eventide" is also in regular consultation with medical and nursing staff there and with the visiting psychiatrist in assessing appropriate care and treatment. An interesting development in recent months has been the initiation and fostering of a committee of residents within the Home. While it is desirable that this committee should be composed of and run by residents, it is by their wish that the social worker is available for consultation and direction at their meetings.

In addition to "Eventide" assessment a significant proportion of referrals concerned requests for advice regarding institutional care for an aged person because of deteriorating physical or mental health or a combination of both. Whenever possible, the public health nurses were involved in assessing the overall health needs of a client and the alternative possibility of remaining in their own homes with maximum support from domiciliary services and home-help. In many cases, particularly where there is adequate family support, even reasonably deteriorated old people have been maintained in the community with continuing contact and support from the public health nurse and social worker. In many cases the main support continues to be from the public health nurse but in consultation with the social worker, particularly when a breakdown or crisis is imminent.

There has been a close liaison by social workers with the staff of aged persons' homes and nursing homes whether conducted by Church or voluntary bodies or by private enterprise and appreciation has been expressed of the fact that when a placement is arranged there will be a continuity of social work support. Alternatively, many active elderly persons sought direction or advice in making their own choice of an aged persons home and a significant number also sought private boarding or hostel type accommodation or independent living within the pension range. On the other hand, almost daily enquiries were received seeking either a live-in companion help or another person to share a private home. It has only seldom been possible to help with these requests and there appears to be a reluctance or wariness regarding sharing private accommodation. Most enquirers appear to prefer either independent living or institutional care.

The number of direct referrals to social workers from general practitioners continues to increase. All have demonstrated an awareness of the appropriate use of social work intervention and assessment of social needs. Not only the senior social worker but also all social workers in the Division have been appropriately used in a consultative capacity by social workers in hospitals and other agencies and there has been a most cordial and mutually helpful relationship. Staff from Princess Alexandra Hospital and from Commonwealth Department of Social Services, as well as social work students, have attended conferences at the Community Home Care centres in order to evaluate and use the service appropriately.

The social workers were again involved in the in-service course for public health nurses for the country expansion and welcomed the opportunity to take part in case discussions and lectures. They have also shown an awareness of the importance of liaison with domiciliary services and active co-operation with and encouragement to various voluntary groups in the community with an interest in the welfare of the aged. A seminar conducted by the Queensland Council of the Ageing was well attended as were seminars at the Geriatric Unit during the year.

Social work students have been supervised in this Division for their field work placements. The senior social worker has been involved in panel discussions and seminars with medical and social work students and has addressed various professional and voluntary groups concerning not only the services of this Division but also matters relating to the general welfare of the aged.

DIVISION OF NURSING

Adviser in Nursing: Mrs. E. W. S. SULLIVAN, S.R.N., G.N.C., O.N.C., C.W.C.

Assistant Adviser in Nursing: Miss J. FOLEY, S.R.N., G.N.C., O.N.C., C.W.C., F.C.N.A.

The Adviser in Nursing has made many special and routine visits to Metropolitan and Country hospitals. Special visits were made to Ipswich, Royal Brisbane, Cairns, Redcliffe, Rockhampton, Toowoomba and Townsville. Routine visits were made to Mt. Isa, Normanton, Boulia, Bamaga, Doomadgee and Mornington Island. Interstate visits were paid to Canberra to attend the National Health and Medical Research Council Nursing Committee in August, 1970; the International Hospitals Federation Convention in Sydney in September, 1970; to Armidale for a Seminar on Nursing Education in February, 1971; and to Melbourne in May for a conference on Nurses Registration Affairs.

The Assistant Adviser in Nursing paid routine visits to Townsville, Ayr, Home Hill, Collinsville, Bowen and Proserpine in August, 1970 and to Charters Towers, Hughenden, Julia Creek, Richmond, Cloncurry and Winton in December, 1970.

Winton Hospital nurses began participating in a Regional Training Scheme in July with two (2) second year nurses attending Mt. Isa for sixteen weeks theory and clinical experience. Later two nurses attended the Preliminary Nursing Course there for six weeks.

The Matrons' Conference was held in May. Matrons from all parts of Queensland attended. The Royal Brisbane Hospital was again the venue for all sessions of the conference. The theme of this year's conference was Patient Care and Regional Training. Much debate took place and many constructive suggestions were put forward. The conference was opened by the Honourable Minister for Health who also received the recommendations from the Conference Executive at the end of the conference. The conference participants were entertained to afternoon tea at Parliament House by the Minister.

The College of Nursing (Australia), Queensland Branch, is conducting Nursing Administration and Nursing Education Courses this year. There are 15 students in the former class and five in the latter.

The Nurses Board of Queensland has legislated this year to enable training programmes which will lead to enrolment,

to be held for Nursing Aides. This will fill a long felt want in the nursing situation in our State and many Hospitals Boards have indicated the intention to carry out the programme in their hospitals. Many nurses who have had difficulty in coping with the curriculum requirements of student general nurse training will now receive recognised training and will not be lost to nursing. These nurses have a very valuable contribution to make to patient-care in our hospitals.

It is pleasing to note the large number of Canadian and United States registered nurses seeking registration and employment here in Queensland. Any profession can gain from the infusion of constructive new ideas and we hope these new members to our ranks here will provide much that will be to our mutual benefit.

The work of the Division is increasing each year as many nurses from other countries which do not have reciprocity with Queensland for their nursing programmes seek registration. These nurses are interviewed by the Adviser in Nursing on behalf of the Nurses Board of Queensland. Visits are made to individual base hospitals when assistance is sought to seek a solution to a local or regional training problem. Many invitations are received and accepted for the Adviser to be guest speaker at Nurse Graduation Ceremonies. This is always a pleasant duty to perform. With all the different types of programmes for nursing education being implemented in other countries and states, nursing can look to some interesting developments in the future.

The wastage survey was again conducted this year. A revised form was circulated in July, 1970. There is very little difference in the wastage figures this year compared with previous years. There have been no student nurses at Mitchell or Kilcoy. The trend appears to be that some of the smaller hospitals will cease to be general nurse training schools. The number who left for personal reasons can be divided into categories such as family problems, parent transfers, home sickness, as well as the lack of desire on the part of the nurse to give the real reason. It is also regretted that there are five deaths as the result of car accidents. The complete results of the survey are attached in Table CXXXI.

