

JOURNAL OF THE NEW ZEALAND ASSOCIATION OF BACTERIOLOGISTS

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Communications regarding this JOURNAL should be sent to the Editor, Department of Pathology, Auckland Hospital, Auckland, C.3.

Communications primarily affecting the Association should be addressed to the Secretary, Mr. M. McL. Donnell, 4a Symonds Street, Auckland, C.1.

All moneys should be paid to the Treasurer of the New Zealand Association of Bacteriologists (Inc.), Mr. R. J. Patterson, Pathology Department, Public Hospital, Auckland, C.3.

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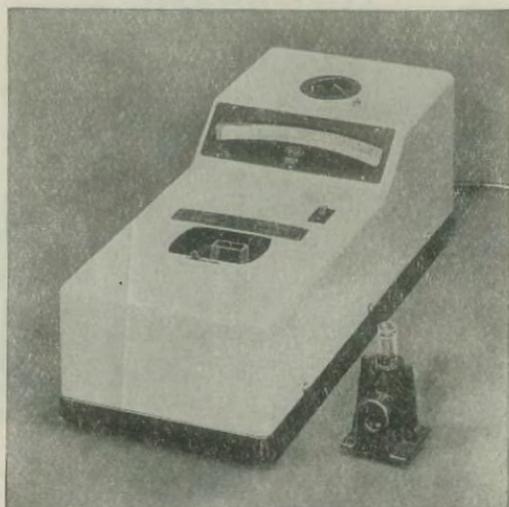
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A COMPARISON OF TWO TYPES OF CULTURE MEDIUM FOR THE GROWTH OF *M. TUBERCULOSIS*

By J. P. Walsh

PATHOLOGY DEPARTMENT
GREEN LANE HOSPITAL

Lowenstein's medium has been used since 1942 in the Auckland Hospital laboratories and has been generally regarded as giving a reasonably rapid, reliable and luxuriant growth. It has the disadvantage, however, of being time-consuming and tedious in preparation and sterilization.

Recently, Tarshis, Kinsella and Parker (1) described a simple blood medium for the routine culture of *M. tuberculosis*. To assess its qualities it was decided to compare the results of cultures made from the same sources on Lowenstein's medium and Tarshis' medium.

MATERIALS AND METHODS

(a) Preparation of Media

Lowenstein-Jensen medium was prepared by the following method.

Fifty gms. of thinly sliced peeled potato is steamed in 100 mls. of distilled water for 30 minutes and when cooled is homogenised.

A solution is prepared from the following formula:—

Asparagin (pure)	= 0.6 gms.
Tri-sodium citrate (pure)	= 0.2 gms.
Dipotassium hydrogen phosphate A.R.	= 0.2 gms.
Magnesium sulphate	= 0.2 gms.
Distilled water	= 200.0 mls.
Glycerol	= 12.0 mls.
Tomato juice	= 20.0 mls.

Each ingredient is suitably sterilized before use.

This solution is added to the potato mixture and after homogenisation is autoclaved at 240° Fahrenheit for 15 minutes.

The yolks of six eggs and the whites of four eggs, aseptically handled, are beaten together. 7.0 mls. of a 2.0% malachite green solution are added and beaten in. The potato-asparagin solution is now added and the whole is thoroughly homogenised.

The media is dispensed aseptically into sterile MacCartney bottles, which are inspissated in the sloped position in a hot air oven at 75° Centigrade (at the centre of the pack) for one hour. On the following day the medium is reheated at 75° Centigrade for two hours.

To check for contamination the media is incubated at 37° Centigrade for 48 hours.

Tarshis blood medium is prepared from the following ingredients:

Agar	=	1.5 gms.
Glycerol A.R.	=	1.0 gms.
Human Blood	=	25.0 mls.
Distilled water	=	74.0 mls.
Penicillin	=	50.0 units/ml. of medium.

The final P.H. is adjusted to 6.8 approximately.

The agar is dissolved in the glycerol water by heat and the mixture is then sterilized at 15 lbs pressure for 15 minutes. It is cooled to 45° Centigrade (in a water bath). The blood and penicillin are added aseptically and a thorough mixture obtained. This mixture is then poured into sterile MacCartney bottles, sloped, allowed to harden and then kept at 4° Centigrade.

(b) Source of Material

The specimens inoculated were Ziehl-Neelsen smear-positive concentrates from sputa, resting juices and bronchial washings using the tri-sodium phosphate brom-thymol blue method of concentration (2). The concentrates were inoculated directly on to two tubes of each medium. A sterile Pasteur pipette was used in this procedure, the whole of the deposit being taken up in a pipette, to allow even mixture, and then expelled in equal droplets to cover at least two-thirds the surface area of the medium. The remaining inoculum, if any, was discarded. Two tubes only of each medium per culture were used in this study. This followed not only from long custom, but also from the experience of Cruickshank. (3) who showed that it was uneconomical and unnecessary to inoculate more than two tubes. The cultures prepared on the same day as the concentration were incubated at 37° Centigrade.

The specimens cultured were entirely unselected and came from a wide range of tuberculosis in-patients and out-patients the majority of whom had been on chemotherapy.

(c) Examination of Cultures

After the first 10 days of incubation the cultures were examined microscopically at weekly intervals and oftener on some occasions for the first appearance of growth. At the end of six weeks all cultures were withdrawn from the incubator and all doubtful colonies were checked for acid and alcohol fastness by Ziehl-Neelsen staining and confirmed microscopically. For the purposes of record the growth of the cultures was described as heavy, medium or light, as follows, according to the degree of growth presenting.

Heavy = confluent, profuse or over 100 colonies.

Medium = 50-100 colonies.

Light = 1-50 colonies.

Results

The general results of the cultures on both media are shown in Table 1. It is found that significantly more specimens yielded cultures on Lowenstein's medium than on the blood medium.

