THE NEW ZEALAND

JOURNAL

OF

MEDICAL

LABORATORY TECHNOLOGY

THE OFFICIAL PUBLICATION OF THE NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INCORPORATED.

EDITOR:
John Case

SUB-EDITORS:
J. Rees
H. C. W. Shott

ADVERTISING MANAGER:
F. C. Kershaw

CIRCULATION MANAGER:
E. K. Fletcher

JOURNAL REPRESENTATIVES:
Auckland — J. Holland
Christchurch — A. C. Titheridge
Hamilton — M. G. Harper
Wellington — A. L. Schwass

VOLUME 17. No. 3 OCTOBER, 1963

Directions for Contributors

In the interests of uniformity, the following directions should be followed by all contributors to the Journal.

Manuscripts should be typewritten on one side only, of good quality quarto sized paper, be double spaced and with a 1½in margin. They should bear the author's name (male authors give initials, female authors one given name), address, and (if this is different), the address of the laboratory where the work was carried out. The manuscript should take the following form: Introduction; materials and methods; results; discussion and conclusion; summary; acknowledgments; references. Carbon copies are not acceptable. Nothing should be underlined unless it is necessary that it be printed in italics.

ILLUSTRATIONS. Graphs and diagrams are termed 'figures' and should be numbered in the order of their appearance in the text. Figures should be drawn in Indian ink on stout white paper larger than required for the text. Legends to the figures should be typed separately and attached. Illustrations, particularly half tone blocks, should be sparingly used. Half tone blocks are referred to as 'plates' and these again are numbered in sequence and the captions are typed and attached. Elaborate tables should be kept to a minimum but any necessary tables should be typed on separate sheets of paper and numbered in roman numerals.

NOMENCLATURE. Scientific names of micro-organisms should conform with the system adopted in the latest edition of *Bergey's Manual of Determinative Bacteriology* and underlined to indicate that they are to be printed in italics. Collective names for groups of bacteria such as staphylococci, salmonellae, etc., should not be underlined. Abbreviations such as C.S.F. for cerebro-spinal fluid, are only permissible if their meaning is clearly indicated when first introduced. Conventional abbreviations such as ml. for millilitre and cmm. for cubic millimetre are acceptable without explanation. Names of chemical substances should conform to current chemical practice and care should be taken to see that chemical formulae are correct.

REFERENCES: Only papers closely related to the author's work should be quoted. Contributors should study this issue of the Journal for examples of the preferred method of making reference. All references are brought together at the end in alphabetical order and numbered. In the list, references should include (1) Surname followed by the initials of the author(s), (2) Year of publication in brackets (3) Abbreviated title of the periodical according to *World List of Scientific Periodicals* or to *World Medical Periodicals* (underlined), (4) Volume, (5) Page numbers. If there are three or more authors the words *et al* may be added to the name of the first author in the text, but the names of all co-authors must be given in the list. References to books should include (1) Author(s) or Editor(s), (2) Year of publication in brackets, (3) Title (underlined), (4) Edition, (5) Page number referred to, (6) Name of Publisher and Place of Publication.

REPRINTS. Authors may receive a minimum of 20 reprints at cost price. These should be ordered when returning corrected galley proofs.

PROOFS. Whenever time permits, authors will have the opportunity to correct galley proofs before publication. No major alterations will be permitted unless the author is prepared to stand the cost, and proofs must be returned within three days of receipt.

Biolab

Achieve Accuracy
and
Eliminate Error

in the
Colorimetric Determination
of
Serum Glutamic Oxalacetic
and
Serum Glutamic Pyruvic

TRANSAMINASE

with
S.G.O.T. and S.G.P.T. Kitsets
Prepared by Biological Laboratories Ltd.

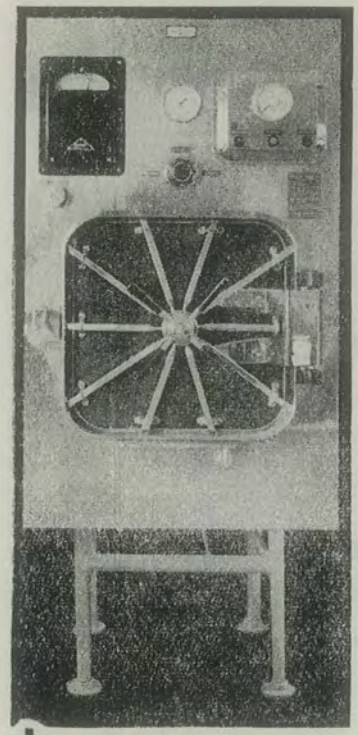
---

also
New Biolab Products
for
HETEROPHILE ANTIBODY TITRES
Biolab Boiled Guinea Pig Kidney Antigen
and
Biolab Boiled Beef Cell Antigen

Biological Laboratories Limited
WOODSIDE AVENUE, NORTHCOTE

P.O. Box 2749,
AUCKLAND, C.1.

Telephone: 18-125
19-748



MERCER

Bacteriological Autoclave

(Rectangular Type)

These rectangular, single-jacketed units are ideal for Bacteriological Work, in that all chamber space is working space. Type illustrated is fitted with flush panel, mounting adjustable thermometer and adjustable timer . . . both being integrated to permit presetting by means of keys, of both temperature and time, taking the guesswork out of all types of media sterilising. Any temperature may be selected up to the equivalent of 30lb pressure for any length of time required up to 60 minutes. Push-button control, light stage indicator.

mercer *SINCE 1884*

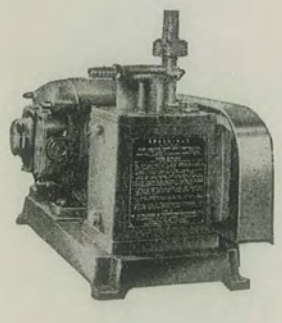
Christchurch: J. Mercer and Sons Ltd. Head Office: Moorhouse Avenue. 'Phone 69-679.
Wellington: 10 Vivian Street. 'Phone 53-410.
Auckland: 36 Carr Road, Mount Roskill. 'Phone 558-054 (3 lines).
Otago and Southland: Home Heating Supplies Co. Ltd., 17 St. Andrew Street, Dunedin. 'Phone 70-052.

B.4

'SPEEDIVAC'
VACUUM
EQUIPMENT

Manufactured by

EDWARDS HIGH VACUUM LIMITED



PUMPS — Laboratory and Industrial

GAUGES, VALVES,

SEALS, LEAK DETECTORS,

FREEZE - DRY EQUIPMENT,

VACUUM COATING UNITS,

etc., etc.

The ever-increasing application of vacuum techniques in the chemical and pharmaceutical fields has yielded new products and processes. A comprehensive range of this High Vacuum Equipment is manufactured by Edwards High Vacuum Limited.

Sole Representatives in New Zealand:

GEO. W. WILTON & CO. LTD.

Box 367,
WELLINGTON.

Box 1980,
AUCKLAND.

METRIX
HEMOGLOBIN STANDARD

(Cyanmethemoglobin)

For the determination of total hemoglobin by the cyanmethemoglobin method, yielding dependable, reproducible values.

A reliable reference standard for the preparation of the standard curve and the calibration of instruments. Each lot approved by the College of American Pathologists.

A stable solution.

Optical density directly proportional to concentration up to 20gm. % Hemoglobin.

Packages of six vials, 10c.c. size. One vial sufficient for establishment of the standard curve.

METRIX DILUENT TABLETS

For preparation of diluent solution to be used in the cyanmethemoglobin method for measure of hemoglobin. Box of 12 tablets, packed individually in aluminium foil. Each tablet will make 250c.c. solution.

METRIX DIAGNOSTIC STANDARDS and CONTROLS

Manufactured by MICHAEL REESE RESEARCH FOUNDATION, Chicago, Illinois, U.S.A.

Inquiries to . . .

DOMINION DENTAL SUPPLIES LTD.

Auckland — Wellington — Christchurch

THE NEW ZEALAND JOURNAL OF MEDICAL LABORATORY TECHNOLOGY

VOLUME 17. No. 3. OCTOBER, 1963.

The New Zealand Institute of Medical Laboratory Technology (Incorporated).

Office Bearers 1963-64

PRESIDENT
H. G. Bloore
Clinical Laboratory,
Wairau Hospital,
Blenheim.

VICE-PRESIDENTS
M. McL. Donnell
G. R. George

SECRETARY
J. D. R. Morgan
Pathology Department,
Wakari Hospital, Dunedin.

TREASURER
D. J. Philip
Pathology Department,
Middlemore Hospital,
Auckland.

ORDINARY COUNCIL MEMBERS
H. E. Hutchings
R. T. Kennedy
Miss J. Mattingley

JUNIOR MEMBER
Miss H. M. Bond

The Journal is published thrice yearly (in April, July and October) and is distributed without charge to all financial members of the N.Z.I.M.L.T. (Inc.). Subscription to the Journal for non-members is ten shillings per year or four shillings per single issue postage paid.

Communications primarily concerning the Institute should be addressed to the Secretary.

Intending contributors to the Journal should address their communications to the Editor at the Department of Pathology, Medical School, Dunedin. Copy must be in the hands of the Journal Committee by not later than the first of the month preceding the month of publication.

Enquiries regarding advertising rates should be addressed to the Advertising Manager at the Microbiology Department, Medical School, Dunedin.

Contributions to the Journal do not necessarily reflect the views of the Editor, nor the policy of the Council of the Institute.

What of the Future ?

The title of this guest editorial proceeds from an article printed in this issue of the Journal. The article mentioned has the merit of quantitatively expressing trends and movements of which we may be only dimly aware; and is the first logical step in counteracting and making provision for the movement and loss of trained staff.

In the sphere of education, I too would like to examine the record of the past in a critical fashion: to correlate hospital laboratory needs with the type and number of staff employed and to consider the alternative forms of tertiary education for technologists which may find application here.

Since 1949, the Annual Conference of our professional body has recurrently discussed the need for specialisation but, until this year, there has been no practical realisation of it. This year we have seen an important step forward in the adoption of detailed syllabuses for intermediate, general and higher specialist examinations. Some of us may feel that this is not the best form and that we now have two intermediate examinations and a final examination in a specialised subject. It is, at any rate, universally accepted that the ramifications of medical laboratory technology do not permit of an adequate general qualification.

The proposed system could be regarded as an evolutionary stage.

Perhaps more important than this aspect, has been the attempt in the last two years, to introduce officially recognised formal training by the designation of tutor-technologists. As yet this does not go far enough and, apart from leaving many centres unprovided for, fails to solve the paradox of routine staffing by ' trainees.'

What are the hospital needs in the Dominion? Nineteen persons are employed in sole-charge posts. These provide a fairly simple laboratory service. If they do not, should these laboratories not be regraded to provide a specialised laboratory service? More than ten times this number of qualified technologists are employed in complex units providing more comprehensive services involving specialisation.

How are new entrants to be trained in sole-charge units? Is this really a problem? In the first place these will again be a small minority. In the second place, trainees are notoriously nomadic and a year or two's sojourn in the appropriate ' big smoke ' hardly represents a hardship.

If we take a look at our fellow-technologists in England, America and other English-speaking countries, we find a con-

siderable variety of educational forms. The general tendency is towards formal full-time training. This may be rudimentary — as in Australia and Britain where day release systems operate but, in the latter case, the possibility of 'sandwich courses' exists. These consist of a period of intensive schooling over several months, alternately with similar work periods.

In the United States and in Canada, full-time educational schemes are in vogue. In certain Canadian provinces, Technological Institutes have been set up to cater for such people as surveyors, electronic engineers, radiographers, physiotherapists, medical laboratory technologists and others. An approximate two years full-time course is taken by the Canadian medical laboratory technologist, who then sits the Licentiate Examination in Medical Laboratory Technology and is regarded as suitable for supervised laboratory work. Higher specialist qualifications (Advanced Registered Technologist) are also available.

In the United States, tertiary education for technologists has evolved to a University Degree Course, which is perhaps the ideal solution providing the necessary broadly based education leading to specialist qualifications. The Registration Examination of the American Association of Clinical Pathologists is an alternative or supplementary qualification. A number of lower grades with suitably ambiguous titles are also employed.

We, in this small Dominion, are in the fortunate position of being able to observe the developments in larger countries and to consider them in relation to our needs. It is surely axiomatic that any educational scheme should be related to our duties and responsibilities, and that for an efficient hospital laboratory service it should be something better than the paradoxical and haphazard trainee system we have inherited from overseas.

It would be a large task to try to define the responsibilities of the medical laboratory technologist; there is, indeed, considerable variation in scale and, certainly, endless scope. Suffice it to say that at one end of the scale it may be carrying our circumscribed repetitive procedures under the control of a senior person; at the other end it may encompass staffing, equipping, evaluating laboratory work capacity; as well as the assessment, selection and control of techniques. This involves keeping up-to-date with new developments — a formidable task — and close liaison with other laboratories and associated staffs.

In relation to the increasing tempo of medical technological development, it is apparent that a sound education in broadly based subjects is required; and that adaptability, coupled with a grasp of principles, is needed to keep up with the dynamic developments in laboratory diagnosis.

We are a long way from the type of education that would measure up to these demands. Our formal training is in most instances rudimentary and often undertaken as a voluntary extramural activity. Is it not in the best interest of the hospital service to allot two or three hours of the employers' time for formal teaching? Of course this requires an increase of staff to make it practicable, and naturally the smaller units would have to rotate their trainee staff. Finally do we utilise, sufficiently, the facilities of the local education authorities?

Editorials tend to be pontifical and to proffer omniscient solutions — I can see no University courses, no University-based schools, nor even Technological Institutes in my crystal ball.

Is it too much to hope for the minor improvements that would seem capable of attainment?

R. D. ALLAN,
Chemical Pathology Laboratory,
Department of Pathology,
University of Otago Medical School.

To the Passionate Bacteriologist From His Love

For romance, you just take the cake;
What sort of proposition's that to make?
Your lab's a pest house, nothing more;
And you're a dreadful, crushing bore.

Staphs and streps just leave me cold;
I hate the sight of fungal mould.
The thought of droppings from a mare
Gives me quite an awful scare.

Your spirochaetes and parasites:
Enough to give a poor girl frights.
And how d'you ever have the gall
To talk of spleens in alcohol?

I've had a thought you dreadful cad,
Just wait until I've told my Dad.
Your worst intentions are quite clear;
To think that once I held you dear.

I'm sure I see your wicked plan,
You're just like any other man.
Those microbes are just merely bait
To lure me to a shocking fate.

Take that! You nasty scheming rat,
For thinking I'd agree to that.
Your hateful, plotting, lupine mind;
I'm through with you and all your kind.

J.C.

Isolation of *Pasteurella multocida* from Sputum

T. E. MILLER.
Medical Unit Laboratory, Auckland Hospital.

(Received for publication May 1963.)

Introduction

Pasteurella multocida is a small, non-motile, gram-negative cocco-bacillus, showing bipolar staining when stained by special methods. It is frequently encountered in veterinary diagnostic bacteriology, where it is known to cause fowl cholera in birds; and haemorrhagic septicaemia in pigs, cattle, sheep, rabbits and mice. Strains of the haemorrhagic septicaemia group are not common in the human respiratory tract, but reports have shown that *P. multocida* is occasionally isolated from cases of respiratory disease[3, 4], and also from apparently healthy carriers[5].

Henriksen and Jyssum[1] examined over 3,000 throat and nose swabs over a period of two years, and cultured *P. multocida* from six patients during this period. Jones[2] described a Pasteurella-like organism isolated from human sputum which, in his opinion, occurs much more commonly in sputum than does *P. multocida.*

There does not appear to be a record of *P. multocida* being isolated from a sputum in New Zealand. This paper describes the cultural and biochemical characteristics of an organism isolated from a sputum sent to the laboratory for T.B. culture. This isolation was made from a sample of sputum cultured routinely on blood agar.

Case Notes

Miss T., a 17-year-old Maori girl, admitted in February, 1963, for psychiatric investigation, was found to have respiratory symptoms.

She gave a history of pleurisy and pneumonia in August, 1962; and since then, recurrent attacks of bronchitis characterised by productive cough, malaise and some mild discomfort on breathing. At the time of these attacks she produced 'greenish-yellow' purulent sputum, without associated loss of weight or night sweats.

Pulmonary tuberculosis was suspected, but repeated examinations of the sputum were negative for acid-fast bacilli. Chest X-ray showed prominent lung markings at right base, but no localised pulmonary lesions were seen.

Characteristics of the organism isolated from the sputum

Morphology:

Small cocco-bacillus, 0.7μ x 0.5μ. The bacilli were arranged singly in gram-stained smears prepared from an agar plate colony. These organisms were non-motile at 22°C. and 37°C., gram-negative in staining, and were not acid-fast.

Blood agar plate (24 hours at 37°C.)

Round, convex, translucent colonies, 1.0 mm. in diameter, with a smooth glistening surface and an entire edge. (Plate 1).

Plate 1.

These colonies emulsified easily with water and were non-haemolytic when grown on human blood agar. The most distinctive features of the colonies were their moist appearance and their tendency to form confluent growth between the colonies, which were close together. The colonies had a characteristic odour which was very similar to that produced by *Haemophilus influenzae*.

Anaerobic culture:

The organism grew well, anaerobically, on blood agar.

Broth culture (Trypticase Soy — 24 hours at 37°C.):

A heavy growth was obtained, with a light viscous deposit.

Gelatin liquefaction:

No liquefaction was observed (plate method).

MacConkey agar:

No growth occurred after five days at 37°C.

Resistance:

A 48-hour broth culture was killed by exposure to heat at 60°C. for four minutes.

Biochemical characteristics:

Lactose	-	Galactose	A
Glucose	A	Dulcitol	-
Mannite	A*	Maltose	-
Sucrose	A	Adonitol	-
Sorbitol	A	Salicin	-
Xylose	A	Arabinose	-

A = acid production within 24 hours of inoculation.
\- = no change in the fermentation tube after one week's incubation.
* = Acid produced after four day's incubation.

Indole	strongly positive
Nitrate reduction	strongly positive
Urease activity	negative
Catalase production	positive
Methylene Blue reduction	weak positive

This organism showed good sensitivity, by the paper disc method, to: penicillin, tetracycline, streptomycin, erythromycin and chloramphenicol.

Pathogenicity:

Three twenty-one day old mice were inoculated, intraperitoneally, with 0.2 ml. of a 24-hour broth culture. One mouse died 24 hours after the inoculation, a second mouse 30 hours, and the third mouse, 44 hours after inoculation. A heavy growth of *P. multocida* was obtained from blood removed from the heart at autopsy, in all three cases.