TABLE CXXXI
WASTAGE OF STUDENT NURSES—QUEENSLAND HOSPITALS—1970-71

Hospital	Daily Average	Student Enrolment				Wastage of Students				Age Groups					Educational Standard				Reasons given for leaving								Died result of car accident	Unknown				
		1st Year	2nd Year	3rd Year	4th Year	Total	1st Year	2nd Year	3rd Year	4th Year	Total	Percentage of Total	17 and under	18	19	20	20+	Not known	8th	Sub. Jnr.	Jnr.	Above Jnr.	Marriage	Un-satisfied	Mis-demeanour	Study difficulties			Health	To take another position	Transfer to another Hospital	To become Asst. in Nursing	Personal
Atherton	60.81	18	11	6	7	42	3	2	3	3	8	19.05	3	2	3	2	3	2	1	1	6	2	4	2	1	1	1	1	1	1	10	..
Ayr	50.81	20	9	11	..	40	7	1	1	1	12	42.50	5	4	3	2	3	1	..	..	15	1	5	..	..	..	..	..	..	..	2	..
Bakindine	17.92	..	1	1	1	4	1	1	1	1	4	100.00	..	1	1	1	1	1	..	..	2	1	1	..	..	..	..	..	..	..	..	..
Beaudesert	11.79	6	4	4	1	15	1	1	1	1	4	22.22	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Blackall	43.19	4	2	2	3	14	2	1	1	1	5	21.43	1	1	1	1	1	1	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Blackburn	22.51	7	2	2	1	8	2	1	1	1	5	Nil	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Bonmah	15.20	3	2	1	2	8	2	1	1	1	5	Nil	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Bowen	24.90	1	1	1	4	7	1	1	2	1	5	Nil	..	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..
Bundaberg	20.40	6	1	2	4	13	1	1	2	1	5	23.08	1	6	3	6	1	..	..	..	16	6	2	3	10	4	1	1	1	1	1	..
Cairns	149.12	66	19	12	14	111	16	9	4	1	30	17.11	8	7	3	6	1	..	..	..	18	6	2	2	10	8	1	1	1	1	1	..
Charleville	140.93	70	35	17	14	136	16	9	4	1	30	22.06	8	7	3	6	1	..	..	..	18	6	2	2	10	8	1	1	1	1	1	..
Chartersville	52.87	3	2	2	2	9	3	1	1	2	7	14.29	3	4	1	1	1	..	..	..	7	4	1	1	5	1	2	1	1	1	1	..
Chinchilla	34.95	13	7	1	2	24	6	3	3	1	14	26.67	3	4	1	1	1	..	..	..	7	4	1	1	5	1	2	1	1	1	1	..
Clermont	22.65	17	3	1	1	22	3	1	1	1	7	16.67	1	1	1	1	1	..	..	..	5	4	1	1	1	1	1	1	1	1	1	..
Collinsville	16.23	4	4	2	2	12	2	1	1	1	5	15.63	2	3	2	2	1	..	..	..	5	4	1	1	1	1	1	1	1	1	1	..
Dalby	60.59	17	8	5	2	32	3	2	1	1	7	25.93	3	2	2	2	1	..	..	..	5	4	1	1	1	1	1	1	1	1	1	..
Emerald	26.37	5	8	7	1	21	3	4	3	1	11	6.67	2	3	2	2	1	..	..	..	3	2	2	2	1	1	1	1	1	1	1	..
Gladstone	61.16	11	8	7	2	28	2	2	1	1	6	26.09	3	2	2	2	1	..	..	..	3	2	2	2	1	1	1	1	1	1	1	..
Goondiwindi	32.90	8	7	6	2	23	4	3	2	1	17	23.91	6	7	5	2	1	..	..	..	4	4	1	1	1	1	1	1	1	1	1	..
Greenslopes	453.00	28	9	8	15	60	4	8	4	1	17	42.11	6	7	5	2	1	..	..	..	4	4	1	1	1	1	1	1	1	1	1	..
Gympie	117.96	43	22	12	15	92	9	8	4	1	22	32.91	10	5	3	3	2	..	..	..	19	7	2	2	1	1	1	1	1	1	1	..
Ingham	45.84	15	11	5	6	37	6	5	3	1	15	32.14	6	3	2	2	1	..	..	..	16	8	2	2	1	1	1	1	1	1	1	..
Innisfail	89.62	30	15	5	6	56	7	4	2	1	14	8.87	4	4	1	1	1	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Ipwich	19.15	8	3	2	1	14	7	4	2	1	14	40.00	4	4	1	1	1	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Isis District-Childers	21.06	1	2	..	..	3	..	..	..	..	Nil	Nil	..	..	..	..	..	..	..	..	1	1	1	1	1	1	1	1	1	1	1	..
Kilcoy	39.43	19	6	6	4	35	5	3	3	3	11	31.43	3	4	2	2	1	..	..	..	10	1	3	1	1	1	1	1	1	1	1	..
Kongarong	26.42	4	2	..	3	9	1	1	1	1	4	22.22	1	1	1	1	1	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Longreach	126.72	36	15	5	5	61	13	6	3	1	20	32.79	10	5	3	3	2	..	..	..	12	4	4	1	1	1	1	1	1	1	1	..
Mackay	61.06	10	10	4	4	28	1	6	3	1	11	39.29	7	5	6	4	4	..	..	..	6	2	2	2	1	1	1	1	1	1	1	..
Mareeba	209.29	40	26	11	9	86	13	8	2	1	26	30.23	7	5	6	4	4	..	..	..	4	3	2	2	1	1	1	1	1	1	1	..
Maryborough	18.46	5	3	3	1	12	2	2	2	1	5	45.45	2	1	1	1	1	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Miles	12.60	..	..	..	..	Nil	..	..	..	..	Nil	Nil	..	..	..	..	..	..	..	..	6	4	2	1	1	1	1	1	1	1	1	..
Mitchell	18.90	9	7	1	1	18	4	1	2	1	7	41.18	1	2	4	1	1	..	..	..	10	1	3	1	1	1	1	1	1	1	1	..
Moonto	23.42	6	3	3	10	22	1	4	4	1	14	23.73	4	3	2	1	4	..	..	..	12	8	4	1	1	1	1	1	1	1	1	..
Moosman	86.29	27	14	8	5	54	6	4	1	1	14	66.67	1	1	1	1	1	..	..	..	6	4	4	1	1	1	1	1	1	1	1	..
Mount Isa	17.96	32	15	5	2	54	6	4	1	1	10	20.00	3	1	3	5	5	..	..	..	12	8	4	1	1	1	1	1	1	1	1	..
Mount Morgan	24.49	9	4	5	2	20	2	4	1	1	10	20.00	3	1	3	5	5	..	..	..	10	7	5	3	1	1	1	1	1	1	1	..
Nambour	64.11	37	9	5	5	56	9	4	1	1	12	20.00	1	1	1	1	1	..	..	..	7	5	5	3	1	1	1	1	1	1	1	..
Proserpine	24.59	9	4	4	2	18	2	1	1	1	9	50.00	3	1	3	2	2	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Proserpine-Alexandra	993.70	531	202	127	78	938	66	30	18	18	123	13.11	33	42	26	11	11	..	..	..	70	53	13	25	1	1	1	1	1	1	1	..
Redcliffe	78.94	19	18	10	2	49	1	1	1	1	22	4.08	1	1	1	1	1	..	..	..	2	2	2	2	1	1	1	1	1	1	1	..
Rockhampton	244.32	113	32	25	9	179	5	14	4	3	35	19.55	7	14	8	3	3	..	..	..	28	5	7	6	9	3	1	3	1	3	1	..
Roma	32.38	13	3	4	2	22	5	1	1	1	10	27.27	3	3	3	3	3	..	..	..	25	17	6	9	1	1	1	1	1	1	1	..
Royal Brisbane	825.93	368	115	138	68	689	37	22	16	3	78	11.32	24	24	13	10	7	..	..	..	70	8	6	6	13	3	3	3	3	3	3	..
Royal Womans	215.64	282	115	138	68	689	37	22	16	3	78	11.32	24	24	13	10	7	..	..	..	70	8	6	6	13	3	3	3	3	3	3	..
Southport	118.50	55	20	9	13	97	17	11	2	4	34	35.05	12	6	6	2	8	..	..	..	25	5	7	7	3	3	3	3	3	3	3	..
Stanthorpe	36.20	20	5	2	1	28	11	14	12	1	37	23.00	6	10	8	7	5	..	..	..	3	25	5	7	3	3	3	3	3	3	3	..
Toowoomba	289.29	118	48	34	17	217	21	12	3	4	41	17.45	11	11	6	5	8	..	..	..	23											

DIVISION OF SOCIAL WORK

Adviser in Social Welfare: M. K. WHILEY, B.A., Dip.Soc.Stud. (Melb.)

Social Workers: T. H. BARKER, B.S.W. (Qld)

R. H. TUTTLE, B.S.W. (Qld)

W. J. STRAKER, B.Soc.Stud. (Qld), until 4th June, 1971

ACTIVITIES

This Division is concerned with the social aspects of the Health and Medical Services, especially with those social problems, of a personal or community nature, that may prevent people from making the optimum use of the health and medical resources available to them.

