

THE BAKER MEDICAL RESEARCH
INSTITUTE



TENTH
ANNUAL REPORT



1935-36

PREFACE

The illness of the Director during the past year consigned the care of the Institute to Dr. A. B. Corkill for a substantial period. During this time he gave it his unremitting attention, and his guidance of it was very successful.

It is gratifying to observe that three of our workers have now been appointed to teaching positions in the University. We value greatly the opportunity of serving the University, and trust that our connection with it will become ever more intimate.

J. F. MACKEDDIE,

Chairman of the Trustees.

The Baker Institute is dependent for its support on the Thomas Baker (Kodak), Alice Baker and Eleanor Shaw Benefactions

The Thomas Baker, Alice Baker, and Eleanor Shaw
Medical Research Institute.

ALFRED HOSPITAL, PRAHRAN, MELBOURNE.

The Baker Institute and Pathological Department are under
a unified administration.

TRUSTEES OF THE BAKER INSTITUTE.

DR. J. F. MACKEDDIE Chairman, Hon. Consulting
Physician to the Hospital.

R. H. WILKINS, Esq. Member of the Board of Man-
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J. SUTHERLAND, Esq. .. Director of Kodak (A/asia).

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and the Baker Institute.

JOHN TURNBULL, Esq. .. (Blake & Riggall), Honorary
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Trustees.

STAFF OF THE BAKER INSTITUTE.

Medical Personnel:

- | <i>(a) Full-time Workers—</i> | <i>Duty.</i> |
|---|---|
| W. J. PENFOLD, M.B., CH.M. (EDIN.), D.P.H., B.HYG. (DUN-ELM), M.R.C.S. (ENG.), L.R.C.P. (LONDON). | Director of the Institute and Hon. Bacteriologist to the Hospital. |
| A. B. CORKILL, M.B., B.S. D.S.C. (MELB.) | Physiological Research. |
| H. B. PENFOLD, M.B., B.S. (MELB.) (Resigned) | Helminthologist. |
| <i>(b) Part-time Workers—</i> | |
| J. F. MACKEDDIE,* B.A., M.D., B.S. (MELB.) | Neurological Research. |
| R. A. WILLIS,* M.D., B.S., D.S.C. (MELB.), M.R.C.P. (LONDON). | Pathological Research with special reference to malignant tumours. |
| H. LAWRENCE STOKES,* M.B., B.S. (MELB.), M.R.C.P. (LONDON) | Clinical Electrocardiographer. |
| CHAS. E. SUTHERLAND,* M.B., B.S. (MELB.), M.R.C.P. (LONDON) | Investigation of Allergic Problems. |
| ALFRED J. TRINCA,* M.D., B.S. (MELB.), F.R.C.S. (ENG.), F.R.A.C.S. | Hon. Consulting Pathologist to the Institute. |
| HUGH C. TRUMBLE,* M.C., M.B., B.S. (MELB.), F.R.C.S. (ENG.), F.R.A.C.S. | The Investigation of the Nerve Supply and Musculature of Certain Abdominal Viscera. |
| J. RINGLAND ANDERSON,* M.C., M.B., B.S. (MELB.), F.R.C.S. (EDIN.), F.R.A.C.S. D.O.M.S. (LONDON). | Various Ophthalmological Investigations. |
| ROBERT FOWLER,* O.B.E., V.D., M.D., B.S. (MELB.), F.R.C.S. (ENG.), F.R.A.C.S. | Endocrine and Cancer Research. |

Medical Personnel: Part-time (Continued)—

- G. A. KAYE,* M.D., B.S. (MELB.) Anaesthetic Research.
- EWEN DOWNIE,* M.D., B.S. Investigations on Carbohydrate
(MELB.), M.R.C.P. (LONDON) Metabolism.
- LEONARD B. COX,* M.D., B.S. Study of the Histopathology of
(MELB.), M.R.C.P. (EDIN- the Nervous System.
BURGH)
- T. A'B. TRAVERS,* M.B., B.S. Curator of the Ophthalmologi-
(MELB.), M.R.C.P. (LONDON), cal Section of the Museum.
D.O.M.S. (LONDON)
- J. M. BUCHANAN,* M.B., B.S. Investigation of Endocrine
(MELB.), L.R.C.P. (LONDON), Problems.
F.R.C.S. (ENG.), F.R.A.C.S.
- J. A. McLEAN,* M.D., B.S.
(MELB.), M.R.C.P. (LONDON) Haematologist.