Discussion

Although the author has had some experience with Pasteurella infection in veterinary bacteriology, the possibility that this organism might be *P. multocida* was not considered at the time of the initial isolation. In retrospect, the colonial appearance and odour were quite typical of the organisms previously encountered.

On inspecting the culture of sputum the usual commensals were present; and it was thought that the low, convex, greyish, translucent colonies, were probably *H. influenzae*. Colonies of *P. multocida* are considerably larger than those of *H. influenzae* after a full 24 hours incubation; however, this culture had only been incubated overnight, so that the developing colonies appeared very similar to those of *H. influenzae*. A gram stain of the organism showed a gram-negative cocco-bacillus, staining rather more strongly than is usual with *H. influenzae*. On the basis of the colonial and microscopical appearance of the organism, a colony was subcultured on blood agar. A streak of *Staphylococcus*

aureus was plated across the diameter of the petri dish. Inspection after 16 hours showed a uniform growth of the organism, without enhancement of growth in the vicinity of the staphylococcal colonies. These growth characteristics indicated an organism which did not require the V factor, and with the Haemophilus group still in mind, *Haemophilus haemoglobinophilus* was considered. A colony was subcultured on plain agar, where it grew readily; thus eliminating organisms of the Haemophilus group.

The growth on plain agar suggested an organism of the Bordetella group, possibly *Bordetella bronchiseptica*. The organism was tested for motility, acid production in glucose-peptone water, nitrate reduction and the ability to split urea. None of the reactions obtained were consistent with the Bordetella group, so *P. multocida* was considered and its identity finally confirmed.

The author would be interested to know how frequently this organism has been isolated from sputum samples in New Zealand. The first indication that a small gram-negative bacillus, isolated from the respiratory tract, might be of the Pasteurella group, would be the failure of the organism to show enhancement of growth in the presence of V factor. One should also be aware of the Pasteurella-like organism described by Jones[2]; which differed from *P. multocida* in being strongly urease positive, in failing to form indole, in fermenting maltose but not xylose, and in growing poorly at 22°C.

Summary

The cultural and biochemical characteristics of an organism isolated from a sample of sputum and identified as *Pasteurella multocida* are described. Organisms found in the sputum, which could be confused with *P. multocida*, are mentioned.

Acknowledgment

The author wishes to thank Dr Goodfellow, Medical Superintendent, Auckland Hospital, for permission to publish the case notes presented in this paper.

REFERENCES:

1. Henriksen, S. D. and Jyssum, K. (1961), *Acta path. microbiol. scand.*, **51**, 354,368
2. Jones, D. M. (1962), *J. Path. Bact.*, **83**, 143-151.
3. Morris, A. J., Heckler, G. B., Schaub, I. G. and Scott, E. G. (1952), *Bull. Johns Hopk. Hosp.*, **91**, 174-178.
4. Olsen, A. M. and Needham, G. M. (1952), *Amer. J. med. Sci.*, **224**, 77-81.
5. Wilson, G. S. and Miles, A. A. (1955), *Topley and Wilson's Principles of Bacteriology and Immunity*, 4th Edition, Arnold, London.

A Further Modification of the Impression Plate Technique in the Bacteriological Examination of Surfaces.

H. T. KNIGHTS, M.B., Ch.B., D.P.H.,
The National Health Institute, Riddiford Street, Wellington.

(Received for publication May 1963.)

Introduction

Being asked to furnish reports upon the value of certain bactericides as surface cleansing agents, and upon the suitability of certain surfaces for use in interior finishes, the National Health Institute studied the suggestions put forward with regard to the techniques for the estimation of surface bacterial contamination.

Existing Techniques

Method	Disadvantage
Series of Swabs	At best only a sampling technique; not a true proportionate estimation.
Impression Plate[1]	Difficult to prepare and handle intact.
Impression Plates[5]	Separation of the medium from the slide; insufficient area of sample.
Sticky Tape[2]	Uncertainty regarding culture of bacteria obtained on the tape; insufficient area of sample.

The last listed is by far the best from the aspect of transportability. There is no doubt about its withdrawal of bacteria from the skin crypts, but there are real doubts regarding whether all bacteria on the tape are readily transferred to the medium.

Apparatus

The best solution seems to be a light, shallow, flexible container, in which the medium can be applied to the skin, but which prevents the agar from falling out.

Work upon this new technique was advanced, when our attention was drawn to an article[4] using agar 'replicates' in the testing of disinfectants. Though employing a metal container for the agar medium, this technique was for an agar-to-agar contact; not as a sampling technique for general surface contamination.

Some plastics would appear to offer advantages, but the fact that the inexpensive types are not sterilizable by steam detracts from their usefulness. There is another difficulty: their low thermal coefficient of expansion does not help to ensure a flat agar surface; a cheap, light metal container, with a high thermal coefficient of expansion, is more desirable.

A wide selection of metal boxes, employed to contain needles and varieties of tulle gras; also aluminium lids of screw-top jars, were tested. Finally chosen, were tin lids of 2⅝in. and 3½in. diameter respectively, having a depth of ¼in. The smaller size was the 'Tri Vac' lid, familiar as the closure on glass jars of peanut butter; the larger were lids of paint cans, the projecting edges of which enable them to be grasped without contaminating the enclosed medium, and also to be transported in the container which will be described.

Each type of lid can also be placed within a petri dish, of either 3½in. or 5½in. diameter. If a doubled piece of plastic sticky tape, with sticky side outwards, is placed in the bottom of the petri dish, this will hold the medium container so that it does not make contact with the petri dish lid.

The medium containers suffer the disadvantage of being opaque, but they can be coated with baked-on enamel, in order to afford contrast for colony isolations, and also for photography. With the wider adoption of the technique, an anodized finish, stainless steel plate would be an improvement, since some media tend to remove the enamel.

When the containers are poured, the agar should form a slightly convex surface, to enable it to come into contact with the surface tested. These plates have been tested elsewhere against the sticky tape technique[3] and found to collect 58% of the bacteria from a surface, compared with 25% by the sticky tape.

Containers for Large Scale Sampling of Surfaces

Feeling that there would be an application of the technique for work to be done at some distance from the laboratory, we sought the help of Mr D. Taylor, Histologist at Wellington Hospital.

Mr Taylor designed an apparatus (Fig. 1), which is constructed as follows:—

The base is a piece of ⅛in. clear perspex, 15in. long by 4 $^{11}/_{16}$in. wide, which is roofed over to a height of 1in. for its middle 12½in., low stops being placed at each end of the base to prevent the medium containers from falling out.

The roofed-in portion has a width of 4⅜in. and halfway up the side walls on each side, 1/10in. guides touching the plate rims ensure that the surface of the medium does not touch the roof of the container. The whole is covered with a rectangular plastic lid.

Prints showing the design in detail, are available on application to the National Health Institute, Wellington.

Sterilization

Rinsing the container with 10% formalin and drying in hot

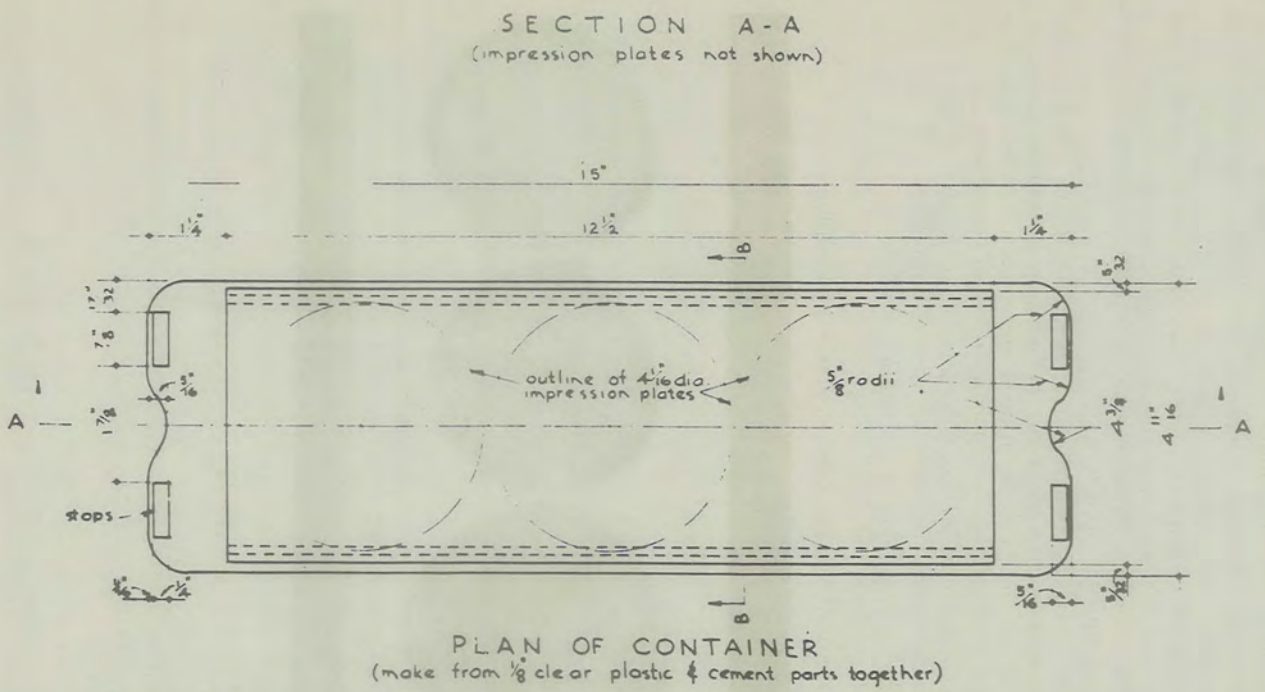


Fig. 1

IMPRESSION PLATES CONTAINER

air, has proved sufficient to ensure that there is no contamination by moulds or spore-bearing organisms.

Application of the Technique of Surface Sampling

There are several spheres in which the impression plate method can be of use:—

1. *For teaching purposes*: The swab and its subsequent growth in broth or after smearing on a plate, will not convey to a class as good a demonstration of surface contamination, as a plate directly applied.
2. *The value of skin antiseptics*: If it is desired to determine the numbers of bacteria lying behind the superficial skin layer, a plastic tape can be applied and removed as for the sticky tape method[2], before applying the impression plate.
3. *The suitability of finishing surfaces* in respect of the retention, or not, of soiling; and ease of cleaning.
4. *The value of surface antiseptics.*
5. *The sampling of blankets.*

Plate 1 illustrates some examples of sampling.

Plate 1.

Summary

The methods of surface sampling are reviewed, their advantages and disadvantages discussed, and what is considered an improved technique suggested. This employs a solid medium held in a thin metal container. Some applications of the technique are commended.

Acknowledgements

My thanks are due to: Dr H. B. Turbott, Director-General of Health, for permission to publish this paper; to Mr D. Taylor, Histologist, Wellington Hospital, for the care and interest shown in the construction of the plastic container; to Messrs Sanitarium Health Food Co., Christchurch and Alex Harvey, Wellington, for the supply of metal lid containers; to A. S. Paterson Ltd., Wellington, for the enamelling process; and to Dr J. D. Manning Director of the National Health Institute, Wellington, for help and advice.

REFERENCES:

1. Foster, W. D. (1960), *Lancet*, **i**, 670.
2. Thomas, Mair (1961), *Mon. Bull. Minist. Hlth Lab. Serv.*, **20**, 37.
3. Nathsarma, K. C. (1962), M.D. thesis, University of Otago.
4. Parry, J. (1961), *J. appl. Bact*, **24**, 218.
5. Porter, I. A. and Nicholson, J. (1961), *J. clin. Path.*, **14**, 557.

The Junior Essay Competition, 1963

ESSAY SECTION:

No essay submitted attained the required standard and, in accordance with the terms of Rule 27, no prize has been awarded in this section.

TECHNICAL SECTION:

The prize of £5/5/- was won by:

I. R. ORCHARD, of Christchurch,

for his essay

Photomicrography with Standard Laboratory Equipment

which is published in full in this issue of the Journal.

Vacancy

CHARGE POSITION — HAEMATOLOGY

A Charge position is offered in the Haematology Department of the Medical Laboratory, Auckland.

Applicants must be qualified and have organising experience and an interest in this field, which offers advanced techniques, etc.

Apply:

Chief Technologist,
Medical Laboratory,
127 GRAFTON ROAD, AUCKLAND.

Photomicrography with Standard Laboratory Equipment

I. R. ORCHARD,
Pathology Department, Christchurch Hospital.

Winner in the Technical Section of the Junior Essay Competition, 1963.

In recent years, photomicrography has gained considerable importance in medical laboratories as a means of keeping records of specimens for demonstrations and educational purposes. There are many excellent detailed accounts of photomicrographic technique available, but the impression gained from reading most of these publications is that both complex and expensive equipment are absolutely necessary. The question thus arose: How would the technologist in the laboratory where such equipment is unobtainable, go about taking presentable photomicrographs? In this account of the answer to the question, the author has presumed that the reader already has a basic knowledge of the function of microscopes and cameras.

The Camera

The first problem was the choice of camera. The ideal for this system of photography, is the Single Lens Reflex 35mm. For the purposes of this study it was decided to use a 35mm. camera with optical viewfinder and interchangeable lens, as this type is more readily available to all technologists — although it presents more difficulties. The actual camera used was a Braun Super Paxette. Cameras without interchangeable lens, folding cameras, or even 'Box' cameras can be used if the lens is set to infinity. An important accessory is the cable shutter release. (See 'Setting up.')

The Microscope

The microscope is of prime importance as its definition and resolution largely determines the quality of the final photographs. If a single lens reflex camera is used, a monocular microscope gives best results. For other cameras the binocular head is necessary, although only one third of the initial light reaches the film, the remainder being lost in the prisms and to the other ocular. Throughout this study, a Leitz SM proved satisfactory. The light source on this microscope is a mains supplied, rheostat controlled 6v Tungsten bulb attached to the base. During exposures it was run at a full load of 2.5 amps. The objective lens will depend on the type of subject being photographed and

the x10 oculars give the best field of view without empty enlargement.

To connect the camera to the microscope, a light-fast brass extension tube 7.0cm. long and 3.8cm. wide, with an internal diameter of 3.2cm., was used. This is the only piece of apparatus that is not standard laboratory equipment, but it can be easily constructed in any engineering workshop. The upper end was threaded to screw into the camera, and the lower end had attached, a cylindrical black felt pad to provide a snug contact round the ocular tube. An ordinary retort stand, clamped to the extension tube, is adequate support for the camera.

The Film

A variety of black and white films were tried during the study and the best results were gained using Ilford Pan F (ASA 50); a slow, fine grain emulsion. Monochrome is satisfactory for most wet films and helminthology. Stained films are best photographed with a colour reversal emulsion such as Ektachrome 32 ASA Daylight. (See Filters.)

Filters

To improve contrast of coloured subjects in monochrome photography, there are numerous coloured filters. For example, experimental exposures of Lieshman-stained blood films were improved by using a light green Wratten 66 placed across the light source.

A tungsten light source with daylight colour film may require a correcting filter — Wratten 80A or 78AA (some workers prefer Wratten 66) although this may not be necessary if a low voltage, high intensity light source is used. The use of Daylight film is preferable to Tungsten film.

Resolving power may be improved by the use of a Blue-green filter with no red transmission and a wavelength range 470-480 millimicrons (Wratten 45A).

The Ground Glass Screen

The correct focus for the camera was determined using a ground glass screen. A simple, efficient method of construction, is to grind two glass slides together with a paste of glycerin and 120 grade (or finer) Carborundum, until the surface is *uniformly* roughened.

Setting up

The first consideration is the elimination of vibration. The author was fortunate in being able to work in a reinforced concrete building, where even heavy city traffic directly outside, had no apparent effect. If this is a problem, however, the microscope and camera stand should be based on a pad of rubber or newspaper. Stronger support for the camera may also be necessary,

although microscope vibration is the major difficulty. While the actual exposures are being made, ensure there is no obvious vibration, and use a cable release.

The following procedure is used to establish the correct initial focus:

1. The microscope optical system is carefully cleaned and adjusted to optimum performance. Dust and oil on the lenses are the photographer's worst enemies.

2. Remove the camera lens and screw in the extension tube. At this stage, it is necessary to add a small extension *ring,* approximately 1.5cms in length, to the fixed ocular. (See 5.)

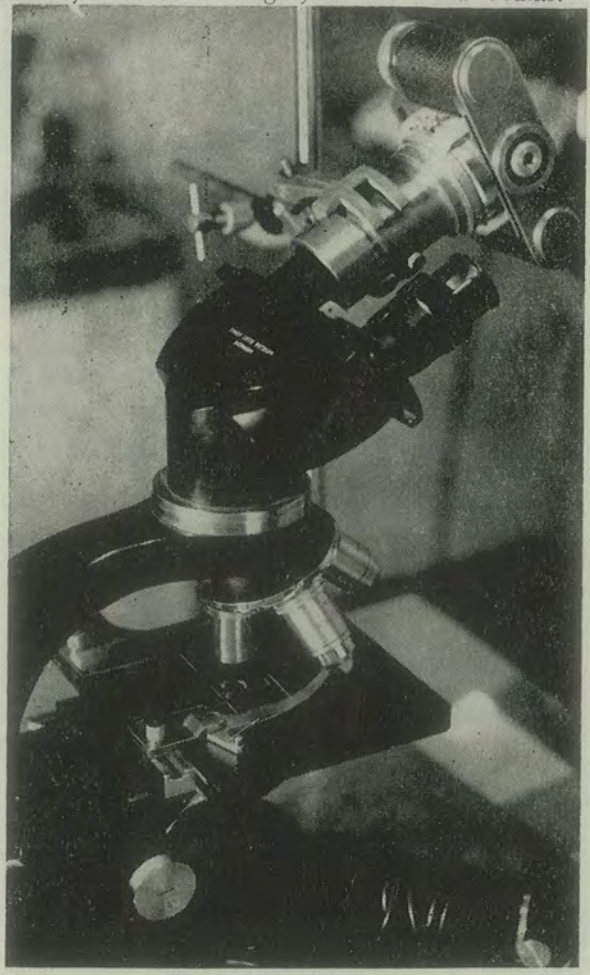


Plate 1. The Apparatus.

Ensure that the eyepieces are set at their widest position, slide the extension tube and camera over the fixed ocular and clamp them roughly in place.

3. The back of the camera is removed and the ground glass screen taped firmly in place in the film position, with the ground surface (the light scattering surface) *downwards.*

4. Darken the room, increase the light source to maximum and focus the subject image on the screen. Each camera will have an optimum distance from the eyepiece, at which the widest field of view will reach the film. This must be determined experimentally. Once it is found, the camera is carefully aligned and clamped firmly in place.