TABLE 1

	Lowenstein	Blood
Both tubes Positive	59	26
One tube Positive	13	34
Both tubes Negative	11	22
Contamination 1 tube	1	2
Contamination 2 tubes	1	1

A similar advantage was found in the degree of growth on individual slopes as indicated in Table 2.

TABLE 2

	Lowenstein	Blood
Heavy growth	23	14
Moderate growth	23	26
Light growth	26	20
No growth	11	24
Contaminated cultures	2	1

The rate of growth was considerably more rapid on Lowenstein's medium the comparative figures being shown in Table 3.

TABLE 3

Growth appeared in week number	Lowenstein	Blood
2	18	11
3	25	16
4	15	11
5	8	9
6	6	13

Discussion

From the evidence offered in these tables it can be seen that growth of *M. tuberculosis* was obtained in 72 cases using Lowenstein's medium the comparative figures being shown in Table 3. growth on either medium was obtained in 11 cases using Lowenstein and in 22 cases using Tarshis blood medium. A certain failure of growth from smear positive specimens can be expected and these findings are within the figures given by Cruickshank who noted 27% failures in cultures from weakly positive sputa in general and 68% when chemotherapeutic agents had been administered.

Consideration of these results was sufficient to discourage, at present, the introduction of this simply made blood medium for diagnostic use. Other modifications of blood media, notably that advocated by MacCabe and Gould (4) are however being tried at present.

Summary

In a series of 85 cultures from specimens containing *M. tuberculosis* Lowenstein-Jensen medium was superior to Tarshis blood medium in the number of positive cultures the degree of growth and rapidity with which growth appeared.

SALARY SCALES OF U.S.A. LABORATORY WORKERS

Lab. World, an American news magazine devoted to the Clinical-Scientific Laboratory Field, recently published a 1955 salary scale recommended by the California Association of Medical Laboratory Technicians. The Association annually compiles and publishes standards to assist both employer and employee groups in the laboratory held to reach more equitable solutions to their problems.

Chief Laboratory Technician \$450 per month.

Senior Laboratory Technician \$400 per month.

Laboratory Technician (newly licensed) \$350 per month.

Trainee Laboratory Technician with A.B. or B.S. degree \$250 per month.

Trainee Laboratory Technician without degree \$100 per month, first year, \$175 per month for remainder of training period.

CONFERENCE, 1955

This year the annual conference of the N.Z. Association of Bacteriologists will be held in Auckland on Thursday and Friday, 28th and 29th July.

Nominations for members of Council should be in the hands of the Hon. Secretary, 4a Symonds St., Auckland C.1. by 18th June.

Nomination forms and information regarding conference will be sent to members at a later date.

The conference secretary is:

MR K. M. BILKEY,
Central Laboratory,
Auckland Hospital,
Park Rd., Auckland, C.3.

DEPARTMENT OF HEALTH
EXAMINATION FOR CERTIFICATE OF PROFICIENCY IN
HOSPITAL LABORATORY PRACTICE

February, 1955

Examiners: Professor D'ath, Dr Watt, Dr Pullar, Dr Lynch.

Time allowed, three hours. All questions to be answered.

- 1 Give an account of the Haemophilus group of bacilli, and of the methods used in their isolation and identification.
- 2 What are the normal levels in human serum of the following:
 - (a) Calcium
 - (b) Alkaline Phosphatase
 - (c) Globulin.Discuss the principles underlying the technical methods employed in estimating these substances.
Write a brief note on gamma globulin.
- 3 What is meant by the "absolute values" in haematological work? Explain how these figures can be calculated; state the normal range, and discuss their accuracy and significance.
- 4 Assuming that suitable cases were available, state how you would obtain and prepare for demonstration each of the following:
 - (a) Enterobius vermicularis
 - (b) Microsporion audouini
 - (c) Epidermophyton
 - (d) Torula histolytica
 - (e) Microfilariae
 - (f) Sickle cells.

PRACTICAL EXAMINATION—PAPER "A"

Time 9.30-12.30.

- 1 Report on the following specimens and in each case state what further steps should be taken to establish a diagnosis.
 - (a) A Loeffler slope culture. (?) Diphtheria.
 - (b) A Blood-agar culture from a breast abscess.
 - (c) Smear from a sputum.
 - (d) Hairs from a suspected case of ringworm.
- 2 Outline a method for determining:
 - (a) Fragility of red cells.
 - (b) Activity and titre of haemolysin.
 - (c) Presence of spermatozoa in a stain.
- 3 Indicate the laboratory methods used for demonstrating in a histological preparation the following:
 - (a) Trichina spiralis.
 - (b) B. leprae.
 - (c) T. pallidum.
- 4 What are the steps in the cross matching of blood for transfusion? What material is required from donor and recipient?

PRACTICAL EXAMINATION—PAPER "B"

- 1 Write short notes on specimens 1-8 (Two minutes allowed for each).
 - (1) Anthrax colonies, eosin stained.
 - (2) Dark field condenser for low power objectives.
 - (3) Sealed tube, scolices etc, in sputum.
 - (4) Pneumococcus, capsule stain.
 - (5) Sarcoptes scabiei.
 - (6) Micrometer eyepiece.
 - (7) Filter for use with collodion membranes.
 - (8) Object marker.

- 2 Examine the two stained films. Make a differential count and report on the result of your estimation.
- 3 Name each piece of apparatus and indicate its use.
 - (a) Developed electrophoresis strip.
 - (b) Sintered glass filters.
 - (c) Pandy's solution.
 - (d) Photoelectric colorimeter.

