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TABLE OF CONTENTS

Original Articles
A New Zealand "Bombay" Family
A. E. Knight, Diane Meek

Polyagglutinability in a Patient with a Clostridial Infection
L. Pinder

Cytochemical Stains as an Aid to Classical Membrane Marker Tests
R. M. Holmes and J. E. Lucas

National Immunohaematology Proficiency Survey (NIPS). A Summary of Results
R. J. Austin, A. E. Knight

N.Z.I.M.L.T. Library
Think Wide: Overseas Aid — What Can Be Done?
Ted Norman A.N.Z.I.M.L.T.

Book Reviews
Letter to the Editor
Two-Day Seminar in Laboratory Safety
Abstracts
Institute Business

MLTB Notes
CSU Notes
Management
News from the Hill
Forum
Obituary
Institute Calendar
Classified Advertisements

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Index to Volume 36, 1982

BIOCHEMISTRY

CYTOGENETICS
Centromeric Constitutive Heterochromatic (C-bands) in the Human Karyotype D. R. Romain 32
Silver-Staining of Active Nucleolar Organiser Regions (NORS) in Human Chromosomes D. R. Romain 4
Medical Cytogenetics (a personal viewpoint) D. R. Romain 88
A technique for the Demonstration of Kinetochore (Cd-bands) in Human Chromosomes D. R. Romain 58

GENERAL METHODS
Purification of Band 8, a Salivary Protein Implicated in Boat Susceptibility J. T. McIntosh 86
A Simple Method for the Calibration of Autoclave Temperature Probes M. Killip 11

HAEMATOLOGY
Hereditary Antithrombin III Deficiency in Pregnancy Gary S. Milicich, Dr J. M. Carter, Dr G. J. Green 55
A Case of Hairy Cell Leukaemia Sandra Sexton and Penny McComb 116

HISTOLOGY
Methyl-Butyl Methacrylate as an Embedding Medium for Routine Resin Sectioning in Light Microscopy Brian C. Thackeray 57

HISTORICAL
Organs and Organisms K. B. Ronald 25

IMMUNOHAEMATOLOGY
The Group and Hold Scheme and Elective Cold Surgery D. E. Roser 3

An Inexpensive Radioimmunoassay for Hepatitis B Antigen Detection R. A. M. Anderson 30
A Cord Blood Sample with a Positive Direct Antiglobin Test due to Anti M Wendy B. Barnes 36
Actinidin—the Proteolytic Enzyme from Kiwifruit as an Aid to the Detection of Blood Group Antibodies R. J. Austin and Gloria L. Crossley 115
A Simple Economical Platelet Rotator L. Milligan, A. Knight, Heather Kerr, and R. Harvey 121
An Economical Quick Thaw Cryoprecipitate Shaking Bath L. Milligan, Heather Kerr, and L. Foley 121

LETTERS TO THE EDITOR
Paltridge C. P. 14
McKenzie R. 39
Postlewaite B. F. 67

IMMUNOLOGY
The Use of Cellulose Acetate as a Supporting Matrix for Counterimmunoelectrophoresis Ray Cursons 31

MANAGEMENT AND EDUCATION
Introducing the New Employee to their job J. Parker 12
Are You Receiving Me? Jan Parker 37
Predictors of N.Z.C.S. Success Jan Parker 60
Medical Laboratory Technologists and Continuing Education R. Saminathan 118

MICROBIOLOGY
Trichomonas Vaginalis—A Comparison of Acidine Orange Stain and Direct Wet Film Examination Marne Wynn 37
Gas-Liquid Chromatography in Microbiology T. A. Chew 8
The Quality of Antibiotic Susceptibility Discs Helen M. Heffernan, Linda McLauchlan, Allison E. Smith 112

DIRECTIONS FOR CONTRIBUTOR
Uniform requirements for manuscripts submitted to biomedical journals 90
A New Zealand "Bombay" Family

A. E. Knight, Diane Meek

Immunohaematology Laboratory, Dunedin Hospital

(Paper presented at the first South Pacific Congress in Medical Laboratory Technology, Christchurch, August 1982)

**Introduction**

The rare "Bombay" phenotype may present only occasionally. This paper outlines the discovery of one such donor during the course of routine testing and the subsequent investigation of the donor's family in which one other member of this rare phenotype was found.

The "Bombay" phenotype may be thought to arise as a result of the presence in the rare homologous state of a "suppressor" gene, \( h \), which prevents the expression of normal ABO genes or the absence of the common "modifying gene" \( H' \). So that conversion of precursor substance to \( H' \) substance does not take place and thus in turn normal expression of the ABO genes.(1)

![Simplified ABO Genetic Pathway](Fig. 1)

The red cells of an individual of the Oh (Bombay) phenotype are not agglutinated by either anti-A, anti-B, or anti-\( H' \), and the serum contains anti-A, anti-B, and anti-\( H' \) and is thus incompatible with all normal donors.

Secretor studies also reveal that although the individual may have the \( Se \) gene, they do not secrete either A, B, H, or Lewis substances. Consequently, although the appropriate Lewis genes may be present they all type as either \( Le(a-)b- \) or \( Le(a+b-) \) and never as \( Le(a- b +) \).

**Family Study**

Miss S.N. presented at the Otago Region Blood Transfusion Service as a first time donor.

**METHODS**

On routine testing of her donation by the Technicon BCG blood grouping analyser the following results were obtained:

- Cells vs Anti-A, anti-B, anti-A+ B—All negative.
- Plasma vs Standard A, cells, B cells, O cells—All strong positive.

Manual ABO grouping techniques were therefore performed and the same results obtained.

Automated antibody screening by the Lalezari technique gave strong positive reactions in both channels against a pool of O Rh positive cells in one channel and O Rh negative cells in the other channel.

Antibody identification was then carried out on the serum by the following techniques:

- Saline room temperature, 20 min one stage enzyme (papain).
- Saline 37°C—converted to I.C.T. against a panel of fully typed group O cells, including the patient's own. Strong reactions were obtained in all tubes by all techniques excluding the auto control. Some haemolysis was observed in the one hour saline 37°C technique. It therefore was shown that the donor's serum contained an antibody to a high incidence antigen reacting by all techniques. Primarily, for exclusion of the rare Bombay type and because of ease of testing, the donor's cells were tested with anti-\( H' \) (Ulex europeus). However the cells failed to react with this reagent, although the control cells gave the expected pattern of reactions. The anti-\( H' \) typing was then repeated using the original reagent together with anti-\( H' \) of human origin. Consistent negative results were obtained with both reagents. In order to confirm this

probable although rare typing the serum was retested against an example of Oh (Bombay) phenotype cells. It was found that the serum was compatible with these cells, and the likely explanation that this donor was of the rare Oh Bombay type was made. It was arranged that the donor should revisit the centre to obtain further blood and saliva samples and for a full investigation of her family. Repeat testing of the second set of samples confirmed the original findings. The saliva was examined to determine the secretor status of the donor and this revealed that she was a non-secretor of "\( H' \)" substance. Full typing for other red cell antigens was performed with the following results.

