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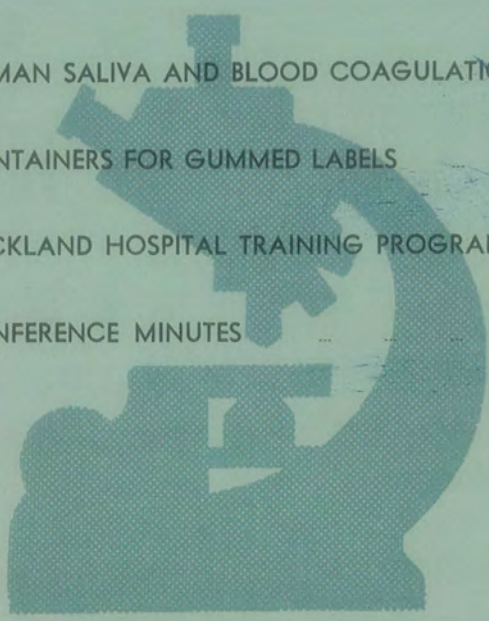
NOVEMBER, 1962

JOURNAL

OF THE NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

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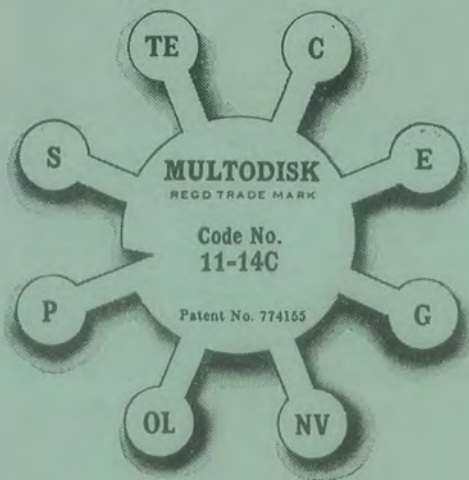


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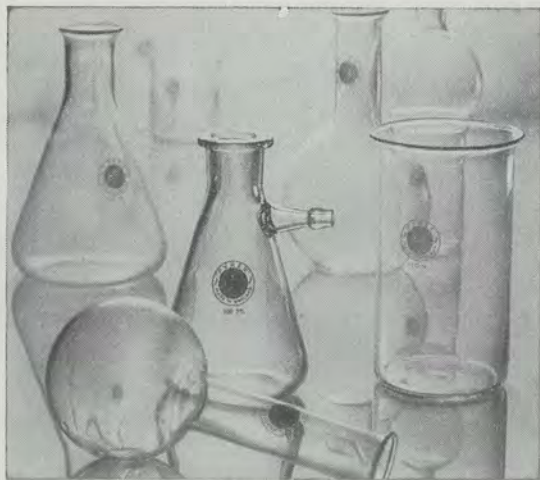
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JOURNAL OF THE NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY

VOL. 16, No. 3

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ADDRESSES

If the address as printed on this envelope is incorrect, please notify the Editor as soon as possible of your correct address.

HUMAN SALIVA AND BLOOD COAGULATION

F. M. HILDER

Pathology Department, Christchurch Hospital.

During the investigation of a method of anti-haemophilic globulin assay (Nilson et. al. 1962) the suspicion arose that the results were being affected by contamination with saliva during pipetting. To discover whether saliva did possess blood clotting ability undiluted human saliva was substituted for brain extract in the Quick one-stage prothrombin time. It was found that saliva acted as a fairly powerful thromboplastin, different persons' saliva giving times of 40 to 80 seconds with normal plasma and correspondingly prolonged times (120 to 180 seconds) with plasma from patients on anticoagulant therapy. Substituting saline for the saliva gave times of more than 150 seconds with normal plasma.

The plasma of one case of haemophilia and one case of Christmas disease gave the same times as normal plasma, saliva evidently correcting these defects as does tissue thromboplastin. The haemophilic's own saliva correct the haemophilic and Christmas disease defects in the same manner as saliva from a person with no clotting defect.

A search of the literature produced an unindexed two line reference to the saliva's clotting power in Biggs and McFarlane's book "Human Blood Coagulation" and two recent articles (Nour-Eldin and Wilkinson 1957, Doku 1960).

Nour-Eldin and Wilkinson (1957) found that A.H.G., Christmas factor and platelet like activities could be demonstrated in the thromboplastin generation test. Like dried brain extract saliva appeared deficient in factor V and VII-like activities. Saliva obtained from 12 normal, 42 haemophilia and six Christmas disease cases all had generally similar clotting abilities.

Doku (1960) found that saliva decreases whole blood clotting time. The one stage prothrombin time and the partial thromboplastin time showed saliva to have similar thromboplastic activity to that found in tissue thromboplastin. Saliva could be substituted for A.H.G., Christmas factor and platelets in the thromboplastin generation test and gave normal results.

DISCUSSION

Human saliva has been shown to possess clotting ability similar to dried tissue extract.

Apart from the theoretical interest of this finding the possibility of contamination with saliva during pipetting is of obvious practical importance. Although slight contamination with saliva probably has no significant effect on the one-stage prothrombin time it may affect Owen's Thrombotest. It could have considerable effects of the thromboplastin generation test, and the plugging of pipettes used with cotton wool would seem to be indicated.

ACKNOWLEDGEMENTS

My thanks are due to Dr F. W. Gunz who instigated this work.

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1. Nilson, I. M., Blomback, M., Ramgren, O., and Francken, I. V. Haemophilia in Sweden. *Act. Med. Scand.* 171-223, 1962.
2. Nour-Eldin, F. and Wilkinson, J. F., The Blood Clotting Factors in Human Saliva. *J. Physiol.*, 136-324, 1957.
3. Hristo Chris Doku. The Thromboplastic Activity of Human Saliva. *J. Dental, Res.* 39-1210, 1960.

CONTAINERS FOR GUMMED LABELS

D. H. ADAMSON

Pathology Department, Christchurch Hospital.

Ever since the introduction in this laboratory of the practice of labelling specimen containers with printed gummed labels before issuing them to the wards, there has been the problem of keeping the labels in tidy stacks. One "Kitchen girl" may be tidy and all is well, but the next may be untidy and one is annoyed to find, one day, a tangled mass of mixed labels in the bottom of a drawer.

After extensive enquiries and many suggestions, the following information was obtained:—

- (1) As far as we could determine, rolls of printed gummed labels are now unobtainable in New Zealand.
- (2) Short perforated strips are more difficult to use than separate labels.
- (3) Commercial firms appear to label their containers by hand.

The idea was then considered of keeping the labels in little boxes. Finally a little tin box to fit each size of label was constructed with the front and top hinging at the back. The front of

a false base was raised half an inch, sloping to the back, thus preventing the labels from sliding forward. The space between the two bases was filled with shot or lead strips for weight or, for those required to be secured to the bench, a large hole was drilled in the false base through which the head of the screw would pass, in order not to interfere with the labels.