Scientific Personnel and Assistants:

(a) Full-time Workers—

- MR. JAS. SUTHERLAND Bacteriologist.
- MR. A. F. DOUTCH Physical Chemist
- DOROTHY H. IRVING, B.SC.
(MELB.) Biochemist.
- HILDRED M. BUTLER, B.SC.
(MELB.) Bacteriologist.
- ISOBEL M. McPHEE, B.SC.
(MELB.) (Resigned) . . . Biochemist.
- MARY PHILLIPS, B.SC. (MELB.) Biochemist.
- MARJORIE M. SHARWOOD, B.SC. .
(MELB.) Allergic Research.
(One half of Miss Sharwood's time is spent in hospital service
as Assistant in the Asthma Clinic.)
- MARIE L. CRANAGE, B.SC. (MELB.) Biochemist.
- JEAN C. TOLHURST, M.SC. Bacteriologist.
(MELB.)
- CHARLOTTE M. ANDERSON,* ~~B.Sc.~~ Attached to Physiological De-
M.Sc. partment.

Scientific Personnel and Assistants: Full Time (Continued)—

MISS JEAN P. MARKS . . . Biochemist.
MR. GLEN BUCKLE . . . Assistant Bacteriologist.
MR. MAXWELL SWAN . . . Assistant.
MR. DOUGLAS WILSON . . . Assistant.

Secretarial:

MISS EDITH ROSS Secretary to the Director and
Librarian to the Institute.

Animal Attendants:

MR. ALEX. GRAY . . .
MR. ROY SMITH . . . Assistant.

PATHOLOGICAL DEPARTMENT.

Medical Personnel:

(a) Full-time Workers—

✓ R. A. WILLIS, M.D., B.S., D.SC.
(MELB.), M.R.C.P. (LONDON) . Pathologist to the Hospital.

~~G. DUNCAN, M.B., B.S. (MELB.)
(Resigned) . . . Assistant Pathologist.~~

H. W. S. LAURIE, M.B., B.S.
(MELB.) . . . Assistant Pathologist.

(b) Part-time Workers—

PROFESSOR P. McCALLUM,* Hon. Pathologist to the Hos-
M.C., M.A., M.SC. (N.Z.), M.B., pital.
CH.B., D.P.H. (EDIN.)

ALFRED J. TRINCA,* M.D., B.S. Hon. Curator of the Pathologi-
(MELB.), F.R.C.S. (ENG.), cal Museum.
F.R.A.O.S.

Scientific Personnel and Assistants:

MR. A. HYAMS Bacteriologist.

MR. A. H. ENNOR. Assistant.

MR. REGINALD PROSSER Histological Technician. .

MR. H. QUIGLEY P.M. Attendant

MR. ALBERT BROWN Assistant.

MR. JOHN F. NELSON Assistant.

MR. KENNETH JOHNSON Assistant.

*Denotes Honorary Workers.

Tenth Annual Report

of the Baker Medical Research Institute

1st May, 1936.

Gentlemen,

During the year just concluded the Empire-wide depression has largely cleared away. Australia and the Institute have shared in the improvement. In July you felt able to restore, as from the 1st April, the reductions of salaries, and so relieved many anxieties on the part of the staff. Partial compensation for the reduction of staff has also been effected by the appointment to the permanent staff of Miss Cranage, B.Sc., and one extra junior assistant.

A valuable extension has been made to the Institute. Through the generosity of Mr. J. J. Rouse, Managing Director of Kodak (Australasia) Pty. Ltd., a new wing, comprising two laboratories, has been erected at a cost of £600. The opening ceremony was performed by Mr. Rouse on the 17th January, 1936, in the presence of Miss Eleanor Shaw, members of the Board of Management and Honorary Staff of the Hospital, and other friends of the Baker Institute. In his speech, the donor spoke feelingly of his friendship with the late Mr. Thomas Baker, and it is encouraging to know that we have in Mr. Rouse a friend who has the welfare of the Institute and the progress of medical research so much at heart.