5. Maintaining perfect focus on the screen, the adjustable ocular is rotated to bring the image in focus for the eye. The difference in the two focal distances may require the fixed ocular in the camera to be extended up to 2cm. further than the eye ocular (hence the extension ring). This now gives the camera image perfectly focussed with the eye.

6. All critical distances *i.e.* film to eyepiece, or more conveniently, leading edge of the camera to ocular backplate; and focus adjustment of the variable oculars are carefully marked or noted. At any later date, the apparatus can be set up to these exact measurements, with the certainty that if the image is in focus to the eye, the camera is correctly focussed. Primitive though this method may seem, it is completely reliable provided the measurements are checked periodically during use, or after changing film etc. An unnoticed bump that puts the camera out of alignment may be the explanation for an out-of-focus bracket of photographs.

Determination of Exposure

The simplest method is what is known as 'bracketing.' A series of experimental photographs is taken at a variety of shutter speeds and the processed film is examined to see which exposure gave the best results. For example: the initial tests involved a Lieshman stained blood film, full intensity lighting, x54 fluorite oil immersion objective, x10 oculars, no filters, and ASA 100 film. Exposures were made at 1/60, 1/30, 1/15, 1/8, 1/4, 1/2, 1, 2, 5 seconds. Subsequent development showed that 1/15 and 1/30 gave the correct density negatives. These results then became standards, and when conditions were changed (different film speed, addition of filters), the new exposure times were calculated accordingly.

Changes in the objectives involved a more complex method of determining exposure. The head or binocular unit is removed and an exposure meter (Weston 11A) is placed across the light path.

with as much as possible of the extraneous room light removed. The known lens (in this case x54 fluorite) is given an arbitrary light value and the objective is changed. The correct exposure was calculated using the following simple ratio:

$$Eu = \frac{Ek}{1} \times \frac{Lk}{Lu}$$

where Eu = Exposure time of unknown objective
Ek = Exposure time of known objective
Lu = Light value of unknown objective
Lk = Light value of known objective

Example :

Light value of x54 fluorite objective = 9.5
Exposure time = 1/15secs
Light value of x45 dry objective = 25

$$Eu = \frac{1/15}{1} \times \frac{9.5}{25}$$

= 1/40sec. = Exposure time for x45 dry objective.

This method is also applicable to filters, dark field and phase contrast microscopy.

After a series of tests in the above manner, the correct exposures for all combinations of objectives, condensers, filters etc. can be recorded, leaving the subject as the main concern. It should be noted that the slower a film emulsion, especially with colour films, the more sensitive it is to irregularities of exposure.

Developing

Commercial processing is probably adequate for most purposes, although 'production line techniques' are inclined to make photographs grainier than necessary. Excellent results were obtained for Pan F film by following the comprehensive instructions included with Johnsons 'Unitol' fine grain developer.

The results of this method are a little irregular at first, but will improve with patience and practice. Once the detailed notes covering all the varieties of exposures have been accumulated, the bulk of the work is complete and the choice of subject becomes the first concern. In time, the mechanics become so automatic that one wonders why photomicrography was thought to be so difficult.

Acknowledgements

The author is indebted to Mr B. Gibson and Miss Joan Speden for the use of equipment and to Mr P. Skidmore for his considerable assistance with photographic processing.

The Last Twelve Years

M. JEANNETTE GREY
Pathology Department, New Plymouth Hospital.

(Based on a paper read at 1962 Conference of N.Z.I.M.L.T.)
(Received for publication June 1963.)

During the last twelve years, medical laboratory staffing in this country has shown some very interesting trends. For some time there has existed a need for a survey of the numbers and distribution of trainees, examination candidates and qualified staff. Over the years, our problems have been discussed from a qualitative aspect, when often they would have been more fully revealed and more easily solved if the quantitative angle had been considered. Such subjects as examination planning, training schemes, adequate staffing of medical laboratories and future policies cannot be dealt with realistically unless the relevant numerical trends are studied.

The following facts and figures relating to trainees and examination passes over the last twelve years (from 1951 to 1962), have been abstracted as accurately as possible from past issues of this journal. There is, in fact, no other easily accessible source from which to obtain such information, as the N.Z.I.M.L.T. holds no other records. Although the Health Department were most helpful with some figures relating to staffing comparisons, details are scattered and meagre — a fact endorsed by the Secretary of the Hospitals Advisory Committee, who gave some assistance towards this article.

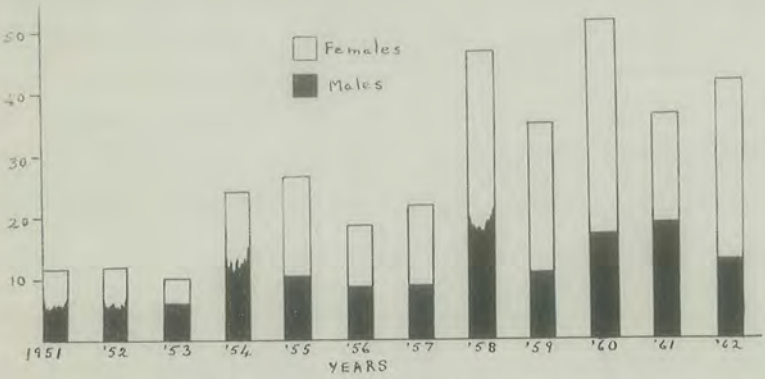


Fig. 1. Annual numbers of successful candidates in Intermediate examinations since 1951.

Figure 1 illustrates the annual numbers of successful trainees in the Intermediate (3 years) examination and shows the recent increases. In 1954 there were only 126 trainees in hospital laboratories, but by 1962 the number had increased to 270. There is a sudden increase in candidates after 1957. A total of approximately 328 persons are represented on Fig. 1 but only 40% were male trainees. The 1958 high total was mainly due to a large influx of candidates from Auckland, but the 1960 column reflects an increase from all over New Zealand — presumably due to an expansion of hospital laboratories in 1956-57. A surprising number of trainees leave laboratories before they have sat any examinations; their reasons vary from marriage to vocational misjudgment. The numbers of male trainees are remarkably constant through the years and the increase consists mainly of female trainees. This is possibly because there is, on the general labour market, a shortage of males; and also because more females are seeking worthwhile careers—at least temporarily.

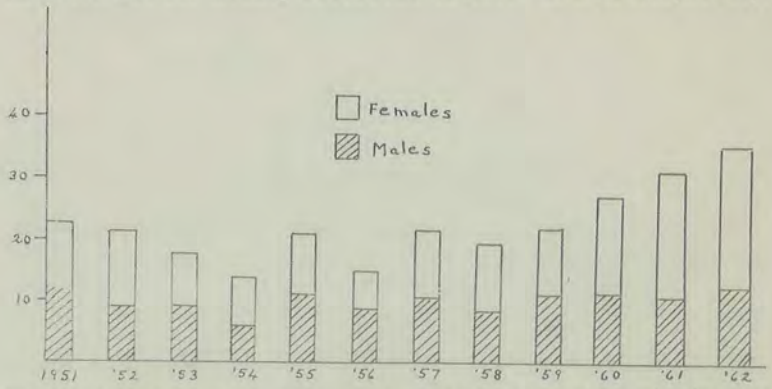


Fig. 2. Annual numbers of successful candidates in final examinations for Certificate of Proficiency since 1951.

Figure 2 shows the annual numbers of successful candidates for the final examinations for the Certificate of Proficiency in Hospital Laboratory Practice. This is a less fluctuating picture and the male candidate numbers show little annual change over the twelve year period. There are approximately 260 persons shown on Fig. 2, but only 43% are males and again the increase since 1958 is largely due to female candidates qualifying. The highest annual figure yet is in the 1962 column; due again to that sudden influx of trainees in 1956-57. In 1954 there were 75 fully-qualified staff in hospital laboratories and in 1962 there were 136. At present we have about 290 people in training, yet only 260 New Zealanders have become qualified during the last twelve years.

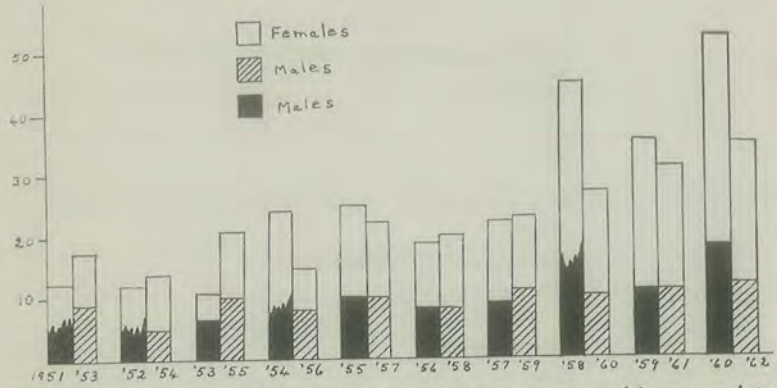


Fig. 3. Comparisons of Intermediate examination numbers with appropriate Final examination numbers 1951-1962 incl.

Figure 3 combines the data of the previous two graphs, to show ten comparisons of Intermediate examination numbers with the appropriate final examination numbers, assuming the usual two years between examinations; thus the 1951 Intermediate is beside the 1953 finals and so on. The first three double sets of columns do not conform to the general trend on the graph, but thereafter the impression is of a loss of people between examinations, because the remaining seven sets of columns show only 170 finalists out of a total of 256 intermediate candidates. This loss of 86 people in seven years represents a considerable and serious deficiency of experienced staff in our laboratories.

One does not need to spend many years in a hospital laboratory before one particular aspect of the scene becomes very obvious: the ever-changing staff. It is necessary and unavoidable to have a certain number of trainees in transit, but the reasonable limit is often passed and at times the staff changes occur so rapidly that the situation becomes farcical. The standard of work is adversely affected by a too frequent change of trainees, and those people responsible for their training cannot be blamed for a growing disinterest in the whole passing parade.

Some of the rapid changes could be avoided — firstly by a more careful choice of trainees; secondly by the abolition of financial bribes by private laboratories; thirdly by the control of unnecessary after-hour call work and finally by a change in the training regulations which force non-pathologist laboratories to relinquish trainees at the end of three years. This latter group of trainees are forced to depart from a laboratory just as they have become very useful, so that many district laboratories are in the unenviable position of facing even more staff changes than usual.

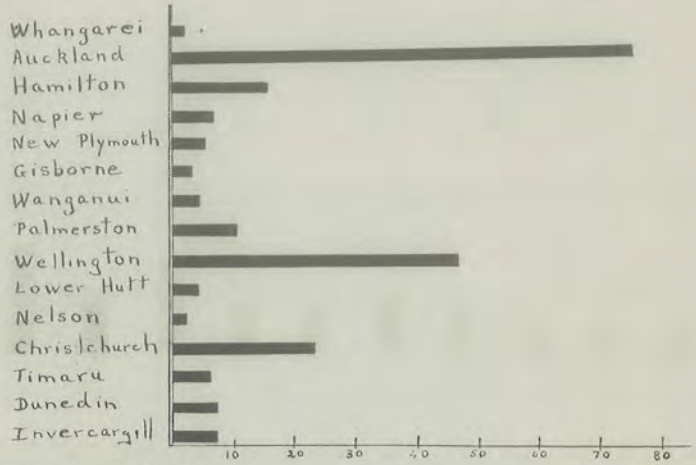


Fig. 4. Geographical distribution of candidates at time of final examinations 1951-1962 inclusive.

Figure 4 shows the geographical distribution of candidates at the time of their final examinations, from 1951-1962. Most of the training centres are shown, listed from north at top to south at the bottom, as on a map. Unfortunately forty could not be placed; this total consists of 15 in 1951, 8 in 1961, 8 from private laboratories and another 9 miscellaneous. There are approximately nineteen centres for finalists and an extra fourteen centres for those up to intermediate standard. In addition, there are more than a dozen private pathology laboratories where trainees may qualify. Since 1954, six more centres have full-time hospital laboratories.

In twelve years, only about 114 men have become fully qualified. This is a number insufficient to meet the demand and the result is a current shortage of qualified staff in our hospital laboratories. It should not have been necessary for us to seek overseas for staff. Many of our qualified men have been lost from hospitals to agricultural, industrial and private pathology laboratories. It is good that our trained people are so versatile, but it is not good that they are so rare or so easily tempted elsewhere.

The shortage of trained staff has been aggravated by the inevitable expansion of hospital laboratories in this country, an expansion which has been very considerable over the last eight years. It is not generally realised that the total number of trainee and trained hospital laboratory technical staff has doubled since 1954 (from 200 to 406).

The present totals of 270 trainees to 136 qualified persons sounds ideal, but in fact the situation is far from satisfactory, as geographical distribution shatters the illusion. Table I shows the 1962 situation in most areas and also the increases since 1954, both absolute and proportional. I apologise for any inaccuracies which individual laboratories may detect in this table, and regret that Dunedin is omitted as figures were not available because of its exceptional circumstances. Many aspects of this survey are incomplete as information has been difficult to obtain.

CENTRE	1962 TRAINEES	1962 QUALIFIED	1962 TOTAL	INCREASE SINCE 1954	% INCREASE SINCE 1954
Ashburton	3	1	4	3	300
Auckland District	97	35	132	83	166
Balclutha	2	1	3	2	100
Blenheim	3	1	4	1	33
Christchurch	24	15	39	17	77
Dannevirke	2	1	3	1	50
Dargaville	1	1	2	2	*
Gisborne	8	2	10	6	150
Greymouth	4	1	5	2	66
Hamilton	9	9	18	7	64
Hastings	5	1	6	4	200
Hawera	2	2	4	1	33
Invercargill	7	4	11	6	120
Kaitaia	2	1	3	3	*
Masterton	4	1	5	3	150
Napier	4	5	9	5	125
Nelson	4	1	5	0	0
New Plymouth	7	2	9	2	29
Oamaru	2	1	3	0	0
Opotiki	0	1	1	0	0
Palmerston North	7	5	12	4	50
Rotorua	7	2	9	4	80
Stratford	1	1	2	2	*
Taumarunui	2	1	3	3	*
Tauranga	5	1	6	3	100
Thames	2	1	3	0	0
Timaru	4	4	8	3	60
Waipukurau	2	1	3	0	0
Wairoa	2	2	4	3	300
Wanganui	7	3	10	6	150
Wellington	34	23	57	21	58
Westport	1	1	2	2	*
Whakatane	2	1	3	3	*
Whangarei	5	3	8	4	100

* NEW LABORATORIES

Table I. 1962 Geographical distribution of trainees and qualified staff showing absolute and relative increases since 1954.

Summary

A numerical survey of twelve years of examinations is presented, together with the geographical distribution of qualifying medical laboratory technologists.

An increase in candidates since 1954 consists mostly of female staff who are lost by marriage.

A disconcerting number of candidates do not reach five years training, causing an unnecessarily high number of temporary trainees. Some possible reasons and remedies are suggested.

The hospital laboratory technical staff in New Zealand has doubled in the last eight years. A survey of centres is shown with present staff and increases.

There are inadequate numbers of fully-trained staff in hospital laboratories, particularly in relation to the numbers of trainees. This shortage adversely influences the standard of training, the safety of personnel, and the standard of accuracy in our hospital laboratories.

Acknowledgement

I would like to thank the Health Department (Hospitals Division) for their help in supplying information. I also acknowledge the many issues of this Journal from which figures were abstracted.

The Rex Aitken Memorial Prize

The Biological Laboratories' Rex Aitken Memorial Prize, worth £25, has been awarded this year to:

A. J. FORSYTH, of Dunedin,
for his paper

Stabilisation of the Nitrogen/Nessler Complex in Blood Urea Estimations.

which was published in this Journal in April, 1962 (Vol. 16 pp 8-12).

This paper investigated a method of stabilising the nitrogen/Nessler complex when estimating blood urea, by using polyvinyl alcohol and gum ghatti to prevent the development of turbidity.

TECHNICAL NOTES

The Estimation of Serum Sodium Using the E.E.L. Flame Photometer.

J. V. DUNCKLEY, B.Sc., A.N.Z.I.C.
Chemical Pathology Laboratory, Medical School, Dunedin.

(Received for publication April 1963.)

The E.E.L.* flame photometer is probably the most commonly used instrument for the estimation of serum sodium and potassium in this country. It suffers from certain disadvantages, of which the fact that a secondary dilution is required for the estimation of sodium, is probably one of the most irritating. This extra manipulation must also be an additional source of error. An attempt has been made to overcome this difficulty. A frequent compromise is the use of a 1 in 100 dilution for both sodium and potassium estimations. This has the advantage of a single dilution, and the possibility of requiring slightly less of the original serum; but the already low sensitivity for potassium is reduced to a level where significant variations in concentration cannot always be measured with accuracy.

To overcome the above, there are two obvious possibilities: one is to increase the sensitivity of the instrument to potassium. A preliminary investigation showed that this would be both difficult and expensive, and not necessarily successful. Attention was then directed to the other possibility: that of reducing the sensitivity of the instrument to sodium. This was achieved by placing a mask, made from the black paper commonly used for the protective wrapping on photographic materials, with a hole cut in it to coincide with the centre of the filter, between the filter and the photocell. An aperture of approximately one square centimeter was found to be satisfactory for our instrument. This area may have to be varied slightly to suit the characteristics of other instruments. The area of the aperture was such, that when a sodium chloride standard containing 10 mg./100 ml. sodium (equivalent to 500 mg./100 ml. diluted 1 in 50) was sprayed, a galvanometer deflection of 100% could be obtained with the galvanometer control potentiometer set in the vicinity of the '3' graduation. This having been determined, a more permanent mask of blackened sheet metal was constructed. The usual calibration curve was then determined, using dilutions of the above standard. Thereafter, the instrument was initially

* Evans' Electroselenium Ltd, Harlow, Essex, England.

adjusted using the 10 mg. sodium/100 ml. standard, 1 in 50 dilutions of the specimens sprayed and read, with the sodium concentrations being evaluated from the calibration curve in the usual manner.

The validity of this modification was then tested using the surplus solutions from the laboratory's routine sodium determinations. These were 1 in 50 serum dilutions, prepared for use in the Beckman DU spectrophotometer with flame attachment. Table I shows a typical set of figures obtained using the Beckman DU with flame attachment; the E.E.L. flame photometer using a 1 in 50 dilution as described above; and using a further 1 in 10 dilution of these solutions with the mask removed, balancing the instrument against a 1 in 10 dilution of the above standard, and interpreting the results with a conventional calibration curve.

SODIUM LEVELS IN m.Eq./L.