Rhesus CCDec (most probably CDe/CDe) MNSSs; P, + ;
- Le(a-); Kk- \( Kp^-; \) Le(a- b -); \( Fy(a+b-); \) \( Jk(a-b+); \)
- Co(b-); \( Xg^+(+ \) )

Blood and saliva samples were then sent to the Blood Group Reference Laboratory, Oxford, England for confirmation of the findings and if the identification proved correct for inclusion of the donor's name onto the International Panel of Rare Donors.

**FAMILY HISTORY**

On questioning the donor at the time of collection of the second set of samples, she revealed that her family were from Sri Lanka and that her parents were first cousins and that they together with two brothers and one sister resided in Wellington. Moves were therefore initiated to obtain specimens from the family to see if any other members were of the Bombay type. On subsequent testing it was found that one brother was of the rare phenotype (this has also been confirmed by the BGRL, Oxford). The parents, other brother and sister proving to type as normal group O.

The family study shows the following:

![Family Study Diagram](Fig. 1)

**References**

Bacterial Penetration of Theatre Linen

Philippa Bridgewater, B.Sc (Hons)
J. D. Manning, M.D., Dip. Bact., MRC Path
Department of Laboratory Services, Wellington, 5 October 1982

Summary
In order to test proposed fabric for ability to remain impermeable to pathogenic bacteria under operating conditions, direct penetration tests using *Serratia marcescens* were used. The test fabric compared favourably to those presently used in the operating theatres of our hospital. Methods of testing are described.

Introduction
Before purchasing a new fabric for drapes and gowns the theatre staff wanted to know how effective it would be in guarding against micro-organism penetrating under various operating conditions.

During surgery the number of micro-organisms in the air of the operating room is high as possible. In a study of post-operative wound infections when operating in practically sterile air(1) it was clear that a reduction in infection rates from 9 percent to 1 percent could be attributed to clean air. However, even when the air in the operating room was “sterile” there was still a post-operative infection rate of 1 percent. This could be due to endogenous or exogenous organisms from the patient or organisms carried by the operating team.(2) It is not always possible to know if a person in the theatre is the carrier of a potential pathogen; however, if all external, uncovered surfaces are scrubbed and the use of sterile gloves and masks is observed, if the guards and gowns and drapes are of such a quality as to let no, or few, organisms through(3) then much has been done to minimise the risk of infection. If organisms are recovered from the outside surface of the surgeon’s gown at the end of an operation performed in sterile air, the most likely explanation would be that they had come from the surgeon’s body.(5)

A few studies have been made in various ways to measure the penetration of clothing. One such study(7) involved the use of a machine to rub bacteria through test fabrics and it was found that the fabric did reduce bacterial numbers to about 10 percent of the original concentration. Another group(6) used similar methods to test fabrics while wet and to stimulate transfer of dry particulate material through them. They found they got much higher penetration by their methods than the relative dispersal of bacteria. This was used at a concentration of 10⁸/ml (of a four hour culture).

METHOD
All the materials tested were done in the same way and under the same conditions, that is for 5 minutes and for 30 minutes. The fabric was stretched over a wooden embroidery frame and placed over the small agar plate. One ml of a 10⁷ suspension of a four hour broth culture of *Serratia marcescens* was dispensed onto the middle of the fabric while in position above the agar. Timing was begun.

The frame holding the fabric was removed after the appropriate time interval (5 or 30 minutes). The plates were then incubated at 37°C overnight and the number of colonies grown were counted the next day. This number could be converted to a percentage of the organisms applied initially to the fabric (which was about 10⁴ orgs/ml, although a Miles and Misra count was done in each case).

Results
All the fabrics were tested for the microbial permeability after 5 and after 30 minutes. It seemed that the extra time did not make much difference to the numbers of bacteria penetrating the fabric; most penetration had occurred after 5 minutes (Table 1).

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Micro-Organisms Penetrated at 5 minutes</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Test fabric X</td>
<td>y 900 (21.5) z 77 (1.8)</td>
</tr>
<tr>
<td>(b) New fabric Twill</td>
<td>26 (0.6)</td>
</tr>
<tr>
<td>(c) Fabric in use</td>
<td>Drape 1 19 (0.4)</td>
</tr>
<tr>
<td></td>
<td>Drape 2 30 (0.7)</td>
</tr>
<tr>
<td></td>
<td>Trolley top 3 (0.07)</td>
</tr>
</tbody>
</table>

Since so few organisms passed through the fabric after 5 minutes it was decided to try and “flush” out any organisms adhering to the fibres of the fabric. This was done by the addition of one ml of sterile water to the fabric surface after the 5 minute interval. It was hoped to elute any organisms that would normally penetrate the fabric but had been caught in the weave and had stuck in the fabric (Table 2).

<table>
<thead>
<tr>
<th>Fabric</th>
<th>Micro-Organisms Penetrated after Flushing</th>
</tr>
</thead>
<tbody>
<tr>
<td>(a) Test fabric X</td>
<td>0 (0)</td>
</tr>
<tr>
<td>(b) New fabric Cotton</td>
<td>293 (2.9%)</td>
</tr>
<tr>
<td>(c) Fabric in use</td>
<td>Drape 1 26 (0.26)</td>
</tr>
</tbody>
</table>

Table 1: Penetration of fabric by *Serratia marcescens*,

Table 2: Penetration of fabric by *Serratia marcescens* after Flushing.
Discussion
These results reveal that the choice of linen, made in the operating room, could affect the presence of possible pathogenic bacteria that may penetrate from the patient or any of the surgical team and initiate an infection. There have been various ideas put forward as to how to prevent this possibility of infection by direct contact with organisms forced through fibres of the fabric, these involve the use of still another garment. For example, it would be possible to use a layer of plastic under the drapes on the patient or under the surgeon’s gown, but this would be uncomfortable under operating conditions since temperatures (and) to be fairly high. The use of a plastic apron may be a realistic means of preventing bacterial penetration from the surgeon. (8) Another idea (9) is that a sterile apron of fine woven cloth can be worn over the surgeon’s gown to give increased thickness of fabric between the patient and the surgeon, but here again more clothing is necessary and this can be frustrating to the surgeon.