It has been decided to set apart the larger of the two laboratories in the Rouse Unit for the use of members of the Honorary Medical Staff who may desire facilities for working out their problems. The first to avail himself of these facilities is Dr. John A. McLean, a member of Dr. Downie's Clinic at the Hospital, and a former worker in the Baker Institute, who has recently returned from a five years' sojourn in England, where he held a position as Medical Officer at the West Middlesex Hospital, London. During this period he was admitted to membership of the Royal College of Physicians, London.

About the middle of 1935 Dr. Willis was appointed a lecturer in the Department of Pathology under Professor MacCallum. He will deliver at the University twelve lectures annually on the Pathology of Tumours. He is the second of our research workers to be incorporated as a lecturer in the Department of Pathology. Dr. L. B. Cox was already the lecturer on

Neuro-pathology. The Institute values greatly every increase in its intimacy with the University. The University, its library and its various departments have been an unfailing help and inspiration to us.

Towards the end of last year Mr. W. M. Hughes, Minister of Health of the Commonwealth, favourably considered an application of the writer for some financial support for the work of Miss Jean Tolhurst. For this purpose he awarded the Institute £200 for her first year's work. This is the first occasion on which the Minister of Health has supported the work of the Institute. It is to be hoped that Miss Tolhurst's work will be so successful that further appeals of the Institute to the Government will be sympathetically considered.

We desire to express our indebtedness to the Returned Sailors' and Soldiers' Scholarship Fund of Victoria for a grant of £100 to help Miss Tolhurst to develop a prophylactic to gas gangrene. This disease took a great toll of our soldiers in the Great War, and it would be very gratifying if we in Australia could discover some effective means for its control.

During this year illness has had an unfortunate effect on the work of the Institute. In July, 1935, the writer suffered from a serious illness, which occasioned an absence from duty until the first day of May, 1936.

Miss Irving and Miss McPhee, the biochemists in charge of the routine hospital work, have both been advised to take long vacations for reasons of health. Their vacations are being taken in Europe, and while abroad, if they feel well enough, they will endeavour to see as much laboratory work as possible.

Dr. A. B. Corkill was last year awarded the Degree of Doctor of Science by the University of Melbourne for valuable research work carried out here and at the National Institute for Medical Research, London.

On the 23rd August the report on beef measles was submitted to the Melbourne and Metropolitan Board of Works, but, though methods of effective control of the spread of tape-worm through the meat had been discovered, nevertheless the Government prohibited the sale for human consumption of any cattle reared on land irrigated with human sewage. However, the new immunity results obtained are to be applied in Africa, and it will be interesting to hear with what success.

Dr. H. B. Penfold terminated his full-time position with the Institute in December, but many important helminthological problems have been illuminated by the work done for the Melbourne and Metropolitan Board of Works, and he will

continue as a part-time worker during this year, endeavouring to solve some of these problems.

It was very gratifying to learn that "Practical Anaesthesia," the first monograph of the Baker Institute, secured for the Institute and its authors the Congress Trophy of the International Society of Anaesthetists, which met in America last year. The subscribers to the publication of the first monograph have reason to be gratified at its success.

After eight months in charge of the laboratory at the Geelong Hospital, Miss Sharwood has again taken up her duties here in the Asthma Clinic, and her research on allergic subjects. Miss Cranage, who acted as her locum tenens, is continuing her work on tissue culture and filling in the balance of her time with other research work.

Miss Anderson, who recently joined the staff in an honorary capacity, is investigating, under Dr. Corkill's direction, the diabeto-genic principle contained in the anterior lobe of the pituitary gland.

During the year Mr. Ennor, assistant in the Physiological Department, and Mr. Buckle, assistant in the Bacteriological Department, successfully completed the first year of their Science courses. On the basis of his examination results, Mr. Ennor has been granted a free place at the University, and is now attending full time, with a view to completing his course in the next two years. Mr. Kenneth Johnson has been engaged as assistant in the Physiological Department during his absence.