It is naturally desirable to standardise the size of as many different labels as possible so that the boxes may be standard. A label 2 inches x 1½ inches high is quite a satisfactory size for most purposes. As labels are often cut not quite true to pattern, the internal dimensions of the box should be an eighth of an inch larger than the label. Labels are usually packed in lots of 500, so that a box about 2½ inches overall in height will be found to hold a pack. The cost to us was about 6/6 per box.

The boxes, both those weighted with lead and those fixed to the bench, have proved most satisfactory here and also at the Princess Margaret Hospital over the past six months.



THE LABEL BOXES

PROGRAMMES OF TECHNICAL TRAINING BY THE LABORATORY SERVICES OF THE AUCKLAND HOSPITAL BOARD IN 1962

R. KENNEDY

Central Laboratory, Auckland Hospital.

Preliminary School for First Year Trainees

The group was assembled at 9 a.m. on Monday, January 8th, in the lecture room. Each trainee was presented with:

- (a) A white coat or uniform.
- (b) Various pieces of essential equipment, e.g. grease, pencils, etc.
- (c) A hard back folder.

The folder was provided for the collection of lecture notes over the five-year training period and also contained information relevant to the following subjects:

- (a) Salary scales.
- (b) Annual leave.
- (c) Sick leave.
- (d) Superannuation.
- (e) Fire precautions.
- (f) Text books.
- (g) Summary of employment regulations.
- (h) General instructions for behaviour in a Laboratory.
- (i) Examination syllabuses.

Purpose of the Preliminary School:

The purpose of this course was threefold.

- (1) To introduce the trainee to the workings of hospitals and of the role played by the hospital laboratory.
- (2) To introduce the trainees to the equipment, techniques and scope of work to be encountered in the laboratory.
- (3) To emphasize to trainees certain basic points of etiquette and behaviour to be adopted during their employment.

It is expected that trainees emerging from this course will immediately be more useful and capable of realising the importance of honesty, accuracy and efficiency in their work.

Briefly the course consisted of the following lectures:

Introductory talk by the Director of Laboratory Services.

Structure of Laboratory Services: Mr Whillans.

Microscope and balance: Mr Whillans.

Centrifuge: Mr Whillans.

Spectrophotometers: Mr Whillans.

Pipettes, glassware: Mr Whillans.

Aseptic technique: Mr Kennedy.

Fire lecture: Mr McGennett.

Incubators, etc.: Mr Whillans.

Measurement: Mr Whillans.

First Aid (3): Tutor Sister.

Sterility: Mr Whillans.

Collection of samples: Mr Kennedy.

Slide Rule: Mr Whillans.

Collection of Bloods: Mr Kennedy.

The above lectures were interspersed with films and tours through the various hospital departments.

End of the course test:

A one hour short answer test was conducted at the end of the course.

Text Books:

All students were required to purchase the following text books:

Mackie and McCartney's Handbook of Practical Bacteriology.

Darmady and Davenport—Haematological Technique.

Baker, Silvertown and Lucock—Introduction to Medical Technology.

FIRST YEAR LECTURES

Details of the Course:

The lectures are held each Tuesday and Thursday from 8.30 a.m. to 9.30 a.m. in a lecture room at the Auckland Hospital. Lectures commenced on February 13th. The schedule has been divided into three terms.

February to April

June to July

September to November.

At the end of each month's lectures a one hour written test is conducted, based on the month's work.

An examination for this group will be held in November, consisting of a three hour written paper and an oral examination.

Examiners will be:

Mr D. Whillans

Mr R. Kennedy

Mr I. Cole.

LECTURE SCHEDULE

First Year Trainees

FEBRUARY:

1. Physiology: Dr Hitchcock.
2. Sterilisation: Mr Whillans.
3. Sterilisation: Mr Whillans.
4. Glassware: Mr Meredith.
5. Cleaning of Glassware: Mr Meredith.
6. Disposal of Specimens: Mr Miller.
7. Test.

MARCH:

1. Collection of samples: Mr Kennedy.
2. Physiology of Blood: Dr Hitchcock.
3. Postal Regulations: Mr Kennedy.
4. Aseptic technique: Mr Kennedy.
5. Disinfectants and antiseptics: Mr Kennedy.
6. Blood Fractions: Mr Kennedy.
7. Test.

APRIL:

1. Sterilisation practical: Mr Whillans.
2. Equipment: Mr Whillans.
3. Equipment: Mr Whillans.
4. Physiology of Body Fluids: Dr Hitchcock.
5. Equipment: Mr Whillans.
6. Equipment: Mr Whillans.
7. Test.

JUNE:

1. Handling of pipettes—behaviour in a Biochemistry Lab.: Dr Sims.
2. Oxidation, reduction, acid-bases: Mr McArthur.
3. Buffer, pH, volumetric analysis: Mr Hollis.
4. Alcohols: Mr France.
5. Enzymes: Mr Kennedy.
6. Spectrophotometry: Mr Whillans.
7. Test.

JULY:

1. Origin of blood cells synthesis of haemoglobin: Mr Kennedy.
2. Counting chambers, pipettes, cell counts: Mr Kennedy.
3. Making of film, staining, differential count: Mr Nixon.
4. Haemoglobinometry, indices: Mr Kennedy.
5. Mention of Paul Bunnells, L.E. Cells, clotting: Mr Kennedy.
6. Pathology of blood: Dr Hitchcock.
7. Test.

SEPTEMBER:

1. Historical outline of Bacteriology: Mr Kennedy.
2. Morphology of Bacteria: Mr Holland.
3. Physiology of Bacteria: Mr Holland.
4. General Bacteriological Techniques: Mr Holland.
5. Antibiotics: Mr Kennedy.
6. Immunity: Mr Fischman.
7. Physiology of Infection: Dr Hitchcock.
8. Test.

OCTOBER:

1. Media and stains: Mr Kennedy.
2. Media and stains, filtration: Mr Kennedy.
3. Basic Histology: Mr Patterson.
4. Basic Blood Banking: Mr Douglas.
5. Basic Serology: Mr Fischman.
6. Test.

NOVEMBER:

1. Revision.
2. Revision.
3. Written Examination.
4. Oral Examination.

AN EXAMPLE OF A FIRST YEAR TRAINEE'S MONTHLY TEST:

1. What is the difference between Kohler and critical illumination?
2. Why is immersion oil used with certain lenses?
3. What do you understand by dynamic and static balance?
4. What is a needle valve and where is it used?
5. What are verniers?
6. Where is the C.S.F. formed?
7. What do you understand by—homeostasis, anuria?
8. Why are some centrifuges angle headed?
9. List three sources of transcellular fluid.
10. Diagrammatically show how the balance is kept between extra and intracellular fluid.

