

THE
BAKER MEDICAL RESEARCH
INSTITUTE



EIGHTH
ANNUAL REPORT
1933-34

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PREFACE

In making the report of the Institute's work available to the public, attention may be drawn to the fact that the first two Monographs of the Institute have been submitted to the judgment of the profession throughout the English-speaking countries. The entire medical press has eulogised both whole-heartedly. These preliminary efforts suggest that the time has come for Australia to take an ever-increasing share in supplying her own medical literature.

Much interesting and important research work has been carried out during the year, and the Institute justifies itself more and more as the years pass.

(Signed) J. F. MACKEDDIE,
Chairman of the Trustees.

The Baker Institute is dependent for its support on the Thos. Baker (Kodak), Alice Baker and Eleanor Shaw Benefactions. The benefactions are administered by an Advisory Committee consisting of the following members:—

Mrs. Alice Baker Miss Eleanor Mary Shaw	With Mr. Baker, founders of the Institute.
Mr. J. J. Rouse	Chairman of Directors of Kodak.
Mr. W. A. J. Baker	Representative of certain relatives of Mr. Baker.
Dr. J. F. Mackeddie	Chairman of Trustees of the Baker Institute.
Mr. Geo. Emery	Rotarian representative.
Mr. J. Turnbull	Trustee.
Mr. Jno. Sutherland	Secretary.

STAFF OF THE BAKER INSTITUTE.

Medical Personnel:

- | | Duty. |
|--|---|
| <p>(a) Full-time Workers—
 W. J. PENFOLD, M.B., Ch.M.
 (Edin.), B.Hy. (Dunelm),
 M.R.C.S. (Eng.).</p> | <p>Director of the Institute
 and Hon. Bacteriologist
 to the Hospital.</p> |
| <p>A. B. CORKILL, M.B., B.S.
 (Melb.).</p> | <p>Experimental Physiologist
 and Research Biochemist.</p> |
| <p>(b) Part-time Workers—
 J. F. MACKEDDIE,* B.A., M.D.,
 B.S. (Melb.).</p> | <p>Neurological Research.</p> |
| <p>R. A. WILLIS,* M.D., B.S.,
 D.Sc. (Melb.).</p> | <p>Pathological Research with
 special reference to
 malignant tumours.</p> |
| <p>H. LAWRENCE STOKES,* M.B.,
 B.S. (Melb.), M.R.C.P.
 (London).</p> | <p>Clinical Electrocardio-
 grapher.</p> |
| <p>CHAS. E. SUTHERLAND,* M.B.,
 B.S. (Melb.), M.R.C.P.
 (London).</p> | <p>Investigation of methods
 for the detection and re-
 moval of the allergic
 state.</p> |
| <p>ALFRED J. TRINCA,* M.D., B.S.
 (Melb.), F.R.C.S. (Eng.),
 F.R.A.C.S.</p> | <p>Hon. Consulting Patholo-
 gist to the Institute.</p> |
| <p>HUGH C. TRUMBLE,* M.C.,
 M.B., B.S. (Melb.), F.R.C.S.
 (Eng.), F.R.A.C.S.</p> | <p>The Investigation of (1)
 the Nerve Supply and
 Musculature of Certain
 Abdominal Viscera, (2)
 other surgical problems.</p> |
| <p>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).</p> | <p>Various Ophthalmological
 Investigations.</p> |
| <p>ROBERT FOWLER,* O.B.E.,
 V.D., M.D., B.S. (Melb.),
 F.R.C.S. (Eng.), F.A.C.S.,
 F.R.A.C.S.</p> | <p>Research on Treatment of
 Carcinoma of Uterine
 Cervix (in conjunction
 with League of Nations
 Cancer Commission).</p> |
| <p>G. A. KAYE,* M.D., B.S.
 (Melb.).</p> | <p>Editor of a Monograph on
 Anaesthetics.</p> |
| <p>EWEN DOWNIE,* M.D., B.S.
 (Melb.), M.R.C.P. (Lon-
 don).</p> | <p>Investigation of Arterial
 Disease in Diabetes.</p> |
| <p>LEONARD B. COX,* M.D., B.S.
 (Melb.), M.R.C.P. (Edin-
 burgh).</p> | <p>Study of the Histo-pathol-
 ogy of the Nervous Sys-
 tem.</p> |

PATHOLOGICAL DEPARTMENT.

Medical Personnel:

(a) Full-time Workers—

R. A. WILLIS, M.D., B.S., D.Sc. (Melb.).	Pathologist to the Hospital.
A. NEWSON, M. B., B. Sc. (Melb.).	Assistant Pathologist.

(b) Part-time Workers—

PROFESSOR P. McCALLUM,* M.C., M.A., M.Sc. (N.Z.), M.B., Ch.B., D.P.H. (Edin.).	Hon. Pathologist to the Hospital.
ALFRED J. TRINCA,* M.D., B.S. (Melb.), F.R.C.S. (Eng.), F.R.A.C.S.	Hon. Curator of the Patho- logical Museum.
F. M. READ,* M.B., B.S. (Melb.).	Assists the Curator of the Museum.