ORAL EXAMINATION:

The following are some of the questions asked:

Differentiation malaria types, and life cycle; Echinococcus granulosis; Measurement of depth of objects; Hookworm; Enterobius; Accaris; Trichuris ova; Investigation of typhoid cases; Antigenic structure of Salmonellae and identification of non-lactose fermenters; Micrometer eyepiece; calf lymph; Anthrax; collodion filter; Tetanus in powders etc; Casoni fluid; Enterotoxins and phage typing of Staphylococci from food poisoning.

Absolute values and units; Haemolytic anaemias; Significance of red cell fragility; Sickle cell and Mediterranean anaemias; Protein free filtrates; C.S.F. protein lumbar and ventricular values; Van Slyke gas analysis apparatus; Various pieces of apparatus; Blood sugar; Calcium in serum.

The following candidates were successful in this examination:

K. M. Bilkey (Auckland); Jean M. Cross (Southland); G. F. Davis (Auckland); W. A. Don (Christchurch); Jean Duncan (Wellington); Barbara M. Edwards (Wellington); A. I. Grace (Wellington); Lysie M. Jones (Auckland); David M. Liardet (Wellington); R. Mackenzie (Wellington); R. E. J. Wales (Hutt); J. A. Walker (Christchurch).

INTERMEDIATE EXAMINATION FOR HOSPITAL LABORATORY TRAINEES

WRITTEN PAPER

Time 9.30-12.30.

- 1 You have been asked by a small country hospital some distance from your centre, to forward appropriate containers for collecting:
 - (1) Blood for routine grouping or Rh. typing
 - (2) Blood sugars
 - (3) Non-Protein Nitrogen or Urea
 - (4) Blood counts
 - (5) Cerebro-spinal fluids
 - (6) Gastric analysis
 - (7) Urine specimens.Describe briefly the type of containers you would send and their preparation.
- 2 Describe the routine operation of a High Pressure Steam Sterilizer. Discuss the relative importance of operating temperature and pressure.
- 3 Write short notes on:
 - (1) The estimation of sugar in the cerebro-spinal fluid.
 - (2) The preparation of Leishman's stain and method of staining.
 - (3) The composition of Red and White cell diluting fluids.
- 4 You have received a turbid C.S.F. from a case of pyogenic meningitis. However, no clearly defined organisms can be found in the centrifuged deposit.
Detail the steps you would take to obtain an identifiable organism in the shortest possible time.
How soon would you expect to have such a culture and its sensitivities to antibiotics.

- 5 Tabulate the various methods available for concentrating Tubercle bacilli from sputa.

Give short comments on any advantages or disadvantages of each method.

Which method would you choose and why?

Can you make any generalisation in a few words on the difference between T.B. work and the rest of laboratory bacteriology.

Time 2.30-5.30.

October, 1954.

PRACTICAL EXAMINATION A

- 1 Examine the urine specimen provided for:
 - (1) Red blood cells and leucocytes.
 - (2) Albumin.
 - (3) Sugar.
- 2 Two blood films are provided:
 - (1) Stain with Leishman's and comment on the unstained film.
 - (2) Comment on the cells in the stained film and also on the staining.
- 3 Write notes on the composition and uses of the solutions set out:
 - (1) Benedicts Qualitative.
 - (2) Nessler's Solution.
 - (3) Grams Iodine.
 - (4) Anticoagulant solution.
 - (5) Physiological saline.
- 4 The culture A is an 18 hour sub-culture on MacConkey medium. It was sub-cultured from a Selenite F enrichment culture of faeces. The patient had been on antibiotics for several days. Report on the culture and do the necessary sub-cultures and other tests.
- 5 This is an exercise in making dilutions. The bottles actually contain acid of known strength so that your results may be titrated. Problem: You have a solution of penicillin at a concentration of 50,000 units per cc. You are asked to produce a bottle containing 25cc at a concentration of 1150 units per cc. Show your method of working, and make the necessary dilutions. Label each bottle and leave them with your answer paper.

B

- 1 Make two pasteur pipettes. (Time allowed 3 minutes).
- 2 Make a wire loop (Time allowed 3 minutes).
- 3 Explain the difference between: Ethanol, Methanol, absolute alcohol, S.V.R. and methylated spirits.
- 4 Discuss the use in the laboratory of the following objects:
 - (a) Solvex thermometer Control.
 - (b) Freeze drying tube.
 - (c) Apparatus for adding sugars to peptone water.
 - (d) No. 95 oil immersion lens.
 - (e) Silicon grease.
 - (f) Plastic bottle with 20 N.NaOH.
- 5 How would you dissolve iodine in water?

ORAL EXAMINATION

The following are some of the questions asked:

Paul Bunnell; Autoclave; Reticulocytes; Platelets; Bilirubin; Haemoglobin; Cross types; Coagulation times (comparison of methods); Leishman stain; Red cell fragility; Acetone; Errors in red cell counts; Indirect Coombs test.

MINUTES OF A MEETING OF THE COUNCIL OF THE N.Z.A.B.
HOSPITAL ON 24TH APRIL, 1954

(INC.) HELD AT THE MEDICAL CENTRE AUCKLAND

PRESENT. The full Council. Messrs Whillans, Buxton, Adamson, McKinley, Miss P. Scott, and Patterson, Reynolds, Rush-Munro, and Samuel.

CONFIRMATION OF MINUTES. The Council Minutes of 15th and 18th July, 1953, were confirmed, after one correction to the minutes of 18th July, 1953, as follows:

Moved: That the President, Mr D. Whillans be authorised to sign cheques on behalf of the association.

(Buxton—Reynolds)

This was carried, and added to the minutes of 18th July, 1953.

BUSINESS ARISING FROM MINUTES. Mr Whillans detailed the difficulties of compiling the new membership list, and informed Council that it would possibly be out before Conference, 1954.

The secretary was instructed to write suitable letters to Mr J. Pierard, expressing sympathy in the loss of his wife, and to Mr I. Saunders expressing pleasure at his recovery from his illness.