SECOND YEAR TRAINEES

This group of trainees is issued with a reading list composed of selected chapters from standard text books.

In November, 1962, this group will sit a three hour written and an oral examination, based on the above reading list.

The examiners will be:

Mr J. Holland
Mr A. Nixon
Mr D. Hollis.

READING LIST FOR SECOND YEAR TRAINEES

An examination will be held at the end of the second year of training, the examination being based on this reading list.

1. Revision of all work covered in the first year's lectures.
 2. Mackie and McCartney—Chapters 1, 2, 3, 6, 7, 8, 9, 10, 11, 15, 17.
 3. Darmody and Davenport—Chapters 1, 2, 3, 4, 5, 8, 11.
 4. Baker, Silverton, Lucock—Chapters 1, 2, 3, 4, 6, 18, 19, 20, 26, 27, 33.
 5. The Life of Pasteur—Rene Vallery-Radet.
Edward Jenner—Drewitt.
History of Medicine—Garrison p575-591.
Pathfinders in Medicine—Robinson p679.
Lord Lister—Guthrie.
Topley and Wilson—Chapter 1.
The Road to Penicillin—Coldsmith.
Antibiotics—Florey.
Medical terms, their origin and construction—Roberts.
- All of the above are obtainable from the Central Medical Library.
6. A knowledge of the following:
 - Elementary genetics.
 - Basic chemistry.
 - Basic biology.

THIRD YEAR TRAINEES

This group of trainees undergoes a series of lectures given by Messrs:

Cole, Charge Technologist, Green Lane Laboratory.
Sloan, Charge Technologist, National Women's Laboratory.
Philip, Charge Technologist, Middlemore Laboratory.
Meredith, Charge Technologist, Princess Mary Laboratory.
Cameron, Charge Technologist, North Shore Laboratory.
McArthur, Biochemist, Princess Mary Laboratory.
Small, Biochemist, Green Lane Laboratory.

The lectures are held each Tuesday and Thursday in the lecture room, Auckland Hospital, from 11.30 a.m. to 12.30 p.m. Each trainee has only a half-hour lunch period on these days. The lectures commenced at the beginning of June and will be completed at the end of October. Tests are conducted at the end of each subject lectured upon, and an examination will be held at the end of the course.

Examiners will be:

Mr J. Sloan
Mr D. Philip
Mr D. McArthur.

COURSE OF LECTURES FOR INTERMEDIATE COURSE 1962
COMMENCING JUNE, 1962

1. Introductory Talk (All 5).
2. Sterilisation (Cole).
3. Sterilisation (Cole).
4. Microscope (Sloan).
5. Centrifuge, Stills (Sloan).
6. Thermoregulated apparatus (Meredith).
7. Colorimeters and Spectrophotometers (Philip).
8. Glassware (Meredith).
9. Stains (Sloan).
10. Morphology and Physiology of Bacteria (Meredith).
11. Antibiotics (Philip).
12. Antibiotics (Philip).
13. Staphs and Streps (Philip).
14. Neisseria, Diphtheroids (Cameron).
15. Salmonella, shigella (Meredith).
16. Myobacteria (Cole).
17. Coliform Group (Meredith).
18. Milks and Waters (Philip).
19. Abortus, Vincent's, Haemophilus (Cameron).
20. Puncture Fluids, Urine (Cole).
21. Puncture Fluids, Urine (Cole).
22. Puncture Fluids, Urine (Cole).
23. Puncture Fluids, Urine (Cole).
24. Chemistry and Biochemistry (Small and McArthur).
25. Chemistry and Biochemistry (Small and McArthur).
26. Chemistry and Biochemistry (Small and McArthur).
27. Chemistry and Biochemistry (Small and McArthur).
28. Chemistry and Biochemistry (Small and McArthur).
29. Origin and Development of Cells (Cole).
30. Blood Counting and Collection (Philip).
31. The Differential Count (Cole).
32. Coagulation (Cameron).
33. Blood grouping and Cross-type (Sloan).
34. Haematocrits, E.S.R.'s, Retics, Platelets (Cameron).
35. First aid, postal regulations, Asepsis (Cameron).
36. Examination.
37. Revision (Meredith).
38. Revision (Sloan).
39. Revision (Cole).
40. Revision (Philip).

FOURTH YEAR TRAINEES

This group of trainees will work for their fourth year of training on a thesis. The group is composed of all trainees successfully passing their intermediate examination.

The purpose of setting original work to do, is to keep the trainee's interest alive, and at the same time to teach them to use their initiative. At all times, senior members of the staff are available for assistance, and consultation on problems arising.

Summary of Instructions for Thesis:

A reading list on how to prepare and write scientific papers is issued.

The trainee must do the work in his own time unless quiet periods during the working day permit otherwise.

The trainees may work singly or in pairs on a project, with permission.

Subjects for the thesis must be in the hands of the Tutor by the end of June, and the work must be completed by the following April.

At all times the work being done is under the scrutiny of the Tutor.

Thesis Prize:

A prize for the best thesis has kindly been offered by the Director of Laboratory Services.

FIFTH YEAR TRAINEES

Lectures are held for this group of Wednesdays and Fridays from 8.0 a.m. to 9.0 a.m. in the lecture room, Auckland Hospital. The lectures commenced in May, and will finish in November. At the end of each month's lectures, a written one hour test is held.

Lecturers:

Mr Kennedy.

Mr Whillans.

Mr Douglas.

Mr Fischman.

Mr White.

Mr Patterson.

Mr Hollis.

HOSPITAL DISCUSSION GROUPS

The Green Lane Hospital Laboratory has developed a Staff Discussion Group which includes the Pathologist-in-Charge, trained technologists, trainees at various levels of experience and technical assistants. This Group meets fortnightly and has led to the delivery of excellently prepared talks followed by a good discussion.

While such groups are not included in the official training programme, their contribution to the general and technical laboratory knowledge of the group is considerable. It is expected that more of these groups will come into existence.

The current programme of the Green Lane Group is shown below:

Lecture Schedule:

Dr J. Gwynne, Pathology of Urinary Deposit.	26.6.62
I. M. Cole, Training in Medical Technology.	10.4.62
T. Wheeler, The Microscope.	15.5.62
C. Small, Quality Control	29.5.62
R. Sowden, Brucellosis	25.9.62
J. McLure, Infectious Mononucleosis.	12.6.62
H. Stunzer, L. E. Cells	1963
E. Beagley, Parasites	28.8.62
B. Elliott, Bacteriology of chronic Bronchitis.	1963
D. Henwood, Prothrombin Clotting Time.	30.10.62
W. Wiggle, C.S.F.	24.7.62
J. Harding, Haemoglobin	11.9.62
A. James, Laboratory Aspects of Diabetic Comas.	1963
S. Palmer, Plague	1963
K. MacFarlane, Staining of the Bacterial cell	1963
T. Turley, History of antibiotics	10.7.62

A. Strickett, Diphtheria	10.7.62
A. Shaw, Pathogenic Fungi.	1963
V. Wadams, Insect-borne disease.	16.10.62
A. Loader, Care and maintenance of Laboratory equipment.	1963
P. Coxhead, Erythrocyte Sedimentation Rate.	16.10.62
V. Nicholson, Heart Defects.	14.8.62
V. Parrish, Cytology.	1963

Also during the course of the year lunch-hour films are screened at regular intervals at the Central Laboratory. These films have been obtained from various drug and chemical firms and from the National Film Library and are related to medical work, e.g.