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 WOOD.	Assistant.

* Denotes Honorary Workers.

In February, it was arranged that Miss D. Irving should be seconded for approximately eight months for work with Dr. Silberberg. For the period she has been replaced in the biochemical laboratory by Miss S. E. Allason, who some years ago acted in the same position.

Simultaneously with Miss Allason's taking up duty, Miss I. McPhee fell ill, and required prolonged leave of absence for her recovery. Happily, she is recovering well, and it is anticipated that she will soon resume her work.

Miss M. Phillips, who was formerly a voluntary worker of the Institute, was furnished with a salary through the generosity of the Felton Bequest Trustees. At the present time she is employed by the Institute, at the cost of the Metropolitan Board of Works, assisting in the investigation of the epidemic of beef measles.

Dr. Henry Boyd Penfold is also occupied in the same work, and during the first six months of his service it is anticipated that his employment will be whole time. For the subsequent year it is likely to be a half-time appointment only.

Mr. James Buchanan, Assistant Gynecologist to the Hospital, joined our staff as a voluntary worker, and has carried out a long series of Friedmann tests in collaboration with Mr. Hyams.

Dr. M. C. Davis, a voluntary worker of the Institute, was awarded, during the year, the Armytage Prize for Medical Research. His thesis was entitled "Extensive Visceral Involvement in Rheumatic Fever, etc." The work incorporated in the thesis was commenced under Professor MacCallum in the Pathological Department of the University.

Dr. R. H. Orton was commissioned by you to carry out during this year research on a problem of diabetes, with a view to presenting a thesis for the Armytage Prize in 1935.

Mr. Gordon Ley, who has acted as officer-in-charge of the media room for the last four years, and who came to us fresh from school, relinquished office in order to commence a medical course at the University.

Two other young male assistants of the Institute, viz., Messrs. Glen Buckle and Hugh Ennor, have, by means of night study, qualified themselves for matriculation, and have commenced science courses at the University. In this, the first year of their course, they are doing the University work in the evenings. This, with their ordinary day's work, means for them a very strenuous life.

THE MONOGRAPH MOVEMENT.

The first monograph, "Practical Anaesthesia," of the Baker Institute was published in December, 1932, when an edition of 1,000 copies was placed on the market. Within one year the whole of these were disposed of, and the second impression was ordered, of which about 200 copies have been sold.

This monograph has been eagerly taken up by the Australian profession, and has been the means of quickening the interest of the profession in the special subject of Anaesthesia.

It was published by means of donations and subscriptions received from members of the staff of the Hospital, and from the Board of Management, and one or two outside friends.

The medical press in England, Canada, America, and Australia have been unanimous in praising the work, so that it really should have substantial foreign sales. Its reception by the medical press is illustrated in the following excerpts from reviews:—

"... The outlook is essentially practical. . . . The authors are well abreast of the numerous recent advances in the science of anaesthesia. . . . The Baker Institute Series has made an excellent and thoroughly practical start. . . ."
—"British Medical Journal."

"... The work is purely practical, and it is exactly the kind of manual which a man in his early days of anaesthetic practice finds of tremendous assistance."
—"British Journal of Anaesthesia."

"... It may be read with profit by all students of anaesthesia and by teachers, who will find much that is worthy of imitation in this course of lectures. . . ."
—"Journal of the American Medical Association."

"... It is a highly creditable achievement. . . . It is difficult to recall a book on this subject which presents the facts so clearly and in such a small compass. In spite of its compactness, no important methods of inducing anaesthesia seem to have been omitted. . . ."
—"Journal of the Canadian Medical Association."

"... It is splendidly conceived and remarkably well worked out in detail, and it is a credit to all those concerned in its production, and reflects no small degree of lustre upon the institutions which have fostered its publication. . . . It is a volume which every anaesthetist will want to have in his library."
—"Anaesthesia and Analgesia."

"... The opening chapters . . . should be studied by all medical practitioners. . . . We recommend it with confidence."
—"Australian and New Zealand Journal of Surgery."

“ . . . The subject of secondary malignant growths has probably never been so thoroughly considered in all its aspects, and the author should be satisfied with the obvious success of a very important piece of work. . . . The second part of this most valuable work deals, seriatim, in fifteen chapters, and with the same wealth of data, with secondary growths in the various organs and structures of the body.”

—“The Practitioner.”

“ . . . Dr. Willis is a careful and critical observer, and he is not afraid to challenge the conclusions of acknowledged leaders in his subject. He brings to his work such care and devotion, such practical experience, and such erudition, that the book ought to become a classic on this subject throughout the English-Speaking World.”

—“The Argus.”