(Buxton—Whillans)

APPLICATION FOR MEMBERSHIP, AND RESIGNATIONS. The following were elected junior members: Miss C. H. Jenkin, Miss D. J. Segar, Mr P. R. Horne, Miss J. Stevenson, Mr D. M. Taylor, Mr A. D. Nixon, Mr G. J. Hill, Mr B. J. Trenworth, Miss Y. Clarke, Mr M. McCarthy, Mr D. E. Cooper, Miss A. C. Weber, Mr B. J. Yearbury, Miss J. Holloway, Mr R. Douglas. (All of Auckland); Mr B. Scott and Mr Shepherd (Thames), Miss J. Wilkinson (Wanganui), Mr T. E. Miller and Miss P. J. Prentice (New Plymouth), Miss Young (Hastings).

SENIOR MEMBER. Mr F. C. Dixon (Nelson). The following resignations were received. Miss Laws, Miss Savage, Miss Sayers, Mrs Collinson, Mrs Collinson, Miss Lindbergh, Miss Wiseman, Mrs Talbot, Mr Kelliher, Mr Swanson, Mrs Donnell. (All of Auckland); Mr P. T. Kennedy (New Plymouth).

(Rush-Munro—Miss Scott).

CORRESPONDENCE. Inward was received. (Buxton—Rush-Munro).
Outward was confirmed. (Buxton—Rush-Munro)

BUSINESS ARISING FROM THE CORRESPONDENCE. "That the President explain to Conference 1954 the basis of selection of representatives who attended the address delivered to N.Z. scientists by H.R.H. the Duke of Edinburgh on 13th January, 1954." (Rush-Munro—Miss Scott).

The Hon. Secretary was instructed to inform the Nelson Laboratory members concerned, that the Council agreed with the Department of Health interpretation of Hospital Employment Regulations as it affected those members.

THE CHANGE IN TREASURESHIP OF THE ASSOCIATION. Moved. "That Mr Reynolds (member of Council—Wellington) be asked to approach Mr Olive with a letter conveying the decision of Council authorising Mr Reynolds to accept on behalf of the association any bank accounts, receipt books, cheque books or other documents which will enable Mr Patterson (new Treasurer) to put the accounts in order and specifically to ask the name of the auditor who carried out the auditor for Mr Olive on the occasion of the transfer of the association books."

(Samuel—Adamson).

Moved and Resolved.

(a) "That Douglas Whillans, President, Ronald Joseph Patterson, Hon. Treasurer, and Phyllis Betty Scott, members of Council be authorised to operate the account of the New Zealand Association of Bacteriologists (Inc.) at the Bank of New Zealand, Wellington's branch."

(b) "That in accordance with Rule (20) (c) (iv) the Common Seal of the New Zealand Association of Bacteriologists (Inc.), be affixed to the document of authority for the aforesaid Douglas Whillans, Ronald Joseph Patterson, and Phyllis Betty Scott to operate the account."

(Buxton—Reynolds).

Moved and Resolved.

(a) "That the account of the New Zealand Association of Bacteriologists (Inc.), at present lodged at the Bank of New Zealand, Wellington South, be transferred to the Bank of New Zealand, Auckland, Karangahape Road, branch, the transfer to be effected as speedily as possible.

(b) "That in accordance with Rule (20) (c) (iv) the Common Seal New Zealand Association of Bacteriologists (Inc.), be affixed to the document of authority for the transfer of the Account." (Adamson—Samuel).

The Council considered a letter from Messrs Donn, Fill, Rose and Cannon, all of Christchurch, regarding the operation of the Minimum Wage Act. Moved. "That the four members concerned be requested to send detailed signed statements to the Hon. Secretary, with any relevant correspondence, and that the Hon. Secretary then forward all statements and correspondence to the Director-General of Health for his action."

(Adamson—Buxton).

SALARIES ADVISORY COMMITTEE. Moved. "That the Department of Health be approached with the request that, as male and female Laboratory Workers employed under Hospital Employment Regulations perform the same work and receive equal salary, female workers should receive a cost of living increase equal to that received by males, this to be retrospective to the date of operation of the recent cost of living bonus.

(Miss Scott—Rush-Munro).

Moved. "That where a laboratory worker is required to work more than 80 hours in a fortnight the excess time shall be deemed to be overtime and he shall be entitled either to time off equivalent to the excess time worked, or to payment in respect thereof at one and one half times the hourly rate of pay, whichever the Board in its discretion directs, provided that in any one year the payment of salary plus overtime shall not exceed the present allowable and comparable P.S.C. figure." (Whillans—Buxton).

THE JOURNAL. The Editor attended the meeting of the Council by invitation, and stated that at present there was a shortage of articles. He appealed for contributors to come forward with articles for the Journal. The Editor informed the Council that the Journal Committee meets regularly. The President thanked the Editor for attending the meeting and expressed the thanks of the Association to those who give much time to the work involved in the publication of the "Journal." The Council asked all members to give thought to the question of the "Journal" and to assist the Editor by submitting material for publication.

CONFERENCE 1954 AT WANGANUI. Mr Buxton reported to the Council on the arrangements in hand. A Conference Committee (Messrs Buxton and Harper and Misses Wilkinson and Burt) are at work to make all necessary arrangements for the Conference. Mr Buxton outlined the tentative programme, which was approved by the Council. The President thanked Mr Buxton for his report, and said he was sure that Conference 1954 would maintain the high standard of past years. The forming of a Conference Committee was approved, with power to co-opt.

(Patterson—Samuel)

ESSAY JUDGE 1954. Mr Adamson.

(Miss Scott—Samuel).