- The principles of Immunity.
- Erythroblastosis foetalis.
- Insulin.
- Hydatids.

CERTIFICATE FOR QUALIFIED TECHNICAL ASSISTANTS

With a large number (33 females, two males) of laboratory assistants employed in the Board's institutions, it was decided that some type of qualification should be offered these people in recognition of the high standard of work done by them in their special sections.

- Histological Technique.
- Serology.
- Virology.
- Blood Bank Practice.
- Medical Unit Chemistry.
- Medical Cytology.
- Microchemistry.

To be eligible to sit the examination of Qualified Technical Assistants, a laboratory assistant must have completed two years' training in the subject he wishes to sit the examination in. One set of examinations has already been held for these people. The examination was held in March on the 15th and 16th. A three hour paper and an oral examination were conducted by the pathologists and technologist departmental heads for the following groups:

- Serology—2 candidates.
- Histology—1 candidate.
- Medical Cytology—4 candidates.
- Blood Bank—5 candidates.

A further examination will be held in November of this year. Examiners will be:

- Medical Cytology*—Dr J. J. Sullivan, Dr W. McIndoe.
- Blood Bank Practice*—Mr R. Douglas, Mr T. Miller.
- Histology Technique*—Dr J. Gwynne, Mr D. Whillans.
- Virology*—Dr J. Burton, Mr M. Churchouse.
- Medical Unit Chemistry*—Dr R. Farrelly, Dr J. Montgomerie.
- Microchemistry*—Dr D. Becroft, Mr D. McArthur.

Following is an example of a technical assistant's syllabus (blood bank) and also the examinations set by these people early this year.

BLOOD BANK PRACTICE**SYLLABUS FOR EXAMINATION OF QUALIFIED TECHNICAL ASSISTANT**

1. A general knowledge of the principles of immunology and serology; antigen-antibody reactions; the nature and type of antibodies; blood group antigens.
2. A knowledge of the ABO systems:
 - (i) With reference to the formation and development of its antigens and antibodies; secretory status; irregular types of blood.
 - (ii) The practice of 1 minute tube-centrifuge technique; reagents involved; any errors or irregularities that may occur.
 - (iii) The practice of 1 hour tube-sedimentation technique, with particular reference to the blood grouping of donors; the reagents involved; any errors or irregularities that may occur.
3. **The Rh System:**
 - (i) With reference to the formation and development of its antigens and antibodies; antigen complexes.
 - (ii) The practice of routine Rh typing for (a) donors, (b) recipients, (c) other categories; the reagents involved; the techniques used; any errors or irregularities that may occur.
 - (iii) Genotyping of (a) D. negatives, (b) D. positives; the reagents and techniques used in each type of test; the use of the homozygous-heterozygous table. An element of knowledge of genetics.
4. **The Coombs Test:**
A knowledge of the principle of the Coombs test. The preparation of anti-serum globulin. The use of the test (a) Direct Coombs, (b) Indirect Coombs; some knowledge of the interpretation of such tests; false positives and negatives that may occur. The testing of cord blood specimens.
5. **The Cross-Match:**
An understanding of the cross-match—its limitations, reasons for documentation, where errors may occur, checks and safeguards. The provision of blood for immediate, urgent and non-urgent transfusion. Cross-matching of blood for exchange transfusion. Heart-lung-by-pass, artificial kidney, patients with antibodies, patients with haematological disorders. The investigation of and recognition of transfusion reactions.
6. A general knowledge of the other major blood group systems, their antigens, the methods of identification or reaction; their special characteristics.
7. **Antisera:**
A knowledge of the preparation of all types of blood grouping reagents; and the maintenance of sterility in antisera.
8. **General Techniques:**
An understanding of the basis of scoring reactions, of comparative techniques. Techniques used for the isolation and identification of blood group antibodies, with special reference to proteolytic enzymes, albumin, absorption, elution.
9. **The Preservation and Collection of Blood:**
Types of anticoagulant in use, criteria of blood for transfusion, including maintenance of sterility and storage. The preparation of plasma, pooled and anti-haemophilic.

10. A realisation of the need for integrity, and honesty in work; the importance of documentation, clerical work; the need for checking, etc.
11. The history of blood transfusion.
12. The postal regulations governing the transmission of laboratory specimens.
13. First aid procedures for laboratory accidents.

CERTIFICATE OF QUALIFIED TECHNICAL ASSISTANT
MARCH 15th, 1962

MEDICAL CYTOLOGY (GYNAECOLOGICAL)

Time allowed: 3 hours. All questions to be answered. All questions carry equal marks.

1. Give a detailed account of the advantages and limitations of cytology in the diagnosis of carcinoma of the cervix.
2. You have been asked by a doctor, who lives some distance from your hospital, to advise him on the procedures which would enable him to take cervical smears in routine gynaecological examinations, before sending the slides to you for cytological examination. Discuss in full, the information which you would give him.
3. List the technical steps which are followed in staining smears by Papanicolaou's method. How are Harris's haematoxylin and Mayer's haemalum prepared? What qualities are looked for in an ideal cover-slip mounting medium?
4. Describe, with illustrations, the neoplastic and non-neoplastic cells which you would expect to encounter in a cervical scrape smear from a woman with pre-invasive carcinoma of the cervix.
5. Write short notes on five of the following:
 - (a) Oestrogen.
 - (b) Ruth Graham.
 - (c) *Candida albicans*.
 - (d) Radiation reaction in cells.
 - (e) Critical illumination.
 - (f) Inflammatory exudate.
 - (g) Posterior fornix.
6. What is the diagnostic significance of cytology in the following condition?
 - (a) Carcinoma of the breast.
 - (b) Carcinoma of the ureter.
 - (c) Carcinoma of the stomach.

Indicate briefly how you would collect specimens and prepare smears in each condition.

CERTIFICATE OF QUALIFIED TECHNICAL ASSISTANT
MARCH 15th, 1962

MEDICAL CYTOLOGY (PULMONARY)

Time allowed: 3 hours. All questions to be answered. All questions carry equal marks.

1. Give a detailed account of the advantages and limitations of cytology in the diagnosis of lung cancer.
2. You have been asked by a doctor, who lives some distance from your hospital, to advise him on the procedures which would enable him to

make sputum smears in a case of suspected lung cancer, before sending the slides to you for cytological examination. Discuss in full, the information you would give him.