Beckman 1:50 dilution	E.E.L. 1:50 dilution	E.E.L. 1:500 dilution
133	131	140
146	146	151
133	131	141
135	139	146
146	144	150
137	142	130
133	133	137
146	146	139
135	133	138
133	133	137

TABLE I

From these it will be seen that the results obtained using the modified E.E.L. instrument, agree with those obtained with the Beckman DU within expected experimental error, and are distinctly better than those obtained with the unmodified E.E.L. instrument; although these latter are still of an acceptable standard of accuracy.

Summary

A simple modification has been made to the E.E.L. flame photometer, allowing the estimation of both sodium and potassium on the same 1 in 50 serum dilution. Accuracy of sodium estimation is improved.

Acknowledgements

I wish to acknowledge the assistance of Miss J. Edgar and Miss J. Horton, in making available the surplus of their routine serum dilutions and the sodium results thereof.

The work on the dilution problem in sodium estimation was undertaken at the suggestion of Dr R. H. Spitzer.

Abstract of Theses Presented by Fourth-year Trainees of the Auckland Hospital Board's Laboratory Services.

A Study of Serum Albumin Determination using the Anionic Dye, Methyl Orange.

Raewyn P. Duxfield.

The commonly used salt fractionation-biuret method of albumin determination is time-consuming and of variable accuracy. The methyl orange reaction makes use of the unique affinity of serum albumin for certain anionic dyes, and a quantitative relationship between albumin concentration and colour intensity should be readily demonstrable. In fact, a simple method was devised; the effects of time, temperature and haemolysis being studied in relation to the precision of the test. Determinations after additions of known amounts of albumin were also made.

The method, although extremely reproducible, showed a lack of specificity for albumin. The results were consistently higher than those given by the biuret method, and suggested that a systematic error, possibly interference by the globulin fractions, was occurring. With the method used, the test is not suitable for routine laboratory use. Further work, however, may overcome the difficulties experienced.

A Study of the Cooke Count and the White Cell Count, Both Total and Differential in Pregnancy.

Anne M. Duxfield.

Various workers have found evidence of a leucocytosis, particularly of the granulocytes, with a shift to the left of nuclear maturity, as a physiological feature of pregnancy. This study was made to determine these values in a group of 80 pregnant women. It was found that the white cell count was raised in most but not all patients, the mean count being 10,100 cells per cmm. There was a tendency for the count to be raised more in the later stages of pregnancy, but this again was not invariable. The proportion of neutrophils was slightly raised.

The Cooke count, a modification of the Arneth classification, is based on the number of lobes in the nucleus, Group I being unsegmented nuclei and Group V segmented nuclei with five lobes.

Counts on 73 women gave the following values, the accepted normal figures being shown in brackets:—

Group I 6.4% (10%),
Group II 48.6% (25%),
Group III 38.4% (47%),
Group IV 6.05% (16%),
Group V 0.45% (2%).

It was concluded that, in this limited series, a moderate leucocytosis with a neutrophil shift to the left is a physiological finding in pregnancy.

The Auckland Domain Ponds: A Bacteriological Survey

Jennifer L. Harding.

Two large connected ponds, with a total area of one acre, are situated in the Auckland Domain; where they have attracted a permanent colony of ducks, and are constantly patronized by visitors and tourists. It was felt that the turbid waters of these ponds might constitute a bacteriological hazard to children, who might accidentally or purposefully drink from them.

Samples of water were obtained from the ponds twice monthly for a period of nine months. These were subjected to a presumptive coliform count, a differential coliform analysis, enrichment culture in selenite medium and anaerobic culture. On six occasions one litre samples were concentrated by Seitz filtration and the filter pad cultured. Faecal samples were obtained by rectal swabbing from eight ducks, after sedation, and these were cultured for intestinal pathogens. A litre sample of water was concentrated by filtration, and the filter pad applied to the skin of two guinea pigs in a search for pathogenic leptospira.

The water samples showed a wide variety of coliform organisms, as many as ten species being recorded in some samples. No pathogenic salmonella organisms were isolated, either from the water samples or the duck faecal samples, nor could pathogenic leptospira be demonstrated.

In view of these negative findings it was concluded that the Domain ponds do not represent a public health hazard to the community.

Rapid Identification of *Candida Albicans* by Filamentation in Serum.
Patricia A. Joy.

A commonly used means of differentiating *Candida albicans* from other members of this genus, is the recognition of chlamydospores in cultures after at least twenty-four hours incubation. In 1959, Taschdjian, Burchall and Kozium reported that the species could also be identified by its capacity to produce short germ tubes when incubated in serum for one and a-half hours.

Of one hundred strains of Candida collected from routine cultures in the laboratory, eighty-two produced germ tubes in serum. The eighteen cultures which failed to produce germ tubes also consistently failed to produce chlamydospores, while the group of eighty-two strains all produced chlamydospores and were identified as *Candida albicans*.

It was concluded that germ-tube development in serum is as reliable a criterion as chlamydospore production, and the test has the advantage of being rapid, simple and straightforward.

Biochemical Estimations of Fibrinogen
Faine M. Kearney.

There are several obstetric conditions in which an estimation of circulating fibrinogen becomes an urgent necessity. It was decided to test the simple turbidometric measurement of salt-precipitated fibrinogen, as advocated by Parfentjev, Johnson and Cliffton, employing a 13.3% ammonium sulphate solution.

Difficulties were experienced in deciding on a particular technique, in view of the variations of published recommendations with regard to the plasma dilution, the best anticoagulant to use, the preferred wavelength, and the presence of other pigments in the plasma. It was decided, after considerable trial and error, to employ a 4% solution of sodium citrate and to read the turbidity at a wavelength of 700 mμ. Preliminary experiments showed that this turbidometric method closely parallels the Kjeldahl method and has an acceptable accuracy for use in emergencies. It is likely to provide a simple test which can be done on 5 ml. of blood in 15 minutes. Further work is required to define its precise role in routine laboratory practice.

The Assay of Antihaemophilic Globulin (Factor VIII)
Maureen P. Keith.

A method for the assay of antihaemophilic globulin (Factor VIII) has been described by Biggs and MacFarlane, which is based on the thromboplastin generation test. In principle, it consists of carrying out this test on three dilutions of a normal plasma which has been adsorbed with alu-

WHY NOT HAVE THE BEST?

Leitz

MICROSCOPES

ORTHOLUX — LABORLUX — SM

with

FLUORESCENCE — XENON ILLUMINATION

PHASE WITH LIGHT FIELD OR DARK FIELD OBSERVATIONS.

MICROSCOPES AND OPTICAL TESTING INSTRUMENTS FOR ALL PURPOSES.

PROJECTION APPARATUS OF ALL TYPES.

MICROPHOTOGRAPHIC APPARATUS.

CRYSTAL CLEAR IMAGES AT ALL MAGNIFICATIONS.

TECHNICON

AUTO-ANALYSERS

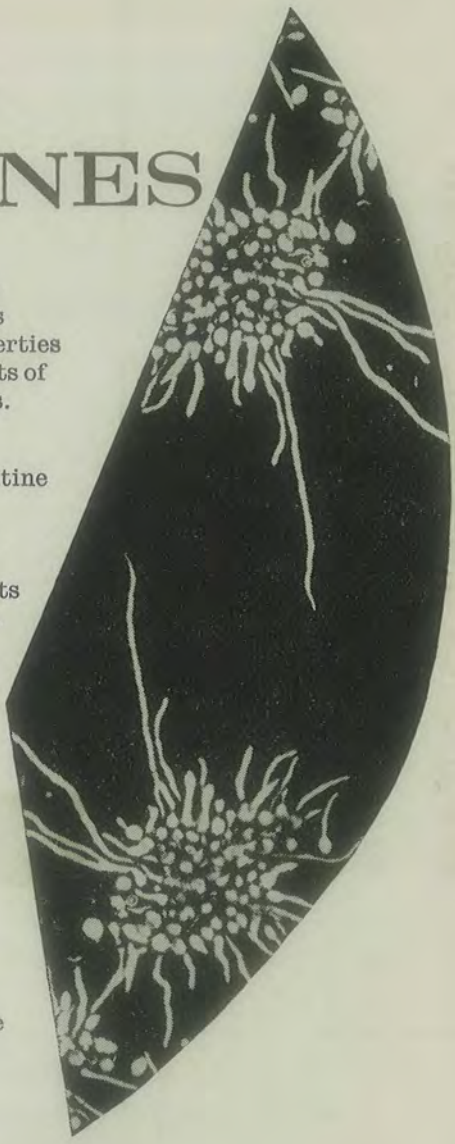
"THE BLACK MAGIC OF CHEMISTRY"

E. C. LACKLAND & CO. LTD.

BLEDISLOE STREET — AUCKLAND, C.1

P.O. Box 5284. Telephone 20-136.

OXOID PEPTONES



The Oxoid Laboratories have developed a range of peptones differing widely in their properties so as to meet the requirements of workers in many varied fields.

OXOID PEPTONE L37
is used extensively for all routine purposes in laboratories throughout the world. It is a high-quality peptone which gives consistently good results with standard culture media.

OXOID PROTEOSE PEPTONE L46,
a more specialized peptone, is prepared by the papain digestion of selected fresh meat, for use in media for the production of bacterial toxins.

OTHER OXOID PEPTONES AND HYDROLYSATES:
Peptone L6, Tryptose, Soya Peptone, Mycological Peptone, Tryptone, Tryptone "T," Casein Hydrolysate (Acid), Peptone "P," Liver Digest Peptonized Milk.

For progressive laboratories... OXOID culture media

MANUFACTURED BY OXO LTD., LONDON

Sole New Zealand Agent Edwin A. Piper Ltd., 4 Rata Road, Cheltenham, Auckland, N.1.
Telephone 70-040. **Telegraphic address:** "Eapagent" Auckland.

minium hydroxide, and on three dilutions of the adsorbed test plasma. It is assumed that minimum clotting times will be proportional to the amount of Factor VIII present, provided that all other known factors are constant.

In introducing this method in the Central Laboratory, a few variations have been made in order to overcome minor difficulties encountered. In the course of the past six months more than 40 assays of Factor VIII have been carried out on control plasma, stored plasma, and plasma from patients. If the test is carefully performed, it does, in fact, appear to estimate Factor VIII, and is likely to be useful in estimating this substance in exercise plasma and concentrates for therapeutic purposes. As an assay takes half a day, and requires a considerable experience with the techniques to give consistent results, it is likely to remain a rather specialized test.

An Investigation of the Urea Method

Christine D. Macedo.

Over a period of many months, the daily testing of a normal calf serum sample for urea by a urease-Nessler method has shown an error of up to 9%. It was decided to investigate certain aspects of the test, with a view to reducing this variation. No significant effect was observed when varying the amounts of blood, protein precipitants or urease. Studies on protein precipitation showed erratic results when trichloracetic acid, or phosphotungstic acid, were substituted for the standard sodium tungstate and sulphuric acid method. Potassium gluconate was substituted for potassium persulphate as a colour stabilizer but was not found to offer any advantages. A considerable increase of the optical density of the Nesslerized test solutions was observed on standing, and it was found necessary to read tests in the specified time range of 5 to 15 minutes. The advantage of cooling the Nessler's reagent and the test solutions to 10°C. or lower, in reducing turbidity, was shown.

None of these experiments clearly explained the daily variations of standard urea estimations, and further work remains to be done.

A Study of the Blood Glucose Estimations When Standardized Errors Are Introduced

Julia B. McLachlan.

This investigation was carried out to determine the errors in glucose estimations which may result from (a) keeping the blood specimen at room temperature for various times after collection, (b) lowering the temperature of the water bath below 100°C., (c) the variation of the time of boiling, (d) the variation of the degree of shaking after the addition of phosphomolybdic acid, (e) the capacity of the blue colour to fade on standing, and (f) the effect of dipotassium EDTA instead of potassium oxalate as an anticoagulant.

With a limited number of samples tested, the following results were obtained:—

(a) Blood collected into potassium oxalate tubes may stand for two hours at room temperature before a clinically significant degree of glycolysis occurs. After standing for five hours, the estimation of glucose is quite unreliable.

(b) Using the Schaffer-Hartmann alkaline copper reagent, temperature of 100°C. is critical for standard results. If it is lowered to 90°C. a fall of 15 per cent. in the glucose estimation is to be expected.

(c) After 8 minutes in the boiling water bath a maximum reduction has occurred. No change in the glucose values resulted from further prolonged boiling.

(d) Vigorous shaking is essential to develop a maximum colour intensity. Lesser degrees of mixing resulted in artificially low values.

(e) There is no appreciable fading of the blue colour during a 3 hour period at room temperature after development.

(f) No alteration of glucose values is found when dipotassium EDTA was used instead of potassium oxalate.

An Investigation of a Method of Thromboplastin Generation Screen Test and Prothrombin Time Using Capillary Blood

J. H. McLachlan.

In 1957, Hicks and Pitney published a method for a rapid screening test on venous blood, which they claimed detected disorders of thromboplastin generation with a sensitivity similar to the orthodox thromboplastin test. The present study was carried out in order to determine the practicability of using this test on capillary blood, particularly in children. After overcoming some initial technical difficulties, it was found that with 26 normal subjects the test gave results consistent with those described for normal individuals by Hicks and Pitney. In six patients with suspected or established clotting abnormalities, including four with haemophilia-like disease, the capillary method gave a definite indication of abnormality, with some evidence of the severity of the disease. An extension of this work to the Owren test for prothrombin time estimations showed that, in 31 normal subjects, normal times could be obtained and suggested that capillary blood might be used to detect abnormalities of prothrombin.

It was found, therefore, that capillary blood could be used in a rapid screening test for detecting disorders of thromboplastin generation, the normal figures following a well defined pattern in which the minimum substrate clotting times were relatively constant.

Lithium Sequestrene as an Anticoagulant in Routine Biochemistry

Joanna Sentance.

Following work which has suggested that lithium sequestrene is a suitable anticoagulant for specimens of blood requiring both haematology and biochemistry examinations, groups of tests were set up to determine the effect of this substance on certain biochemical tests.

In the first group two blood specimens, together with a blank and standard, were compared with a set of aliquots to which lithium sequestrene had been added, when tested by the standard laboratory methods for sodium, chloride, glucose, urea, cholesterol, potassium, uric acid and phosphorous. In a second group, sets of twenty blood samples were taken into potassium oxalate and lithium sequestrene tubes respectively. Each of these sets was tested for bilirubin, carbon dioxide content, total protein, albumin, acid phosphatase and thymol turbidity. In all these tests, it was found that there was no significant variation between the standard specimens and the specimens to which lithium sequestrene had been added. In the case of the alkaline phosphatase and zinc sulphate turbidity tests a very definite variation was, however, observed.

It was concluded that lithium sequestrene is a reliable anticoagulant for many routine biochemical tests.

S.E.W.

Abstracts From Other Journals

Contributors to this issue: J. Case, E. K. Fletcher, F. C. Kershaw, J. Rees, H. C. W. Shott, D. Tingle.

BLOOD BANKING

Sources of Error in a Hospital Blood Bank. Schmidt, P. J. and Levy, S. V. (1963), *Transfusion*, **3**, 198.

This paper analyses the twelve technical and fifty-two clerical errors noted to have occurred in a hospital blood bank over a period of twenty-one months. The causes are examined and specific corrective measures are suggested, although it is considered that each blood bank needs to develop its own safety organisation, based on an examination of the kinds of mistake occurring locally.

Addition of Vitamin E to Stored Blood. Luczac, S and Wolf, F. (1963), *Germ. med. Mth.*, **8**, 182.

Vitamin E is added to donor blood in A. C. D. as a means of reducing haemolysis and prolonging the shelf life of stored blood. Haemolysis is reduced by up to 60% and radio-chromium studies show better survival in the recipient. The gravity system of collecting donations is preferable to the vacuum technique, as it keeps initial haemolysis to a minimum.

A Case of Anti-C^w Sensitisation Resulting in Haemolytic Disease of the Newborn. Anderson, G. H. and Fenton, E. (1963), *Canad. med. Ass. J.*, **89**, 28.

This article serves as a reminder that the relatively uncommon antibody Anti-C^w should be considered when confronted with a case of neonatal jaundice in the offspring of an Rh Positive woman whose serum has been shown not to contain the more common Rh antibodies encountered.

CHEMICAL PATHOLOGY

Isolation of a Protective Gamma Globulin Fraction Interfering with the Zinc Sulphate Turbidity Test. Naganna, B., Rama Rao, B., Venkaiah, K. R., and Lakshmana Rao, P., (1962), *J. clin. Path.*, **15**, 73.

A case of hypergammaglobulinaemia giving negative thymol and zinc sulphate turbidity tests was studied. The protective protein fraction was isolated from the gamma globulin fraction with ammonium sulphate and its properties found to be distinct from those of cryoglobulin or the macroglobulin of Waldenstrom. As the gamma globulin fraction is responsible for turbidity reactions, it is suggested that normal results for these tests in some cases of multiple myelomatosis, may be due to such protective gamma globulin fractions. E. K. F.

A Rapid Manual Method for Determination of Serum Alkaline Phosphatase. Nothstein, D. L., and Ellerbrook, L. D. (1962), *Amer. J. clin. Path.*, **37**, 104.

This procedure is designed to be a simple rapid, universal laboratory method as well as a 'standby' manual technique in replacement of the Auto Analyzer. Reagents and standards are those described in *Alkaline Phosphatase Procedure, Technicon Auto Analyzer Methodology*, and reproduced in this paper. The principles are the same as for the automated method. 0.1 ml. of serum is added to 3 ml. of alkaline buffered substrate at 37°C. After 14½ minutes, 2 ml. of 4-animoantipyrine and at 15 minutes 2 ml. of potasium ferricyanide are added. The control is treated similarly, with the 0.1 ml. of serum being added last. Optical densities are read after 5 minutes at 505 mμ. Results approximate to those obtained by the Auto Analyzer and may be corrected to nearly equal them. E. K. F.

A New Simple Screening Test for Serum Paraproteins in Multiple Myeloma. Sochman, J. and Malaskova, V. (1962), *Clin. chim. Acta*, **7**, 383.

Myelomatous paraprotein and albumin, stain yellow, simultaneously, with a saturated solution of alcoholic picric acid. Other fractions separated by paper electrophoresis are not stained. The technique is rapid (three minutes) and excess picric acid is eluted in running water for five minutes. All patients studied with myelomatous paraprotein of various mobility gave positive results. E. K. F.

A Colorimetric Method for the Determination of Carboxyhaemoglobin over a wide range of Concentrations. Trinder, P., and Harper, F. E., (1962), *J. clin. Path.*, **15**, 82.

A palladium chloride—arsenomolybdate solution produces a blue colour on reaction with carbon monoxide released from blood in a standard Conway unit. The test is compared with a sodium formate standard, and in the case of spectrophotometer, a wavelength of 670 to 735mμ is suitable. Experiments show the method to be reproducible; and extensive, satisfactory recovery tests are shown. Using 0.5 to 2 ml. volumes of blood, the method is capable of accurately estimating carboxyhaemoglobin levels from 0.1% to 100% of total haemoglobin, even in the presence of other abnormal blood pigments. E. K. F.