EIGHTH N.Z. SCIENCE CONGRESS. (May, 1954, at Auckland). Mr Rush-Munro advised Council that the Association was not represented at this important Congress, although a member of the Association, Mr A. Murphy, was giving a paper on Virus Research in the Section of Medical Sciences. The Council was of the opinion that the Association should be

represented and it was resolved: "That the Hon. Secretary write to the Royal Society of New Zealand informing the Society that the N.Z. Association of Bacteriologists (Inc.) is desirous of being a participating body at future Science Congresses." (Rush-Munro—Miss Scott).

FINANCIAL. The following Accounts were passed for payment.

Council Expenses 24/4/54 at Auckland

	£	s	d
G. W. McKinley (Waipukurau)	7	2	9
E. F. Buxton (Wanganui)	6	5	6
L. Reynolds (Wellington)	7	8	0
D. Adamson (Christchurch)	17	18	0
A. Samuel (Dunedin)	24	1	6
Percy Salmon, Wills & Granger, Oct. '53, Journal	45	10	0
D. Whillans (Printing & Stationery)	3	18	5

The pending Account for the April, 1954, Journal was authorised for payment. (Buxton—Adamson).

We regret that the minutes of this Council meeting were overlooked when the last issue of the Journal was published.—Ed.

MINUTES OF A MEETING OF THE COUNCIL OF THE N.Z.A.B. HELD AT THE RESIDENCE OF MR E. L. BUXTON, WANGANUI, AT 8 P.M. ON 14TH JULY, 1954.

Apologies. Mr Rush-Munro (Auckland).

Present. Messrs Whillans, Buxton, Adamson, McKinley, Patterson, Reynolds, Samuel and Miss Scott. Mr Harper, Conference Secretary 1954, attended by invitation.

Minutes of Council—24th April, 1954: Confirmed. (Buxton—Patterson).

New Members. The following were elected: Mr R. Mackenzie, Mr B. R. Casey (Wellington), Miss S. Phibbs (Westport), Robin Clemow (Hamilton), Miss Maika, Miss Schreeves (Rotorua), Mr M. R. Dix (Blenheim). Miss J. Wyllie, Miss J. Dent (Tauranga), all junior members. Mr D. Taylor, Wellington, senior member. Mrs McLean (nee Sayers) Greymouth, senior member.

Resignations: Mrs van Schreeven (nee MacRae), Mrs J. Warren (nee Brown). The above resignations were accepted and the new members were elected. (Samuel—Buxton).

Inward Correspondence. From the Hon. Secretary, Pathological Society of N.Z. re revising of the Syllabus and Final Examination form. Mr Reynolds conveyed to Council a message from Dr Mercer, Chairman of the Committee appointed by the Pathological Society to investigate examination and syllabus reform; Dr Mercer would like to know what the Association required in the way of a final examination. After full discussion by the Council it was moved "That an expression of opinion be sought at Conference 15/7/54, for the guidance of Council." (Scott—Reynolds).

From Secretary, Salaries Advisory Committee: Re the Association's submission that overtime plus salary be permitted up to the present allowable and comparable P.S.C. figure. The Association worded its application, in part, "required to work more than 80 hours in a fortnight" etc. The Secretary, S.A.C. asked why we wished to depart from the normal basis of 40 hours a week.

Moved: "That the Association requested a basis of 80 hours per fortnight because: (a) Salaries are paid fortnightly; (b) Duty rosters and schedules are based on a fortnight." (Whillans—Adamson).

Moved: "That the Association submit £1142 per annum as the figure permissible for salary plus overtime." (Whillans—Adamson)

The Hon. Secretary was instructed to advise the Secretary, S.A.C., accordingly.

At this stage, Mr Harper, Conference Secretary, outlined the arrangements for Conference 1954. The Council approved all arrangements made, and thanked Mr Harper and his committee for their efforts for the Association.

The Journal: Mr Whillans suggested that someone take over the "Journal" from Auckland. After discussion, the matter lapsed, with the opinion prevailing that possibly Christchurch may have the man required to run the "Journal."

Accounts. "That Council members be reimbursed for any extra expenses involved in attending the meeting of 14/7/54." (Adamson—Buxton).

The following account was passed for payment:

Secretarial Expenses 1953-54, £8 19/4. This includes expenses for the completion of the business of Council 14/7/54 and Conference business 1954. (Buxton—Reynolds)

The following accounts are pending (estimated approximately):

	£	s	d
Conference Printing & ordinary printing	12	0	0
Cyclostyling Balance Sheet	2	0	0
"Journal" printing, July and October, 1954	60	0	0
Extra expenses involved by Council Members, attending meeting of 14/7/54. Mr Whillans ..	1	10	0
Miss Scott	1	10	0
Mr Patterson	2	10	0
Mr Reynolds	1	10	0

Moved. "To expedite the business of the Association and to enable the above due accounts and any other accounts falling due to be paid, the Hon. Treasurer be authorised in his discretion to pay any Association accounts received by him, such payments to be subject to confirmation at the next meeting of Council." (Whillans—Samuel).

General. The Hon. Secretary was instructed to write to Miss Corsbie, expressing sympathy in the loss of her mother. (Buxton—Scott).

Mr Buxton announced his intention of resigning from the Salaries Advisory Committee, in view of his impending retirement. The news was received with regret and Council members praised Mr Buxton's work as a S.A.C. member.

Nominations for S.A.C. The Secretary was instructed to advise the Secretary S.A.C. that the Association wished to submit the names of the present two deputies on the S.A.C., Mr Ward, and Mr Olive and also Mr Reynolds, for selection of one as member of the S.A.C. the other two to be deputies. (Adamson—Patterson).

Mr Buxton, attending his last Council meeting, spoke of the events over his nine years as an officer, and assured the Association of his close interest in our affairs.

Mr Whillans, retiring President, expressed his thanks to Council for their loyal support during his term of office. He welcomed the idea of new blood on the Council and said that he will always be interested as ever in the Association.