Since its inception at the end of 1959, the work of the Division of Social Work has become increasingly accepted in the community as an important facet of social and preventive medicine.

The Division's functions include the following activities:—

- (1) It is responsible for studying social needs and advising on the development of social work services to meet these needs throughout Queensland;
- (2) It co-ordinates medical and psychiatric social work services as they are established and developed within the health, medical and psychiatric services;
- (3) It effects a liaison with other social work services, especially with those based in public hospitals and in other State government departments, such as the Department of Children's Services and the Department of Aboriginal and Island Affairs, which are concerned with specialised social welfare programmes.

As social work services develop in the various Divisions of the Department of Health, the Adviser in Social Welfare is responsible for facilitating co-operation between these services, with a view to co-ordinating plans for their future development.

Associated with its advisory role, the Division provides within the public health field, a social casework service, designed to assist people who have inter-related health and social problems that would not normally be catered for by other social work services. While not formally set up as a research programme, this service has provided over the years, an important indication of changing trends in social problems.

This year, much of the casework carried out by social workers in the Division has been concerned with families who have a multiplicity of problems and who may be known to other Divisions, but where a supportive relationship with one social worker is considered necessary to help overcome impaired family or personal functioning. This area of work is being kept under review as other social resources develop. The relationship between this public health social work service and the service offered through the recently established Community Home Care Service, will need re-assessing from time to time, so that these services can be integrated effectively, and over-lapping avoided.

There has been steady development this year in most areas of social work in the health, medical and psychiatric services. The Divisions of Geriatrics, Psychiatric Services, and Youth Welfare and Guidance have all been able to increase their social work staff to help meet increasing demands.

There has been a slight expansion of social work in country centres, but most centres outside Brisbane still have difficulty in recruiting sufficient trained staff.

STAFF

Since the two new positions of Senior Social Worker were established last year, better co-ordination between specialised social work services has become possible and has proved helpful to all concerned. Staff meetings have been held regularly between Senior Social Workers in the Department and those in the main Brisbane hospitals. As a result of these meetings, the Adviser in Social Welfare was able to compile information for a Submission to the Senate Committee on "The Problems of, and Provisions for, Mentally and Physically Handicapped Persons," based on the experience of senior social workers in Queensland hospitals and health services.

In January this year, eight State Government Scholarship-holders graduated in social work and took up appointments, thereby greatly assisting in overcoming the staff shortage. Work with children received priority. Three scholarship-holders were allocated to the Department of

Children's Services, two to Child Guidance Clinics, and one for work with Intellectually Handicapped children. Two were allocated for work in hospitals, one of these being for a new research position.

NEW DEVELOPMENTS

There have been important new developments this year in both hospital and community services. Interest in locally based services to meet local community needs is still increasing. In the Community Home Care teams established last year in two Brisbane centres, the social work contribution has been a significant one. Although at present limited to the social needs of the aged and chronically ill or frail people in the community, it could prove to be an effective means of delivering social work services to younger families with medico-social problems. The development of this service will be watched with interest in the coming year.

An interesting new development in medical social work, this year, was the appointment of a Research Social Worker to the Princess Alexandra Hospital to assess the social factors that contribute to the need for patients to be admitted to, or to remain in, hospital, when medical needs are minimal. It is hoped this research will indicate some ways in which social workers might provide service before breakdown occurs and so prevent the need for some patients' admission to hospital.

TRAINING FOR SOCIAL WORK AND WELFARE

It is with deep regret that we record the death, in July 1970, of Miss Hazel Smith, Head of the Social Work Department in the University of Queensland. Miss Smith had been associated with the training of social workers in Queensland for the past fifteen years and this community is deeply indebted to her work. During the past year, Mr. L. M. Halliwell has been acting Head of the Department, and the University has now created a Chair in Social Work.

As in past years, the Department of Health has again co-operated with the University in providing, wherever possible, facilities for social work students' practical training. Experienced social workers in all relevant Divisions of the Department and in public hospitals have assisted by making some time available to supervise students in training.

During the year the Adviser in Social Welfare and the Senior Social Workers in the Divisions of Geriatrics, Psychiatric Services, and Youth Welfare and Guidance, have co-operated in in-service training programmes for newly appointed social workers, public health nurses, and residential child care workers.

Again this year, in an effort to secure professional staff for the future, the Department awarded Scholarships to students wishing to study social work at the University of Queensland.

It is anticipated that five Scholarship holders will graduate in Social Work in December 1971.

SOCIAL WORK IN HOSPITALS

In the major public hospitals in Brisbane, Bundaberg, Cairns, Ipswich, Townsville and Toowoomba, medical social workers continue to function as integral members of the hospital team. Rockhampton, Maryborough and Mackay hospitals still have difficulty recruiting trained staff.

Of special interest this year were three new appointments:—

The first was the appointment of a research social worker to Princess Alexandra Hospital to carry out a study of social factors contributing to the need for patients to be cared for in hospital. The others were new services introduced to the Casualty Departments in both Royal Brisbane and Princess Alexandra Hospitals. Patients who need help with problems associated with their admission to hospital, or whose social stresses might have been a significant precipitating factor in the illness which has brought them to hospital, will now have earlier access to counselling and help through the Casualty Department's social worker. This service will also provide an important link with social work in the Community Home Care Service, and thus help ensure continuity of care for many isolated folk who need some degree of support.

Volunteer workers who are members of Hospital Auxiliaries are playing an increasingly important role in assisting hospital staff and patients. This year, working under the supervision of the Senior Social Worker and Senior Psychologist, at Royal Brisbane Hospital, some volunteer workers have been able to offer help and support to patients at Lawson House. In conjunction with the Queensland Council of Social Service, the Senior Social Worker and the Senior Psychologist have helped provide a part-time training course for these and other volunteer workers—the first general introductory course of its kind to be offered in Queensland.

Further attention needs to be paid to the problem of recruiting medical social work staff for country centres, where the fear of professional isolation and the need for experienced people to develop new services, appear to be the major factors limiting the development of this work.

SOCIAL WORK IN PSYCHIATRIC SERVICES

The Division of Psychiatric Services now has an establishment of 19 social workers covering all aspects of services for the mentally ill and the intellectually handicapped. For the first time a social worker has been appointed to a community psychiatric team located in a provincial city (Townsville) but not attached to a hospital.

There is at last a growing movement in the State towards the establishment by voluntary organisations of hostels and sheltered workshops, and a close liaison has been maintained with these organisations and others where interest has been expressed. The success already achieved and the evident enthusiasm of those coming into this field augurs well for the future.

SOCIAL WORK IN COMMUNITY HEALTH

In the public health field social workers are engaged broadly in two main areas of social work. The first, which was established in a small way some years ago, operates centrally from the Social Work Division's offices in the Health and Welfare Building and provides a professional social work service, at both consultation and casework levels, for those Divisions which do not have access to a social work service of their own. These include the School Health Division, the Laboratory of Microbiology and Pathology, Health Surveyors, &c. Appropriate cases may also be accepted directly from the community, or from community agencies.

The other main area of public health social work is in the Division of Geriatrics, where social workers are engaged as members of the Community Home Care team, and provide a service in a wide range of problems affecting aged people and their families.

A third more specialised service operates within the Tuberculosis Division, and is concerned with the social problems of people living in the community and whose problems are linked in some way with tuberculosis or an allied condition.

Not all requests coming to these social workers are accepted for a direct counselling service to the patient. In response to many requests, the social worker provides information about the most appropriate resources for meeting the patient's needs, or the social worker may act as consultant to another person—minister of religion, convalescent home matron, public health nurse, local medical practitioner, &c.—who is in touch with the person needing the help. Where a family is at risk of breaking down (except for medical reasons), or where child neglect is alleged, the request would be referred to the Department of Children's Services. Hospital patients, or patients of psychiatric facilities, are usually referred to the social worker engaged within that service.