The Diagnostic Value of Faecal Trypsin Estimation in Chronic Pancreatic disease. McGowan, G. K., and Wills, M. R., (1962), *J. clin. Path.*, **15**, 62.

The relatively accurate method of Charney and Tomarelli for trypsin estimation is described. Duodenal and faecal estimations were performed on children and adults in an attempt to establish specificity for pancreatic disease. Of 40 children with fibrocystic disease of the pancreas, all had sub-normal trypsin levels; however, of 202 children without fibrocystic disease of the pancreas, 12 showed sub-normal trypsin levels. These latter 12 belonged to a group with a final diagnosis of coeliac syndrome. Forty-five adults were studied and those with sub-normal trypsin values were diagnosed as having: carcinoma of the head of the pancreas, *diabetes mellitus*, and idiopathic steatorrhoea. Therefore faecal trypsin estimation is not specific for pancreatic disease, but rather a screening test for patients who may have chronic pancreatic disease and warrant more involved investigation. E. K. F.

Errors in the Assessment of Haemolytic Disease of the Newborn from Amniotic Fluid. Liley, A. W. (1963), *Amer. J. Obstet. Gynec.*, **86**, 485.

This paper summarises the sources of error and the limits of accuracy of the antenatal prediction, by examination of the amniotic fluid, of the severity of haemolytic disease of the newborn.

CYTOLOGY

The Significance of the Leucocyte Concentrate in the Demonstration of Tumour Cells in the Blood. Stofberg, Anna M.M. (1963), *Acta Haemat.*, **29**, 65. The leucocytes in a blood sample are concentrated by incubating 10ml. of heparinised blood for 30 minutes at 37°C., transferring the plasma layer to a tapered tube and centrifuging for 5 minutes at 1,000 r.p.m. The sediment is stained by the May-Grunwald-Giemsa technique. The outstanding value of this paper, is the series of excellent coloured photomicrographs with which it is illustrated.

Methylene Blue — Triphenyltetrazolium Chloride Test Tube Smear Method in Early Diagnosis of Cancer of Uterine Cervix. Ku Chien-jen, Huang Tze-min and Teng Wen-man (1963), *China med. J.*, **82**, 270.

The method is described in detail and the results of nearly 6,000 cases are analysed. A false positive rate of 1.6% was found, but in 124 cases of carcinoma of the cervix, only one preparation failed to give a positive result.

HAEMATOLOGY

A Method for the Estimation of Concentration of Haemoglobin Variants. Hutchison, H. E., Pinkerton, P. H., Aiton, Marjorie and Cassidy, Patricia (1963), *Scot. med. J.*, **8**, 149.

A method is described for the quantitative measurement of the variants, using starch gel electrophoresis and a scanning procedure. The technique is claimed to be satisfactory for the measurement of the haemoglobin A_2 fraction, important in the recognition of thalassaemia minor.

A Modified Azo Dye Method for the Localisation and Assessment of Leucocyte Alkaline Phosphatase. Elves, M. W., Roath, S. and Israels, M.C.G. (1963), *Acta Haemat.*, **29**, 141.

A simple and reproducible azo dye method for the demonstration of leucocyte alkaline phosphatase is described, together with a simple scoring system for recording results.

The Direct Coombs Test and Reticulocytes. Sutherland, D. A., Eisentraut, Anna M. and McCall, Mary S. (1963), *Brit. J. Haemat.* **9**, 68.

The phenomenon of false positive Direct Coombs tests due to non-immune reticulocytosis is investigated and discussed, and a marked association between the strength of agglutination and the concentration of reticulocytes is demonstrated.

Control of Oral Anti-Coagulant Therapy, with Special Reference to Quick Test and Thrombotest. Satake, K (1963), *Jap. Circulat. J.*, **27**, 120.

The experience of this author seems to confirm that of others, in finding that when compared with the Quick test, Thrombotest results point to overdosage. The author suggests that the Thrombotest therapeutic range might be reduced between 5 and 15%, but considers that further clinical and experimental trials would be needed before coming to a final conclusion. The two tests carried out simultaneously and compared, is recommended as a routine.

A New, Automatic, Disposable System for Blood Counts and Haemoglobin. Freundlich, M. H. and Gerarde, H. W. (1963), *Blood*, **21**, 648.

The authors have compared the standard pipette method of carrying out blood counts and haemoglobin estimations, with a new system in which dilution is achieved by means of a self-filling, disposable micropipette and a pre-filled, disposable plastic dilution container (Unopette — B.D.). Good correlation was found, except in the counting of platelets.

Capillary Samples for Haemoglobin Electrophoresis. Ghitis, J. (1963), *J. Pediat.*, **62**, 933.

This brief article deals with a very simple method of preparing a haemoglobin sample for paper electrophoresis, using blood obtained by finger prick.

False Positive Antiglobulin Tests in Reticulocytosis. Fayen, A. W. and Miale, J. B. (1963), *Amer. J. clin. Path.*, **39**, 645.

The tube and slide methods are compared in performing Direct Coombs tests on patients with reticulocytosis ranging from 5% to 33%. The conclusions drawn are, that the intensity of the false positive result parallels the degree of reticulocytosis and, that false positive results are not found by the slide method.

Reticulocyte Counts by Means of Fluorescence Microscopy. Vander, J. B., Harris, C. A. and Ellis, S. R. (1963), *J. Lab. clin. Med.*, **62**, 132.

The method uses acridine orange stain with ultra-violet light, and

produces higher results that those obtained with the conventional method. The results are closely reproducible and are considered to be more accurate because smaller particles of reticulum can be distinguished than is the case by ordinary staining methods.

HISTOPATHOLOGY

A Modification of the Mallory Connective Tissue Stain as a Stain for Keratin. Ayoub, Patricia and Shklar, G. (1963), *Oral Surg.*, **16**, 580.

The OFG and BrAB Methods of Staining the Adenohypophysis. Slidders, W. (1961), *J. Path. Bact.* **82**, 532.

O.F.G. paraffin sections are used. Stain the nuclei with celestin blue and haemalum, differentiate and wash the sections in water, rinse in 95% ethanol, stain in 0.5% Orange G in 95% ethanol containing 2% phosphotungstic for 2 minutes. Rinse in distilled water, stain in 0.5% acetic acid for 2—5 minutes, rinse, treat with 1% phosphotungstic for 5 minutes, rinse in water, stain in 1.5% light green in 1.5% acetic acid for 1—2 minutes, rinse in water, dehydrate in absolute ethanol, clear in xylol, mount.

Nuclei—black; acidophils—orange yellow; basophils—magenta red; chromophobes—pale greyish green; erythrocytes—yellow; stroma—green.

BrAB-OFG. section of water, treat with Bromine water for 5 minutes, wash in running tap water for several mins., rinse in distilled, stain in Alcian Blue for ½—1 hour. Wash well and proceed as for OFG. 'S' type basophils—blue; 'R' type basophils—red, remainder as for O.F.G.

D. T.

Periodic Acid-Schiff-Toluidine Blue-Aurantia: A Stain for the Gland Cells of the Stomach. Cook, H. C. (1962), *Stain Tech.* **37**, 317-319.

Formalin fixed paraffin sections are carried through the P.A.S. technique, the nuclei are stained with celestin blue-Mayer haematoxylin, then the sections are placed in 0.5% toluidine blue for 1 minute, differentiated in 70% alcohol until zymogenic granules are deep blue and the background clear. This is followed by 0.25% aurantia in 50% alcohol for 10 seconds, rinsed in water, dehydrated in tertiary butyl alcohol, cleared in xylol and mounted in balsam. Nuclei—blue black; epithelial lining cells and mucous neck cells—red; zymogenic granules—blue; parietal cells and red blood cells—yellow; background shades of yellow brown.

D. T.

Comparison of Pyronin Dyes Obtained from Various Commercial Sources. Katsen, F. H. (1962), *Stain Tech.*, **37**, 265-275.

The history of pyronin dyes is discussed, beginning with the synthesis of pyronin Y (G) in 1889. The chemical structures of the dyes are given in addition to references to literature describing methods of synthesis. The early histological use of pyronins is described as well as the distribution and use of pyronins in histochemical demonstration of ribo-nucleic acid, especially in relation to sources, dye variability, contamination and substitution by rhodamines. Additional studies with improved pyronins are advocated to evaluate histochemical staining mechanisms and to investigate possible quantitative uses.

(Author's own abstract).

MICROBIOLOGY

Indole-Spot Test in Bacteriology. Vracko, R. and Sherris, J. C. (1963), *Amer. J. clin. Path.* **39**, 429.

This spot test, on filter paper, makes possible the instant determination of indole production by colonies of enteric organisms grown on

ordinary media. There is said to have been good correlation with results obtained by conventional methods.

Gram Staining without the Clock. Paine, T. F. Jnr. (1963), *New Engl. J. Med.*, **268**, 941.

It is claimed that, for satisfactory Gram-stained smears, no timing of the steps is necessary. The stains and the iodine are left on the slide for only as long as it takes to replace the bottle on the shelf.

Sterilisation of Air Filters for High Vacuum Autoclaves. Fallow, R. J. (1963), *J. clin. Path.*, **16**, 259.

Experiments are described with glass filter paper and complete glass filters as fitted to high pre-vacuum autoclaves to determine whether organisms can grow or penetrate the filter. Since many high pre-vacuum sterilisers are being fitted with glass fibre filters, this article is of special interest at this time. H. C. W. S.

Bacteriology of Sputum in Chronic Bronchitis. May, J. R. and May, S. M. (1963), *Tubercle, Lond.*, **44**, 162.

Details are given, of bacteriological findings in the trial of prophylactic chemotherapy in chronic bronchitis carried out by the British Tuberculosis Association. A great deal of thought has been shown in making this survey, it is nevertheless unfortunate that more convincing evidence has not emerged in the assessment of the importance of the 'chief pathogens'. H. C. W. S.

Diagnosis of Urinary Infection. Guttman, D. and Stokes, J. E. (1963), *Brit. med. J.*, **ii**, 1384.

In recent years, many attempts have been made to evaluate the methods in use for the diagnosis of urinary tract infections. The present comparison of a pour-plate counting method with a standard loop method produces a certain evidence in favour of the latter where the smaller laboratory is involved. However, considering the conflicting evidence condensed under the title of discussion, it is still apparent that much further work is necessary before a standard technique becomes universally acceptable. H. C. W. S.

Diagnosis of Significant Bacteruria in Pregnancy. Chard, T. and Cole, P. S. (1963), *Lancet*, **ii**, 326.

A simple technique has been suggested as a screening method before significant bacteruria may be present in pregnancy. Other workers are engaged in making a comparative study of this test, meanwhile accepting certain limitations, the method may give an indication where further detailed studies are necessary. H. C. W. S.

A survey of Maternity Staphylococcal Infection and Carrier State During a Non-Epidemic Period. Nathsarma, K. C. and Markham, N. P. (1963), *N.Z. med. J.* **62**, 321.

This article not only gives valuable information relating to problems continually faced by hospital cross-infection committees, but also provides a base-line for further work. H. C. W. S.

SEROLOGY

A Rapid Field Method for the Diagnosis of Syphilis. Portnoy, J. (1963), *Milit. Med.*, **128**, 414.

A commercially prepared kitset is described, by which serum is readily separated from capillary blood without centrifuging; and a simple and reliable diagnostic test is carried out without inactivation, using a standardised and highly stable antigen suspension and a disposable test card. (R.P.R. Card test — B.D.)

A Flocculation Test for Salmonella Antibodies Using Sensitised Bentonite Particles. Diena, B. B., Wallace, R. and Greenberg, L. (1963), *Canad. J. Microbiol.*, **9**, 221.

A rapid slide flocculation test, using bentonite particles sensitised with

salmonella O somatic antigen extracts, is described. The sensitised test antigen can be freeze dried and, when rehydrated, yields reproducible results. This investigation marks the first reported successful sensitisation of bentonite with polysaccharide material.

A Clinical Comparison Between the Friedman Test and an *in Vitro* Test for Pregnancy. Eden, J., and Black, I. (1963), *Canad. med. Ass. J.*, **88**, 792.

737 urine samples submitted for biological pregnancy tests, were also subjected to an immunological test using sensitised latex particles. Details of the rate of false results in the respective tests are given, and the authors conclude that the latex test requires careful control and is less reliable than the Friedman test.

Comparison of an Immunological and a Toad Test for Pregnancy. Barnett, R. N. (1963), *Amer. J. clin. Path.* **39**, 436.

This author compares a latex test with a different biological test, and only on 111 urine samples; however, he also concludes that there is a higher rate of false results with the latex test.

The Evaluation of Serological Tests for Histoplasmosis in Relation to Clinical Diagnosis. Schubert, J. H. and Wiggins, G. L. (1963), *Amer. J. Hyg.*, **77**, 240.

This article gives a rational approach to the value of the various tests employed and takes into consideration the usual problems of sensitivity and specificity. H. C. W. S.

***Brucella Abortus* Agglutinins in the Sera of Pregnant Women and Blood Donors.** Bartram, H. G. Bothwell, P. W., Jebb, W. H. H., McDiarmid, A. and Preston, A. E. (1963), *Brit. J. prev. soc. med.* **17**, 95.

This article analyses the results of tests on sera from healthy blood donors and pregnant women. 1.02% of pregnancy sera contained *Br. abortus* agglutinins to 1/25 or over, 1.33% of male and 0.87% of female blood donors had agglutinins to 1/10 or over; and 0.23% of pregnancy sera showed titres of 1/100 or over.

Detection of Auto-immune Antibody and Tissue Antigens by the 'Microspot' Technique. Feinberg, J. G. (1963), *J. clin. Path.* **16**, 282.

The specific precipitation technique has been applied to the detection of antibodies in auto-immune thyroiditis. Antibodies of low levels can be detected against specific antigens and it is suggested that this technique could be usefully extended to the study of other auto-immune conditions. J. R.

Studies in Latex Agglutination. Brooks, G. W. and Cobb, S. (1963), *Arthr. and Rheum.* **6**, 198.

Optimum conditions for latex agglutination by rheumatoid factors have been investigated. Best discrimination between rheumatoids and normals was found at pH 8.4, with 0.6% sodium chloride, without gamma globulin and without heat except for 15 minutes inactivation at 56°C.

UNCLASSIFIED

The Consumer as Victim. Editorial (1963), *Lab. Pract.* **12**, 517.

This leading article condemns the sellers-market attitude which has existed in certain firms since the war upset the ready supply of consumer goods. Whether it be in the home or the laboratory, it is to be deplored that the day has passed, when the seller had to *sell* his goods and give absolute satisfaction or go out of business. F.C.K.

Book Reviews

Clinical Diagnosis by Laboratory Methods (Todd-Sanford) 13th Edition. Ed. Davidson-Wells. W. B. Saunders Co. Philadelphia, 1962. 953 pages. Obtainable from N. M. Peryer Ltd., PO Box 833, Christchurch, at 115s 6d.

The first publication of this book ran to 319 pages; that the present edition has almost a thousand is surely a sign of the times.

The book is divided into sections covering the whole range of medical laboratory diagnostic procedures under such headings as: the blood; the faeces; the urine; the sputum; bacteria; enzymes etc.; clinical chemistry; water and electrolytes; isotopology; mycology, microchemistry; and finally ends in a series of appendixes. An excellent set of references has also been added to each chapter.

A book of this nature must inevitably suffer from some lack of detail in each of the sections covered, but there is no one section which is poorly treated in terms of routine procedures. Indeed, it is refreshing to find, in these times of specialist text books, a volume that can cover the entire field of medical laboratory procedures so well in 900-odd pages.

The book is not intended for junior trainees in medical laboratory technology for it does not cover, in any great detail, such fundamentals as pH, spectrophotometry, sterilisation etc. It is, however, an excellent reference book which will give invaluable service in any medical laboratory.

R.T.K.

Manual of Cytotechnology. Ed. J. W. Reagan. National Committee for Careers in Medical Technology, 1785 Massachusetts Avenue N.W., Washington 6, D.C. 1962. 88 pages and 18 colour plates. Price in U.S. $12.50.

This effort by several of America's leading cytologists to produce a textbook for student cytotechnologists is, on the whole, highly successful. This manual covers all aspects of exfoliative cytology and contains some superb colour plates. Chapters dealing with the history of cytology, microscopy, staining methods and methods of reporting are included; and an excellent glossary completes the work.

The book is presented in a loose-leaf folder, permitting additions to, deletions from or rearrangement of the contents. It is clearly printed, on reinforced pages; and, in all, presents an attractive format. The cover, however, is not as sturdy as one would wish.

This volume is not yet generally available in New Zealand, but it is to be hoped that a more universal distribution will be arranged, for with its value to both tutor and student alike, it may well become the standard training manual for cytology.

V.P.

Medical Laboratory Technology. M. J. Lynch, S. S. Raphael, L. D. Mellor, P. D. Spare, P. Hills and M. J. H. Inwood. W. B. Saunders Company, Philadelphia, 1963. 735 pages. Obtainable from N. M. Peryer Ltd., P.O. Box 833, Christchurch, at 84s 0d.

Here is as comprehensive a collection of information as will be found anywhere between one pair of covers. In four separate sections covering: (1) General Knowledge and Chemical Pathology, (2) Haematology, (3) Microbiology and (4) Histology, this team of co-authors has striven to include all that is up to date in hospital laboratory practice. To say that they have succeeded is an understatement, for they have produced a manual that cannot fail to give satisfaction.

Forget the prejudice inspired by the somewhat alien spelling in all books originating in North America; the procedures described here are in use the world over. Familiar techniques and alternatives are given

in step-by-step detail, together with succinct accounts of their underlying principles. Such methods as the estimation of transaminase, the thromboplastin generation test, Thrombotest and latex agglutination tests are included; and in the chapter on blood groups, even the newly-discovered, sex-linked antigen Xg^a receives treatment. There is a chapter on Blood Bank Organisation and Methods, one on Cytology, another on Parasitology and one on Mycology. It would not be possible to detail the whole scope of this book in a few hundred words; suffice it to say that it embraces, in adequate detail, most of the diagnostic procedures used in the average clinical laboratory.

It would be possible to find faults with any book; if there are complaints here, they are that the 233 illustrations might, with advantage, have been doubled in number, those of sickle cells and of Charcot-Leyden crystals appear childishly amateur; and one feels it would help the clinician in interpreting osmotic fragility curves, if technologists were always taught to shade in the normal range on the graph. It is also a pity that the rather redundant term, *Erythroblastosis foetalis* is so frequently used; and what a shame that controls of accuracy are not mentioned.