MINUTES OF A MEETING OF THE COUNCIL OF THE N.Z.A.B., HELD AT WANGANUI HOSPITAL AT 5 P.M. ON 16TH JULY 1954

Present: Messrs McKinley, Adamson, Samuel, Donnell, Patterson and Miss Scott.

Apologies: Messrs Bloore, Reynolds, Rush-Munro. A welcome was extended to new members of the Council.

Moved: "That Miss Scott, Mr Patterson, and Mr Rush-Munro be authorised to sign cheques on behalf of the N.Z. Association of Bacteriologists (Inc.)." (Adamson—Samuel).

Moved: "That the sub-committee on Examinations and the Syllabus consist of the President (Mr McKinley) and Messrs Whillans and Reynolds." (Samuel—Donnell).

The meeting closed at 5.5 p.m.

JUNIOR ESSAY COMPETITION

Junior members are reminded that entries for the Essay Competition should be in the hands of the Hon. Secretary by June 30th.



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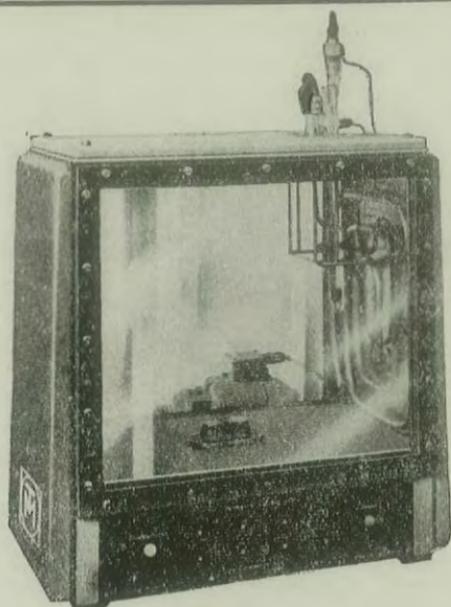
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**EXAMINATION FOR CERTIFICATE OF PROFICIENCY IN
HOSPITAL LABORATORY PRACTICE**

February, 1956

Time allowed: Three hours

Examiners: Drs. P. P. Lynch, T. H. Pullar, J. D. Manning

1. (a) What are the principles involved in the use of the flame photometer in the estimation of serum electrolytes?
or
(b) What is phosphatase? Describe the methods employed in the estimation of serum acid and alkaline phosphatase. Mention briefly the significance of raised values for these substances.
(Note: Answer either 1. (a) or 1. (b))
2. Describe the characteristics of the *Shigella* group of micro-organisms and the methods used in their identification. Which members of the group are likely to be encountered in New Zealand?
3. Discuss the methods which may be employed in the estimation of haemoglobin with particular reference to the degree of accuracy attainable.
Indicate the normal range of haemoglobin values
 - (a) in the new born;
 - (b) in pregnancy;
 - (c) in adult males.
4. Write *short notes* on
 - (a) *Ascaris lumbricoides*;
 - (b) the Casoni test;
 - (c) B.C.G. vaccine;
 - (d) 'Occult blood';
 - (e) Erythromycin.

PRACTICAL EXAMINATION I—Monday, 27th Feb., 2.30-5.30 p.m.

Note: Candidates will be divided into two Groups. Group I will commence with Bacteriology and Group II with Haematology. After 1½ hours, groups will change over. Practical books may be used.

Bacteriology:

1. You are provided with two plates, A and B. Identify the organisms in these cultures as far as possible in the time available.
This question is to be completed on Tuesday.
(Plate A: *S. typhi*. Plate B: Mixture of *S. aureus* and enterococci.)
2. Stain and examine the sputum smear for tubercle bacilli.

Haematology:

3. You are provided with oxalated blood and films. Perform a full R.B.C. and W.B.C. count, calculate the indices and report on the film.
(Haematocrit tubes will be collected from candidates, centrifuged to constant volume and returned in half an hour. Tubes should therefore be prepared early and careful note taken of the number etched on the neck).
4. You are given A1 and A2 cells and anti-A serum. Determine the titre of anti-A in saline and comment on the suitability of this serum for routine A.B.O. grouping.

PRACTICAL EXAMINATION II—Tuesday, 28th February, 9.30 a.m.-
12.30 p.m., 2.30 p.m.-5.30 p.m.
(Candidates will work in the same two groups).

a.m.

Group I:
9.30-11.00—Complete bacteriology.
11.00-12.30—Haematology.

Group II:
9.30-12.30—Biochemistry.

p.m.

Group I:
2.30-5.30—Biochemistry.

Group II:
2.30-4.00—Complete bacteriology.
4.00-5.30—Haematology.

Haematology:

1. You are provided with oxalated blood and films. Perform a full R.B.C. and W.B.C. counts, calculate the indices and report on the film.
(Haematocrit tubes will be collected from candidates, centrifuged to constant volume and returned in half an hour. Tubes should therefore be prepared early and careful note taken of the number etched on the neck).
2. Serum is provided from a patient, and oxalated blood from a donor. Determine compatibility for transfusion, outlining briefly methods used and their significance.

Biochemistry:

3. Estimate the Blood Sugar content in the specimen provided.
4. Estimate the Serum Calcium level in the specimen provided.
5. Estimate the Chloride content in the CSF provided.
All steps and calculations to be set down clearly.

Wednesday, 29th February, 1956, 9.30-10 a.m.

Spot tests were conducted during this period and consisted of:

Culture of *Mycobacterium tuberculosis* on Lowenstein-Jensen medium; incubator thermostat capsule; Fontana stained preparation of *Leptospira*; gonococci in a urethral smear; dark ground condenser; malarial parasites; blood film showing basophilic stippling; blood smear containing L.E. cells; tapeworm (*T. saginata*); macroconidia of *Microsporium canis*.

10.30 a.m.-12.30 p.m. *ORALS*.