Cases in which a consultation service or information only has been provided, are taking an increasingly greater proportion of the social worker's time. Because of the central position of the Health Department in the community it appears likely, and appropriate, that this consultation service will expand, as the service becomes more widely known. While it is unlikely to replace the need for skilled casework services, social work consultation does have the effect of making social work knowledge and experience more widely available in the community for those who need it.

In addition to consultation services, however, social casework with individual people and families continues to be an important area of social work in public health and preventive medicine.

The Analysis of Casework shown in Table CXXXII, and the comments which follow, refer to those requests that were accepted by social workers in the Division of Social Work for a direct personal service to clients.

The number of new cases in which service was given has not increased greatly, (compared with 234 new cases in 1969-1970), because the staff in this section could not be increased this year. This service still operates only in the Brisbane metropolitan area but service was provided in response to 38 requests coming from outside Brisbane.

TABLE CXXXII
ANALYSIS OF CASEWORK

Number of Cases—	
Cases brought forward from previous year ..	101
Cases previously known to the Division and reopened on request during the year ..	32
New clients	284
Total	417
Cases in which service was given and the case closed during the year	
Current cases on 30th June, 1971	87
Total	417

To help meet the increased demand for service, priorities have been assessed in the following manner:—

(a) **Casework.**—Except in special circumstances, requests for assistance with a social problem were not accepted for casework service unless there were also a significant health or medical problem.

Priority has been given to cases referred through another Division or Section of the Department of Health, especially where the social work service would enable people to use the Department's resources more effectively.

However, with the introduction of the Subsidised Medical Benefits Scheme for low-income families this year and the possibility that more families can obtain medical attention locally, the social workers have endeavoured to co-operate with general medical practitioners in helping these families.

Other urgent referrals have been accepted where no other appropriate casework service existed, or where it was likely that, after a short contact, a client could be helped to accept more appropriate treatment—for example, psychiatric or child guidance treatment.

(b) **Consultation.**—In response to a large number of enquiries, including some from country centres, social workers have provided information on other appropriate resources in the community.

More significant has been the increasing tendency to use the social worker as consultant while another person in close contact with the client has provided the supportive service. This method was used, for example, in relation to the social adjustment problems of a young chronically ill patient in a nursing home, and also when a minister of religion was helping a country family under stress adjust to a new environment.

This aspect of the work has proved effective and seems likely to increase. Its significance as an important area of preventive medicine should not be overlooked.

School Health Requests

For some years now, this Division has co-operated closely with the School Health Services by providing a consultation service on school children's social problems for medical officers and school nurses. Where feasible a direct casework service has been offered to families, when their school children's health needs were urgent and when the family social problems were an important contributing factor.

The School Health Division is a preventive medical service which aims at the early detection of school children's health problems and offers guidance and information about treatment facilities. The Division is also concerned with the health aspects of the school environment and with the health of teacher trainees. In recent years, as children's health needs have changed, more attention has been given to children's emotional and social problems.

Since this area of social work has increased in significance, it was decided this year, to study the kind of problems referred to the social workers in an effort to re-assess the means of providing this service. The focus has been on those social problems that are linked in some way with a child's health needs, or that could significantly interfere with a student teacher's education.

Not all cases could be accepted for personal service, but of 65 families referred to the social worker by the School Health Services, 51 families received help with their social problems.

There were also 16 student teachers who needed help with their social problems, bringing the total number of School Health cases seen by the social workers to 67, or approximately 25 per cent. of the new cases for which social work service was provided by this Division during the year.

Family problems which appeared to be standing in the way of a child's health needs, and for which social work assistance was sought, included accommodation problems, unemployment, a parent's illness or disability, family or marital relationship problems, &c. In cases where a parent's mental health or a child's emotional or behaviour disorder was significantly contributing to the problem, the social worker assisted the family only until they could accept the need for

This area of work has proved very rewarding in terms of a preventive medical service for children. The work has been allocated to the social workers concerned, on an area basis, in order to promote a closer liaison with schools in the area, and with other resources. There has been close co-operation with social workers in the Community Home Care Service, and, in some areas where a disabled parent needed assistance, the social worker worked in collaboration with the public health nurse for the area.

The other area of the work, an increasingly important one, comprised the problems of student teachers where a social problem threatened to interfere with their training.

The service required in each case varied. The requests included, for example—counselling with regard to a family relationship problem interfering with the student's studies; assistance with financial difficulties for a student living away from home; counselling and assistance in arranging treatment when a student's problems were linked with drug abuse; assistance with rehabilitation for a student who discontinued her studies following a psychiatric illness; several unmarried students sought help in relation to problems associated with pregnancy—accommodation during pregnancy, guidance regarding her own rehabilitation and the baby's future.

Youth Welfare and Guidance

This year, social workers in the Division of Social Work, working in co-operation with the School Medical Officers, have assisted in referring a number of children to Child Guidance Clinics. These were usually children whose educational, attendance, or social adjustment problems were causing concern, but whose parents, for various reasons, were unlikely to seek child guidance treatment voluntarily. In most of these cases, some help was required in family social problems before the referral to the Clinic could be effected. Once the child had been accepted by the Clinic for treatment, the Clinic social worker, working as a member of the Child Guidance team, continued family counselling if this were considered necessary.

Co-operation with Private Medical Practitioners

There were 19 requests this year from general medical practitioners seeking some form of social work assistance for their patients. Although this number is small, it is higher than in previous years and is of interest for the variety of requests. They included requests for assistance to unmarried expectant mothers, for deserted or unsupported mothers and children, where the mother's health was causing concern, &c. In a further group of cases, medical practitioners requested information only—for example, sheltered workshop facilities, schools for handicapped children, &c.

Cot Deaths

The service to bereaved parents following the sudden unexpected death of an infant has continued this year in co-operation with pathologists in the Laboratory of Microbiology and Pathology.

During the year, at the request of the pathologist concerned, social workers visited 21 families as early as possible after an autopsy had been completed.

This service aims at providing the parents with information about "cot deaths," the cause of which is still unknown, and assisting them by explaining the procedure followed in issuing a death certificate in these circumstances. Information regarding the autopsy, and any tests which follow it, is made available, and if the parents wish it an appointment is arranged for them with the pathologist. Some parents express interest in research being carried out in this field. In many of these cases, an important aspect of the service provided by the social worker is the reassurance and support offered to the parents during their grief.

Handicapped Young Adults

This year 24 problems associated with a young adult's disability or chronic illness were referred to the Social Work Division, usually where no other appropriate service was available to assist them. An increasing proportion of these cases will probably be catered for by the Community Home Care Service in future, perhaps after the social worker has made the initial contact and assessment of the social problem. Accommodation for handicapped people is still a major problem. Some concern has also been expressed that some handicapped young people living in the community or in nursing homes still do not have sufficient social stimulation.

Voluntary organisations are beginning to take more responsibility for hostel accommodation and sheltered employment, Elizabeth Court at Nambour being an interesting example, and a small number of nursing homes are introducing occupational therapy services.

Unmarried Mothers

There appears to be a marked increase in the number of unmarried mothers availing themselves of social work assistance in an effort to rehabilitate themselves and plan appropriately for their baby's future.

Social work services are offered through the major public hospitals, the Department of Children's Services, Commonwealth Department of Social Services, and several voluntary organisations.

There were 68 girls referred to social workers in the Health Department for some form of help in problems related to pregnancy—accommodation, financial assistance during their pregnancy, &c. While they cover a wide age range, the girls seeking help from the Health Department social workers were aged from 15 years to 25 years, the majority being aged between 17 and 19 years.

The social workers have appreciated the assistance of many responsible citizens who have provided accommodation for these girls in return for light duties, but concern is expressed that some unsuitable living-in employment is often advertised for unmarried mothers.