“ . . . Up to the present there appears to have been no systematic work in existence on the ‘Spread of Tumours in the Human Body.’ The subject is important, and Dr. Rupert A. Willis’s book bearing that title will be welcomed, the more so as he has based his work on very extensive material, and his conclusions, many of which are not in accordance with current opinions, are therefore well grounded. . . . Dr. Willis is extremely critical in interpreting the observations of authors, and is prepared to be regarded as iconoclastic in places; but his criticisms have a good backing of reason, and he perceives that, in dealing with the subject of metastases, it is needful to define our unassailable knowledge amidst a chaos of conjecture. . . .”

—“The British Medical Journal.”

“ . . . Much may be learnt about malignant tumours from a study of their paths in spreading and the nature of the tissues in which they prefer to form secondary growths. . . . Dr. Willis has well surveyed a neglected corner of the field of morbid processes.”

—“Nature.”

The copyright of the first monograph is in the hands of our Trustees, but we have been unable to retain all our property in the copyright of the second monograph, because the £350 subscribed for its publication was by no means sufficient to publish it. The balance of the cost of the publication was borne by Messrs. Churchill, of London, who, in publishing it, produced an extremely fine piece of work.

THIRD MONOGRAPH.

The third monograph is in preparation by Miss Hildred Butler, B.Sc. It deals with the subject of Blood Culture. For some strange reason, no monograph exists in the English language on this subject—nor yet, as far as we are

J. RINGLAND ANDERSON, M.C.; M.B., B.S. (Melb.); F.R.C.S. (Edin.); D.O.M.S. (London); F.R.A.C.S.; and
 "Holes in the 'Posterior Hyaloid Membrane' of the Vitreous; Report of a Case." Appeared in the "British Journal of Ophthalmology," August, 1933.
 "The Practice of Perimetry." Appeared in the "Australian and New Zealand Journal of Surgery," 1933.
 "The Elucidation of Binocular Diplopia." In preparation.
 "An Investigation of Nystagmus, Kymo- and Cinematograph Studies." In preparation.
 "Further Studies in Retinal Detachment." In preparation.

J. RINGLAND ANDERSON, M.C.; M.B., B.S. (Melb.); F.R.C.S. (Edin.); D.O.M.S. (London); F.R.A.C.S.:
 (The papers are arranged in the alphabetical order of the names of authors.)
 The work published during the year, or in course of preparation for publication, is as follows:—

46	Diastase Tests	
17	Blood Calcium Tests	
31	Urine Tests for Sugar, etc.	
24	Miscellaneous	
<hr/>		
1,896	Electrocardiograms	140
	Wassermann Tests	2,100
	Gonococcal Complement Fixation Tests	61
	Blood Cultures	85
	Sundry Cultures	323
	Vaccines	161
	Investigations for Typhoid and Dysentery	118
	Widal Tests	14
	Other Agglutination Tests	17
	Pneumococcal Typing	39
	Sundry Smears	35
	Inoculations	847
	Examinations for Gonococci	2,335
	Dark-ground Examinations	32
	Pregnancy Tests	82
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6,249	Total	14,021

"Diabetes Mellitus." Delivered before Gippsland Sub-division of the British Medical Association, December, 1932. Appeared in the "Medical Journal of Australia," December, 1933.

MRS. W. G. DUFFIELD:

"Blood Sedimentation tests in Allergic states." In preparation.

ROBERT FOWLER, O.B.E., V.D.; M.D., B.S. (Melb.); F.R.C.S., F.R.A.C.S.:

"Treatment of Carcinoma of the Uterine Cervix." Appeared in the "Medical Journal of Australia," July, 1933.

"Ovarian Tumours." In preparation.

"The Clinical use of Prolan." In preparation, with Mr. Douch.

"The Placental transmission of Serum Proteins parenterally injected." In preparation.

JOSEPH LOVE, M.B., M.S., F.R.A.C.S., and HILDRED M. BUTLER, B.Sc.:

"The Quantitative Wassermann Reaction as a Guide to the Treatment of Syphilis; A Preliminary Communication." Appeared in the "Medical Journal of Australia," June 17th, 1933.

W. J. PENFOLD, M.B., Ch.M., B.Hyg., M.R.C.S.; and HILDRED M. BUTLER, B.Sc.:

"Blood Culture in Tuberculosis." Appeared in the "Medical Journal of Australia," December, 1933.

"Further Studies in Intrauterine Infections." In preparation.

W. J. PENFOLD, M.B., Ch.M., B.Hyg., M.R.C.S.; and JAMES SUTHERLAND:

"Studies in the surface tension of Bile Salt Solutions." Read at the Clinical Society of the Alfred Hospital at its meeting on March 6th, 1934. The work is being extended, and will be published later.