Disposable plastic and paper gowns could be advantageous, as far as non-permeability is concerned. But a closely woven fabric offers a more practical solution since the initial expense would soon be offset by the ease of sterilisation and the long period of repeated use.

Conclusion
The fabric that we set out to test (test fabric X), offers a permanent, closely woven, impenetrable fabric that although initially expensive, could be used in the operating theatre with complete confidence. The fabric, when compared to those at present in use, compares favourably in allowing no organisms to pass through it.

References

Polyagglutinability in a Patient with a Clostridial Infection

L. Pinder, ANZIMLT
Blood Transfusion Centre, Auckland Hospital, Auckland 1, New Zealand

Introduction
Polyagglutinability, a condition in which human red cells are agglutinated when mixed with virtually all ABO compatible adult serum, was first described in 1925,(6) and later by other workers. (4, 10) Although initially recognised as an in vitro phenomenon produced by the action of certain enzyme producing bacteria, it was soon shown to be also associated with some autoagglutination was observed in the blood films and difficulty was experienced in testing the blood on the Coulter counter. The Blood Transfusion Service was asked to investigate the possibility of cold haemagglutinin disease being present. No antibodies were detected in the serum but there was massive polyagglutinability of the patient’s red cells. The cells were agglutinated by the patient’s own serum and by the sera of ABO compatible adults but not by cord sera.

On the basis of these, and the findings noted below, it was proposed that the patient had T-activation of the red cells and it was recommended that blood transfusion be avoided if possible. A clinical diagnosis of probable clostridial gas gangrene was then made by the clinicians. Seven days after admission a massive gas forming abscess was drained from the left buttock and back, clearing 4 litres of liquefied material. There appeared to be no communication from the abscess to the abdominal cavity. A variety of organisms were isolated from this fluid including heavy growths of aerobic sporing bacilli, enterococcus, E. coli, Clostridia perfingens, Bacteroides, and Propironibacterium. Multiple blood cultures were negative after 10 days incubation.

Following further surgical debridement it became necessary to transfuse the patient to combat severe anaemia. However, his condition continued to deteriorate and he developed renal failure and died nine days after admission.

Case History
A 19-year-old Maori male was admitted to hospital following a fall from a moving truck. He sustained fractures of his pelvis, right ulna and left tibia as well as lacerations and extensive bruising to the shoulder, back and buttocks.

Resuscitative measures were commenced and surgical reduction of the arm and leg fractures carried out. Post-operatively he complained of back pain and upper abdominal discomfort and had an elevated temperature. Blood was crossmatched during the surgical procedure and the patient was found to be group A Rh positive. A three unit Group O Rhesus positive blood transfusion was given, followed two days later, by a further four units. All blood crossmatched was compatible and no serological abnormalities were noted.

A persistent swinging fever developed and it was noted on the blood film that the neutrophils showed vacuolation. Dohle bodies were present and that there was a marked shift to the left in the granulocytic series. The patient was treated with Ampicillin and Cloxacillin. A massive haematoma of the back was releasing a sero-sanguinous ooz. On the fifth day after admission massive autoagglutination was observed in the blood films and difficulty was experienced in testing the blood on the Coulter counter. The Blood Transfusion Service was asked to investigate the possibility of cold haemagglutinin disease being present. No antibodies were detected in the serum but there was massive polyagglutinability of the patient’s red cells. The cells were agglutinated by the patient’s own serum and by the sera of ABO compatible adults but not by cord sera.

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Following further surgical debridement it became necessary to transfuse the patient to combat severe anaemia. However, his condition continued to deteriorate and he developed renal failure and died nine days after admission.

Laboratory Studies
The patient’s serum contained no detectable antibodies when screened against a panel of group O cells by a variety of techniques at temperatures from 4° to 37°C. The red cells autoagglutinated, even in EDTA anticoagulant and free cells were only obtained on heating the blood to 48°C and washing with warmed saline.
The washed red cells were agglutinated by the patient’s own serum and all ABO compatible adult sera tested, but not by ABO.
compatible cord sera. The following reactions were noted against a panel of lecins (Table 1), thus establishing the laboratory diagnosis of polyagglutinability with T-activation.

A sample of red cells and serum were forwarded to Mr L. Marsh (New York) for further studies. He confirmed the polyagglutinatable changes synonymous with T-activation, with the patient's serum containing Anti T demonstrable against neuraminidase treated cells but not against normal cells. He noted that virtually no detectable A cells were present in the patient's blood and suggested the possibility that glycosidases known to be produced by Clostridium perfringens could have led to an acquired loss of red cell antigens from the red cells. However, the patient had been transfused with seven units of group O cells, and no conclusion can be reached on this possibility.

<table>
<thead>
<tr>
<th>Lectin Source</th>
<th>Patient</th>
<th>T + cells</th>
</tr>
</thead>
<tbody>
<tr>
<td>Arachis hypogaea</td>
<td>++++</td>
<td>++++</td>
</tr>
<tr>
<td>Salvia scarea</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Salvia horminum</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Phaseolus lineatissimus</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Glycine soja</td>
<td>++++</td>
<td>++++</td>
</tr>
</tbody>
</table>

**Table 1: Reactions of Patient's cells with Lectin Panel.**

**Discussion**

Detectable in vivo T-activation is not common. In the years prior to 1959 only 21 cases were reported(3) and not a large number of cases have been reported subsequently. It is often a transient condition disappearing within a few months and is usually associated with bacterial or viral infections, especially sepsicaemia, although it has been reported in apparently healthy individuals.(9) T-activation usually manifests itself as a discrepancy in the results of ABO grouping. Patients with T-activated red cells do not usually have an associated haemolytic process but the transfusion of normal plasma (containing Anti T) has been reported as causing a severe reaction in an infant with polyagglutinatable cells.(11) T-activation is the most common type of polyagglutination but there are at least three other forms. Firstly, Tk activation which is similar to T-activation in being transient and reversible, but the cells react with sera from which all Anti T has been absorbed. Secondly, Tn activation,(8) a permanent condition frequently associated with leucopanaemia and/or thrombocytopenaemia, and found as a consequence of somatic mutation. Thirdly, Cad positive red cells may be associated with polyagglutinability.(2)

The cause of the T-activation in our patient was probably related to the clostridial infection although other bacterial causes cannot be excluded. Numerous pathogenic species of Clostridia produce a lecinthinase capable of causing haemolysis and isolated case reports are present in the literature.(5)

Proof of the causative organism requires cultures to be grown and cell free filtrates tested for their ability to activate the T receptor of normal group O cells.