Some of the questions asked were:

Dr. Pullar:

Blood volumes; haemolytic anaemias; bilirubin; Paul-Bunnell test; prothrombin times; sedimentation rates.

Dr. Lynch:

Parasites: eosinophilia; W.R.s; prevention and treatment of hydatids.

Dr. Manning:

W.R.s; vaginal swabs; selective media; sugars and media in general; throat swabs; antigen structure of *Salmonellae*.

Of the ten people who presented themselves for examination the following were successful.

- Miss C. A. Hall (Auckland).
- Mr R. T. Kennedy (Auckland).
- Mr G. T. Cameron (Auckland).
- Miss R. M. C. Jenkin (Christchurch).
- Miss L. Mackay (Christchurch).
- Mr J. C. Mann (Hamilton).

Results of Certificate of Proficiency in Hospital Laboratory Practice,
August, 1955.

- Miss M. Brown (Auckland).
- Miss D. Reid (Auckland).
- Mr V. Jones (Auckland).
- Miss V. Toms (Lower Hutt).
- Mr G. B. Winders (Invercargill).
- Miss C. B. Curtis (Christchurch).
- Miss J. M. Monro (Christchurch).
- Mr J. J. Cannon (Christchurch).

All candidates who presented themselves for this examination were successful.

MINUTES OF A COUNCIL MEETING OF THE N.Z.A.B. HELD AT
KELVIN CHAMBERS, WELLINGTON, ON 13th NOVEMBER, 1955

PRESENT: Messrs McKinley, Ellison, Adamson, Walsh, Donnell, Reynolds, Bloore, Murphy.

APOLOGY: Miss Scott.

MINUTES OF PREVIOUS MEETING:

Taken as read. (Ellison-Reynolds.)

NEW MEMBERS:

The following new members were elected:—Mr L. R. Wilson, Miss M. A. Elms, Mr B. G. Rutledge, Miss G. Robertson, Miss R. Saunders, Miss A. E. Ford (Dunedin), Mr R. W. E. Simeon (Christchurch).

The following resignations were accepted:—Mrs N. Winn (nee McLachlan), Nelson. (Murphy-Adamson).

TREASURER'S REPORT:

The Treasurer reported on the satisfactory state of the bank balance. The following accounts were passed for payment:—

	£	s.	d.
Auckland Hospital Board	10	5	0
October Journal	53	0	0
Council meeting expenses:			
McKinley	6	7	10
Adamson	7	15	6
Donnell	9	19	0
Walsh	9	19	0
Murphy	9	19	0
Bloore		4	0
			(Bloore-Reynolds)

EDITOR'S REPORT:

The Editor suggested that the Association have two or three bound copies of the first ten volumes of the Journal. It was agreed that two official bound copies be obtained; one to be held by the Editor and one by the Secretary. The President thanked Mr Murphy for his work on the Journal.

CORRESPONDENCE:

Report from the Sub-Committee on the Syllabus: The Hon. Secretary was instructed to write to the Secretary of the Society of Pathologists reaffirming the Association's view that the present system of exams continue.

Letter from the Health Department re the Syllabus: The Hon. Secretary was instructed to write to the Department saying that the Association wished to see the Syllabus implemented as soon as possible and that the Association feels that the question of Standard Methods cannot be considered until this is done; also to outline the previous history of negotiations on Standard methods.

Letters re Christchurch activities: The Council felt that these activities are highly commendable.

Letter from the Department re Intermediate Exam.: It was suggested that the new Editor write an article in the Journal pointing out the common weaknesses of candidates in the exams.

The above correspondence was accepted. (Walsh-Bloore.)

GENERAL BUSINESS:

MOVED: That the extra expenses of the Association's delegates to a meeting prior to the S.A.C. meeting be met by the Association.

(Donnell-Murphy.)

SALARIES:

Mr Reynolds gave a brief resume of the P.S. salaries which had already been requested and compared them with those suggested by Mr Whillans. He pointed out that although in many respects similar, Mr Whillans' proposals nullified our application for the preservation of margins.

Mr Murphy clarified points in Mr Whillans' proposals and referred to salaries of Hospital Board Cadets and the Police Force.

Mr Ellison said that comparison could only be made between our profession and those similar to it. He could see no virtue in adopting Mr Whillans' proposals in view of what had already been asked for.

Mr Walsh agreed.

Mr Ellison spoke of the ease of administration of a salary scale similar to that of the Public Service as compared with a separate scale quite distinct from others.

Members agreed.

Mr Ellison then asked if the present proposed scale of salaries would suit Auckland people.

Messrs Murphy and Walsh thought they would.

Mr Murphy asked if members thought salaries could be based on those of the professional grade of the D.S.I.R.

Members thought not.

The Council was of the opinion that the present submission regarding salaries should stand.

Mr Reynolds asked if the proposed increase would be retrospective to the date when they were granted to the Public Service.

The President thought they would be backdated to a reasonable date.

SALARIES OF TRAINEES:

Mr Reynolds asked what salary the non-graduate trainee would be paid. He suggested that the same salaries should be paid to graduate trainees as in the Public Service and that non-graduate trainees should receive the same salary at their third or fourth year as the graduate trainee commenced at.

Mr Ellison compared the value of a non-graduate trainee after three years with that of a graduate trainee in his first year.

Mr Murphy pointed out that a proportion of graduate trainees was necessary and that reasonable salaries must be paid to obtain them.

Mr Reynolds proposed that graduates be employed at salaries comparable with those paid by the Public Service. He felt that non-graduate trainees should receive the same salary that the graduate trainee commenced on, from their third or fourth year. He outlined a proposed scale.

Mr Murphy queried a distinction between graduate and non-graduate salaries in the following years.

MOVED: That trainee staff be paid according to educational qualifications at the same rates as offered by the Public Service with the proviso that non-graduate trainees in their fourth year receive the same salary that graduate trainees commence at. (Note: In his fourth year a non-graduate trainee would normally have passed the Intermediate Exam.)