W. J. PENFOLD, M.B., Ch.M., B.Hyg., M.R.C.S.; and MARY PHILLIPS, B.Sc. (Melb.):

"The Biochemical Control of Experimental Malignant Growths." In preparation.

ready for the British Medical Association Conference in September, 1935. As a result of a generous gift by Messrs. G. J. and E. B. Coles, a team of workers is investigating the condition of glaucoma. This disease is the most serious menace in ophthalmology. Its ravages arrest the work of many middle-aged persons, and are one of the main causes of filling our Blind Asylums.

Speaking of this disease, Best says: "It would be difficult to find another serious human affliction about which so much is known, and yet to control which so little concerted effort has been made. In causing one-third of all blindness arising after the fortieth year, glaucoma presents a public health problem of urgent importance, for its ravages can be recognised and controlled. The magnitude of the problem is only partly reflected in statistics of blindness, because numbers of cases of glaucoma are never recognised as such. Magnus, for all blindness occurring in the following age-groups, attributes to glaucoma 11.61 per cent. from the thirtieth to the forty-fifth year, 27.27 per cent. from the forty-fifth to the sixtieth year, and 58.11 per cent. from the sixtieth to the seventy-fifth year. Added to the magnitude of this problem, there is the serious economic aspect that glaucoma strikes the individual at the height of his powers, and unless controlled, it rapidly converts him from a producer into a ward."

Until the cause of primary glaucoma has been discovered and eliminated, the most effective method of limiting its damage lies in earlier treatment. Earlier treatment depends upon earlier diagnosis, and it is earnestly to be hoped that the glaucoma team may be able to bring this about. Once the diagnosis is made, further deterioration of the sight can be prevented by operation.

Mr. J. M. Buchanan, a member of Mr. Fowler's clinic, has carried out, with Mr. Hyams, 100 Friedmann tests, and has been able to confirm the work done in Europe, that this test is correct to within approximately 2 per cent. of error in the diagnosis of pregnancy. It is going to be of immense value in the gynaecological work of the Hospital.

Dr. Corkill and Professor Tiegs published, during the year, work directed towards obtaining evidence for the formation of a chemical substance, resulting from the stimulation of sympathetic nerves. They have been able to show that such a substance is actually formed, the effect of which can be recognised by its action on the isolated heart.

them to suggest that the bile salt has a restraining effect on changes in surface tension, raising the surface tension of some mixtures and lowering the tension of others.

Miss Phillips and the writer endeavoured to control experimental malignant growths by the use of toxic preparations of amino-acids, and by other toxic materials, but positive results have not yet been obtained.

Dr. H. B. Penfold, Miss Phillips, and the writer are engaged in a survey of the tape-worm infestations of man in Victoria. It is the desire of the Institute to get all infested persons cured, so that the beef measles which has been prevailing at the Werribee Farm since September, 1933, may be abolished.

The study of this epidemic has given occasion for many very interesting experiments dealing with the treatment of human cases, the ridding of sewage of the infection, and the immunity, if any, that may be produced in bovines as the result of infections.

Miss Sharwood, a worker of the Institute and of the Asthma Clinic, has made a survey of the pollen found in the Melbourne air from August, 1933, to April, 1934. The north winds were associated with a large pollen content of the air, while during wet weather the pollen was absent. Moreover, she has shown how the variety of pollen varies during the changing hay-fever season. It is to be hoped that this research can be continued next year, with improved methods suggested by the experience of the past season.

Mr. Trinca has analysed the results of treatment, by non-drainage, of 244 cases of pelvic and general peritonitis from various causes. The death rate of this series was 2.6 per cent.

The tolerance of the peritoneal cavity is discussed, and the point is stressed that, owing to this tolerance, if the primary focus be eradicated, drainage is not only unnecessary but may be harmful.

With regard to the exudate—provided the cause of the peritonitis has been removed, and the exudate is homogeneous and not containing necrotic material, etc., from the primary focus, the exudate need not be removed.

Mr. Trumble has been able to show that when the pelvic nerves are divided, and their distal ends united to the proximal ends of the divided hypogastric or obturator

Cancer Research.

Experimental cancer research is hampered in Australia by the absence of local supplies of cancerous tumours in different species. The Sydney University Cancer Research authorities have in the past ignored correspondence for prolonged periods, and even permanently. We have, therefore, had unfortunate difficulties in our investigations into the chemical control of malignant growths. It is hoped to recommence this work in the near future, under more favourable circumstances. A variety of cancerous tumours in different species should always be available in the Commonwealth, and it seems natural for workers to look to the University of Sydney, with its immense cancer research endowment, for these facilities. We imported one strain of cancerous mouse from California, but our chemical agents appeared to have no effect in controlling its development.

Clinical Meetings.