A group of social workers is endeavouring to have a leaflet published, advising single expectant mothers of the health and counselling facilities available to them.

SOCIAL WORK AND TUBERCULOSIS

The Social Worker in the Tuberculosis Division continued to offer a supportive relationship, and help with their social problems, for a number of patients of the Chest Clinic, Brisbane. In all 142 patients or their families received some form of assistance through this service during the year.

Requests to the social worker were concerned with a wide range of personal and social problems, including for example, counselling in relation to a patient's emotional reaction to his illness, or help in planning for his rehabilitation. Other requests were related to more practical or environmental problems—financial insecurity, employment, and accommodation, being among the most significant. In some cases, alcohol dependency was a significant problem.

While the illness was a precipitating factor in a number of these social problems—for example, family problems associated with the patient's need for admission to hospital—there appeared to be an increasing proportion of cases where social and psychological conditions were conducive to tuberculosis and other chest conditions. As tuberculosis prevention programmes become even more effective, it is anticipated that these latter cases will in future comprise the greater part of the Chest Clinic social worker's work.

Approximately one-third of the patients referred to the social worker (49 cases), required fairly long-term supportive assistance in order to rehabilitate the patient or his family and so help avoid a recurrence of a chest condition.

The Chest Clinic social worker still operates centrally from the Clinic in Brisbane, where, in addition to seeing patients, she is available for consultation on social problems by team members from other disciplines. In-patients of Cherm-side Hospital are usually seen by the Hospital social worker.

SOCIAL WORK WITH THE VISUALLY HANDICAPPED

The need for a social worker in this field is recognised but the new position created last year is still vacant. The vacancy has recently been re-advertised widely.

ENTHETIC DISEASES CLINIC

There is co-operation between social workers in the Division of Social Work and the Women's Clinic staff, and in a small number of cases some service has been offered. Full coverage of this work was not possible this year with the existing staffing restrictions necessary.

PSYCHIATRIC CONSULTATION

Again this year, social workers in the Department have appreciated the consultation service provided by psychiatrists from the Division of Psychiatric Services, enabling the social workers to gain deeper insight into their clients' problems and so offer a more effective service. Dr. G. S. Briggs and Dr. F. Bryant have given valuable help in this way. In consultation with Dr. Bryant some thought is being given to ways of assisting volunteers to provide supportive community services for people with emotional problems.

COMMUNITY WORK

All senior social work staff in the Department and in Public Hospitals have co-operated with community organisations offering some form of service in the community. This has usually been in the form of talks to groups, or participation in the work of committees or conferences.

FLYING SURGEON SERVICE

Flying Surgeon: A. C. M. PAUL, M.B., B.S.(Qld.), F.R.A.C.S.

Anaesthetists: A. L. NEILSON, M.B., B.S.(Qld.), to February, 1971
W. T. FIFOOT, M.B., B.S.(Qld.), from March, 1971

Pilot: Captain R. LEWIS

The Flying Surgeon Service is based at Longreach and makes routine and emergency visits to Aramac, Barcaldine, Blackall, Clermont, Cloncurry, Collinsville, Cunnamulla, Emerald, Hughenden, Injune, Julia Creek, Mitchell, Mt. Isa, Murrumbidgee, Quilpie, Richmond, Roma, Surat, Springure and Winton.

Dr. A. L. Neilson resigned from the position of Anaesthetist in February, 1971, and was replaced by Dr. W. T. Fifoot, who commenced duty in March, 1971.

The Flying Surgeon Service has now been operating for twelve years and has flown in excess of a million miles amassing about seven and a-half thousand hours of air travel.

During the financial year 1970-71 a total of 731 operative procedures were carried out by this Service with 51 operations at the Longreach Hospital and 680 performed at the aforementioned centres. Of the total of 731 operations 421 were major procedures involving 61 cases of immediate surgery of an emergency nature.

The Flying Surgeon examined 1,300 people referred for specialist opinion apart from patients requiring operations.

A total of 18,773 patients have been examined since the inception of this Service and 6,930 operations have been performed, of which 1,191 were emergency surgical procedures.

TABLE CXXXIII

Year	Miles	Total Patients	Operations	
			Routine	Emergencies
1967	99,999	1,706	577	136
1968	111,095	1,894	638	144
1969	105,778	1,256	591	118
1970	94,259	1,444	706	64

This specialist team has given the people of Western Queensland a highly qualified professional surgical service available at any of the aforementioned centres at very short notice.

The visits of the team to the hospitals situated in the remote areas of this State gives an opportunity for the respective Medical Superintendents to discuss professional problems. These visits are of considerable importance, especially in those instances where the isolated hospitals are staffed by recently graduated medical practitioners.

This Service continues to attract the interest and enquiries from countries overseas.

LEGISLATION

The *Health Act Amendment Act 1971* was assented to on the 21st April, 1971, altering the title of the Principal Act to the *Health Act 1937-1971*.

The main amendment was the repeal of Section 130 and the insertion of a new section with the inclusion of the following Sections 130A to 130O.

These new Sections increased the area and power of authority to control illicit and illegal use of dangerous drugs, prohibited plants and implements used in connection with the drugs of addiction with the important provision of an offence for trafficking in dangerous drugs as distinct from possession of these drugs. Emphasis was given to this trafficking offence with the declaration of harsher penalties including imprisonment.

The new legislation provided for the detention of an offender to a specified institution for treatment in respect of the offender's use of dangerous drugs, the examination of a person so detained and the administrative arrangements for his detention, leave of absence, and discharge on parole.

The matters of proof respecting possession of drugs were expanded and powers detailed for the forfeiture on conviction of materials to the Crown.

Inclusion of a new Division IVa to Part IV of the Principal Act made possible the constitution of a Detention Review Tribunal to deal with applications respecting persons liable to be detained under Court's order and framed the processes of administration of same.

Further amendments included definition of certain expressions, the deletion of some terms, the correction of references, extension of the power to demand, select and take samples of foods, drugs or articles for analysis and declaration of the limitation of time for summary proceedings to be taken.

The *Radioactive Substances Act Amendment Act 1970* came into operation on the fixed date of the fifth of September, 1970 by Proclamation published in the *Government Gazette* dated the 5th September, 1970.

This proclaimed amendment of the *Radioactive Substances Act 1958-1970* enabled persons other than medical practitioners and dentists to apply for a license to use on human beings irradiating apparatus for the sole purpose of diagnostic radiography.

The *Radioactive Substances Regulations, 1961*, were amended on 31st October, 1970, giving an extended definition of methods dealing with an application for a license under the *Radioactive Substances Act 1958-1970*.

The *Poisons Regulations of 1967* were amended on four occasions:—

- (1) On the 15th August, 1970, further amendments were published in the *Government Gazette* of alterations and additions to the Schedules of the Regulations;
- (2) In the *Government Gazette* dated 24th October, 1970, was published amendments to certain regulations and a new regulation which required the provision of an approved receptacle for the storage of dangerous drugs or a secure place to the satisfaction of the Director-General;
- (3) In the *Government Gazette* of the 3rd April, 1971, amendments were made to several regulations. These amendments detailed certain substances requiring written approval of the Director-General for prescription, the requirements of an order or prescription from an authorised person for the dispensing or sale of a dangerous drug or a restricted drug, and the manner in which a person who dispensed a prescription is required to endorse same; and
- (4) The *Government Gazette* dated the 8th May, 1971, declared the prescribed quantities of certain substances to be dangerous drugs for the purpose of Section 130J of the *Health Act 1937-1971*.

Two Orders in Council were published in the *Government Gazette* dated the 8th May, 1971. One Order brought the declared substances to be dangerous drugs under the Authority of the amended Health Act and the other Order declared certain substances to be prohibited plants for the purposes of the *Health Act* 1937-1971.