3. List the technical steps which are followed in staining smears by Papanicolaou's method. How are Harris's haematoxylin and Mayer's Haemalum prepared? What qualities are looked for in an ideal cover-slip mounting medium?
4. Describe, with illustrations, the neoplastic and non-neoplastic cells which are commonly encountered in specimens of pleural fluid examined in a cytology laboratory.
5. Write short notes on five of the following:
 - (a) Critical illumination.
 - (b) Dudgeon.
 - (c) Carnoy's solution.
 - (d) Radiation reaction in cells.
 - (e) Bronchial adenoma.
 - (f) Inflammatory exudate.
 - (g) "Heart failure" cells or dust cell.
6. What is the diagnostic significance of cytology in the following conditions?
 - (a) Carcinoma of the breast.
 - (b) Carcinoma of the stomach.
 - (c) Carcinoma of the ureter.

Indicate briefly how you would collect specimens and prepare smears in each condition.

CERTIFICATE OF QUALIFIED TECHNICAL ASSISTANT MARCH 15th, 1962

SEROLOGY

Time allowed: 3 hours. All questions to be answered. All questions carry equal marks.

1. List the antigens used in various tests for syphilis, giving a short description of their preparation and reasons for use. If prepared commercially, note the source of the antigenic material.
2. Describe in detail the performance of the Rose-Waaler test.
3. Write notes on five out of seven of the following:
 - (a) Anticomplementary system.
 - (b) Cleaning of glassware for serological use.
 - (c) Bordet's contribution to serology.
 - (d) The use of Barbitone-sodium barbitone in saline.
 - (e) The addition of streptomycin to sheep cell collection bottles.
 - (f) False negatives in strongly positive Wassermann sera.
 - (g) The use of Tincture of Benzoin in Laughlen tests.
4. Describe in details the principles and technique of the anti-streptolysin titration in serum.
5. How would you prepare high titre haemolysin? What criteria would you use for the acceptance of such an antiserum?
6. Describe how you would pack sera for mailing. Illustrate your reply by quoting the postal regulations.

CERTIFICATE OF QUALIFIED TECHNICAL ASSISTANT
MARCH 15th, 1962
BLOOD BANK

Time allowed: 3 hours. All questions to be answered. All questions carry equal marks.

1. Discuss the dangers of transfusing Group O blood to patients who are not Group O. What tests would you carry out to select blood of Group O which would remove these dangers. Describe in detail the technique of the tests you recommend.
2. Write down your own Rh genotype and discuss the possible genotypes of your mother and father. Select suitable genotypes for your parents and give the possible genotypes of four of your brothers and sisters, actual or theoretical.
3. When blood donors are typed a series of test tubes is set up for each donor. State precisely what will be pipetted into each tube used for one donor.
4. Describe in detail the method of carrying out a cross-match of one bottle of blood.
5. Discuss the antibodies of the M N S system under the following headings:
 - (1) Sources of sera containing the various antibodies.
 - (2) Optimal conditions for using the antisera.
 - (3) Relationship of any of the antibodies of this system to transfusion reactions or to haemolytic disease of the new born.
6. Answer in a sentence of about three lines:
 - (a) What is the anticoagulant in the ordinary blood bottle?
 - (b) What precautions are needed in the packing of cells for transfusion?
 - (c) What is the basic relationship between the Lewis system and the secretor status?
 - (d) What is the minimum information needed to identify a patient for cross-matching blood?
 - (e) What is the peculiar feature of the reactions of - D - blood with anti-D sera?

CERTIFICATE OF QUALIFIED TECHNICAL ASSISTANT
MARCH 15th, 1962

HISTOLOGICAL TECHNIQUE

Time allowed: 3 hours. All questions to be answered. All questions carry equal marks.

1. What is haematoxylin? What is its main use in histology? Name three varieties of this stain you have come in contact with. Give a method of preparation of one of these.
2. Write short notes on the following:
 - (a) A decalcifying reagent with which you are familiar.
 - (b) Mordants (name one).
 - (c) Dehydrating reagents.
 - (d) Regressive staining.
 - (e) Meyer's egg albumin.
 - (f) Pitfalls likely to be encountered in the Perl stain.

3. What is the object of fixation. Name four fixatives. Give the method of preparation of one of these. What routine fixative are you most familiar with and what are its advantages. Mention any factors which would have a bearing on fixation.
4. What are the principal histological features of the large intestine? How do the structures stain with haematoxylin and eosin? What special stains could be used and why?
5. Name four substances found in pathological tissues and give a histochemical test to confirm each.
6. With what do you associate the names of
 - (1) (a) F. B. Mallory, (b) Heidenhain. Give a short history of these men.
 - (2) Give a short account of the uses of aniline dyes in histology.
 - (3) Give a brief account of the Weigert-Pal method and state why it is used.

NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY (INC.)

Minutes of the 17th Conference held in Auckland on July 12 and 13, 1962.

The meeting opened at 9.30 a.m. on July 12 in a lecture hall of the Auckland Museum.

The Chairman, Mr Olive, introduced the guests:

Mr T. H. C. Coughy, Chairman of the Auckland Hospital Board.

Dr L. Brown, a Director of the Medical Laboratories.

Dr S. Williams, Director of Laboratories, Auckland Hospital Board.

Mr T. H. C. Coughy welcomed the delegates to the Auckland Hospital Board area. Medicine, he said, was on the verge of great things and laboratory diagnosis showed promise of the greatest progress.

He emphasised the importance of laboratory technology in medicine and closed by hoping that all delegates would have an interesting Conference.

Mr Olive, in thanking Mr Coughy for his warm welcome expressed appreciation of Mr Coughy's comments on the role of medical technology.

Dr Brown presented an opening address and expressed the privilege he felt in being associated with the welcome.

Dr Brown asked if hospital establishment as it stands is of most benefit to the patient, and in answering his question compared present hospitals management with private hospital and specialist attendance where the latter was available to all patients with governmental assistance. He concluded his opening address by joining Mr Coughy in welcoming the delegates to the Conference.

Mr Olive thanked Dr Brown for his opening address.

Mr Olive introduced Mr Cameron to the delegates explaining that Mr Cameron was prepared to answer any written queries put to him.

Roll Call. The following members attended the Conference.

Horner, J. E., Ashburton.

Speden, J., Christchurch.

Eales, M., Christchurch.

Hudson, M., Christchurch.

Slee, A., Christchurch.

Cox, M., Christchurch.

Allan, E., Buller.

Rees, J., Dunedin.

Allan, R., Dunedin.

Morgan, J., Dunedin.

Case, J., Dunedin.

Taylor, L., Oamaru.