At the Alfred Hospital Clinical Meeting of the British Medical Association in September, 1933, the Baker Institute provided the following programme of demonstrations:—

1. Dr. Penfold and Miss Butler—T.B. Blood Culture.
2. Dr. Penfold and Mr. Sutherland—Records of a case of Bacilluria. The surface tension of the bile.
3. Miss McPhee—The Distinction between Blood and Iron in Faeces.
4. Dr. Stokes and Miss Irving—Electrocardiograms.
5. Mr. Fowler and Mr. Douth—Prolan and Oestrin.
6. Mr. J. Buchanan and Mr. Hyams—Friedmann's Test for Pregnancy.
7. Dr. Davis — Melanomata, Macroscopic and Microscopic Demonstration.
8. Dr. Tiegs—The Action of the Sympathetic on Muscles
9. Miss Sharwood—The Appearance of various Pollens.
10. Dr. Shields and Dr. Penfold—A Case of Animal Ring-worm in Man, with Cultures.

Again, at a meeting of the Alfred Hospital Clinical Society, held on March 6th, the Baker Institute workers gave the following demonstrations and papers:—

- Dr. Travers—The Early Ophthalmological Additions to the Museum.
- Mr. Fowler, Mr. Douth, and Mr. Hyams—Laboratory Work, illustrating the Papers by these Authors.
- Dr. H. B. Penfold and Miss Phillips—*Taenia Saginata* Specimens.
- Miss Sharwood—Varieties of Pollen.

MONOGRAPH ACCOUNT.

Trading and Profit and Loss Account for period ending
30th April, 1934.

To Stock on Hand, 30/6/33 £107 10 7 " Purchases 167 10 10 " Gross Profit 26 0 11 £301 2 4	By Sales £182 4 3 " Stock on Hand, 30/4/34 118 18 1 £301 2 4
To Sundry Expenses £22 2 10 " Balance Net Profit 3 18 1 £26 0 11	By Gross Profit £26 0 11 £26 0 11

Balance-Sheet as at 30th April, 1934.

To Subscriptions— Melbourne University . . . £100 0 0 Private Subscribers . . . 110 19 6 £210 19 6 " Donation Account— Edward Wilson Trust . . . £100 0 0 Queensland Cancer Trust . . 15 1 3 Private Donations 84 9 6 149 10 9 " Sundry Creditors 68 5 10 " Suspense A/c (Profit) 26 12 1 £455 8 2	By Stock on Hand at Cost £118 18 1 " Sundry Debtors 32 12 0 " No. 2 Monograph 250 15 0 " Cash on Hand 53 3 1 £455 8 2
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I have audited the above statement, and certify it to be correct.

Alfred Hospital,
25th July, 1934.

(Signed) R. H. METCALFE,
Asst. Secretary and Accountant.

" University A/c			
Monograph : £100 0 0			
Monograph Sales	8 5 10		108 5 10
" M. & M.B.W. Investigation of Beef Measles			319 17 10
" Interest—			
Australian			
Consolidated			
Loans ..	348 8 10		
Alfred			
Hospital .	28 11 7		
Sundry Refunds		377 0 5	
Proceeds of Sale of Equip- ment		1 17 10	
Medical Fees		32 6 6	
		132 7 6	
			5,647 18 4
			<u>£5,737 0 7</u>
£ To Balance at 31st March, 1934—			£982 5 5
Cash in Bank			
			<u>£5,737 0 7</u>

I have audited the above Statement and certify it to be correct.

Melbourne,
9th August, 1934.

J. N. BLACK,
Honorary Auditor.



Papers Immediately After the Demonstration, 8.30 p.m.

Mr. Fowler, Mr. Douth, and Mr. Hyams—The Clinical Laboratory Significance of the Female Sex Hormones.

Dr. W. J. Penfold, Mr. C. A. E. Price, Mr. J. Sutherland—Some Physical Properties of the Bile, with their Clinical Significance.

Associate Professor Tiegs—The Sympathetic Innervation of Muscle.

The financial statements of the Institute and Monograph Funds are appended.

(Signed) WILLIAM JAS. PENFOLD.
Director.

To the Trustees of the Baker Institute,
Alfred Hospital,
PRAHRAN.

nerves, after sufficient time has been allowed, regeneration occurs, so that stimulation of the repaired nerves is followed by contraction of the muscle of the bladder.

Structural Alterations.

During the year, certain structural alterations have been made to the laboratories. The large biochemical laboratory has been divided into two smaller ones, one of which is only one-third the size of the original. The smaller laboratory is being used for the work of the Metropolitan Board of Works. The other, and larger, laboratory is used for the routine biochemical work of the Hospital. This small alteration cost only £73, and is an immense improvement.

Equipment costing £25 has been provided to furnish a room in which microphotographic work can be done, and in which a fair amount of clinical photography will also be undertaken. Hitherto the microphotograph work has had to be done in a very small congested laboratory, and under great difficulties.

Gifts to the Institute.

During the year, we gave notice to the publishers of certain journals that we would not be able to continue our contributions. Mr. R. McComas very generously contributed £100 to avoid this, so that our series of journals would not have to be interrupted.