One unusual serological feature of this particular case was the presence of Anti T in the patient's serum. Anti T is usually absent from the serum of subjects with T activated red cells. The possibility exists that the patient had initially very high levels of Anti T which were not consumed in the agglutination process or the polyagglutinability was incomplete or arrested by the infusion of group O cells whose T receptors were not exposed at the time the samples of blood were taken.

The availability of a panel of lecins greatly simplifies the diagnosis of polyagglutinability. In particular the use of a lecin from an extract of peanuts (Arachis hypogaea) to establish the presence of T-activation in a red cell population is most useful. Other lecins can define the type of polyagglutinability present as each form has a characteristic serological pattern.

The management of a patient with T-cell activation can be difficult. Effective treatment of the primary condition will usually reverse the polyagglutinability, but where haemolysis is present the infusion of whole blood or plasma containing Anti T may cause a transfusion reaction. It is usually recommended that washed red cells are used or plasma containing low titres of Anti T.

**Summary**

A patient with clostridial gas gangrene was shown to develop polyagglutinatable red cells with T-activation caused by bacterial enzymes. The case is unusual in that the patient's cells were autoagglutinated by Anti T. The availability of a lecin panel was of value in rapid diagnosis of the condition.

**Acknowledgements**

Mr L. Marsh of the New York Blood Centre for confirming the serological findings and commenting on the case. Dr D. G. Woodfield, Medical Director, for assistance in preparation of the report.

**References**

cytochemical stains as an aid to classical membrane marker tests

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t.

haematology department, dunedin hospital

introduction

in 1958 the lymphocyte was described as "a poor sort of cell characterised by mainly negative attributes."(1) however in the intervening 24 years much has been learnt about this "poor sort of cell".

it is known that lymphocytes consist of two broad groups; t-lymphocytes and b-lymphocytes and it is now obvious that there are a number of sub-groups to each section.(2)

b-lymphocytes are said to be morphologically large; have a short life span of 2-3 days; secrete a small amount of immunoglobulin which is used in antigen recognition; proliferate and mature into antibody secreting plasma cells when stimulated by antigens. they constitute ± 15% of circulating lymphocytes.

t-lymphocytes on the other hand are said to be morphologically small; have a long life span; are responsible for cell-mediated immunity by reacting either directly with target antigenic determinants or indirectly through effector cells (not through the production of immunoglobulin). they constitute ± 75% of circulating lymphocytes.

the ability to determine the relative proportion of t- and b-lymphocytes is helpful as a diagnostic aid in many disease states. for example in acute lymphoblastic leukaemia (a.l.l.) the proliferating cell type has prognostic significance, as it has been found that t and b cell a.l.l. have a worse prognosis than common (non t-non b) a.l.l.(3) it is also useful to be able to demonstrate that in an increase of b-lymphocytes a single type of light chain immunoglobulin is being produced. this is suggestive of a malignant proliferation as opposed to a reactive lymphocytosis in which both types of light chain will be produced.

b and t-lymphocytes have many characteristics which make their differentiation possible. these include (in the case of the b-lymphocytes); the presence of surface immunoglobulin, receptors for the fc portion of igg; c3d, mouse erythrocytes, and epstein-barr virus, together with the presence of fa-like antigens. t-lymphocytes may be distinguished by the presence of sheep erythrocyte receptors; the presence of the specific t-lymphocyte antigen and certain cytochemical reactions.

some of the membrane marker tests suffer from lack of specificity. for example not all lymphocytes have receptors for fc and c receptors but so do neutrophils and monocytes. this fact must be taken into account when detecting surface immunoglobulin by immunofluorescent techniques as monocytes which may have surface bound exogenous immunoglobulin could be mistaken for b-lymphocytes. this problem can be overcome by the use of fab2 antisera which do not recognise the fe receptor. another approach is to utilise a counterstain to make recognition of monocytes easier. to this end a peroxidase method has been used.(4) rosetting techniques used for the identification of t-lymphocytes are also beset by the problem of avidity between different sheep red cells.

a number of cytochemical stains have been used in an attempt to identify lymphocyte types. these include acid phosphatase,(5) \( \beta \)-glucuronidase,(6) acid \( \alpha \)-naphthyl acetate esterase (anae),(7) and \( \alpha \)-naphthyl butyrate (nbe).(8) much work has been done using these stains in recent years by a number of researchers and there has been some disagreement as to their usefulness or otherwise of some of them. the most useful appear to be the esterases anae and nbe. it is considered that they show a specific staining pattern for t-lymphocytes and more accurately the major sub-population of \( \tau \) or killer/inducer cells. a lymphocyte containing a single large granule or up to five smaller granules in the cytoplasm is considered to be positive. the stains readily distinguish monocytes which display an overall strong granular pattern of reaction. b-lymphocytes are said not to contain this enzyme and the small population of non-t, non-b (null) lymphocytes show a specific fine granular pattern using the nbe stain.

in this laboratory we have combined the following four techniques for the detection of lymphocyte membrane markers: surface immunoglobulin detected by the use of fluorescent-isothiocyanate conjugated labelled anti-human immunoglobulin with a peroxidase counterstain; spontaneous sheep erythrocyte rosetting using aet-treated red cells; acid \( \alpha \)-naphthyl acetate esterase and \( \alpha \)-naphthyl butyrate stain.

methods

mononuclear cell separation

heparinized or edta anticoagulated blood is diluted with phosphate-buffered saline (pbs) and layered over a ficoll/hypaque density gradient.(9) the mononuclear layer is collected and washed twice in rpmi 1640 tissue culture medium and finally resuspended in rpmi plus 20% fetal calf serum (rpmi/fcs). viability is assessed by the trypan blue exclusion test. monocytes invariably contaminate the layer but these are not removed in any way as it has been found that some lymphocytes later selectively removed at 37\(^\circ\)c be left at 4\(^\circ\)c overnight in rpmi/fcs without any ill effects. the average yield is ± 90% lymphocytes and viability of ± 99%. e-rosettes

fresh sheep erythrocytes are treated with aet as previously described.(10) equal volumes (200 ul) of 2% aet treated sheep cells and 4 \times 10\(^7\) mononuclear cells are mixed and incubated at 37\(^\circ\)c for 15 min. with intermittent mixing followed by gentle centrifugation (200 rpm/10 min) and a further incubation this time at 4\(^\circ\)c/3 hours. approximately one half of the supernatant is removed and a small drop of 1% methylene blue added. the cells are then gently resuspended and a drop placed on a slide, coveredslipped and sealed with nail polish. a minimum of 400 lymphocytes are counted and the percentage of rosetting cells expressed. a rosette is considered to be a lymphocyte with three or more srbc attached. monocytes are recognised by virtue of nuclear shape, etc. as visualised by the methylene blue and are not included in the count.