(Reynolds-Bloore.)

PROPOSALS FOR SHIFT WORK:

The President said that the matter of shift work might be contentious. He felt that it could be intended for routine or even a three shift routine service seven days a week. He felt that shift work should therefore be defined as to its nature and extent. The Council must decide whether it approves of shift work. He asked Mr Murphy to speak first on behalf of

Auckland members. Mr Murphy outlined the present practice in Auckland of doing all urgent work and as much routine work as possible up to 10.30 p.m. He asked if it was our position to decide what is urgent work and said that it is for the Director to decide. We can voice our opinion but it is not for us to decide. That is Dr. Hill's opinion. He outlined several arguments of the Auckland administration. Anyone who refused to do after-hours work must resign. He said that the amount of work at Auckland could not be covered by a call system. The Auckland Hospital Board's attitude was that as the present practice is illegal the Regulations must be changed, for the Laboratory cannot function without the present service. If necessary they would go direct to the Department about the matter. The President asked what the staff reaction at Auckland was to the proposals regarding shift work.

Mr Murphy: Unfavourable.

Mr Ellison asked if staff was specially employed to do night work or if it was forced to work late duties.

Mr Murphy said that the practice is to work seven nights on end and then to have one and a half days off afterwards.

Mr Ellison said that the usual practice was to employ staff to do night work or else pay staff to work overtime.

Mr Murphy said that the Auckland staff felt that if it was necessary to work they should be remunerated for it.

Mr Walsh had nothing to add.

The Hon. Secretary said that he was opposed to any move to introduce a shift system to the Regulations. He thought that just because this illegal practice existed was no reason for making it legal. He felt that routine work could and should be done in routine hours. As provision is already in the Regulations for urgent work the shift work proposal was unnecessary. He thought the Association should oppose shift work. He said that any existing after-hours work should be for emergency purposes only. He thought a call service could cover such emergencies provided that it was monitored by a pathologist. He agreed that we should press for adequate reward for after-hours work. He said that Council could not consider the shift proposal without first seeking the opinion of the general membership by referendum.

The President said that he was opposed to shift work of three shifts twenty-four hours a day. Mr Whillans had assured him that one person could handle the emergency work throughout the night from 10 p.m. to morning.

Mr Reynolds said that this was covered by the present proposals for penal rates. He said that nothing could be done about the question of routine work as it is being done so it is a question of what pay should be received. He felt that it should be left to the Boards to decide the system and make no proposals apart from those concerning pay. He felt that it should be made to cost as much as possible.

Mr Ellison thought that as we had not been asked about shift work we should not raise the matter.

Mr Bloore raised the question of overtime payments and the fact that he could not award himself overtime.

Several members said that surely the Medical Superintendent could judge this.

Mr Bloore said that that was his position.

Mr Murphy said that overtime did not arise at Auckland.

Mr Reynolds outlined the position at Wellington where qualified staff worked from 8.30 a.m. to 10 p.m. regularly.

Mr Murphy put forward proposals for payment for hours outside the normal. After much discussion it was **MOVED**: That the previous proposals regarding payment for work done outside the hours specified in the Regulations be modified as follows: (1) That time and a half rates apply between the hours of 5.30 p.m. and 12 midnight and all day on Saturdays. (2) That double time rates apply between 12 midnight and 8 a.m. and all day on Sundays and statutory holidays. (Murphy-Reynolds.)

The Hon. Secretary asked for determination of the shift system proposal. At this stage the President left to catch his train.

It was moved that Mr Ellison should take the Chair.

(Reynolds-Murphy.)

The Hon. Secretary proposed that the Association should object to an extension of hours for routine work.

His proposal met with no support. Members thought that no mention should be made of shift work.

Several further submissions regarding conditions of employment and after-hours and call work, from Mr Whillans, were agreed to.

Discussion lapsed regarding a proposal about Grade Laboratory Officers' salary bars and no action was taken.

MOVED: That the N.Z.A.B. disapproves of the fact that there does not appear to be a higher authority than the Committee to deal with appeals against the findings of the Grading Committee. (Murphy-Bloore.)

Mr Adamson asked for clarification of holidays.

Mr Ellison suggested that delegates to S.A.C. be informed of the position.

MOVED: That any Laboratory Worker required to be on call for a total period of not less than three months in any one year should have twenty-eight day's annual leave. (Adamson-Murphy.)

The meeting closed at 2.45 p.m.

NOTICE OF MOTION: To be moved by Mr N. J. Ellison at the next Annual General Meeting of the N.Z. Association of Bacteriologists (Inc.):

"That there be inserted in Rule 14 (a) after the words 'Ordinary members' the words 'of which one shall be a Junior Member.'"

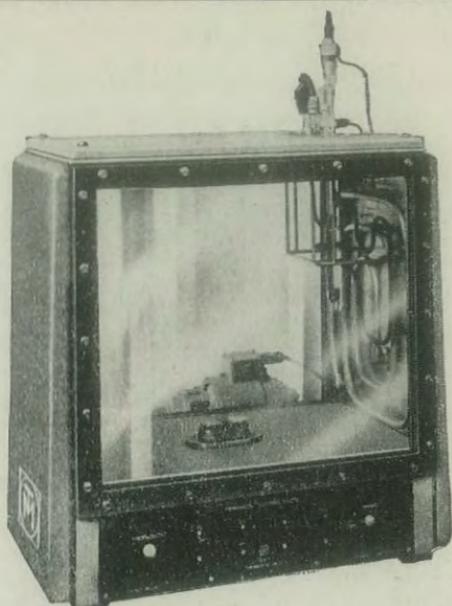
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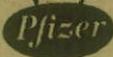
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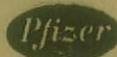
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