The Felton Bequests Committee gave £100 to the Institute, to enable investigations to be undertaken into the biochemical control of experimental malignant disease. This work has only given negative results so far, but will be continued when better supplies of experimentally-infected species are available.

Miss Austin contributed £100 to the general purposes of the Institute. It was very helpful in the period of depression.

Mr. J. J. Rouse very generously contributed £500, and the Kodak Company (A/asia) also £500, to help to carry on the work with a minimum of restriction.

The University provided a grant of £50 to Miss Butler, which relieved the funds of the Institute to some extent.

Mr. Robert Fowler took over responsibility for the insurance premium of the Commonwealth radium, which was lent to the Institute for research in the treatment of cancer.

They found that this substance is not a product of the activity of the muscle tissue itself, but is presumably an intermediary between nerve and muscle.

Dr. Cox has stressed the difficulty in determining, in some of the brain tumours, which cells are genuine tumour cells and which are derived from the invaded tissue. The distinction between these various cells has been fully discussed and illustrated by him.

On the origin of various tumours he joins issue with American workers, who have expressed the belief that the tumour cells were of embryonal character. In his review of almost 150 tumours, he has been able to determine which tumours were relatively favourable for operation, and which were unfavourable, and has laid down criteria for determining this before operation. In the paper in preparation, dealing with tumours of the mesencephalon and hypothalamic region, tumours of the mesencephalon and posterior part of the third ventricle are described, which are associated with pathological sleep, trance-like and cataleptic states. These symptoms are contrasted with the condition of excited consciousness, which may occur when growths invade the anterior part of the third ventricle.

During the past year, in the Gynaecological Department of the Hospital and the Physiological Department of the Institute, there has been a great development of interest in the endocrinology of the female. Prolan, made in the Institute, has been used with success in the Gynaecological Clinic, and estimations have been made of various sex hormones. The great development of interest in this field has been associated with the return of Mr. Fowler from abroad. Mr. Douch has been associated with Mr. Fowler in the laboratory side of the work.

The study, by Miss Butler and the writer, of intrauterine infections has been pursued further, and a good deal more evidence has been obtained that intrauterine manipulation can cause just as serious an infection of the foetus—if not more serious—as it can of the mother. Some little progress has been made, too, in the study of the part played by infection in causing maceration of the foetus.

Mr. Sutherland and the writer have continued their work on the surface tension of pure bile salt solutions, and of similar solutions, to which other substances have been added. Some preliminary evidence has been obtained by

W. J. PENFOLD, M.B., Ch.M., B.Hyg., M.R.C.S.; H. B. PENFOLD, M.B., B.S. (Melb.); and MARY PHILLIPS, B.Sc. (Melb.):

"A Survey of the Tape-worm Infestations of Man in Victoria, and their public health control." In preparation.

MARJORIE M. SHARWOOD, B.Sc. (Melb.):

"A Pollen Survey of the Melbourne Air during the Season 1933-34." In preparation.

CHARLES SUTHERLAND, M.B., B.S. (Melb.); M.R.C.P. (London):

"The Perennial Treatment of Hay Fever." Appeared in the "Medical Journal of Australia," September, 1933.

"Vasomotor Rhinitis." Read at the Medical Congress, Hobart, January, 1934. To be published in the Proceedings.

A. J. TRINCA, M.D., B.S. (Melb.); F.R.C.S. (Eng.); F.R.A.C.S.:

"The Abuse of the Drainage Tube in the treatment of Peritonitis." Appeared in the "Australian Medical Journal," August, 1933.

HUGH C. TRUMBLE, M.C.; M.B., B.S. (Melb.); F.R.C.S. (England); F.R.A.C.S.:

"A Saddle Appliance for bearing the Body Weight." Appeared in the "Australian and New Zealand Journal of Surgery," January, 1934.

"The Plan of the Visceral Nerves in the Lumbar and Sacral Outflows of the Autonomic Nervous System." Appeared in the "British Journal of Surgery," April, 1934.

"The Innervation and Movements of the Distal Colon, with a note on the Surgical Treatment of Constipation." In the press.

"Re-innervation of the experimentally-paralysed Bladder." In preparation.

In reference to the work of the previously-mentioned authors, it may be stated that the members of the Ophthalmological Department of the Hospital — Dr. J. Ringland Anderson and his colleagues — are conducting an investigation into the causes and treatment of infantile glaucoma. A questionnaire is being sent to different countries, seeking information, and it is proposed to have a report of this work

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

"The Nature and Cause of Idiopathic Cyclitis in Women."
In preparation.

WM. B. BOX, M.B., B.S. (Melb.); D.O.M.S. (London):

"Gonioscopic Investigation of Glaucoma." In preparation.

J. M. BUCHANAN, M.B., B.S. (Melb.); L.R.C.P. (London); F.R.C.S. (Eng.); F.R.A.C.S.:

"Friedmann's Test in Obstetric and Gynaecological Diagnosis." In preparation.