Kershaw, C., Dunedin.	Till, D. G., Wellington.
Reeve, C., Dannevirke.	Bilkey, K., Auckland.
Nielsen, S. A., Wanganui.	Cole, I. M., Auckland.
Harper, A., Wanganui.	Sloan, W. J., Auckland.
George, G. R., Rotorua.	Wiggle, W. J., Auckland.
O'Meara, B., Rotorua.	Sowden, R. C., Auckland.
Mitchell, M., Rotorua.	Yearbury, B. J., Auckland.
Symonds, I., Wellington.	Holland, J. T., Auckland.
Schwass, A. L., Wellington.	Nixon, A. D., Auckland.
Allen, R., Wellington.	Ronald, K. B., Whangarei.
Poole, W., Wallaceville.	Johnston, N. D., Kaitaia.
McCarthy, M., Auckland.	Henry, D. F., Tauranga.
Kennedy, R., Auckland.	Howell, A. C., Upper Hutt.
Miller, T. E., Auckland.	Lairdet, D. M., Upper Hutt.
McArthur, D. A., Auckland.	MacKenzie, R., Masterton.
King, I. C., Auckland.	Smith, F., Napier.
James, V. C., Auckland.	Wales, R., Kawakawa.
Hill, G. J., Auckland.	Garnham, F. C., Napier.
Taylor, D. M., Auckland.	Hutchings, H. E., Palmerston North.
Davis, G. F., Auckland.	Olive, D. H., Wellington.
Johnston, E. M., Thames.	Foster, H., Taumarānui.
Morrow, J. L., Lower Hutt.	Callaghan, J., Auckland.
Clarkson, K., Lower Hutt.	Pridham, A., Palmerston North.
Barrington, R., Hawera.	Nicholas, R., Palmerston North.
Walsh, J., Auckland.	Aldridge, W., Balclutha.
Connolly, J. T., Auckland.	Lyons, D., Lower Hutt.
Curtis, P. H., Auckland.	Donnell, M., Auckland.
Small, R. W., Invercargill.	Phillip, D., Auckland.
Thompson, G. C., Invercargill.	Bloore, H., Blenheim.
Gray, J., Invercargill.	Dixon, F., Nelson.

Apologies were received from Miss L. Evans and Mr G. Rose of Christchurch, Mr Robertson, Mr Main of Dunedin, Mr McKinley of Waipukurau.

President's Address: Mr Olive entitled his address "Progress Made." Ministerial associations had changed. The new Minister, Mr McKay, had assured Mr Olive that he was anxious to find facts in order to understand difficulties. Associations have flourished with the Minister, and the Institute is receiving greater assistance than ever before in our history. The respect of the Joint Committee has been largely responsible for this better association. The Minister was a man instilling confidence and warranting our support.

Mr Olive said that in February the Salaries Advisory Committee had met along with the Hospital Boards Committee. At this meeting the Institute submissions were dealt with. The results are not as yet known. In June the Joint Committee met and the following is a summary of recommendations from that meeting.

This year there will be one C.O.P. Examination in Palmerston North in August, as there are only ten candidates.

One Intermediate in the South Island and one in the North Island.

The recommendation that examination fees be paid was re-introduced.

That there should be a Registrar of trainees was suggested.

That a partial pass in an examination on passing two of the three subjects and that a special examination for these candidates be held.

The Committee recommended that there be one examination a year for C.O.P. and one for Intermediate candidates in March.

The Committee recommend the operation of a training syllabus.

In the discussion of the new syllabus it was suggested that Dr Markham prepared the syllabus for Bacteriology, Dr Pullar for Histology and Cytology, Mr Olive for Biochemistry, Mr Whillans for general technique and Dr Williams for Haematology and Blood Bank.

It was felt, Mr Olive said, that the Joint Committee should oversee the training programme and that as each trainee was appointed they should be issued with a book containing the syllabus and which would act as their workbook. Assignments, it was thought, could be dovetailed into this system. A centrally placed Tutor Technologist would oversee the progress of the trainees.

Mr Olive made an urgent request for support of the Journal. There were no articles in hand for publication. He also announced the retirement of the Editorial Committee at the end of this year.

Mr Olive concluded his address by saying he realised there were some who felt that nothing has been done, but there was in fact, he said, good progress being made, and he requested that members be patient.

Minutes of the previous meeting:

Moved: "That the minutes of the previous meeting be approved."
Kershaw/Allen.

ANNUAL REPORT

Moved: "That the Annual Report be adopted." Hutchings/Cameron.

Financial Report:

Moved: "That the Treasurer's Report and Balance Sheet be received and adopted."
Philip/Morgan.

Election of Officers:

It was recommended by the Council that the voting papers be destroyed, the ballot be declared invalid and that a new election be held because of irregularities in the voting papers. The nominees were not in alphabetical order and it was thought that the instructions were misleading.

Moved: "That a new election be held, but that nominations stand."
Lyons/Ronald.

Amended motion: "That as the election is invalid, the voting papers be destroyed and that a new election be held but that nominations stand."
Donald/Bloore.

Carried.

Moved: "That indication should be given numerically in order of preference up to the total number of positions vacant."
Lyons/Ronald.

Amended motion moved: "That where an election is necessary all nominees shall be numbered in order of preference."
Donnell/Phillip.
Carried.

Recommended: "That the incoming Committee investigate the possibility of having a Chartered Accountant employed to conduct the ballot."
The recommendation was lost.

Moved: "That the election immediately required be carried out in the manner already established."
Schwass/Aldridge.

The Chairman asked the body of the Conference to be upstanding in memory of Mr and Mrs Carroll.

The meeting adjourned for lunch.

Mr Olive asked Mr Cameron to speak to the Conference.

Mr Cameron conveyed the good wishes of Dr Turbott and Dr Taylor for the delegates to the Conference.

The only question asked of him, Mr Cameron said, would enable him to answer it by outlining the history of fixing of earnings of hospital workers.

First, he said, Hospital Boards had fixed their own salaries, then co-operation between the department and Hospital Boards introduced minimum salaries for nurses. From time to time these were reviewed until Stabilisation Regulations stabilised rates for all Hospital Boards in 1946.

In 1947 there was established an Advisory Committee to review and submit recommendations to the Minister. Although special committees make recommendations direct to the Minister, Government policy requires that the comments of Treasury and Public Service Commission be obtained.

Grading, went on Mr Cameron, arose with the Medical Advisory Committee. The Director General of Health as Chairman, two nominees from a group not themselves engaged in the work, two Hospital Board employees, and a Department of Health representative. Hospital Boards may review and make recommendations to the Grading Committee. This Grading Committee, Mr Cameron stated, is concerned with relative positions in the country, not with money. There is a second meeting for the consideration of applications and the Committee is always prepared to review previous decisions. The final say, however, always rests with the Minister.

Mr Olive thanked Mr Cameron.

REMITTS

Christchurch:

"That the time available for the Annual Conference of the New Zealand Institute of Medical Laboratory Technology is insufficient, and should be extended to three days."