The *Government Gazette* dated the 14th November, 1970, amended the Food and Drug Regulations, 1964, to implement a recommendation of the National Health and Medical Research Council to declare a uniform standard for edible fats and oils.

The standard for margarine was altered by amendment in the said *Government Gazette* to include a formula for determination of the fat value.

The Food and Drug Regulations, 1964, were further amended by *Government Gazette* dated the 5th December, 1970, to include a declared labelling provision of foods containing cyclamates in accordance with a recommendation of the National Health and Medical Research Council.

The Barbers' Shops Regulations of 1952 were amended on the 29th May, 1971, to extend the areas of application of licensing powers of Local Authorities.

ACKNOWLEDGMENTS

I have much pleasure in recording my gratitude to all members of the staff for their loyal service, support, and conscientious attention to duty.

Acknowledgment is also made to other Government Departments for their co-operation, particularly the Government Statistician, Mr. A. W. Mumme, and his officers who, as usual, have been of great assistance in preparing the vital statistics section of this report and have supplied other statistical details from time to time throughout the year.

Every assistance has been given by the President, Dr. E. F. H. Theile, and members of Council of the Australian

Medical Association, Queensland Branch, and I am indebted to them for the help they have given me.

I would also thank the members of the various expert committees who have given so freely of their time and advice.

I desire to acknowledge the co-operation I have received from the Medical Superintendents of the base hospitals and would particularly thank Dr. A. F. Knyvett, General Superintendent of the Royal Brisbane Hospital; Dr. O. W. Powell, Medical Superintendent of the Princess Alexandra Hospital; and Dr. C. Lomas, Medical Superintendent of the Chermide Hospital, for the assistance they have given during the year.

APPENDIX

ANNUAL REPORT OF THE NATIONAL MOSQUITO CONTROL COMMITTEE,
1970-1971

The Committee, through its Senior Research Officer, is concerned in educational, advisory, field and laboratory work on mosquitoes.

During the year identifications and advice were provided to seven Local Authorities and to an increased number of individual collectors or enquirers. A survey was undertaken for Pioneer Shire and Mackay City Councils, and *Aedes aegypti* surveys were continued with the collaboration of officers of the State Health Department and six Local Authorities. Research was maintained into the systematics and biology of Queensland mosquitoes.

1. PUBLIC HEALTH

Identifications and advice were provided on mosquitoes submitted by the following:—

- Balonne Shire Council
- Brisbane City Council (3 samples)
- Mulgrave Shire Council (8 samples)
- Murweh Shire Council.

Identifications of other insects were provided to:
Belyando Shire Council (Chironomidae)
Longreach Shire Council (Belostomatid bug)
Mulgrave Shire Council (Blowflies)

Advice was provided in answer to queries by Acting Health Inspector, Darwin.

2. Aedes Aegypti Surveys

A report on "*Aedes aegypti* in Queensland" including all information available at 30th June, 1970, from the survey undertaken for W.H.O. was forwarded to Chief, Vector Biology and Control, W.H.O.

In acknowledging it, Dr A. W. A. Brown, Scientist/Biologist, Vector Biology and Control, wrote, "We conclude from your report that *Aedes aegypti* is on the wane in Queensland, though outside breeding in discarded containers could lead to a recrudescence; while the Torres Strait islands, Bamaga and Cairns remain well infested". He asked whether negative records could be established for localities positive in 1965-1966 but for which there were no subsequent records, using the balance of the W.H.O. grant to promote surveys in these areas. The single-larva technique, which had proved unsuited to Queensland conditions, was not required.

Surveys were therefore undertaken with the collaboration of Health Inspectors, as indicated: Dr E. N. Marks, April 1971, Mt Surprise, Georgetown (Mr F. Leavis, Etheridge Shire Council); Petford, Almaden, Chillagoe (Mr G. Gnezdiloff, Mareeba Shire Council); Miss P. Kerridge, May 1971, Sarina, Louisa Creek, Half-tide (Mr A. J. Andreasen, Sarina Shire Council); Proserpine-Cannon Vale (Mr P. Eldershaw-Wilson, Proserpine Shire Council); Charters Towers (Mr H. G. Birgan, Charters Towers City Council). Once the presence of *A. aegypti* was established, further detailed examination of a town was not attempted. Localities in Proserpine and Sarina Shires were surveyed in dry conditions and negative findings might not be a true indication of absence of *A. aegypti*.

In addition, Mr A. Harper, State Health Department of Cairns, has continued surveys in Aboriginal and Torres Strait Island Communities, and Mr S. Crichton, Mulgrave Shire Council, has provided records.

The results are recorded in Table CXXXIV.

Breeding Places

In surveys in Etheridge and Mareeba Shires, 17 collections of *A. aegypti* were from tyres (7), large rainwater tanks (3), 44-gallon drums or equivalent (3); old paint tins (2), discarded cooking bowl (1), and very large underground tank (1). *A. aegypti* was taken alone (11), with *A. notoscriptus* (2), with *A. notoscriptus* and *A. tremulus* (1), with *A. notoscriptus* and *C. fatigans* (1), with *A. notoscriptus* and *C. halifaxii* (1), and with *C. fatigans* (1).

The number of collections from rainwater tanks is unlikely to be a real indication of the extent of breeding in them. It is difficult to collect larvae from them, and in low rainfall localities with no reticulated water, the collector is reluctant to deplete the householder's water supply. If *A. aegypti* was found in nearby containers, tanks were not intensively searched for larvae.

Recent rain in these districts meant that many small containers held water. Round homes where tanks were effectively screened or regularly kerosened or round those

in Georgetown where tanks had been removed since provision of reticulated water, householders had failed to notice prolific mosquito breeding in tyres or 44-gallon drums. Care in mosquito control by one householder might be negated by prolific breeding round an unoccupied dwelling nearby.

Two very prolific breeding sites which were undoubtedly contributing to troublesome mosquito infestations were a very large tyre near Georgetown Hospital, and a discarded chip-heater near Chillagoe Hospital. In both, the predominant species were *Tripteroides punctolateralis* and *Aedes tremulus*, both of which enter houses and bite man; *A. aegypti* was apparently not present in these sites.

It is suggested that large truck tyres holding water and placed in suitable sheltered sites near dwellings, could provide a simple means of checking distribution of *A. aegypti*. No special skill is needed to collect larvae from them which can be submitted for identification.

3. INVESTIGATION OF MOSQUITO PROBLEMS IN THE
MACKAY DISTRICT 28th JULY-6th AUGUST,
1970

This was undertaken at the request of the Pioneer Shire Council and Mackay City Council, who jointly met the expenses for the field investigation. The former provided laboratory accommodation and transport, and the latter field guidance and assistance. A comprehensive report was furnished to the Councils. Twenty-seven species or subspecies of mosquitoes are recorded for the area, 23 being taken during this investigation. The variety and distribution of brackish water sites breeding *Aedes vigilax* were specially studied, and representative fresh water sites were sampled with particular attention to those altered by man. Two miniature light-traps and a truck-trap were used to sample adult populations.

The main breeding sites of *A. vigilax* are usually located on open salt marshes with no more than partial shade. The intensity of breeding and extent of the sites where larvae were found among mangroves in fair to dense shade was unexpected; it needs to be resolved whether this is largely a dry season phenomenon, or whether it is characteristic of *A. vigilax* at any season in the Mackay district.

Reclamation and drainage have restricted salt marsh breeding sites in the city area since an earlier survey in 1947. It appeared that clearing of obstructions from natural drainage channels and introduction of native larvivorous fish could help to reduce larval populations, and that strategic spraying of breeding sites based on presence of larvae and consideration of wind direction, as is currently practised by Mackay City Council, was in present circumstances the most practical means of reducing all but major infestations of *A. vigilax*.