A. B. CORKILL, M.B., B.S. (Melb.); and O. W. TIEGS, D.Sc. (Adelaide):

"The effect of sympathetic nerve stimulation on the power of contraction of skeletal muscle." Appeared in the "Journal of Physiology," May, 1933.

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

"The Cytology of the Glioma Group, with special reference to the inclusion of cells derived from the invaded tissue." Appeared in the "American Journal of Pathology," November, 1933.

"Observations upon the Nature, Rate of Growth, and Operability of the Intracranial Tumours, derived from 135 Patients." Appeared in the "Medical Journal of Australia," February, 1933.

"Atypical Neuralgia of the Face." Read at the Australian Medical Congress, Hobart, February, 1934.

"The effect of Tumours of the mesencephalon and hypothalamic region upon conscious states; with special reference to the occurrence of pathological sleep and the various psychoses." In preparation.

EWEN DOWNIE, M.D., B.S. (Melb.); M.R.C.P. (London):

"The Incidence and Pathology of Primary Bronchial Carcinoma." Delivered before the Association of Physicians of Australasia in Melbourne, May, 1933. Appeared in The Melbourne Hospital Clinical Reports, June, 1933.

"Diabetes in Childhood." Delivered before the Victorian Branch of the British Medical Association, August, 1933. Appeared in the "Medical Journal of Australia," September, 1933.

aware, in any language—while blood culture is one of the most potent means of diagnosis in the hands of the physician.

This work is well on its way to completion, and will be of very great value to both the clinician and the laboratory physician.

Until it is quite ready for the press, we will refrain from considering how the means are to be obtained to finance its publication.

Other monographs are in contemplation, but probably will not be ready for a year, or even two years.

Until now the monograph fund has been kept separate from the general funds, but at an early date it will be merged in the general funds of the Institute.

During the year the routine laboratory work that was carried out was as follows:—

ROUTINE WORK FOR THE YEAR ENDED 30th APRIL, 1934.

Post-Mortem Examinations	223	
Examinations of Sputum for T.B.	559	
Micro. Examinations of Urine	986	
Micro. Examinations of Pleural and Peritoneal Fluids	62	
Blood Examinations	521	
Pus Examinations	66	
Micro. Sections—Post-Mortem—		
Embedded and Cut	200	
Embedded	350	
Yet to be embedded and cut	450	
	—	1,000
Micro. Sections—Biopsy	1,039	
Guinea Pig Inoculations	58	
Diphtheria Examinations	1,222	
	—	5,736
Test Meals	350	
Blood Urea Estimations	512	
Urea Concentration Estimations	285	
Blood Sugar Estimations (Single)	217	
Blood Sugar Curves	78	
Cerebro-Spinal Fluid Examinations	163	
Basal Metabolic Rate Estimations	57	
Fouchet Tests	7	
Van den Bergh Tests	16	
Occult Blood Tests	93	

“. . . This book is a credit to all those concerned in its production, and it shows a very high standard of work. It has already been chosen as a textbook for students by at least one Australian university. . . . 'Practical Anaesthesia' may be confidently recommended to the student, house surgeon, and practitioner as a guide to safe and scientific anaesthesia."

—"Medical Journal of Australia."

SECOND MONOGRAPH.

Dr. Willis had the second monograph of the Institute, "The Spread of Tumours in the Human Body," ready to go to press in July, 1933, and it actually appeared in December of the same year. For its publication, £350 were required from the Monograph Fund of the Institute. This large sum caused us to approach the subscribers to the first monograph, and ask them if they would give us a longer loan of their subscriptions. They all graciously replied in the affirmative, so that, with this support, and the support set out in the Balance-Sheet of the Monograph Fund as an appendix to this report, we were able to finance the publication.

The second monograph is an altogether remarkable piece of work, though it possibly will not command the market in the same way that the first monograph has done.

Extracts from the press reviews of this monograph follow, and they speak volumes for the devotion of Dr. Willis:—

“. . . The book is a veritable mine of information to the morbid anatomist. . . . The illustrations attain a high standard of excellence, and, in all respects, the book merits the warmest commendation."

—"Journal of Pathology and Bacteriology."

“. . . Dr. Willis has accomplished a sound bit of work, and has written a book which will be invaluable as a work of reference to all interested in the subject of malignant disease."

—"The Lancet."

“. . . A book devoted to the problem of the spread of tumours might be thought to be dull, but this is far from being the case in the excellent book by Dr. Willis. The book is written in an able and fascinating manner, and the illustrations, which are numerous, could not be bettered; the microphotographs are some of the best we have ever seen. . . . Now that the teaching of pathology has become so important a part of the student's curriculum, it may well be said that Dr. Willis's book will be constantly used by both teacher and undergraduate. An excellent book in every respect."

—"Medical Press."