The junior assistants, Albert Brown, Jack Nelson, Max Swan, and Douglas Wilson, have all made substantial progress in their studies.

During the British Medical Association's Annual Meeting, held in Melbourne in September, a number of distinguished medical men from overseas visited the Institute, among whom were Sir James Purves Stewart, Sir William Wilcox, K.C.S.I., Consulting Toxicologist to the Home Office, and Dr. Z. Mennell, Senior Anaesthetist of St. Thomas's Hospital, London. Later in the year we were honoured with a visit from Dr. J. A. Murray, until recently Director of the Imperial Cancer Research Fund.

Mr. Edgar Rouse, of Kodak (Australasia) Pty. Ltd., has been good enough to have about 150 volumes of journals bound for us, for which we desire to express our gratitude.

During the year Mr. Robert Fowler, Gynaecologist of the Hospital, has kindly donated £9 odd to the funds of the Institute.

**ROUTINE WORK FOR THE YEAR ENDED 30th APRIL,
1936.**

During the year the following routine laboratory work was carried out:—

Pathological Department:

Post Mortem Examinations	360	298
Examinations of Sputum for T.B.	654	394
Micro. Examinations of Urine	1,177	454
Micro. Examinations of Pus and Other Fluids	238	147
Blood Examinations	643	624
Microscopical Sections—		
(a) Biopsy	654	648
(b) Post Mortem and Research	776	516
Guinea-pig Inoculations	77	4563
Throat Swab Examinations	1,440	1333
	—	6,019 5433

Biochemical Department:

Test Meals	436	361
Blood Urea Estimations	630	638
Urea Concentration Estimations	340	246
Urea Clearance Tests	101	98
Blood Sugar Estimations (single)	282	385
Blood Sugar Curves	154	112
Cerebrospinal Fluid Examinations	242	276
Basal Metabolic Rate Estimations	83	107
Fouchet Tests	19	21
van den Bergh Tests	32	26
Occult Blood Tests	184	132
Diastase Tests	47	44
Blood Calcium Tests	22	23
Urine Tests for Sugar, etc.	150	284
Blood Cholesterol Estimations	8	7
Lange Reactions	49	245
Miscellaneous	31	46
<i>Acetone Estimations</i>		196
	—	2,810
Electrocardiograms		284 3177
		361

Bacteriological Department:

Wassermann Tests	1,923	1866
Gonococcal Complement Fixation Tests	142	121
Blood Cultures	106	94
Sundry Cultures	290	382
Vaccines	184	209
Investigations for Typhoid and Dysentery	109	95
Agglutination Tests	48	37

RESEARCH WORK.

The work published during the year, or in course of preparation for publication, is as follows:—

(The names of authors are arranged in alphabetical order.)

CHARLOTTE M. ANDERSON, B.Sc.:

"The Anterior Pituitary Principle that Influences Carbohydrate Metabolism." A thesis for the Degree of M.Sc. (Melbourne). In preparation.

J. RINGLAND ANDERSON, M.C., M.D., B.S. (Melb.), F.R.C.S. (Edin.), D.O.M.S. (London), F.R.A.C.S.:

"An Investigation of Nystagmus; Kymo- and Cinematograph Studies." In preparation.

Report on Questionnaire on Buphthalmos or Infantile Glaucoma. B.M.A. Annual Meeting, Melbourne, 1935.

Further Studies on Congenital Glaucoma.

HILDRED M. BUTLER, B.Sc.:

"Blood Cultures and their Significance." A monograph. ~~Ready for the press.~~

A. B. CORKILL, M.B., B.S., D.Sc. (Melb.):

"The Relationship of the Pituitary Gland to Carbohydrate Metabolism." Appeared in the "Medical Journal of Australia," 1st February, 1936, page 168.

"The Value of Rectal Glucose." ~~In the press.~~ *M. J. A. 1936, 1, 807.*

"Magnesium and Carbohydrate Metabolism." In the press.

LEONARD B. COX, M.D., B.S. (Melb.), M.R.C.P. (Edin.):

"The Relation of Tumours of the Base of the Brain to Changes in the Conscious State." In the press.