No one volume could ever wholly replace the many specialist text books available; yet no specialist could complain that this work does less than justice to his specialty. To the non-specialising technologist; to the trainee and to those responsible for his training; to the specialist who likes to keep abreast of developments in other fields; to the pathologist too: this book will prove a valuable asset. J.C.

Medical Photography in Practice, Symposium, Ed. E. F. Linssen, F.Z.S., F.R.E.S., F.R.P.S., Fountain Press, London, 1961. 343 pages, over 200 illustrations. Price in U.K. 75s 0d.

Ten medical photographers discuss the following aspects of the subject: Historical, Clinical, Cinematographic, Colour, Infra-Red and Ultra-Violet, Children, Orthopaedic, Specimens, Ophthalmological, Endoscopic and Equipment.

The purpose and value of these contributions is very uneven. The expressed purpose of the publisher is that the book will prove useful to practitioners already working in the field and also serve as a guide to new entrants. Some of the writers clearly have this aim in mind and are successful in communicating to the reader, their experience in their specialised branch of medical photography; but others give the impression they are concerned only to display their wares to impress the layman—and they are not even up-to-date with their exhibition.

It is a fact that the medical photographer is expected to be versatile and familiar with display techniques; but the essential work which constitutes his daily routine remains that of scientific recording. The historical survey could have made this point had it placed more emphasis on Muybridge's painstaking and monumental work for the University of Pennsylvania (published in 1887 in the form of over 700 large photogravure plates in eleven volumes), in particular his gait studies, which anticipated the requirements of research in this field up to the present day; rather than dismissing him as a precocious cinematographer. The history of medical photography is rich in invention and scientific recording of a high order of precision, and such statements as 'doctors . . . did not realise that mere "3-D" is of no real value; and that stereoscopy, to be of scientific significance, must be accurately controlled' has little meaning when the section in this book dealing with stereoscopy describes a method containing no more accurate control than that employed by the 'doctors' in question.

Medical cinematography is discussed by one who has devoted himself to this speciality for a number of years. His experience is here offered in condensed form and will be particularly appreciated by the senior photographer that is only occasionally requested to make a film.

The section on the use of colour materials is in terms too general to be of much practical value. Suggestions of a purely theoretical nature are made, without offering any details of practical application or giving warning of the demerits of some of the techniques mentioned.

The article on infra-red reprints the useful chart of materials available, and names and addresses of manufacturers which medical photographers already have in *Medical & Biological Illustration.* The article is a general survey of applications and includes a very full and immensely useful list of references, but is not brought up to date beyond 1958.

Methods of determining measurements and their employment in clinical recording is emphasised in the section on 'Photography of the Patient', and it is the business of the photographer to be familiar with them. The procedure advocated for dealing with patients is obvious good sense. There is little discussion of actual photographic procedure.

The section on ophthalmological photography does little credit to this specialised field. The author speaks of the Zeiss-Nordenson as the best known retinal camera, which in fact it may be in some conservative London establishments, but this pre-war model is scarcely the one to describe, or fit, to the applications of recent years. Slit-lamp photography, which for a few years now has been a routine task, is written off as better left to the artist. A note at the end of this article admits that it was contributed in 1955, but one feels certain the author must have been aware of recent advances current when the article was revised for publication in this book.

On the whole disappointment may be felt that the book contains more of pickings from the literature, than of offerings of first-hand experience by experts; and that when they do describe their techniques, these experts appear to use antiquated apparatus that is no longer in production, and however well it may serve them, is scarcely recommendable. There is, in the last section, some discussion of the merits and demerits of various types of modern apparatus, but this is over-cautious and does not appear to be written from practical experience.

Photographers are notorious individualists; it was clearly the task of the editor and the publisher to drill this team into a more systematised presentation. The publisher's prefatory plea that medical photographers are busy people is no excuse, for all successful technical authors necessarily are; their success resting on wide experience bought at the price of labour. F. H. K.

Progress in Industrial Microbiology Vol IV. Ed. D. J. D. Hockenhull, M.A., Ph. D., M.I. Biol. Heywood & Co. Ltd., London 1963. 214 pages. Price in U.K. 55s 0d.

This is the fourth volume of a series covering recent advances in the field of Industrial Microbiology. It is evident that the Editor has chosen experts who are qualified to make a positive contribution towards work already developing in their particular field.

In reviewing the book it is at once apparent that there is no compromise whereby generalisation is possible; each particular section must be considered individually.

1. *Microbial Degradation of Hydrocarbons:* The review covers the breakdown pathways found for hydrocarbons to December 1960. Examination of a large number of aromatic and aliphatic compounds reveals three basic patterns for their breakdown. This research has, in addition to increasing the microbial physiological knowledge, made a possible contri-

bution to engineering by preventing deterioration of cutting oils; and to agriculture by preventing loss of effectiveness of herbicides and other chemicals. The breakdown of toxic industrial wastes must also benefit from these recent investigations.

2. *The Sterilisation of Air:* Three practical methods are cited for industry. One of these: heat, is generally considered too expensive except when the heat of compression is used. The other two methods depend on filtering the air through various materials.

Large scale submerged culture techniques have led to the development of more efficient filter-type sterilisers. Factors in the design and testing of these filters are given.

There is no mention of electrostatic, ultraviolet radiations, other radiations, or chemical methods of sterilisation of air.

3. *Growth of Animal Cells in Tissue Culture:* The chapter on the growth of animal cells surveys the techniques and potential of this phase of industrial microbiology and is supported by a comprehensive list of reference.

4. *The Lactobacilli. II Applied Aspects:* Almost 400 references cover every conceivable aspect of the lactobacilli. Together with Part I, the Lactobacilli are summarised in a most readable manner. Their use is analytical reagents in microbiological assay is not mentioned, but has been adequately covered in a previous article (in Vol. I).

5. *Chloramphenicol:* The author has very skilfully taken the opportunity to present a historical review of work covering the discovery and development of this broad-spectrum antibiotic. This article is of particular interest as it shows the inside story of antibiotic fermentation, at the same time pointing out the undeniable advantages of synthetic production.

6. *Griseofulvin:* This article shows the pathway leading from the research laboratory to the full scale commercial production of an antibiotic.

In future volumes one may expect to find articles on such subjects as sterilisation, mould enzymes, continuous fermentations and microbial genetics; thus continuing the policy of giving concise information on a diversity of subjects, together with a comprehensive list of references.

H. C. W. S.

Review of Medical Microbiology. Fifth Edition. E. Jawetz, J. L. Melnick and E. A. Adelberg. Lange Medical Publications, Los Altos, California, 1962. 400 pages. Obtainable from N. M. Peryer Ltd., PO Box 833, Christchurch, at 44s 0d.

The fact that this publication has now reached its fifth edition speaks for its general popularity. The value of this book is in the first one hundred and twenty pages, where basic principles are studied and the last one hundred and fifty pages, which deal with the general properties of viruses. The first section opens with an introduction to the microbial world and is followed by a well-illustrated chapter on cell cytology. Bacterial metabolism and cycles of elements in nature are dealt with in a comprehensive survey, and the chapter on the cultivation and growth of bacteria is an excellent summary of contemporary knowledge in this field. The subject of bacterial variation and transmission of genetic material are well reviewed, and a chapter on anti-microbial therapy brings the reader up to date on current chemotherapeutics.

The middle section of the book deals with systematic bacteriology. While this section is very concise and ideal for students, it is not a substitute for standard works on bacteriology and, of course, it does not claim to be.

The section dealing with the general properties of viruses is of sufficient merit to warrant the inclusion of this book on every medical laboratory shelf. The information is clearly laid out, easy to find, and

procedures for obtaining satisfactory specimens are outlined. This section is available for quick reference and a more concentrated study — when time allows.

A new section is included on microscopic parasitology. In this chapter certain protozoan and helminthic parasites, whose identification depends upon the microscopic study of biological specimens, are described. Both the text and the illustrations are excellent. These pages will be constantly referred to by medical technologists. T.E.M.

Staining Animal Tissues, Practical and Theoretical. Edward Gurr. Leonard Hill Ltd., London, 1962. 631 pages. Price in U.K. 84s 0d.

The book is divided into three sections and a bibliography. The first section, devoted to stains and the theory of staining, contains some observations by the author on such things as the effect of heat on pH and the pH given by a 1% solution of various dyes. The structure of several dyes is given along with the *Michrome* numbers (E. Gurr's catalogue number) and solubility in water, alcohol, etc. This section is too brief to be of any real value but, as pointed out by the author, it is intended to be used in conjunction with his previous book, *Encyclopaedia of Microscopic Stains.*

The second section, the bulk of the book, presents numerous staining techniques collected from journals and other text books, both ancient and modern. Each technique has been simplified and the source indicated. The techniques are arranged in alphabetical order according to the stain used, which makes it essential to have a thorough index; unfortunately it is possible to fault the cross-indexing.

The third section gives some of the usual and latter-day dehydrating, clearing and mounting media, with some brief notes on processing techniques. The formulas of approximately 80 modified fixatives and numerous staining mixtures are given, along with other miscellaneous data.

The bibliography is extensive and interesting.

Section one apart, the book is essentially a reasonable reference book and as such may find its way to the laboratory shelf. D.T.

Letters to the Editor

FRIVOLITY IN THE JOURNAL

Dear Sir,

How can you justify inclusion of such literary meanderings as *The Huckster,* appearing in the July issue? In the same journal, *Council Notes* informs us of a rise in subscription, due to an increase in the size of the Journal and mounting printing costs. This would seem inevitable and characteristic of the times, but in what proportion is the mentioned article (and perhaps others to follow) contributing to this increase in cost? Are subscribers being asked to double their rate in return for a certain amount of nonsense?

A second issue is at stake. Is our tri-annual publication to be a scientific journal with Institute news included, or a presentation partly, of short stories encouraging one and all to pen their experiences? Surely the latter is more typical of a school annual. Let us keep a journal of medical technology. *The Huckster* — a long-winded display of satire — is of the type to be found in any domestic weekly. Why contaminate our Journal?

Finally, the mentioned article is conspicuous for its absence of author — not published. Is it the Editor's privilege to omit such formalities; or is this discretion at its finest?

SUBSCRIBER (Name and address supplied).
14 August 1963.

[The satirical article to which this correspondent refers might have seemed a trifle frivolous to merit inclusion in the pages of a scientific periodical; however, I am unrepentant and gladly take up Subscriber's challenge to justify it.

To begin with, its contribution to the increased costs is negligible; the subscription rate has been uneconomic for several years and, if it is borne in mind we must work in multiples of four pages, it will be readily seen that a small amount of apparently superfluous material may occasionally be the only alternative to a number of empty pages.

The second issue said to be at stake is more serious. There was never the intention to descend to the level of a school annual. Our principal aim is indeed, to turn out a scientific journal of reasonable quality; Institute news in included because this is the best method of disseminating it to the membership and, if there is room, a little levity is surely not out of place *if it creates interest and stimulates a desire to open the Journal and read it.* Humorous articles appearing in other and well-known medical or scientific periodicals may be funnier and better written than *The Huckster,* but the comparison is, nevertheless, a valid one.

The anonymity of the author was without sinister purpose; the Editorial was unsigned too, but only because I feel diffident about appending my initials to *everything* I have to write in order to fill the void left by the shortage of ink in other quarters. J.C.]

THE 1963 CONFERENCE

Dear Sir,

As one of the fortunate delegates to attend this year's Annual Conference, I would like to congratulate the Committee on an excellent effort. The smooth running of this Conference was certainly a credit to them.

I was particularly interested in the forum method of approach, which collected all papers on specific subjects and undoubtedly brought out more discussion than in the past. If only the business section could be cut down by limiting each speaker's time and continuing with the rules of debate (as was done successfully this year), we should have more time for these enjoyable and informative wrangles.

Individual papers can be too long, but the forum method tends to shorten them to the 'meat only' level; I hope this form of presentation will be borne in mind for the future.

P. H. CURTIS
3 September 1963.

SODIUM ESTIMATION

Dear Sir,

Since submitting my paper (p. 103), I have been advised that Mr J. D. R. Morgan has been using this modified procedure for the past four months at Wakari Hospital; and reports improved accuracy, better instrument stability and more convenient technique.

J. V. DUNCKLEY
1 September 1963.

Council Notes

A Council Meeting was held at the Otago University Medical School on Wednesday, August 21, 1963. Present were H. T. G. Olive (in the Chair), and Messrs H. G. Bloore, J. Case, G. R. George, H. E. Hutchings, J. D. R. Morgan and D. J. Philip. Apologies were received from Mrs J. Hodgetts, Miss J. Mattingley and Mr M. McL. Donnell.

Examination Syllabuses

The President reported that the revised syllabuses had now been finalised except for that relating to the advanced certificate in Haematology. It was reported that, in the case of candidates for higher qualification who had published work of outstanding merit, the Examination Board had the power to waive the requirement of examination.

It is proposed that no Fellowships be allowed until the Higher Examination becomes available and that, provided Council's recommendations regarding the requirements for Fellowship are accepted, members qualified at that date shall become eligible for election as Fellows automatically on the tenth anniversary of their qualification.

Conference Report

Mr Allan detailed the arrangements for the Conference and explained that unusual expenses to the University's Maintenance Department would limit the profits from the Trade Display this year, so that it had been necessary to increase the charge for the Conference Dinner to 27s 6d.

The Hospital Laboratories Advisory Committee

In reply to a letter from the Dunedin Branch seeking an explanation of the functions, responsibility and composition of this Body, the President explained that the Committee is appointed by the Director-General of Health to advise him on all matters appertaining to the laboratory service. The H.L.A.C. consists of: Dr Claude Taylor, Director of the Hospitals Division at the Department of Health (Chairman); Drs J. O. Mercer and J. D. Manning; and Mr H. T. G. Olive.

The Salaries Advisory Committee

The following names are to be submitted to the Department of Health, from which the Minister will select three: Messrs H. G. Bloore, H. T. G. Olive, D. J. Philip, H. E. Hutchings and D. Whillans.

New Members

Thirty-two applications were approved.

Senior

Bailey, M.	Lower Hutt	Robinson, J. V. A.	Masterton
Braidwood, J. L.	Dunedin	Scott, I. D.	Gisborne
Collins, A. A.	Dunedin	Shepherd, C. S.	Hamilton
Johnston, A.	Stratford	Small, C. W.	Auckland
Jones, R. H.	Dunedin		

Junior

Alexander, M.	Christchurch	Jackson, Miss D. F.	Masterton
Bain, A. C.	Christchurch	Kerr, Miss C. E.	Dunedin
Cuthbert, Miss J.	Wellington	Kerr, Miss J. M.	Hawera
Denton, Miss P.	Wellington	Martin, Miss E.	Auckland
Douglas, Miss L. M.	Hamilton	Martin, J. S.	Gisborne
Duffill, Miss H. B.	Dunedin	Mold, Miss M. E.	Palmerston Nth
Gould, Miss M. L.	Wanganui	Oliver, Miss L. E.	Hamilton
Gould, P. J.	Dunedin	Ramsay, Miss A.	Oamaru
Graham, E. J.	Christchurch	Reeves, Miss H.	Lower Hutt
Hankers, Miss B.	Wanganui	Turner, Miss A.	Rotorua
Hawkless, J. R.	Taumarunui	Wright, Miss L.	Gisborne
Hood, Mrs A. M.	Blenheim		

Resignations

Coates, Miss J.	Wellington	Norris, Mrs M.	Auckland
Foley, Miss A. M.	Christchurch	Slee, Miss A.	Christchurch
Forrester, Mrs J. M.	Auckland	Worsley, M. A.	New Plymouth
Moyle, G.	Auckland		

Finance

The Treasurer explained the Balance Sheet and summarised the expenditure and income for the period since March 31, 1963. Current subscriptions amounting to £453 9s 0d and arrears to £84 0s 0d had been received, and the present assets amount to £533 13s 11d.

Status and Registration

The implications of the proposal from the Health Department regarding the establishment of a Medical Technologists Board, and the counter suggestion from the Society of Pathologists on the composition of such a Board, were considered and discussed at considerable length. It was eventually decided to write to the Department of Health, enquiring if a *Registration* Board was envisaged and, if this should be the case, respectfully suggesting that consideration be given to representation from the Society of Pathologists and the N.Z.I.M.L.T. in proportions similar to those already existing in other Registration Boards, such as those of the Nurses and Midwives and the Physiotherapists.

Remits for Conference

The previously circulated remits were fully discussed and Council's attitude towards each was decided upon.

The letter concerning the subject matter of one of the remits from the Wellington Branch, signed by twenty members, and published in the July issue of the Journal, was discussed at some length. It was explained that the Salaries Advisory Committee was in no sense an arbitration body on which the Institute was represented, but that its function was simply to advise the Minister of Health on salaries and conditions of employment. The Minister was free to act on advice or otherwise, and the Committee was not responsible for the wording of the Regulations.

It was decided to recommend to the Annual General Meeting as follows:

That with reference to this Wellington remit, the Council is satisfied, after considerable discussion, that the Institute's nominees on the Salaries Advisory Committee put the proposals discussed in the remit before the Committee in very much more detail than would appear from the final wording of the Regulations, but that the outcome is the decision of the Minister, which is final.

Arbitration Machinery

At a brief meeting of the new Council on August 23, the direction of the Annual General Meeting was acted upon, in the matter of studying the prospects of the establishment of suitable negotiation and arbitration machinery. A sub-committee was established, consisting of Mr H. G. Bloore and Miss J. Mattingley, with power to co-opt if necessary. This sub-committee will make every effort to meet representatives of similarly situated bodies in the Hospital Service, and will report back to the next meeting of Council.

Branch Reports

CHRISTCHURCH

(Secretary: A. C. Titheridge, Pathology Department, Christchurch Hospital.)

The second Annual General Meeting of the Christchurch Branch of the N.Z.I.M.L.T. was held in June 1963. The officers elected for 1963-64 were:

Chairman: Mr J. Horner.
Secretary/Treasurer: Mr A. Titheridge.
Committee: Messrs G. Cameron, E. Norman, G. Rose and T. Tanner.
Journal Representative: Mr A. Titheridge.

During the year 1962-63, two visits were arranged; one to the newly-completed Christchurch Sewage Treatment Station and the other to N.Z. Breweries Ltd.'s brewery in Christchurch.

Films of technical interest were shown at the October 1962 meeting and at other gatherings, papers on various topics were presented:

Electrophoresis: Dr A. Arcus of the Medical Unit.
Some Aspects of Cleft Palate Research: Dr D. Poswillo of the Plastic Surgery Unit.
Some Tests for Megaloblastic Anaemias with Special Reference to Vitamin B12 Assay: Miss J. Speden.
Review of Current Literature on Liver Function Tests: Mr J. Walker.
Some Aspects of Work in a Small Laboratory: Mr J. Horner.
Cytogenetics in Leukaemia: Mr P. H. Fitzgerald of the Cytogenetics Unit.