During the year Miss F. Bullock and Miss P. Connor have acted as voluntary part-time Secretaries, doing valuable work. At the beginning of April, Miss C. Bennetts started as a full-time Secretary, pending the return of Miss E. Ross.

On the 10th February, 1934, Dr. Douglas commenced work in the Institute. He was sent by the Hospital authorities of Newcastle, New South Wales, to spend six weeks with us in order to familiarise himself with certain methods which the Hospital desired to have available in their new laboratory. It was a privilege for us to be able to oblige another great Public Hospital, and Dr. Douglas is now directing its laboratory.

Dr. Strange, from the Wangaratta Hospital, has come for six months' training in laboratory work, with a view to using the information she acquires in the service of that Hospital.

Miss Wales has been appointed a voluntary worker to assist Dr. Cox in his study of brain tumours; that is to say, to cut sections for him, and stain them by the various modern methods, and also to endeavour to grow the tumour tissues outside the body.

During about four months, Miss M. C. Penfold acted as a voluntary worker in the biochemical laboratory.

In October of 1933, the Melbourne & Metropolitan Board of Works consulted the Institute about the epidemic of beef measles that occurred at their farm, and subsequently a scheme of research was submitted to and accepted by the Board, to be carried out under the direction of the writer.

In March, 1934, you agreed to Dr. T. S. Campbell investigating the influence of serum administered by the mouth in various experimental infections. The work has been inaugurated.

Eighth Annual Report

of the

Baker Medical Research Institute

30th April, 1934.

Gentlemen,

In furnishing a resumé of the life of the Institute for the past year, it is fitting, first, to record with deep regret the passing of Mr. E. O'Donnell, the Hon. Treasurer, who had great sympathy with our work and appreciated its value, to the patients on the one hand and to the science of medicine on the other.

Mr. O'Donnell was succeeded as Hon. Treasurer by Mr. G. J. Coles.

Mr. Price, who resigned from the staff as a voluntary worker on the 16th November, 1932, died during the year under review, to the great sorrow of his former colleagues of the Institute.

Towards the end of the year, Mr. John Sutherland and Mr. G. J. Coles applied for leave of absence to go abroad. During the absence of these gentlemen, Mr. Edgar Rouse and Mr. Malcolm M. Brodie will act as their representatives.

During the year Dr. Willis was granted leave of absence by the Hospital to enable him to work with Sir Arthur Keith, of the Royal College of Surgeons of London. His study leave in London has been financed by a Rockefeller Foundation Fellowship. The confidence of the Rockefeller Foundation authorities in the workers of the Institute is extremely gratifying. Dr. Willis is continuing his study of tumours, and from reports already to hand it seems likely that his work will be fruitful.

Dr. Corkill has been absent during the whole of the year, working with Sir Henry Dale in the Medical Research Council's Institute in London. He is still working on fundamental problems of carbohydrate metabolism.

H. SHANNON,* M.D., B.S. (London), D.P.H. (Oxford), M.R.C.S. (Eng.), L.R.C.P. (London).	Study of various problems in Tuberculosis.
O. W. TIEGS,* D.Sc. (Ade- laide).	Investigation of the In- fluence of the Sym- pathetic Nervous System on Muscle.
T. A'B. TRAVERS,* M.B., B.S. (Melb.), M.R.C.P. (Lon- don), D.O.M.S. (London).	Curator of the Ophthalmo- logical Section of the Museum.
C. H. HEMBROW,* M.B., B.S. (Melb.), F.R.C.S. (Eng- land), F.R.A.C.S.	Various surgical investiga- tions.

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.).	Biochemist.
MARY PHILLIPS, B.Sc. (Melb.).	Assistant Bacteriologist.
MARJORIE M. SHARWOOD, B.Sc. (Melb.).	Assistant Biochemist.
(One-half of Miss Sharwood's time is spent in hospital service as Assistant in the Asthma Clinic.)	
MR. GLEN BUCKLE.	Assistant.
MR. W. P. T. SORRELL.	Assistant.
(b) Part-time Workers—	
MRS. W. G. DUFFIELD.*	Records Officer for Asthma Research.
MR. D. B. SMITH,* B.E.E., A.M.I.E.	Electro - physiological In- vestigation.
Secretarial:	
MISS EDITH ROSS.	Secretary to the Director and Librarian to the In- stitute.

Animal Attendants:

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

**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 Management of the Hos- pital.
J. SUTHERLAND, Esq.	Director of Kodak (A/asia)

G. J. COLES, Esq.	Hon. Treasurer to the Hos- pital and the Baker Institute.
JOHN TURNBULL, Esq.	(Blake and Riggall), Hon- orary Solicitor.
E. H. FLACK, Esq.	(Flack and Flack), Honor- ary Auditor.

LIEUT.-COL. J. H. P. ELLER, D.S.O., V.D., Secretary to
the Trustees.