Mr Cameron was asked to comment. He expressed considerable doubt that such a remit would be favourably received. Mr Schwass felt that more use could be made of the evenings for business in a two-day Conference.

The motion was lost.

Dunedin:

1. "Moved that the Institute shall organise specialist examinations in the four subjects: Microbiology, Haematology, and Blood Transfusion; Histopathology and Cytology, and Chemical Pathology, in place of the present final examination to take effect from 1963.

Allen/Morgan.

Mr Olive spoke to the remit pointing out that it was envisaged that the Joint Committee planned to consider specialisation of examinations on completion of the syllabus.

The remit was lost.

2. "Moved that the standby duties shall attract a fee of one guinea per night and the work performed at the hospital outside working hours shall in addition attract a fee of two guineas for each period of two hours or part thereof."

Several spoke against the motion. It was pointed out that submission asking for overtime for graded staff had been made to the Department of Health.

The remit was lost.

3. "Moved that Rule 14 be deleted and the following substituted."
 "The Officers of the Institute shall consist of a President, two (2) Vice-Presidents, a Secretary, a Treasurer, and a Junior Member all nationally elected, and four (4) ordinary members, one from each of the four geographical regions based on Auckland, Wellington, Christchurch and Dunedin, these members to be regionally elected."

Case/Morgan.

Mr Case spoke to the remit and felt that despite opinion expressed by Council after the last Conference such a move was worthy of reconsideration. The motion was not carried by the required two-thirds majority.

Palmerston North:

"Moved that the overtime be replaced by a flat on call rate of £1 per day to be paid to all Medical Technologists on call."

Hutchings/Reeve.

The motion was lost.

Hawera Hospital:

"Moved that for every night that a qualified Technologist is required to be on call the sum of 15/- retainer fee shall be paid. That for each and every 'after hour' case or call undertaken by a qualified Medical Technologist the sum of 30/- shall be paid regardless of such a call, provided however that for any night on which such after-hour call eventuates the above mentioned retainer fee of 15/- shall not apply."

Barrington/Morgan.

Mr Barrington amended the motion to read:

"Moved that for every night that a Medical Technologist is required to be on call the sum of 15/- retainer fee shall be paid.

"That for each and every after-hour case or call undertaken by a Medical Technologist the sum of 30/- shall be paid regardless of the duration of such a call, provided however, that for any night for which such after-hour call eventuates the above mentioned retainer fee of 15/- shall not apply.

"That for the purpose of the above payments Sundays and Public Holidays shall be deemed equivalent to a night."

Motion was not carried by the required two-thirds majority.

Auckland:

1. Members of the Auckland Branch of the New Zealand Institute of Medical Laboratory Technology, are dissatisfied
 - (a) with the lack of direction of the Council of the Institute in regard to Clause (4)* of the Rules of the Institute, and
 - (b) in particular with the lack of progress in instituting a training scheme."

*4. "To improve the standard of the Profession of Medical Laboratory Technologists."

Mr Donnell spoke to the remit.

The object of the remit was to bring into the open the apparent lethargy of members of the Institute. The remit was worded and directed at Council because Council being a representative of ourselves was a point of focus.

Mr Donnell moved the following amendment to make the remit more positive.

"That the Council takes deliberate steps to introduce a training scheme."

Donnell/Whillans.

Mr Olive: In view of the existence of the Joint Committee, the motion was not properly directed. In light of progress of the Committee the remit was an unfortunate one.

Mr Miller declared that the remit was neither hasty nor immature. He felt the Council and the Institute were at cross purposes. The object of the remit was to stimulate interest and to point the need for the distribution of the knowledge of progresses made.

The amendment gave a positive direction to Council.

Mr Whillan: No facts can be given; only indications of endeavours and recommendations of the Joint Committee.

Mr Barrington: Loss of initiative by the Institute to the Joint Committee was to be deplored.

Mr Olive: We must lean on the Joint Committee, the Society of Pathologists and in turn the Health Department, particularly in view of co-operation being received and progress being made.

Mr Donnell hoped that there would have been more discussion and that the Institute had more life.

Moved: The amended motion was put and carried.

2. "That a central registrar of the financial members of the Institute be held by Council, listing full historical records of members with particular reference to their academic careers."

Explanatory Note—Prospective employers could be furnished with confidential information if required.

Miller/King.

The motion was lost.

3. Moved that the Institute grant Associateships to all members obtaining Certificate of Proficiency in Hospital Laboratory Practice.

Explanatory Note—The Institute would issue a document to the effect to all such members.

Miller/King.

Mr Donnell pointed out that it would require a change in the Rules.

Mr Miller therefore moved that the Council alter the Rules enabling members passing the C.O.P. to be admitted as Associates.

Miller/Whillans.

The motion was carried.

4. Moved that the Department of Health be requested to change the title of the qualifying examination from the Certificate of Proficiency in Hospital Laboratory Practice to Diploma in Medical Laboratory Technology.

Mr Miller asked that the remit be withdrawn.

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

McArthur/Whillans.

It is suggested that a Junior Committee be set up wherever there is a local branch of the Institute or in such places where there are sufficient numbers of Junior Staff employed. These Committees to have access to the National Council to make any recommendations or suggestions as desired.

Mr McArthur: Junior members should still be able to make recommendations to the Council but that the position of Junior members to the Council be abolished.

The motion was carried.

Wellington:

"Moved that the Secretary, or an appointed person, write to new laboratory staff who are potential members of the New Zealand Institute of Medical Laboratory Technology:

- (a) Congratulating them on their choice of profession.
- (b) Setting out the aims of the Institute.
- (c) Inviting them to become members of the Institute by completing an enclosed enrolment form.
- (d) Supplying information about the Branch in their area, should there be one.

The information regarding new staff to be supplied to the Secretary by the Charge Technologist. Schwass/Tait.

Mr Schwass felt many potential members were not contacted and were therefore lost.

Mr Whillans expressed himself strongly in favour of the remit.

The remit was carried unanimously.

Moved: "That the Dunedin Branch control the Editorship of the Journal." Kershaw/Allan.

The motion was carried.

Moved: "That a sincere vote of thanks be sent to Mr G. Rose and Miss L. Evans for their work." Tait/Grey.

Notice of motion was given by Mr Kennedy and seconded by Mr Phillips "That the wording of Rule 13g (1) be altered to delete the words two thirds ($\frac{2}{3}$)."

Mr Olive pointed out the value of Rule 13g (1).

Moved: "That the Honoraria remain the same and be paid."

Donnell/Whillans.

Moved: "That the Council arrange the disposal of the voting papers as they see fit." Bloore/Morgan.

Mr Allan issued an invitation for the 1963 Conference on behalf of Dunedin.

The invitation was received with applause.

The meeting closed with a vote of thanks to the Chair.