"A Case of Syringomyelia, associated with an Intramedullary Tumour; with remarks on the relation of the gliosis to tumours of ependymal origin." In the press.

LEONARD B. COX, M.D., B.S. (Melb.), M.R.C.P. (Edin.), and ISOBEL M. MCPHEE, B.Sc. (Melb.):

"Observations on the Metabolism of Calcium and Phosphorus in three cases of acromegaly, one showing osteoporosis." ~~In the press.~~ *M. J. A., 19/1/36, 290.*

ADELAIDE GAULT, M.B., B.S. (Melb.), D.G.M. (Calcutta),
D.O.M.S. (London):

“The Nature and Cause of Idiopathic Cyclitis in Women.”
Read at the British Medical Association Annual Meeting
in Melbourne, 1935.

G. A. KAYE, M.D., B.S. (Melb.):

“Anaesthetic Deaths in Melbourne, 1929-1936.” Appeared
in the “British Journal of Anaesthetics,” April, 1936.

JOHN A. MCLEAN, M.D., B.S. (Melb.), M.R.C.P. (London):

“The Haematocrit in the Study of Anaemia.” In prepara-
tion.

DIANA MANN, B.Sc.:

“The Acetyl-choline Content of the Aqueous Humor of
Normal and Glaucomatous Eyes.” In preparation.

H. B. PENFOLD, M.B., B.S. (Melb.):

“The Treatment of Patients infested with *Taenia Saginata*,
with special Reference to Certain Unusual Results.”
Appeared in the “Medical Journal of Australia,” 21st
March, 1936, page 385.

W. J. PENFOLD, M.B., CH.M. (Edin.), D.P.H., B.Hyg. (Dunelm),
M.R.C.S. (England), L.R.C.P. (London):

“Medical Research in Australia.” Appeared in the “Medi-
cal Journal of Australia,” 23rd November, 1935, page
707.

W. J. PENFOLD, M.B., CH.M. (Edin.), D.P.H., B.Hyg. (Dunelm),
M.R.C.S. (Eng.), L.R.C.P. (London); and

H. B. PENFOLD, M.B., B.S. (Melb.):

“The Diagnosis of *Taenia saginata* Infestation.” Appeared
in the “Medical Journal of Australia,” 7th March, 1936,
page 317.

W. J. PENFOLD, M.B., CH.M. (Edin.), D.P.H., B.Hyg. (Dunelm),
M.R.C.S. (Eng.), L.R.C.P. (London);

H. B. PENFOLD, M.B., B.S. (Melb.); and

MARY PHILLIPS, B.Sc.:

“A Survey of the Incidence of *Taenia saginata* Infestation
in the population of the State of Victoria from January,
1934, to July, 1935.” Appeared in the “Medical Journal
of Australia,” 29th February, 1936, page 283.

"Acquired Active Immunity in the Ox to *Cysticercus bovis*." Appeared in the "Medical Journal of Australia," 28th March, 1936, page 417.

✓ "Taenia saginata: Its growth and propagation." ~~In the press.~~ *J. of Helminthology, 1937, 15, 41*

✓ "The Criteria of Life and the Viability of Mature Taenia saginata Ova." In the press.

✓ "Artificial Hatching of Taenia saginata Eggs." In the press.

✓ "The Distribution of *Cysticercus bovis* in the Sites of Election in the Ox." In the press.

✓ "Ridding Pasture of Taenia saginata Ova by grazing Cattle or Sheep." ~~In the press.~~ *J. of Helminthology, 1936, 14, 135.*

W. J. PENFOLD, M.B., CH.M. (Edin.), D.P.H., B.Hyg. (Dunelm), M.R.C.S. (Eng.), L.R.C.P. (London); and

JEAN C. TOLHURST, M.Sc. (Melb.):

"Formol Toxoids in the ^{Prevention} ~~Prevention~~ of Gas Gangrene." ~~In preparation.~~ *In the press.*

H. C. TRUMBLE, M.C., M.B., B.S. (Melb.), F.R.C.S. (Eng.), F.R.A.C.S.:

"The Innervation and Muscular Activities of the Distal Colon, with a Note on the Surgical Treatment of Constipation." Appeared in the "British Journal of Surgery," 1935, Vol. 23, page 214.