surface immunoglobulin detection

incubate 0.2 ml volumes of 4 \times 10^7/ml mononuclear cells and appropriately diluted fluorescein labelled antibody for 30 min-4\(^\circ\)c. wash cell suspension three times with pbs and resuspend button in 1 ml 20% rpmi/fcs. add 25 \( \mu \)l peroxidase reagent(4) and 10 \( \mu \)l of 5% h\(_2\)o\(_2\), mix and centrifuge after 1 min. remove supernatant and resuspend in a drop of pbs. place a drop on a glass slide, cover with a coverslip and seal with nail polish. examine using a microscope fitted with both light and epifluorescent light sources. a minimum of 200 lymphocytes should be assessed for fluorescence and the percentage calculated.

monocytes are recognised under light illumination by the presence of black peroxidase reaction material in the cell.

acid non specific esterase

the method of ranki et al(7) was used using a shorter incubation time of 1-2 hours/37\(^\circ\)c. briefly; formalin vapour or buffered formal/acetone fixed films are incubated for 1-2 hours at 37\(^\circ\)c in an incubation mixture consisting of \( \alpha \)-naphthyl acetate and hexazonised pararosanilin in an acid-phosphate buffer of ph 5.8. the reaction material is seen as a single large para-nuclear red granule in the cytoplasm of lymphocytes. at least 200 lymphocytes are counted and the number of ana-positive cells expressed as a percentage. monocytes have a diffuse overall fine granular pattern and are easily recognised.

\( \alpha \)-naphthyl butyrate esterase

the method of higgy et al(8) is used with the substitution of hexazonised pararosanilin for fast blue bb as the coupler. formalin vapour fixed films are incubated in an incubation medium of ph 8.0 phosphate buffer, 1m; \( \alpha \)-naphthyl butyrate in acetone and hexazonised pararosanilin for 30-45 mins at room temperature. the slides are counterstained with haematoyxlin. positive reaction consists of 1-4 dots of red material in the
cytoplasm of lymphocytes which is considered to be compatible with T-μ lymphocytes. B-lymphocytes show no reaction while Null-lymphocytes have an overall fine granularity. Monocytes are easily distinguished by the nuclear shape and overall fine granular staining.

Results and Discussion
To date we have tested many Chronic Lymphocytic Leukaemias, a few Acute Lymphoblastic Leukaemias, a number of patients with an absolute lymphocytosis and some lymphomas. The techniques have also been applied to cells obtained from bone marrow, lymph nodes and spleen biopsies. As can be seen from Table 1 the correlations obtained between the classical methods and cytochemistry are acceptable. An advantage of the cytochemical stains is that they may be performed retrospectively on marrow films, touch preparations, etc., and in some cases add valuable diagnostic information. Although the cytochemical methods cannot at this time, supplant the classical methods of lymphocyte typing they add important knowledge and are also a form of quality control. If for instance the sheep red cells in use do not have the required degree of avidity it may occur that the percentage T-μ-lymphocytes appear to exceed the percentage total T-lymphocytes (E-Rosetting). As this is not possible the E-rosettes need to be repeated using fresh sheep cells.

In conclusion we have found that the ANAE and NBE cytochemical stains are a useful addition to the classical membrane marker armory. The ANAE and NBE when used in conjunction with the classical tests can provide additional information with particular reference to the T-μ-lymphocyte subpopulation.

References
National Immunohaematology Proficiency Survey (NIPS)
A Summary of Results

R. J. Austin
Charge Technologist, Blood Bank, Taranaki Base Hospital, New Plymouth

A. E. Knight
Charge Technologist, Immunohaematology Laboratory, Dunedin Hospital

On behalf of the Technical Sub-Committee of the Transfusion Advisory Committee

Introduction
This is the fourth summary of results to be presented for publication and covers the last four surveys:
NIPS 15 (November 1981)  NIPS 16 (February 1982)
NIPS 17 (May 1982)  NIPS 18 (August 1982).
It remains the intention of these summaries not to pass judgement but rather to present the results and for individual laboratories and technologists to be aware of their shortcomings and take the necessary steps to correct their deficiencies.

A comprehensive summary and discussion of results is distributed to each participating laboratory after each survey which details results on a confidential basis and contains comments from the survey referees on the antibodies and/or abnormalities present.

NIPS 15
GROUPING

COMMENT
As in previous surveys basic errors in ABO and Rhesus grouping are taking place. The usual forms of error include transcription and transposition of results and specimens. Other errors relating to the misuse of reagents is also a common source of error especially in Rhesus genotyping. It may be that some laboratories which do not routinely carry out Rhesus genotyping do in fact attempt it in these surveys and because of the lack of expertise make these simple yet important errors. The inclusion of a D\textsuperscript{+} cell in this survey once again highlighted the problem of cells that are apparently D negative. Some laboratories still fail to confirm the status of these cells by failing to test with anti-D by the Indirect Coombs technique.

ANTIBODY SCREENING AND IDENTIFICATION
No atypical blood group antibody is present in serum 066.

COMMENT
An incompatibility was detected by a few laboratories by both saline and I.C.T. techniques.

NIPS 16
GROUPING

COMMENT
Errors in ABO and Rhesus grouping in this survey were almost non-existent. One transposition of samples did take place with subsequent erroneous results. An occasional error was noted in the genotyping due to the laboratories obtaining incorrect results with their typing sera.

ANTIBODY SCREENING AND IDENTIFICATION
Serum 070—contains anti-c, anti-e and anti-Kell.

COMMENT
The main reason for laboratories failing to identify all three antibodies correctly was due to a lack of suitably typed cells on the panel being used for antibody identification.

CROSS MATCHING

This survey once again highlighted the problem that some laboratories are having with their enzyme techniques in that a large number failed to detect the incompatibilities with either cell 071 or 072. To quote the worst example, of the 32 laboratories using ficin as their enzyme of choice 10 failed to detect the incompatibility with 071 and 19 failed with cell 072. It is not suggested that participants should change from ficin to papain, as this latter enzyme had the better performance, but rather to examine the techniques generally to determine the possible cause of the poor performance by some enzyme users. The fact that 22 ficin users detected the incompatibility with cell 071 and 13 with 072 shows that the enzyme is suitable and does work and that personal use of the technique should be examined.