On one occasion, questions on Blood Bank Serology and on Microbiology respectively, were answered by Miss L. Evans and Dr G. C. T. Burns.

G. R. R.

DUNEDIN

(Secretary: E. K. Fletcher, Pathology Dept., Medical School, Dunedin.)

At our June meeting two films were shown:

(I) *Insulin:* The history, manufacture and therapeutic uses of insulin. Quality control studies using animals and the laboratory aspects of blood sugar levels in diabetes and response to insulin were seen.

(II) *Immunisation:* An account of the processes and reactions in the various stages of immunisation, also preparation by culture and attenuation and processing of the toxoids and vaccines against viral and bacterial infection were shown.

It is with pleasure that we look back on Conference 1963 and its success, made possible by the attention, enthusiasm and participation of all delegates present.

The A.G.M. of the Branch will be held on October 2 at the Medical School.

E. K. F.

WAIKATO-BAY OF PLENTY GROUP

Tauranga Hospital acted as host to 45 members from seven laboratories on Saturday, July 27. The meeting followed the form of the previous two, in that papers were read and discussion on their content followed. A short discussion on Institute affairs was then followed by an inspection of the laboratory, and afternoon tea.

Papers read were:—

The Advantages of Using Coverslips to Spread Blood Films Mr D. C. Quinnell (Tauranga).
A Case of Hyperparathyroidism Mr K. James (Waikato).
The Augmented Histamine Test Meal Mr R. Reilly (Tauranga).
Estimation of Haptoglobin Mr G. R. George (Rotorua).
L.E. Cells Miss V. Drewitt (Queen Elizabeth, Rotorua).
Prepuerin Pregnancy Test Miss A. Pridham (Tauranga).
The Effect of Haemolysis on Certain Biochemistry Estimations Mr B. Barry (Hamilton).

The next meeting is to be held at Hamilton in November.

D. C. S.

THE NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY (INC.)

19th Annual Conference, 1963

Held at the Otago University Medical School, Dunedin, on August 22, 1963.

The meeting opened at 9.15 a.m. when the President, Mr H. T. G. Olive introduced the guests: Associate Professor R. A. Rodda of the Pathology Department; Emeritus Professor E. F. D'Ath; Associate Professor N. P. Markham of the Microbiology Department; Dr J. B. Howie, Senior Lecturer in Haematology; and Mr K. H. Melvin of the Otago University Education Department.

Associate Professor Rodda, in welcoming delegates to the Medical School, pointed out the changes since the last Dunedin Conference and mentioned future changes and trends. He then declared the Conference open.

Professor D'Ath traced the beginnings of medical laboratory technology in New Zealand, alluded to its remarkable growth in little over forty years, and reminisced about some of the field's early pioneers. In outlining his concept of the Institute's future, Prof. D'Ath emphasised the need for friendly co-operation with the Department of Health and with the Society of Pathologists.

The President thanked Professor D'Ath for his address and offered his wife and he, the Institute's warmest wishes for a long and happy retirement.

Presidential Address

In making his third and final report to a Conference as President, Mr Olive thanked members in general and Council in particular for their loyal support over the past three years. This period had been all too short for the accomplishment of the many tasks he had set himself as aims on assuming the leadership of the Institute, but it was with some satisfaction that Mr Olive felt he could now report considerable progress. Alterations to the Rules had been consolidated, and members could now look forward to being able to assume the status of Associates or Fellows of the Institute. The Joint Committee, which had last met on August 7, had finalised detailed syllabuses for the examinations, and these will eventually be printed—to serve as a working document for almost daily use, as well as a guide for entrants to the examinations.

New Employment Regulations had now been made public and, although these may have caused dissension in some circles, we remain the highest paid medical laboratory technologists in the world. This could well serve as a lesson for us all and it would be desirable, before levelling criticism, to be certain in a knowledge of the true facts. Mr Olive drew an analogy between petty dissatisfactions and the folly of the devotee of hi-fi, who misses the beauty of the music because he is so intent in listening for minor imperfections in the quality of reproduction.

The Journal Committee was to be congratulated on its management of our publication, which had earned the commendation of the Institute as a whole. Thanks were also due to the various people who had rendered help to the Joint Committee in its deliberations about the examination syllabuses.

Concluding, Mr Olive declared that he was handing over his office to Mr Bloore with a good heart. Counselling 'make haste slowly,' he

gave an undertaking that his services would be available for as long as the Institute had need of them.

One sad note to the year, had been the passing of Messrs J. Pierard and W. Nuttall, two of the earliest laboratory pioneers in New Zealand. Conference stood as a mark of respect.

Roll Call

The following delegates were present at Conference:

Aldridge, W.	Balclutha	Killian, Sister	Auckland
Allan, R. D.	Dunedin	Kitto, J.	Dunedin
Allen, Miss R. E.	Wellington	Lee, Miss A.	Invercargill
Allum, Miss J. G.	Dunedin	Lockwood, B.	Palmerston N
Bailey, M.	Lower Hutt	McConnell, D. S.	Christchurch
Barry, B. W.	Hamilton	MacDuff, D. A.	Ashburton
Beattie, J. C.	Lower Hutt	McKinley, G. W.	Waipukurau
Bloore, H. G.	Blenheim	Mackintosh, Miss J.	Wellington
Braidwood, J. L.	Dunedin	McLean, B.	Wellington
Bremner, Miss G. F.	Dunedin	Mann, J.	Palmerston N
Brown, T. E.	Dunedin	Miller, T. E.	Auckland
Buchanan, Miss A. M.	New Plymouth	Mitcherson, B.	Hastings
Buchanan, Miss M.	Rotorua	Morgan, J. D. R.	Dunedin
Case, J.	Dunedin	Morris, M. R.	Clyde
Clapson, C. K.	Hamilton	Nixon, A. D.	Auckland
Clifton, R. E.	Dunedin	Norman, E. P. S.	Christchurch
Coleman, R. J.	Wanganui	Ogle, W. D.	Invercargill
Collins, A. A.	Dunedin	Olive, H. T. G.	Wellington
Curtis, P.H.	Auckland	Olsen, R. E.	New Plymouth
Dix, M. R.	Auckland	Orbell, W. G.	Auckland
Eales, Miss M. M.	Christchurch	Orchard, I.	Christchurch
Edgar, Miss J. M.	Dunedin	Paula, Sister M.	Auckland
Ellerm, Miss N.	Wellington	Philip, D. J.	Auckland
Fischman, A.	Auckland	Rees, J.	Dunedin
Ford, D. S.	Dunedin	Reeve, K. G.	Dannevirke
Forsyth, A. J.	Dunedin	Robertson, J. V. A.	Thames
Foster, H. C.	Taumarunui	Ronald, K. B.	Whangarei
Gerring, Miss M.	Hamilton	Rush-Munro, F. M.	Auckland
George, G. R.	Rotorua	Scott, Miss E. L.	Dunedin
Glynn-Jones, B.	Dunedin	Smail, R. W.	Invercargill
Gray, A.	Dunedin	Smith, B. N.	Timaru
Grey, Miss M. J.	New Plymouth	Smith, D. C.	Tauranga
Hains, G.	Hamilton	Smith, F.	Napier
Harper, A.	Wanganui	Stewart, A. McD.	Dunedin
Hawkless, J.	Taumarunui	Tanner, T. E.	Christchurch
Heath, Miss L.	Gisborne	Taylor, L. R.	Oamaru
Hodgson, W.	Dunedin	Thompson, G. C.	Invercargill
Horner, J.	Ashburton	Tingle, D.	Dunedin
Horton, Miss J. F.	Dunedin	Titheridge, A.	Christchurch
Hutchings H. E.	Palmerston N	Toms, Miss V. M.	Wellington
James, K. R.	Hamilton	Tucker, R.	Nelson
Johnston, A.	Stratford	Walker, J. A.	Christchurch
Kelman, Miss J.	Christchurch	Weston G.	Auckland
Kennedy, R. T.	Auckland	Wilson, A. G.	Dunedin
Kershaw, F. C.	Dunedin		

Written apologies were received from: E. L. F. Buxton (Wanganui), Mr and Mrs M. Jenner (Christchurch), M. McCarthy (Auckland) and Miss J. Mattingley (Wellington).

192 Proxy votes were registered with the Secretary.


MEDICAL SCHOOL

Nineteenth Annual Conference — Dunedin — 22 & 23 August 1963

1. Mr R. D. Allan
2. Miss M. M. Eales
3. Miss J. Horton
4. Mr K. H. Melvin
5. Mr J. Case
6. Dr J. B. Howie
7. Dr R. R. Rodda
8. Mr H. T. G. Olive
9. Dr E. F. D'Ath
10. Dr N. P. Markham
11. Mr H. G. Bloore
12. Mr J. D. R. Morgan
13. Miss J. M. Edgar
14. Miss N. Ellerm
15. Miss J. Mackintosh
16. Mr G. W. McKinley
17. Fido
18. Mr D. Tingle
19. Mr P. H. Curtis
20. Miss R. E. Allen
21. Mr H. E. Hutchings
22. Miss A. Buchanan
23. Mr J. Mann
24. Mr B. W. Barry
25. Mr B. M. Lockwood
26. Mr M. R. Morris
27. Mr T. E. Tanner
28. Mr B. W. Main
29. Mr T. E. Brown
30. Mr A. McD. Stewart
31. Miss M. Buchanan
32. Miss V. M. Toms
33. Mr I. Bardsley
34. Mr G. C. Thompson
35. Mr J. V. A. Robinson
36. Miss J. Shennan
37. Mr H. C. Foster
38. Mr S. J. Duncan
39. Miss G. Potter
40. Miss A. Lee
41. Miss M. Gerring
42. Miss C. Saxby
43. Miss M. J. Grey
44. Mr A. D. Nixon
45. Mr F. Smith
46. Mr B. Glynn-Jones
47. Mr K. G. Reeve
48. Mr W. D. Ogle
49. Mr R. Tucker
50. Mr R. Clifton
51. Mr C. K. Clapson
52. Mr M. Bailey
53. Mr K. James
54. Mr B. N. Smith
55. Mr B. Robertson
56. Mr R. T. Kennedy
57. Sr M. Paula
58. Sr Killian
59. Mr R. H. Jones
60. Mr R. W. Smail
61. Mr D. C. Smith
62. Mr I. R. Orchard
63. Mr K. B. Ronald
64. Mr A. C. Titheridge
65. Mr E. P. S. Norman
66. Mr W. G Orbell
67. Mr M. R. Dix
68. Mr T. E. Miller
69. Mr A. Johnston
70. Mr A. Fischman
71. Mr W. Hodgson
72. Mr G. D. Hains
73. Mr B. Mitcherson
74. Mr A. Gray
75. Mr B. McLean
76. Mr A. J. Forsyth
77. Mr K. McKechnie
78. Mr W. Aldridge
79. Mr A. A. Collins
80. Mr L. R. Taylor
81. Mr W. Bumstead
82. Mr J. Weston
83. Mr D. J. Philip
84. Mr F. Rush-Munro
85. Mr R. E. Olsen
86. Mr F. C. Kershaw
87. Mr J. Horner
88. Mr J. Rees
89. Mr G. R. George
90. Mr J. L. Braidwood
91. Mr R. Coleman
92. Mr J. Hawkless
93. Mr E. K. Fletcher
94. Mr A. Harper
95. Miss L. Heath

Photograph by Morris Kershaw F.N.Z.P.P.A., A.R.P.S., A.I.B.P., Pattillo Studios, 567 George St, Dunedin N. 1.

MINUTES OF THE NINETEENTH ANNUAL GENERAL MEETING

Moved:

That the Minutes of the previous meeting be confirmed.

Foster/Curtis — Carried

Annual Report:

In presenting the eighteenth annual report the Secretary declared the total membership of the Institute as standing at 466 members, consisting of 221 senior and 245 junior members. There are 17 Honorary and 4 Life Members. New members elected during the year numbered 148, of which 18 were senior and 140 junior. There had been 2 deaths and 11 resignations.

The Secretary thanked those in charge positions who had been so helpful in promptly returning the staff questionnaires.

Moved:

That the Annual Report be adopted.

Morgan/Hutchings — Carried

Financial Report and Balance Sheet:

Moved:

That the annual statement of account and balance sheet be adopted.

Philip/Beattie — Carried

Election of Officers:

The following were elected to office for 1963/64:—

President	H. G. Bloore	unopposed
Vice-Presidents	M. McL. Donnell G. R. George	
Secretary	J. D. R. Morgan	unopposed
Treasurer	D. J. Philip	unopposed
Council	H. E. Hutchings R. T. Kennedy Miss J. Mattingley	
Junior Member	Miss H. Bond	unopposed

Editor's Report:

Moved:

That the Editor's report be adopted.

Case/Philip — Carried

Essay Prizes:

The Technical Section of the Junior Essay Prize was won by I. R. Orchard, of Christchurch, for his essay "Photomicrography with Standard Laboratory Equipment."

There was no award in the Essay Section owing to the generally low standard of the entries.

Rex Aitken Memorial Prize:

This £25 award by Biological Laboratories Ltd. was won by A. J. Forsyth, of Dunedin, for his paper "Stabilisation of the Nitrogen/Nessler Complex in Blood Urea Estimations" (The *Journal*, April, 1962).

Moved:

That the rules of debate apply to coming discussions.

Kennedy/Bloore — Carried

Moved:

That the Secretary write to the Director-General of Health thanking him for his letter, and asking whether the Laboratory Technologists Board is to be a Registration Board; and if this should be the case, we ask for representation from the N.Z. Society of Pathologists and the N.Z.I.M.L.T. in proportions similar to those extant in other Registration Boards, such as the Nurses and Midwives, Physiotherapists etc. It should also be borne in mind that the numerical strengths of our two

bodies are 466 to some 60-odd. It is respectfully suggested that at least a **pro rata** representation should be included in any proposed Medical Laboratory Technologists Registration Board.

Amended

Olive/Case

Moved:

That only the number of qualified members of the N.Z.I.M.L.T. be quoted, namely 221.

Carried

Ogle/Hutchings

The amended motion was then put and carried.

Notice of Motion:

That Rule 8 (a) in the previously circulated notices of motion be amended to read fifteen years instead of ten years.

Moved:

That it be a resolution from Conference that Council be instructed that no Fellowships be granted until the Higher Certificate Examinations become available; and that all persons who are qualified at that time shall be eligible for election on the tenth anniversary of their qualification.

Amended

Council recommendation

The meeting adjourned for luncheon.

Moved:

That the previous motion be amended to read 'fifteenth anniversary' instead of 'tenth anniversary.'

Defeated

Miller/Kennedy

The original motion was then put and carried.

Notices of Motion Previously Circulated:

(Recommendations from Council)

Moved:

That Rule 8 be deleted and the following substituted. Rule 8. The Following shall be eligible for election by Council as members of the Institute.

(a) As Fellows:

1) All persons who qualified for Senior membership prior to August 1953, and who, since that date, have been continuously engaged in the profession of medical laboratory technology.

Defeated

2) All those persons who fulfil the requirements of the Council and the Examining Body approved by the Director General of Health for higher qualification than is required for Associateship.

Carried

3) Any other person who the Council may deem a fit and proper person to be elected a Fellow.

Carried

(b) As Associates:

1) All persons who have qualified for the Certificate of Proficiency in Medical Laboratory Practice or Hospital Laboratory Practice, or whose qualifications are regarded as being equivalent by the examining body approved by the Director General of Health.

Carried

2) Hospital Scientific Officers who have completed not less than three (3) years post-graduate service in medical laboratory technology.

3) Any other person whom the Council may deem a fit and proper person to be elected an Associate.

Carried

(c) As Members:

1) All those persons who are engaged in the profession of medical laboratory technology, but who are not eligible for election as Fellows or Associates.

Carried

2) Any other person whom the Council may deem a fit and proper person to become a Member.

Carried

(d) Honorary Members in any of the above categories.

Carried

(e) Life Members shall automatically be elected as Fellows.

Carried

Rule 8 (ii) Privileges and Obligations of Members.

(a) A Fellow may use the initials F.N.Z.I.M.L.T. after his or her name and an Associate the initials A.N.Z.I.M.L.T. after his or her name, but no other member may indicate his membership by the use of initials.

Carried

(b) Every Fellow or Associate, when elected, shall be entitled to receive a diploma in respect of his membership of the Institute and shall, so long as he or she remains a member, be entitled to hold the said Diploma.

(c) Every Diploma shall be issued under the seal of the Institute, and shall be in such form as the Council may from time to time determine, and shall be the property of the Institute and upon the member ceasing to be a member shall be recoverable on demand.

Carried

The alterations to Rules 14 (a) and 14 (b) were then put.

Moved: (Recommendations from Council)

That Rule 14 (a) and 14 (b) be deleted and the following substituted.

Rule 14:

(a) The Officers of the Institute shall consist of a President, two Vice-Presidents, a Secretary, a Treasurer and four (4) Ordinary members. These shall constitute the Council. All members of the Council shall retire annually from office but shall be eligible for re-election.

Carried

(b) 1. The President, Vice-Presidents, Secretary and Treasurer shall be Fellows or Associates, but the Ordinary Members of the Council may be Fellows, Associates or Members of the Institute.

Carried

2. The Four Ordinary Members of the Council shall be regionally nominated and balloted for, such ballot to be conducted with the Annual Postal Ballot for the election of Officers.

Carried

3. One Council (Ordinary) Member shall represent each of the following areas—Auckland, Wellington, Christchurch and Dunedin.

Carried

4. The Four areas are defined as follows:—

AUCKLAND—The northern portion of the North Island comprising the areas of the following Hospital Boards—Northland, Auckland, Waikato, Thames, Tauranga, Bay of Plenty, Opotiki, Taumarunui.

WELLINGTON—The southern portion of the North Island comprising the areas of the following Hospital Boards—Waiapu, Cook, Wairoa, Hawkes Bay, Waipawa, Dannevirke, Taranaki, Stratford, Hawera, Patea, Palmerston North, Wanganui, Wellington, Wairarapa.

CHRISTCHURCH—The northern portion of the South Isand comprising the areas of the following Hospital Boards—Marlborough Nelson, Westland, Buller, Inangahua, Grey, North Canterbury, Ashburton, South Canterbury.

DUNEDIN—The southern portion of the South Island comprising the areas of the following Hospital Boards—Waitaki, Otago, South Otago, Vincent, Maniototo, Southland.