An extraordinary prolific breeding place of *Mansonia uniformis*, *Coquillettidia xanthogaster* and *Coq. sp.* near *crassipes* (species whose larvae attach to roots of plants growing in water) was found at Slade Point, where about 50 acres of teatree swamp was felled some three years ago. The tangle of uprooted trees thickly overgrown with grass, and impenetrable to stock, hid many shallow swampy depressions and deeper root-holes where great numbers of larvae of these species were associated with grass roots. All three can be major pests of man, as well as potential disease carriers. *Coq. sp.* near *crassipes* had not previously been taken south of Townsville.

This swamp represented a much greater mosquito source, and control problem, than in its natural state, and exemplified the problems produced by land reclamation projects undertaken without consideration of likely biological effects.

Culex annulirostris was common, and *Anopheles annulipes* was breeding prolifically in open pools and hoof prints round sedge swamps trampled by cattle or birds. Collections of 300-500 specimens in the truck trap indicated the occurrence of male swarms of *An. annulipes* 0-30 minutes after sunset and 60-30 minutes before sunrise.

Species that breed in temporary fresh-water pools resulting from rain or floods were absent at this dry season. It appears likely that suitable depressions for their breeding places have been greatly reduced in number by the extensive cultivation of canefields.

A fish, the Northern Blue Eye, *Pseudomugil signifer*, was numerous in one sedge swamp at Andergrove, in which mosquito larvae were scarce, and its introduction to other sites was suggested.

TABLE CXXXIV

Aedes aegypti SURVEY IN QUEENSLAND 1970-71

Place	Premises Examined	Containers with Water	Containers with Larvae	Containers with <i>A. aegypti</i>	Other Species (Number of Containers)
TORRES STRAIT ISLANDS					
Boigu Island (11th and 12th October, 1970)	34	31	8	8	..
Dauan Island (13th October, 1970)	10	11	0	..	..
Saibai Island (13th and 14th October, 1970)	27	22	0	..	..
Mabuiag Island (9th and 10th October, 1970)	26	38	9	9	..
Badu Island (6th and 7th October, 1970)	15	21	0	..	..
Moa Island, Kubin Village (8th October, 1970)	12	14	2	..	<i>Culex fatigans</i> (2)
Moa Island, St. Paul's Mission (15th and 16th October, 1970)	20	15	2	..	<i>C. fatigans</i> (2)
CAPE YORK PENINSULA—ABORIGINAL COMMUNITIES					
Bamaga (4th to 7th August, 1970)	37	124	16	7	<i>C. fatigans</i> (4) <i>Culex halifaxii</i> (4) <i>Culex</i> sp. nr <i>vishnui</i> (1) <i>Aedes tremulus</i> (2) <i>Aedomyia catacticta</i> (1)
New Mapoon (3rd August, 1970)	24	37	0	..	..
Umagico (7th August, 1970)	18	30	0	..	..
Cowal Creek (31st July, 1970)	21	28	2	..	<i>C. fatigans</i> (2)
Red Island Point (1st July, 1970)	6	15	0	..	..
Weipa (13th to 17th July, 1970)	40	4	0	..	..
Aurukun Mission (May, 1971)	90	0	8	..	<i>C. fatigans</i> (7) <i>C. halifaxii</i> (2) <i>Culex pullus</i> (2) <i>Culex annulirostris</i> (1) <i>Anopheles annulipes</i> (2)
Lockhart River	32	0	0	..	..
Lockhart River Beach area	..	..	3	..	<i>Culex sitiens</i> (3)
GULF ABORIGINAL COMMUNITIES					
Mornington Island (20th to 24th June, 1970)	46	8	0	..	..
Doomadgee (17th to 21st May, 1970)	41	11	1	..	<i>C. fatigans</i> (1)
NORTH QUEENSLAND					
Chillagoe (26th April, 1971)	3	..	8	3	<i>C. fatigans</i> (3) <i>C. halifaxii</i> (4) <i>A. tremulus</i> (1) <i>Aedes notoscriptus</i> (2) <i>Tripteroides punctolateralis</i> (1)
Almaden (26th April, 1971)	1	..	6	4	<i>C. fatigans</i> (1) <i>C. halifaxii</i> (1) <i>A. notoscriptus</i> (4) <i>Aedes quasirubithorax</i> (1)
Petford (26th April, 1971)	1	..	3	1	<i>A. tremulus</i> (2) <i>A. notoscriptus</i> (2) <i>Toxorhynchites splendens</i> (1)
Mount Surprise (20th April, 1971)	5	..	9	5	<i>C. fatigans</i> (6) <i>A. notoscriptus</i> (2)
Georgetown (21st April, 1971)	6	..	6	4	<i>C. fatigans</i> (2) <i>A. tremulus</i> (1) <i>T. punctolateralis</i> (1)
Machan's Beach (24th February, 1971)	1	..	1	1	..
Charters Towers (14th May, 1971)	7	..	8	5	<i>C. fatigans</i> (2) <i>A. notoscriptus</i> (2)
Ravenswood (May, 1971)	1	..	1	1	..
CENTRAL QUEENSLAND					
Proserpine (12th May, 1971)	15	..	11	3	<i>C. fatigans</i> (8) <i>C. halifaxii</i> (2) <i>C. fatigans</i> (4) <i>C. halifaxii</i> (1) <i>A. notoscriptus</i> (6) <i>An. annulipes</i> (2)
Cannon Vale (13th May, 1971)	11	..	7	..	<i>A. notoscriptus</i> (3) <i>C. fatigans</i> (1) <i>A. notoscriptus</i> (2) <i>C. fatigans</i> (3) <i>A. notoscriptus</i> (1) <i>C. fatigans</i> (3) <i>A. notoscriptus</i> (1)
Far Beach (Mackay) (29th July, 1970)	3	..	3	..	..
Sarina (11th May, 1971)	2	..	3	..	..
Louisa Creek (11th May, 1971)	3	..	3	..	..
Half-tide (11th May, 1971)	2	..	4	..	..
Woorabinda Aboriginal Community (1st to 7th December, 1970)	34	18	3	..	<i>C. fatigans</i> (1) <i>A. notoscriptus</i> (3)

4. MOSQUITOES FROM SOUTH-WESTERN QUEENSLAND

Mr J. Wright, Rabbit Control Officer, Lands Department, sent in approximately 400 specimens. These, supplemented by samples from Health Inspectors at Charleville and St. George, provide interesting records of the species active before, during, and after an unusually wet season.

In August 1970, after about three months without rain, larvae and pupae of *Culex australicus* and *Aedes eidsvoldensis* were taken at the overflow of a bore and windmill, 40 miles west of Windorah. At Tindary Bore, 15 miles east of Thargomindah, *Anopheles annulipes* were breeding in large numbers

in warm water in a bore drain, and adults of *An. annulipes* and *Anopheles amictus amictus* were resting in rabbit burrows near a bore drain. At Paracoona, 100 miles north-west of Cunnamulla, *Anopheles annulipes*, *Aedes bancroftianus* and *Culex cylindricus* were active close to a rock pool (*C. cylindricus* had not previously been recorded west of Roma).

In March 1971, at Paracoona, after 5 inches of rain had fallen in the preceding three weeks, the following species were taken biting: *An. annulipes*, *Culex annulirostris*, *Aedes eidsvoldensis*, *Aedes pseudonormaniensis*, *A. bancroftianus*, *Aedes vittiger*, *Aedes* "sp. No. 71", *Aedes* "sp. No. 85" (these *Aedes* spp. all breed in rainfilled pools).

C. annulirostris was taken in greatest numbers.

At Cunnamulla, *C. Annulirostris*, *A. eidsvoldensis* and *An. amictus amictus* were biting man. At Valetta, 55 m. S.E. Cunnamulla, *C. annulirostris* occurred in large numbers. One treehole species *Aedes mallochii* was collected as larvae and another, *Tripteroides punctolateralis*, was biting (it had not previously been recorded from the Cunnamulla district).