NIPS 17
GROUPING
074 A, Rh Negative rr, Jk(a—b+). 075 O Rh Negative, rr, Jk(a—b+). 076 A, Rh Negative rr, Jk(a—b+). 077 A, Rh Positive R,R, Jk(a—b+).

COMMENT
An attempt was made to sensitize cell 074 in order that a weakly positive Direct Coombs test would be obtained. Some laboratories correctly found this result and were successful in elution studies. Other laboratories experienced haemolysis of the cell as a result of the attempted sensitization. Because of the sensitization some laboratories misreported the cell as being D\textsuperscript{+} positive. All the other cells were correctly ABO and Rhesus genotyped by all participants.

ANTIBODY SCREENING AND IDENTIFICATION
Serum 074 contains anti-Jk\textsuperscript{a} detectable by I.C.T.

COMMENT
A number of laboratories failed to detect the presence of the antibody by their screening techniques. Some laboratories, although reporting the presence of an atypical antibody failed in their identification.

CROSSMATCH WITH SERUM 074
Cell 075—Compatible. Cell 076—Incompatible due to anti-Jk\textsuperscript{a}. Cell 077—Incompatible due to anti-Jk\textsuperscript{a}.

COMMENT
A large number of laboratories failed to detect the incompatibility with either cell 076 or 077 and some laboratories failed with both cells. The anti-Kidd antibodies are notorious for their lability and may be indetectable in a short period of time. This may be the reason why a number of laboratories failed to detect the incompatibilities. Another reason offered is that quite often the agglutination may be quite fragile and easily dispersed with rough handling.

NIPS 18
GROUPING

COMMENT
The main reason for laboratories failing to identify all three antibodies correctly was due to a lack of suitably typed cells on the panel being used for antibody identification.
COMMENT
A few laboratories failed to either correctly ABO, Rhesus genotype or Lewis type all four cell samples. More importantly was the fact that 45 percent of the participating laboratories failed to detect or comment upon the deliberately introduced clerical error with cell 080 (800). This reflects a poor standard of checking samples. Clerical errors rather than those of a technical nature account for the greatest number of transfusion "accidents" that take place.

ANTIBODY SCREENING AND IDENTIFICATION
Serum 078 contains anti-Le\textsuperscript{a} plus Le\textsuperscript{b}.

COMMENT
Some laboratories failed to detect the presence of the antibodies. This may be attributed to the lability of the antibodies of the Lewis system and the loss of potency during shipping. Also the Lewis typing of cell 078 caused some confusion because as was stated in the referee's comments, for an individual to develop any Lewis antibodies, anti-Le\textsuperscript{a}, anti-Le\textsuperscript{b} or both, the typing must be Le(a- b-). For a likely explanation reference should be made to the survey summary.

CROSS MATCHING
Cell 079 Incompatible due to anti-Le\textsuperscript{a}. Cell 080 (800) Compatible. Cell 081 Incompatible due to anti-Le\textsuperscript{b}.

COMMENT
A number of laboratories failed to detect the incompatibilities. This failure may reflect the lable nature of the antibodies as previously mentioned. Another contributing factor may be the delicate nature of the agglutination caused by Lewis antibodies which can be easily dispersed with violent agitation.

General Comments
There is 100 percent participation of laboratories in the National Immunohaematology Proficiency Survey. It still proves to be a most popular and the organisers hope a most beneficial external quality control system. There are still some areas of concern. The errors that are most often highlighted relate to fairly basic problems. Transposition of specimens, transcription errors, failure to carry out adequate clerical checks, being the most common. The ability to correctly identify an atypical antibody is not of paramount importance. However to detect the presence of an abnormality either by screening or in cross matching is of utmost importance, as this could have disastrous consequences. Although the lability of Kidd and Lewis antibodies may be used as the reason for non-detection of these antibodies in the appropriate surveys it should be pointed out that these antibodies were detected by laboratories distant both in time and kilometres from the point of origin. Lability of an antibody should be used as a reason for detection failure only when all other possibilities have been examined. In conclusion the organisers would like to thank all participants for the support, criticism (generally constructive) and supply of raw materials.

Acknowledgements
The organisers wish to thank Miss J. McRae and Mrs B. England for their patience in interpreting and typing the surveys to date.
The following journals have recently been received by the NZIMLT Library and may be borrowed by writing to Mr J. Lucas, NZIMLT Librarian, Haematology Department, Dunedin Hospital.

LABORATORY MEDICINE VOL. 13 NO. 2
(1) Rubella Testing—An Overview.
(2) Diagnosis of Cylindria trachonastus infection by cell culture and serology.
(3) A modification of the P.A.S. technique using Dimedone as an aldehyde blocking reagent for plastic embedded sections.
(4) Counterimmuno-electrophoresis I. Laboratory evaluation.
(5) The usefulness of the Limulus amoebocyte lysate assay.
(6) Evaluation of a chemically modified Rh amiserus for routine Rh testing.

LABORATORY MEDICINE VOL. 13 NO. 6
(1) Fine needle aspiration—a personal view.
(2) Urine crystals—identification and significance.
(3) A survey of blood-ordering practices for elective surgical procedures.
(4) Comparative evaluation of phase, impedance and laser platelet counting.
(5) Comparative clinical and serological study of autoantibodies in sera of Rheumatic Disease patients.

LABORATORY MEDICINE VOL. 13 NO. 7
(1) Clinical application of immunologic techniques to the diagnosis of lymphoproliferative and immunodeficiency disorders.
(2) Bacteriophage—a review for medical technologists and hospital epidemiologists.
(3) Effect of staining and storage times on reticulocyte counts.

MEDICAL LABORATORY SCIENCES VOL. 39 NO. 3
A special issue devoted to the role of the laboratory during and after pregnancy.

AMERICAN JOURNAL OF MEDICAL TECHNOLOGY VOL. 48 NO. 5
(1) Case Study: drug induced electrolyte changes.
(2) Controlling the quality of blood gas results.
(3) Non-invasive measurement of blood oxygen levels.
(4) The use of restriction endonucleases in prenatal diagnosis of haemoglobinopathies.
(5) Identification of T-lymphocytes by a histochemical stain for -naphthyl acetate esterase.