R. A. WILLIS, M.D., B.S., D.Sc. (Melb.), M.R.C.P. (London):

"A Rare Type of Diffuse Carcinoma of the Pancreas with Unusual Metastases." Appeared in the "Journal of Pathology and Bacteriology," 1936, Vol. 42, page 203.

"The Neural Components of Teratomata." Appeared in the "Medical Journal of Australia," 15th February, 1936, page 231.

"The Histogenesis of Neural Tissue in Teratomas." Appeared in the "Journal of Pathology and Bacteriology," 1936, Vol. 42, page 411.

"The Growth of Embryo Bones transplanted whole in the Rat's Brain." (Submitted by Sir Arthur Keith, F.R.S., to the Royal Society of London). In the press.

"Acute Endocarditis due to a Bacillus morphologically and culturally resembling the Diphtheria Bacillus." (In collaboration with Mr. Jas. Sutherland). Submitted to the "Journal of Pathology and Bacteriology."

The general nature and results of some of the before-mentioned researches:—

Miss Anderson is investigating the anterior pituitary principle that influences carbohydrate metabolism. The special factor under investigation is the so-called "contra-insulin hormone." The effect of "prolactin" on glucose tolerance and insulin action is being studied on rabbits. She is attempting to elucidate whether the decreased hypoglycaemic response to insulin, which occurs after administration of prolactin, is in any way dependent on the supra-renal glands. In addition, the possibility of prolactin having an effect on the various muscle enzyme systems is being investigated.

Dr. Corkill and Miss Cranage are investigating problems concerned with ketosis. An attempt is being made to determine the factor that is responsible for the diminished glucose tolerance that occurs when an excess of fat is present in the diet. Hims-worth considers that ketone bodies are not the primary cause, and, in order to test his hypothesis, the above workers are studying the effect of ketone bodies on glucose tolerance. The influence of ketosis on several body enzyme systems is also being studied.

Miss Butler has completed the writing of her monograph on "Blood Cultures and their Significance." This monograph will help greatly the clinician and bacteriologist in their blood culture work. It is an exceptionally fine effort. In collaboration with Mr. Colville, Miss Butler is studying the effects of mandelic acid on those types of bacteria which are usually associated with chronic pyelitis.

Dr. Corkill has found, contrary to Franke's statement, that magnesium administered intravenously has no influence in promoting glycogen storage. The hyperglycaemic action of magnesium has been confirmed and shown to be dependent on the suprarenal glands. In this connection the effect of magnesium on the blood sugar of rabbits was studied before and after adrenalectomy. In the latter case, magnesium failed to produce hyperglycaemia.

In his studies on the administration of glucose per rectum, Dr. Corkill has shown that no significant absorption of the glucose occurs by the rectal route. In these experiments the effects of orally and rectally administered glucose in controlling mild forms of ketosis were compared. Under carefully controlled conditions, ten grams of glucose by mouth were able to prevent the development of a mild degree of ketosis produced by starvation, whereas thirty grams administered by rectum failed to do so.

Drs. Cox, Hembrow and Corkill and Mr. Douch have been conducting metabolic studies on patients with primary

muscular dystrophy. The alleged beneficial effect of glycine on this condition is being critically studied. On the clinical side careful measurements of muscular power have been made before and during the administration of glycine, whilst on the laboratory side glycine, creatinine and phosphate excretions are being studied. Animal experiments on the metabolism of creatine are also in progress.

Dr. Cox has continued his studies on the gliosis in a case of syringomyelia, and compared the type of cell encountered to that observed in ependymal tumours. He has concluded that this particular case represents an anomaly of development in the ependymal zone of the foetal cord.

Dr. Cox and Miss McPhee have completed a study of the metabolism of phosphorus and calcium in acromegalics. No abnormality of this metabolism was discovered in the two cases showing the bone changes characteristic of acromegaly, nor yet in one case showing osteoporosis.