DUNEDIN BRANCH NEWS

During September a Postal Ballot was held for the election of officers to be responsible for the N.Z.I.M.L.T. Journal when that publication becomes our task.

Results were as follows:

Editor: Mr J. Case.

Sub-Editors: Mr H. Shott, Mr J. Rees.

Business Manager: Mr C. Kershaw.

Circulation Manager: Mr K. Fletcher.

Our Annual General Meeting was held on the 4th October, 1962. The Chairman's report is as follows.

On behalf of the committee I wish to present this record of their stewardship.

The branch has once more had an active and productive year. Last November we had a successful social at Glenfalloch in spite of some gloomy forebodings, and in fact it was necessary to limit ticket sales latterly. In more serious vein we were addressed by Dr McQueen on "The Artificial Kidney," and two conference papers were re-read. Several meetings were devoted to the discussion and preparations of remits for conference, and although they met with little apparent success it is probable that the sound preparation and presentation of these remits made a favourable impression at the annual conference. As previously indicated two papers were presented from the branch as well. At the 1961 conference, we presented similar evidence of industry.

Our other ventures included a film show and a second demonstration evening. This lacked the spontaneity of the previous year but four creditable papers by Miss Rutbatch, Miss K. Fissenden, Mr F. Tannock and Mr A. Forsyth were presented. Mr A. Stewart provided a demonstration of the qualitative detection of foetal haemoglobin. We must congratulate Mr A. Forsythe on the publication of his article on "The Nessler Complex" in our Journal. This was a sound piece of routine investigation providing valuable quantitative information. Congratulations also to the contributors to our previous demonstration evening, some of which also made the Journal. Finally congratulations to John Morgan on his election to Institute Secretary. It is probably not common knowledge that parity with hospital laboratory salaries is due in no small measure to John's timely and adventurous spade work in the not too distant past.

After discussion of the projected South Island Conference we decided to invite the Christchurch Branch to organise this in view of our current commitments.

No report would be complete without mention of that dedicated band of Branch members who give up such a large amount of their spare time including some time normally devoted to sleep to attend our Branch meetings, not once or twice, but several times a year. We look forward to our November meeting in Invercargill.

R. D. ALLEN,
Branch Chairman.

The out-going officers were replaced by the newly elected,

Chairman, Mr C. Kershaw.

Secretary, Mr K. Fletcher.

Treasurer, Mr C. Thompson.

Committee, Messrs J. Case, B. Main, J. Morgan.

A discussion on Conference organisation for August 1963 followed and eventuated in the following being elected.

Conference Secretary, Mr R. Allen.

Business (Trades), Mr C. Kershaw.

Social Organiser, Miss J. Allum.

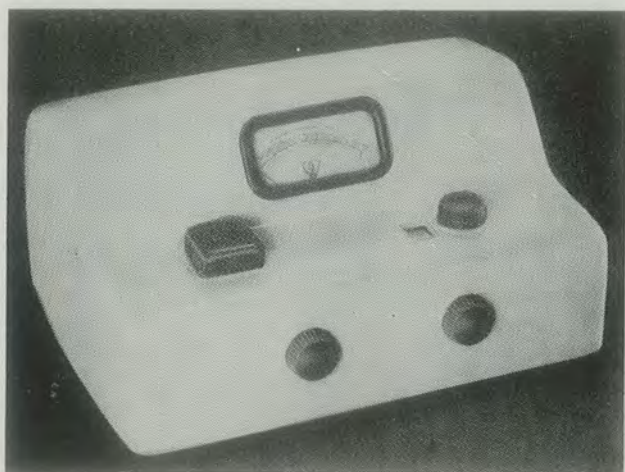
It was decided to hold our November Branch meeting in Invercargill on the 10th of the month and those Invercargill members present assured us of a very warm welcome. Our Christmas social function has been set down for December 6th at Brown House. As usual there will be a recess and after the November meeting we will not meet again officially until March. The evening ended with a delicious supper served by the women.

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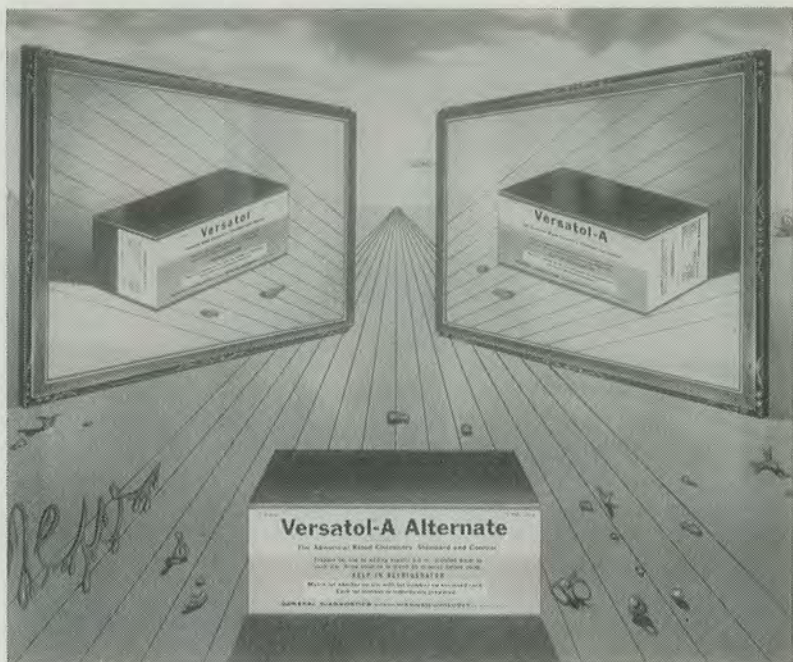
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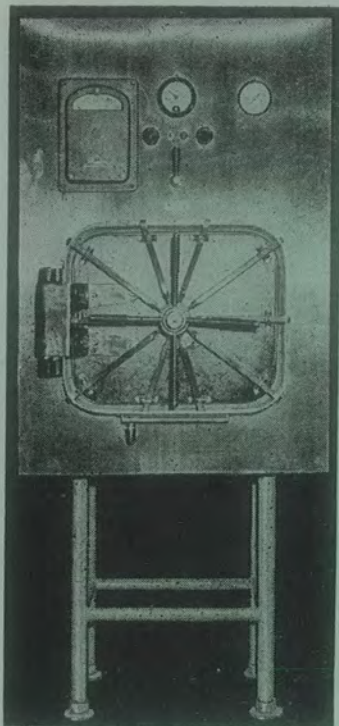
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K. P. Silicone Barrier Cream 555 is recommended for use by those whose occupation brings them into contact with Detergent Solution, Electroplating Solutions, Aqueous Solutions of Acids and Alkalis, and other skin irritants.

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.

Kemphorne, Prosser & Co.'s N.Z. Drug Co. Ltd.

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