AMERICAN JOURNAL OF MEDICAL TECHNOLOGY VOL. 48 NO. 7
(1) Computer technology—a reality in today's laboratory.
(2) Computers—education at your fingertips.
(3) Personal experiences with personal computers.
(4) Using the proposed NCCLS protocol for evaluation of automated instruments.
(5) Structuring complexity of testing: a process oriented approach to limiting unnecessary laboratory use.
(6) Differential microbiological diagnosis of Proteus infection from non-human sources.
(7) Evaluation of a metronidazole disc test for the presumptive identification of anaerobes.

LABORATORY MEDICINE VOL. 13 NO. 8
(1) Special feature on technologists' dissatisfaction with their job.
(2) Specimen quality control in microbiology.
(3) Acid phosphatase and other biochemical markers in Prostatic carcinoma: current status.

LABORATORY MEDICINE VOL. 13 NO. 9
(1) Tumour diagnosis—tumour markers.
(2) Microbiology—Babesia.
(3) Immunohistologic analysis of lymphocyte surface markers.
(4) Donor ALT testing.

MEDICAL BIOLOGY VOL. 60 NO. 2, 3, 4

MEDICAL LABORATORY SCIENCES VOL. 39 NO. 4
(1) The analysis of factor VIII.
(2) Amidolytic end-point methods for factor VIIIIC inhibitors.
(3) Factor VIII related antigen: an improved enzyme immunoassay.
(4) Qualitative VIIIIR:AG function screening of multiple samples by two-dimensional crossed immuno-electrophoretic technique.
(5) Improved anti-globulin tests to detect difficult antibodies: detection of anti-Kell by LISS.
(6) Haematoxylin and eosin staining of osmium-fixed tissue in epoxy sections.
(7) Inhibitory substances in urine: an addition to the routine screen.
(8) The role of receptor assays in the clinical laboratory.
(9) Detection of penicillinase-producing Nisseria gonorrhoeae.
(10) A cell for perfusion studies of isolated tissues.
(11) Simplified haemolysate preparation for haemoglobin A, determinations by elution after electrophoresis.

AUSTRALIAN JOURNAL OF MED. LAB. SCIENCE VOL. 3 NO. 4
(1) Factors influencing the Romanowsky Effect.
(2) Assay of Growth Hormone in Serum: A Preliminary Comparison of Four Commercial Kits.
(3) The Relationship Between Platelet Size, Platelet Count and Platelet Distribution Width.
(4) Same Day Susceptibility Testing of Enterobacteriaceae to Tetracycline.
(5) A Simple Yet Effective Laboratory Eye-Wash Facility.

CANADIAN J. OF MED. TECH. VOL. 44 NO. 3
(1) Rapid presumptive antibiotic susceptibility testing of anaerobes using an automated system.
(2) Detection and clinical significance of hemagglutinating penicillin antibodies.
(3) Thawing fresh-frozen plasma.
(4) A system for the standardisation of urine microscopic examinations.

AMERICAN JOURNAL OF MEDICAL TECHNOLOGY VOL. 48 NO. 8
(1) Focus on Immunassays
(2) Absorption of warm autoantibodies using glutaraldehyde treated red cells.
(3) Lymphomas and their expression in the peripheral blood.

AMERICAN JOURNAL OF MEDICAL TECHNOLOGY VOL. 48, NO. 9
(1) Serum-plasma separator in amylase assay.
(2) Titrimetric and gravimetric calibration of pipettors—a survey.
(3) Comparison of “Micro-10”, a modified “Minirek” system and conventional methods for four-hour identification of Enterobacteriaceae directly from blood cultures.
Think Wide: Overseas Aid—What Can Be Done?

Ted Norman A.N.Z.I.M.L.T.

Charge Technologist, Laboratory, Dannevirke Public Hospital, Dannevirke

Presented at the Annual Seminar of the Mid North Island Districts held at Palmerston North Hospital on 13th November, 1982

Over recent years the subject of aid to overseas countries—especially the Pacific—has cropped up fairly regularly at Conferences. Several well-informed people such as Ron McKenzie and Marilyn Eales have spoken, discussion has followed and various views have been expressed. Despite this I feel that as an Institute we are still doing little more than paying lip service to the question of aid. This feeling was amplified at the South Pacific Congress, a successful and well organised meeting which attracted one Cook Islander who trained, and still works in this country, one South East Asian, one expatriate New Zealander now doing research in Papua New Guinea and one Fijian Indian as guest speaker. A total of four from outside New Zealand or Australia from a total registration of over 450. Australian Congress—certainly and a good one, South Pacific Congress—one Congress the question was raised in which there were no Islanders present and it was explained that full information had been sent to all Pacific territories and they had been invited to send representatives. The organisers were at a loss to understand why none were present. I can explain it in two words, distance and money. Money I shall consider in more detail later but I know that if I were to suggest to a competent Cook Island technologist that he might like to listen to a paper on “The Haematological effects of Prostacycline during Hypothermic Cardiopulmonary Bypass” or on “A Case of Hypereosinophilic Syndrome” or a new unusual eosinophilic infiltrate with no known cause or on “Haemoglobin E and raised Creatine Phosphokinase” he would certainly regard me as weird and would wonder what language I was speaking. If however, someone should explain to him in simple terms why a kid with a belly full of hookworm will probably have 30-40% eosinophilia in the peripheral blood and will almost certainly be anaemic, he would understand and would benefit. Of the 120 or so papers presented at Congress I would think that 15-20 would have been useful to, and understood by, an Island technologist. There is a vast gap in communications between our technology and that of the Pacific and this gap is growing wider daily. In failing to recognise this the Congress organisers ignored a great opportunity to provide aid.

During the opening ceremony the Minister of Health stated “This Congress is also important in another aspect. For it aims to recognise the responsibilities which both Australia and New Zealand have in the Pacific region. At a time when international relations are all too often strained it is important to build up understanding and a feeling of mutual responsibility with the nations geographically closest to us.”

Undoubtedly reasonable sentiments but in reality so much hot air. As we have seen an aid chance was permitted to pass by unnoticed. I wonder who wrote that speech for him. Another example of lip service appeared in a recent journal when the Christchurch regional representative on Council wrote “the institute is also financially involved in the Pacific Training Centre at Wellington Hospital and has a representative on the Training Centres Management Committee. This type of involvement has some political significance and consequently has not gone unnoticed by Health Department authorities. So not only is the institute involved in improving health care in the Pacific basin but it is increasing its standing in New Zealand’s health scene.” All of this is well and good standing was obtained for the cost of transporting the Institute’s representative between Auckland and Wellington for Training Centre Management Committee Meetings. While in no way knocking the contribution which the Council representative made I would suggest that for a sum of $400 in the last financial year we certainly obtained real value for money.