For Dr. Cox, Miss Cranage, in collaboration with Mr. Sutherland, has succeeded in cultivating several types of brain tumour. The study of the individual cells is being proceeded with, and it is hoped shortly to have grown a series of tumours, the description of which will be well worthy of publication. Miss Cranage has succeeded in growing such tumours as the common auditory nerve tumour and the cerebellar haemangioblastoma. As far as is known, no report of the cultivation of this latter tumour has appeared in the literature.

The work of the team (Drs. W. J. and H. B. Penfold and Miss Phillips) engaged in the investigation of tapeworm and beef measles has shown that—

(1) Of 90 persons found infested with beef tapeworm in Victoria, no less than 42 were Syrian born, and all the 42 were infested before they entered Australia. The incidence ratios based on our findings were three per 100,000 of the Australian-born population, and 11,000 per 100,000 of the Syrian-born.

(2) The Syrians were also much more heavily infested than the Australians. Of 86 persons treated, 38 were Syrians, who harboured 135 worms amongst them, while 48 Australians harboured only 51 worms.

(3) The most reliable and useful method of diagnosis of tapeworm infestation was the finding of segments of the worms in the stools. Diagnosis of the condition on a symptomatic basis was entirely unreliable.

(4) A safe dose of Liquid Extract of Felix Mas was able to cure 90 per cent. of cases with only a single treatment. The

cases uncured with one treatment were, with one exception, cured with a second treatment with a similar dose of Felix Mas.

(5) A first attack of beef measles protects the ox against a second attack.

(6) No measles of beef were found alive later than nine months after heavy experimental infestation was induced, so that, by infesting the calves when young, it would be possible then to graze them on sewage farms and dispose of them when about two to three years of age without risk of causing tapeworm infestation in man.

(7) When sewage irrigation of grass land occurs the worm eggs contained in the sewage tend to collect around the sewage outlets—the grass offers a formidable obstacle to their dissemination.

(8) *Taenia saginata* eggs are heavier than sewage, and a large percentage of them can be removed from it by simple sedimentation.

The helminthological papers described as in the press have all been accepted for publication by the "Journal of Helminthology," England.

Mr. Sutherland has prepared, by the oxalate method, a satisfactory gold sol for examining the cerebrospinal fluid. The sol can be brought to a regular degree of sensitivity so that different cerebrospinal fluids examined at different times can be satisfactorily compared.

Mr. Sutherland and Dr. Willis have described an interesting case of diphtheroidal endocarditis; apparently only two similar cases have been described in the literature.

Mr. Sutherland has also collaborated with Mr. Trumble in an examination of skin disinfectants suitable for use on the scalp. From their work, "metaphen" has been found very effective.

Miss Tolhurst and the writer continue to study the problem of the control of gas gangrene by suitable anatoxins. Definite progress is being made in animals, but immunization has not yet been attempted in man.

Dr. Willis has continued his microscopical studies of the structure of teratomata and the modes of spread of tumours. The neural components of teratomata have been the subject of particular attention, their variety and histogenesis being studied in some detail. Dr. Willis has also carried out further experiments on the intracerebral implantation of embryo tissues in

rats, and has succeeded in obtaining full grown whole bones, such as tibia or femur, following the implantation of their early cartilaginous rudiments.

Mr. A. J. Trinca and Dr. Willis collaborated in a paper entitled "Primary carcinoma unsuspected by the clinician," which was read at the Seventh Australian Cancer Conference. It recorded nineteen cases in which diagnostic errors had been made in cases of malignant disease, the clinician being misled by metastases or by complications. A plea was made for greater alertness on the part of clinicians with regard to disguised malignant disease; and practical rules were formulated as aids to more accurate diagnosis in such cases.

Meetings and Demonstrations.

At the meeting of the Victorian Branch of the British Medical Association, held at the Alfred Hospital on the 17th July, 1935, the following demonstrations were given by the staff of the Institute:—

- (1) Pulmonary Endarteritis—Dr. W. J. Penfold and Mr. G. Buckle.
- (2) Immunity to *Cysticercus bovis*—Drs. W. J. and H. B. Penfold and Miss Phillips.
- (3) Tissue Cultures of Human Brain Tumour Cells—Miss M. Cranage and Mr. J. Sutherland.
- (4) Hypersensitiveness to Pollens, Dusts, etc., by Scratch and Intradermal Methods—Dr. Chas. Sutherland and Miss M. Cranage.