Carried

Moved: (Council Recommendation)

That Rule 23 (a) be deleted and the following substituted:—

The Annual subscription shall be £2 2s 0d for Fellows and Associates and £1 1s 0d for Members, or such other sum as may, for any particular financial year, be fixed by members present at the Annual General Meeting of the Institute.

Carried

Notice of Motion: (Auckland Branch)

Concerning Rule 8 (a) which reads: 'All persons who have the Department of Health Certificate of Proficiency in Bacteriology, or in Hospital Laboratory Practice, and who shall be designated senior members.'

That this Rule be amended to read:

'All person.....and who shall be admitted as Associates of the N.Z.I.M.L.T.'

Withdrawn — Miller

Notice of Motion: (Dunedin Branch)

That Rule 14 (a) be deleted and the following substituted:

The Officers of the Institute shall consist of a President, two Vice-Presidents, a Secretary and a Treasurer, to be nationally elected; and four Ordinary Members, one from each of four geographical regions based on Auckland, Wellington, Christchurch and Dunedin, to be regionally elected. These shall constitute the Council. All members shall retire annually, but shall be eligible for re-election.

Withdrawn — Case

Notice of Motion: (A.G.M., 1962)

That the appointment of junior members to the National Council of the Institute be abolished forthwith and that only senior members be eligible for election to the Council as well as the Executive of the Institute.

Withdrawn (A.G.M., 1962)

Moved:
That the wording of Rule 13 (g) i be altered to delete the words 'two thirds' ($\frac{2}{3}$).

Defeated

Kennedy/Philip

Remits:

Moved:
That the Council of the N.Z.I.M.L.T. makes a recommendation to the Joint Committee to have the Examination dates, both Intermediate and Final, brought into line with the normal academic year, in that examinations should be conducted at the end of November each year.

Defeated

Auckland Branch

Moved:
That the Committee of the N.Z.I.M.L.T. investigate the possibility of using a tape recorder at the A.G.M.

Carried

Auckland Branch

Moved:
That the Secretary of the Institute be instructed by the Conference to write to the Minister of Health, with copies to the Secretaries of the Salary Advisory Committee and the N.Z. Society of Pathologists, expressing our deep concern about and strong disapproval of the wording of the recent additions to the Hospital Employment (Laboratory Workers) Regulations contained in Circular Memorandum No. Hosp. 1962/86, and strongly recommending that:—

(a) The words 'appropriate degree' be defined in the regulations specifically as:
'a degree to stage III in Biochemistry, Chemistry or Microbiology of a New Zealand University or an equivalent overseas degree, or degrees appropriate to special studies carried out in a laboratory such as Virology or Parasitology.'

(b) The words 'Hospital Scientific Officer' be defined in the regulations as:—
'A laboratory worker holding an appropriate degree employed solely in work directly associated with the subject in which he majored, and that all other science graduates be employed as graduate trainees, training towards the C.O.P. or as medical laboratory technologists.'

Defeated

Wellington Branch

Moved:
That Rule 14 (a) be deleted and the following substituted.
'The Officers of the Institute shall consist of a President, one Vice-President, a Secretary, a Treasurer and three Ordinary Members to be regionally elected, two from the North Island and one from the South Island. All members of the Council shall retire annually from Office, but shall be eligible for re-election.

Defeated

Christchurch Branch

Moved:
That where a laboratory worker is required to be 'on call' for urgent laboratory work, that the said worker be paid 3s 0d as a retainer fee for every night on call, except that in the case of Sundays and Public Holidays, the retainer fees shall be 5s 0d for that day. These retainer fees to be additional to overtime paid for actual call duties.

Defeated

Christchurch Branch

Moved:
That the present overlapping of salary scales for Graded Officers is unrealistic and frustrating toward endeavour, and should be amended to provide a clear distinction between each scale.

Carried

Christchurch Branch

Moved:
That the N.Z.I.M.L.T. should approach the Department of Health to amend the present Regulations governing compensation for overtime worked by Graded Laboratory Officers, by extending the Regulations covering overtime compensation of other Laboratory Workers to embrace Graded Laboratory Officers.

Defeated

Waikato Hospital

Moved:

That Council be instructed to give consideration to the following scheme and report to members through the medium of the Journal:
A trainee begins in any laboratory, and at the end of one year, sits a preliminary examination in basic knowledge. Two years later, the trainee sits examinations in two subjects of his own choice. This examination to be called 'Intermediate' but of a standard comparable with the present C.O.P. If trained at a sole-charge hospital, there would now be the requirement to transfer to a base hospital.
After a further two years, he sits an examination of the above standard in the third subject and also an examination to an advanced level in one subject of his choice. Success would entitle the candidate to certification and Associateship of the Institute.
At some time after this, he may present himself for examination by thesis, dissertation or examination for Fellowship in his subject, which would entitle him to automatic grading (Grade C).
Alternatively, he could take a second subject at 'Associate' level, which would also entitle him to Fellowship.
The Science graduate may be included at Associate level and considered for Fellowship after passing the examination and completing two years service.

Hutchings/Case — Defeated

[This remit has been substantially abridged and reworded for publication.]

Moved:

(a) That the Examination Board be requested to organise specialist examinations in four subjects: (1) Microbiology (2) Haematology and Blood Transfusion (3) Histopathology and Cytology (4) Chemical Pathology.
(b) The Intermediate Examination to be taken after two years laboratory service and the Final Examination after four years laboratory service.
(c) Candidates be eligible to sit the specialist examinations one year after Final Examination.

Dunedin Branch

Section (a) withdrawn.
Section (b) defeated.
Section (c) amended.

Moved: (Amendment)

That the words 'one year' in Section (c) be replaced by the words 'two years.'

Philip/Bloore — Defeated

The original motion was then put and defeated.

Moved:

That in view of the fact that the members of the N.Z.I.M.L.T. as a body have no satisfactory avenue of appeal or arbitration open to them, this Institute agitate through all possible channels to have some form of arbitration machinery set up to arbitrate on issues of contention affecting medical laboratory workers.

Wellington Branch

Miss Toms requested permission to amend the remit by substituting the word 'investigate' for the words 'agitate through.'

Agreed

Moved: (Amendment)

That a sub-committee be set up to make a thorough investigation into possible changes in our negotiation and arbitration machinery with power to meet representatives of similarly situated bodies, such as the Registered Nurses Association, and to make a report to Council which shall be circulated to all members.

Edgar/Case — Carried

The amendment was then put as the motion and carried.

Moved:

That the voting papers be destroyed.

Hutchings/Kershaw — Carried

Moved:

That the honoraria remain the same and be paid.

Hutchings/Aldridge — Carried

Submissions to the Salaries Advisory Committee:

The following submissions were approved to go forward:—

Salaries:

Special Grade to a maximum of £2,340.
Grade (a) £1,720 — 1,815 — 1,910 — 1,970 — £2,095.
Grade (b) £1,565 — 1,625 — 1,710 — £1,795.
Grade (c) £1,185 — 1,225 — 1,270 — 1,335 — 1,405 — 1,485 — 1,555 — £1,615.
Staff Technologists £995 — 1,050 — 1,090 — 1,140 to special maximum £1,270.
Trainees: First year £505.
Second year £570.
Third year £655.
Fourth year £765.
Fifth year £825.
Sixth year £885.

That provision be made for the payment of senior hospital laboratory staff for set lectures given to trainees in those laboratories whose establishment does not permit them to employ tutor-technologists.

We also wish to resubmit the following definitions:

PROBATIONARY SCIENTIFIC OFFICER means a University graduate with a degree which includes as major subjects those which are appropriate to the field in which the graduate is employed.

HOSPITAL SCIENTIFIC OFFICER means a University graduate with a degree which includes as major subjects those which are appropriate to the field in which the graduate is employed, and who has completed two years of hospital laboratory work, or who has special qualifications or experience in his specialty; in either case such that he may be designated by the Grading Committee as a Hospital Scientific Officer.

Moved:
That Council members' expenses be paid.
Taylor/Ronald — Carried

Moved:
That Council be asked to investigate deserving cases for Life Membership.
McKinley/Philip — Carried

Moved:
That in order to provide systematic formal training for medical laboratory technologists throughout the Dominion, provision be made for sufficient staff in suitable centres to allow formal teaching during the normal hours of duty and to provide rotating replacements so that trainees in outlying districts can participate at suitable stages.
That senior technologists voluntarily undertaking extramural teaching should be officially encouraged to do so by legislation determining:
a) Required qualification to undertake teaching.
b) A scale of fees for tuition.
c) A scale of remuneration for teaching.
That in order to improve the education of the medical laboratory technologist, classes should be run in conjunction with local education authorities and syllabi specifically for medical laboratory technologists on a wider basis be arranged.
Allan/Case — Carried

Moved:
A vote of thanks to the retiring President.
McKinley — Carried with acclamation

Moved:
A vote of thanks to Mr Allan and the Conference Committee.
The President — Carried with acclamation

Moved:
That Dr C. A. Taylor be invited to accept Honorary Membership of the Institute.
Olive/McKinley — Carried unanimously

NEXT YEAR'S CONFERENCE WILL BE HELD AT WELLINGTON.

The meeting closed at 10.35 p.m.

Index to Volume 17

Abstracts 17, 55, 105, 109
Annual Conference (1963) 124
Annual General Meeting Minutes 129
Book Reviews 20, 61, 115
Branch Reports 27, 70, 122
Comparative Study of Antiglobulin Reagents Commercially Available in New Zealand, A 47
Council Notes 28, 71, 121
Curtis, P. H. 4
Dawkins, B. F. 40
Dunckley, J. V. 103
Editorials 2, 36, 80
Estimation of Serum Sodium Using the E.E.L. Flame Photometer 103
Evaluation of the Copper Sulphate Specific Gravity Method for Screening Blood Donors, An 52
Examination Papers 21, 63
Ford, D. S. 15
Further Modification of the Impression Plate Technique in the Bacteriological Examination of Surfaces, A 87
Grey, M. Jeannette 97
Hilder, F. M. 52
Hospital Employment Regulations 30
Huckster, The 73
Introduction to the Thrombotest, An 4
Isolation of *Pasteurella multocida* from Sputum 83
Jubilee of the Pathology Department, Christchurch Hospital 33
Knights, H. T. 87
Last Twelve Years, The 97
Letters to the Editor 34, 77, 119
Lowes, Rita E. 36
Metcalfe, Mary G. 12
Miller, T. E. 83
On Improvements in Status 36
Orchard, I. R. 92
Our Journal — Some Changes 2
Photomicrography with Standard Laboratory Equipment 92
Rapid Romanowsky Stain, A 54
Sterile 'Closed Circuit' Method for Preparing Red Cell Concentrates, A 15
Toms, Valerie M. 47
Use of an Electroprecipitin Test for Thyroid Antibodies in Serum, The 40
What of the Future? 80
Yeast, Glucose and Steroids 12

REICHERT
WIEN

AUSTRIA

The N.Z. REICHERT SERVICE CENTRE has now been established in Dunedin under the direct control of a works-trained technician. Routine maintenance can also be attended to.

Besides the more orthodox REICHERT microscopes, microtomes and accessories, the following novelties have proven of greatest interest:

BINOLUX combined fluorescence/tungsten lamp together with u/v passing phase contrast condenser for Coons' Antigen/Antibody technique etc.

VISOPAN daylight projection microscope for fatigueless routine brightfield examinations as well as demonstrations.

COLPOSCOPE particularly suitable for early diagnosis of cervical carcinoma.

BIOTHERM biological heating stage for nearly all makes of microscopes.

REMIPHOT automatic exposure meter for use with any microscope.

MICRO ELECTRONIC FLASH equipment for COLPOSCOPE, ZETOPAN, Me F.

Please write for fullest details to:—

REICHERT SERVICE CENTRE IN N.Z.
P.O. Box 171 Dunedin or
P.O. Box 1498 Christchurch.
N.Z. Distributors for:
FRIGISTOR thermoelectric knife and stage coolers.

Vacancy

QUALIFIED LABORATORY TECHNOLOGIST

There is a vacancy for a Qualified Laboratory Technologist in a private medical laboratory in Hamilton.

Good working conditions and salary above Hospital Rate.

Subsidised superannuation is available to the successful applicant.

This position would ideally suit a young, recently-qualified person. Apply:

BOX 52, HAMILTON.

LUPUS SERA

Dr A. Sharard of the Pathology Department, Medical School, Dunedin, would be grateful for samples of sera from patients in whom a laboratory diagnosis of disseminated lupus erythematosis has been established.

ANNUAL SUBSCRIPTIONS

The Treasurer would be grateful if members who have not paid their subscriptions for 1963/64, would kindly send their remittances as soon as possible.

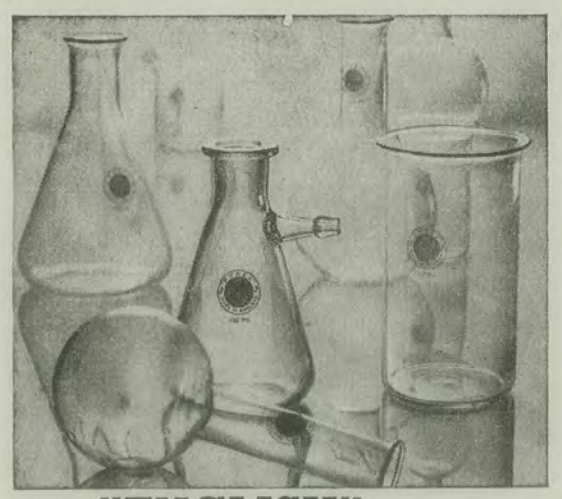
Members are reminded of the terms of Rule 10 (c) which reads:

'Any member whose subscription is unpaid after the expiration of six (6) calendar months from the date fixed for payment of subscriptions shall cease to be a member of the Institute and shall be struck off the roll by the Council provided that in the absolute discretion of the Council such member's name may be returned to the Roll at any time upon payment of all arrears due by such member at the time of restoration.'

SCIENTIFIC GROUNDWORK IN PYREX

A machine called the Turret Chain made these: it automatically makes blownware such as flasks, beakers and other types of laboratory ware, to a very high standard of uniformity. It's the only machine of its kind in Europe. Just an example of how PYREX, the first and most important source of borosilicate glassware in this country, use the latest and best processes available. PYREX are always improving their production methods to attain even higher standards of quality. This is one good reason (among many) why everyone who is looking for quality glassware, looks for PYREX.

Pyrex beakers and flasks



are made in all practical sizes and shapes for students, routine or research work.

Extremely low expansion coefficient virtually eliminates breakage from thermal shock allows more robust construction giving greatly increased mechanical strength

High stability against attack from water and all acids (except hydrofluoric and glacial phosphoric)

Therefore durable, accurate, economical, dependable, most used.

"ENGLISH"

PYREX

Regd. Trade Mark

Laboratory and scientific glass

MADE IN ENGLAND PYREX

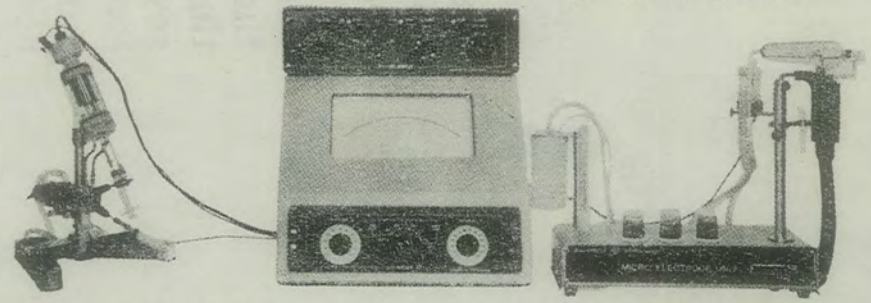
N.Z. Agents: **Messrs. F. O. & H. S. HART, 20 Victoria Street, Wellington, C.1**

MEASURE pH, pCO_2 pO_2

WITH THE **RADIOMETER** pH METER 27GM

The Gas Monitor type pHA927 is designed for use with the Radiometer pH Meter 27.

pH METER 27GM



For measuring continuous or in discrete samples, pH, pCO_2 and pO_2 in blood

Full service facilities from:—

SOLE NEW ZEALAND AGENTS

WATSON VICTOR LTD

AUCKLAND — WELLINGTON — CHRISTCHURCH — DUNEDIN

"It's accurate, Doctor. We ran normal and abnormal Versatol® controls at the same time, at several levels, as part of our new quality control programme."

Laboratory heads everywhere are answering clinicians with greater assurance, thanks to modern methods and materials for routine, daily quality control. The Versatol series, currently available comprise:-

Versatol: normal reference standard for 12 serum constituents.

Versatol-A: abnormal reference standard for 16 constituents.

Versatol-A Alternate: alternate abnormal reference standard for 16 constituents.

Versatol Paediatric: reference standard for infant serum; normal for 13 constituents, abnormal for bilirubin (20mg./100ml.)

Details of the Versatol series, or information concerning the full range of Warner-Chilcott diagnostic reagents is available from the N.Z. agents on request:

William R. WARNER & Co. Ltd.

P.O. Box 430 Auckland

OMNIS ORBIS WARNER

K.P. SILICONE BARRIER CREAM 555

Silicones have wide applications to pharmaceutical products, and on account of their extreme water repellent properties they can be usefully employed in Barrier Creams.

Silicones are non-sensitising and non-irritating. They have been shown not to have immediate or delayed reactions on skin contact. They possess no therapeutic value. They remain stable under varying degrees of heat. Some are soluble in alcohol; all are repellent to water and solutions of water containing sensitising or irritant substances.

K.P. Silicone Barrier Cream 555 is recommended for use by those whose occupation brings them into contact with Detergent Solution, Electroplating Solutions, Aqueous Solutions of Acids and Alkalis, and other skin irritants.

It should not be used to enclose areas of skin which are already inflamed.

K.P. Silicone Barrier Cream 555 should be applied after the skin is thoroughly washed and dried. The cream is then carefully worked into the skin, taking care to see that the surface is completely covered, particularly between the fingers and under the fingernails.

As it is not necessary to remove the cream, subsequent applications provide a protective film.

If removal is desired, it can be accomplished by the application of surgical spirit or frequent washings with hot water and soap.

K.P. Silicone Barrier Cream is available in 4oz and 16oz Jars.

KEMPTHORNE, PROSSER & CO.'S N.Z. DRUG CO. LTD.

Pharmaceutical Laboratories

22-26 STAFFORD STREET — DUNEDIN

Warehouses at . . .

AUCKLAND, WELLINGTON, CHRISTCHURCH and DUNEDIN.

Branches at . . .

HASTINGS, NEW PLYMOUTH, WANGANUI, PALMERSTON NORTH, INVERCARGILL and HAMILTON.