A. vittiger apparently occurs only rarely in the far west; the Health Inspector, Murweh Shire Council, sent a specimen from Charleville in October 1970 as "an unusual variety for this district".

The Health Inspector, Balonne Shire Council, in October 1970 found *Culex fatigans*, *Aedes alternans*, *A. eidsvoldensis* and *A. "sp. No. 85"* harbouring in town culverts and drains at St. George and, at swamp areas within 30 miles, collected *A. vittiger*, *A. eidsvoldensis*, *A. "sp. No. 85"*, *Aedes theobaldi* and *Aedes sapiens* (*A. sapiens* had not previously been recorded east of Cunnamulla).

In February 1971, Mr Wright took *An. annulipes*, *C. annulirostris*, *A. vittiger* and *A. alternans* at Terriea, 32 m. W. Stanthorpe. On 2-3 March, there was a heavy infestation of *C. annulirostris* 30 m. E. Bollon. *A. vittiger* was taken near Mitchell on 19th March, plus the treehole species, *Aedes notoscriptus* and *T. punctolateralis*. By the end of the month, mosquito activity was low, in the Surat district, with small numbers of *An. annulipes*, *C. annulirostris* and *A. notoscriptus* taken.

A specimen of *Coquillettidia xanthogaster* collected 40 m. S.W. Condamine on 30th March, apparently provides the first record of this species west of the coastal plain in South Queensland.

5. IDENTIFICATIONS

There has been a significant increase in specimens and questions on mosquitoes submitted by individuals. Some very interesting records and valuable research material was included in the following collections (some are discussed in the next section):—

Queensland.—Iron Range area, Bloomfield River area, Cooktown (G. B. Monteith); Planet Downs (D. Hockings); Edungalba (E. E. Adams); Fairfax I. (A. B. Cribb, W. D. McKenzie); Round Hill Head (D. N. Home); Biloela (M. Godwin); Chinchilla (C. Cameron); Charleville (T. E. Woodward); Emu Vale (G. B. Monteith); Sandgate (J. T. Brooks); Brisbane (D. Lambourne, J. Atherton), Loganlea (A. Swinton).
New South Wales.—Cobar (M. Bradney).
Western Australia.—Albany (C. A. Green).
Northern Territory.—Gove (P. Kerridge).
New Guinea.—Minj (S. H. Christian).
Fiji.—Malolo Lailai (E. J. Reye).

Four enquiries about "unusual" mosquitoes biting man concerned *Anopheles annulipes* and one *A. bancroftii bancroftii*—probably a result of greater numbers being present in this year's wet season.

Enquiries included two concerning use of plants in mosquito control—one of garlic as a larvicide; and sticky seeds of certain plants as a means of entangling mosquito larvae. These were stimulated by reports of overseas experiments and the enquirers were encouraged to make some preliminary investigations themselves with local material.

6. RECORDS OF SPECIAL INTEREST

With the exceptionally wet summer in many parts of Queensland some unusual records of mosquito distribution were obtained—

Coquillettidia xanthogaster at Condamine.

Aedes vittiger at Freshwater, near Cairns (collected by Mulgrave Shire Council); this is probably the northernmost record for this species and also the first from the high rainfall tropical lowlands.

Aedes aculeatus a rare species that, near Brisbane, has only been found breeding in rainfilled sedge pools near the beach of Dunwich, Stradbroke Island, was collected in December at Wickham Terrace, in the middle of the city (this happened once before, in 1947).

Three species of *Tripteroides* previously reported from Bamaga, *T. subobscurus*, *T. brevihynchus* and *T. "filipes"*, were collected by Mr Monteith from pitcher plants at Mt Tozer near Iron Range. Laboratory rearing of larvae proved that records of *T. longipalpa*? from Queensland refer to an early instar of *T. "filipes"* (this had been suspected but proof was hitherto lacking). This species shows interesting differences in mouthparts between larval instars.

Miss Kerridge's collection from Gove included numerous females taken biting, of what is almost certainly *Aedes (Geoskusea) daliensis*, a species that has for long remained obscure. *Anopheles farauti* specimens from this area had atypical wing spotting.

7. FIELD WORK

Opportunity was taken when in the Mackay District and in north Queensland, to make general or special collections not connected with the main surveys being undertaken. The Conservator of Forests, who gave permission for collections in certain National Parks, has been sent a list of mosquitoes collected in Eungella National Park, and other lists are in preparation.

Special attention was given at Lakes Barrine and Eacham to collection of an undescribed species of *Aedes kochi* group, previously known only from females. A good series of all stages was obtained, and this species will be described in a paper on this group in preparation by Drs Marks and Dobrotworsky. At Atherton, Mr J. H. Barrett collaborated in an extensive collection, from treeholes in eucalypt forest fringing rainforest, Mulgrave Shire Health Inspectors demonstrated some of the sites from which they have been sending specimens and collaborated in trunk-trapping in the Cairns area.

Other field work has been undertaken in the Palmwoods area, and on several occasions at Camp Mountain. A new record for this well-studied locality is *Aedes moloiensis*, a species with a widely scattered distribution, but very rarely collected. In January, biting collections at Camp Mountain were made to assist Mr H. A. Standfast's investigation of possible vectors of ephemeral fever. Whereas in November-December, the casual-pool species such as *Aedes rubrithorax* and *Aedes vittiger* were numerous biting, in January, when many lowlying paddocks had been converted to shallow grassy swamps, *Culex annulirostris* was very common, the adults sheltering low in the grass clumps during the day. On one occasion *Culex halifaxii* larvae were found in such a grassy shallow pool. In March *Culex orbostiensis* was common biting, probably coming from the many pools in shaded gullies that normally are dry.

8. TAXONOMIC STUDIES

Collaboration with Professor D. J. Lee on a Checklist of Mosquitoes of the Australian Region, has involved re-examination of many specimens in several genera, and reinterpretation of early records in the light of later published taxonomic papers. The collection probably contains a better collection of sub-genus *Huaedes* than is held elsewhere; and keys were prepared to adults and larvae of the five included species. Two species are undescribed, one being recognised for the first time during this study.

Collaboration with Dr N. V. Dobrotworsky on revisions of the *Aedes kochi* group and of Australian and New Guinea *Uranotaenia* continued and the former is near completion.

A short paper was published recording scales or hairs on the metapleuron in 22 of the 30 described species of *Topomyia*. This is apparently the first time scales or hairs on the meta-pleuron have been reported in mosquitoes.

Tables for identification of mosquitoes found in wetlands were provided for Queensland Littoral Society.

9. MISCELLANEOUS

Supervision was provided for the research project on the biology of *Aedes vigilax* undertaken by Miss P. Kerridge with a grant from Chevron Chemical Co. This project has been completed.

Larvae of six species of *Aedes (Ochlerotatus)* were sent to Mr C. Gardner, University of Utah, for inclusion in a study of mouthparts in this subgenus.

Visitors with whom mosquito problems were discussed included Dr A. W. Morrill, Entomologist, Pacific Division, U.S. Naval Facilities; Dr W. A. Steffan, Bishop Museum, Honolulu; Mr P. Allen, Entomologist, S. A. Department of Agriculture, who is concerned in *A. vigilax* control; and Dr J. S. Pillai, University of Otago, who is interested in biological control agents that might be suitable for introduction to Pacific Islands for mosquito control.

10. PUBLICATIONS

MARKS, E. N. (1970). A list of Australian species of *Uranotaenia* Lynch-Arribalzaga (Diptera: Culicidae). *J. Aust. ent. Soc.* 9: 165-167.

MARKS, E. N. (1971). A metapleural generic character in *Topomyia* Leicester. *Mosq. Syst. Newsletter* 3: 4-6.

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