In addition, Dr. R. A. Willis showed a number of microscopical preparations, and Dr. C. Duncan several specimens of neurological interest.

At the Annual Meeting of the British Medical Association, held in Melbourne in September, 1935, several museum exhibits were arranged by the staff of the Baker Institute. Drs. W. J. and H. B. Penfold and Miss Mary Phillips presented specimens and photographs to illustrate (1) the life history of *Taenia saginata*, (2) acquired immunity in the ox to *Cysticercus bovis*, and (3) the efficiency of different methods of control of *Cysticercus bovis*. Dr. R. A. Willis exhibited photographs and maps to show the structure of teratomata, especially as regards their neural components. These illustrated a paper which he read on the subject to the Pathological Section. The value of rectal glucose, considered experimentally, was illustrated by Dr. B. Corkill by means of charts and diagrams. Miss Butler exhibited

blood culture outfits suitable for hospital and private use, together with various media used. Exhibits of tissue cultures of human brain tumour cells were shown by Miss Cranage and Mr. Sutherland in conjunction with papers read by Dr. Cox and Mr. Trumble.

The financial statement for the year is appended.

(Signed) WILLIAM JAS. PENFOLD,
Director.

To the Trustees of the Baker Institute,
Alfred Hospital,
Prahran, Melbourne.

THE THOMAS BAKER, ALICE BAKER, AND ELEANOR SHAW MEDICAL RESEARCH INSTITUTE.

Financial Statement, 1st April, 1935, to 31st March, 1936.

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RECEIPTS.				EXPENDITURE.			
To Thomas Baker (Kodak), Alice Baker and Eleanor Shaw Benefactions	£4,850	0	0	By Balance at 31st March, 1935	£101	4	10
„ Grants—				„ Medical Salaries	£2,643	14	10
Alfred Hospital	£500	0	0	„ Other Salaries and Wages	3,182	5	5
Commonwealth De- partment of Health	200	0	0				5,826 0 3
			700 0 0	„ Drugs, etc.	177	11	10
„ Donations—				„ Instruments and Glass- ware	302	5	10
J. J. Rouse, Account Rouse Unit	550	0	0	„ Experimental Apparatus	390	3	2
G. J. Coles	50	0	0	„ Rouse Unit Buildings	588	2	7
E. B. Coles	50	0	0	„ Furniture	47	1	8
R. Fowler	9	1	2	„ Fuel and Lighting	133	6	7
Sundry	6	16	6	„ Insurance	19	9	0
			665 17 8	„ Repairs	34	5	6
„ Interest—				„ Library	241	12	4
Australian Consoli- dated Loan	637	10	0	„ Printing and Stationery	76	11	0
Alfred Hospital	61	2	2	„ Travelling	12	4	2
			698 12 2	„ Special Research—Dr. Anderson	69	0	3
				„ Sundries	120	3	9

<p>„ Melbourne and Metropolitan Board of Works—Investigation of Beef Measles— Payment for Routine Work 410 4 4 Refund of Special Expenditure 450 3 8</p> <hr/> <p>„ Proceeds of Sale of Monographs .. 860 8 0 „ Medical Fees 57 14 7 „ Proceeds of Sale of Equipment and Serum 408 2 10 66 3 4</p> <hr/> <p style="text-align: right;">£8,306 18 7</p> <hr/> <p>To Balance at 31st March, 1936 £28 1 5</p>	<p>„ Special Expenditure on Beef Measles—subject to Refund 129 8 0 „ Monograph Expenditure 10 6 5</p> <hr/> <p style="text-align: right;">2,351 12 1</p> <hr/> <p style="text-align: right;">£8,278 17 2</p> <p>„ Balance 28 1 5</p> <hr/> <p style="text-align: right;">£8,306 18 7</p> <hr/>
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We have audited the above Statement, and certify it to be correct,

Melbourne,
 31st July, 1936.

FLACK & FLACK,
 Honorary Auditors.

Spectator Publishing Co., Printers,
Coromandel Place, Melbourne.