I suggest that the Council of our Institute have no real interest in the needs of the Pacific.

Two positive contributions at Congress in relation to aid were those of Des Philip who, in a most eloquent keynote address, considered a novel version of CER, and of Dr Rau from World Health Organisation who must have opened many eyes when he compared the cost of the 1980-1990 pure water for all decade with the profits achieved world wide by tobacco and brewing companies.

World Health Organisation have as their guiding objective a vision of health for all by the year 2000 and from the laboratory aspect they emphasise Public Health laboratories and communicable disease surveillance and control. They are concerned with all aspects of training, Q.C. and method standardisation and with the introduction of techniques relevant to local needs. I wish to consider the concept of relevant. We recently had a student from the American trust territory of Truk, an island of the Eastern Caroline group, in our laboratory for a few weeks. It turned out that his laboratory and ours had a similar haematology workload—about 15-20 specimens/day. However Mick mentioned that when he left Truk only very basic haematology testing was being done. The reason was that their Coulter counter had broken down and none of the staff were very familiar with manual techniques. The counter was part of an American aid package a few years ago and while basic preventative maintenance procedures could be carried out by laboratory staff, a major breakdown required flying a serviceman from Hawaii at a cost of approximately $2,500. Hence the Coulter had lain idle for a while.

An aid project team sets up a water reticulation system in the Gilbert Islands, obtaining water from a not very deep artesian source under coral sand. The water was of average quality and was chlorinated before being piped around the Island. Whether because of carelessness or lack of knowledge I cannot say but the chlorine levels were not properly monitored with the result that the water was grossly under treated, faecal contamination found its way into the water lens and a cholera outbreak occurred. The result was some deaths and the need for urgent intervention by New Zealand and Australia emergency medical teams.

A Pacific Island doctor spent six months on World Health Organisation fellowship at Palmerston North Hospital doing a post-graduate radiology course. Within a short time of his return home he had made a vast improvement in x-ray services. Within six months he was transferred temporarily to a remote outer island with no x-ray facilities. As can so often happen temporary programme must be regularly followed up to ensure their outcome is not lost as happened to the radiologist. In fact this they were fairly successful but the recipient feels that he has had little benefit. The communication and understanding gap widens further. Relevant aid must be more carefully considered than were the Coulter counter or auto-analysers, it must be properly planned and set in place and all involved must be properly and fully trained to ensure correct use as was apparently not the case with the Gilberts water supply and all programmes must be regularly followed up to ensure their continuation, and not lost as happened to the radiologist. In fact Pacific Islanders have been subjected to a long history of less than appropriate aid as 150 years ago the first missionaries found themselves confronted by heathens and set about saving souls. In this they were fairly successful but their success in destroying bodies was really spectacular. The Islanders had no immunity to the measles, colds and other minor ailments which the missionaries carried with them and in many cases populations were very severely depleted.
It is very easy to criticise and it is dangerous to knock without offering constructive alternatives—this far I have offered mainly bricks so I will now look at what I think is required in the form of aid and will consider ways of meeting these requirements.

It is recommended by World Health Organisation that training for Pacific Island laboratory people should take place at three levels.

1. A 12 month course for laboratory assistants which is carried out locally and trains to a level which enables a variety of very basic tests to be carried out on remote, sparsely populated islands.

2. A three year postgraduate certificate course, the basic technical qualification, which is available at either the Papua New Guinea or Fiji schools of medicine. In some cases this course can be continued for a further two years to diploma level at Papua New Guinea.

3. Short, postgraduate courses in specific topics e.g. water testing. This is the level at which the Pacific Paramedical Training Centre (P.P.T.C.) is operating and these courses are also arranged by World Health Organisation in the larger Pacific territories and in Manila.

Some problems occur. Only a limited number of Islanders achieve sufficient schooling to enable them to be trained beyond the laboratory assistant stage. Those who do show aptitude in science are quickly directed into medicine or dentistry. Setting up a teaching course at this basic level can be hampered by the reluctance which many Islanders show towards sharing information. I suspect that their shortcomings as teachers stem from a lack of confidence in their own knowledge and ability as well as from a tendency to regard knowledge as a personal possession in an extended family culture which emphasises sharing material possessions. I think that aid can most appropriately be given at the basic level by individuals who go to the Pacific either as volunteers or as seconded expatriates. Their main task will be to train senior technicians to set up and run their own basic training schemes. These schemes can always utilise surplus text books, equipment, etc., which I am sure still fill the storerooms of many laboratories in this country.

Equipment is best directed through the P.P.T.C. where need can be assessed and students can be trained in proper use. At the secondary level we should be looking at the needs of the Papua New Guinea and Fiji schools. Help can obviously only be offered in response to their needs but I feel that some effort to assess needs is required. Could they use tutors from here or Australia to run short courses in specific topics? Would their teaching staff benefit from refresher courses here? What equipment do they have and what do they need? I do not have answers to these questions and it may be that there is little that we can do but if we do not try to find out we will never know.

At the tertiary level we can speak of our efforts with much greater confidence. The P.P.T.C. is now well established and is at present running courses in water testing which are well organised and have full World Health Organisation backing. Future courses are planned on diarrhoeal and respiratory diseases—but areas of real concern in the Pacific. A number of dedicated people are giving their time and effort both as tutors and as members of the organising committee and they deserve our full backing.

I will sound one note of caution in this area. In some cases the school is arranging individual courses when a group course is not suitable arranged programme would offer benefits for them and for us. A few days at Pacific harbour would be most acceptable but I hear you say—to0 expensive! Four hundred and fifty dollars for four days of congress in Christchurch. One third of these were from Australia. When the costs of travel, accommodation, registration fees, etc., for both delegates and industry people are considered I would conservatively estimate the total cost as being in the vicinity of $400,000. Compare that with the $80-81 Cook Island annual allocation. True the greatest part was spent on air fares between here and Australia but many of us will expect to recoup in four years. How useful would some of that money be in the tourist-dependent economies of Fiji or Samoa?

At this point a number of points emerge which merit consideration and discussion.

Individually many of us have skills and talents which we can share at the P.P.T.C., in our own laboratories or as volunteers or expatriates in the Pacific. I know that those who do become involved will find problems, frustrations and periods of real doubt as to the worth of it all but I also know that ultimately they will find pleasure and satisfaction in a job well done. Of the many New Zealand technologists who have been involved and who have made real contributions I would point to two who I feel are making extremely valuable efforts to help Island technology. The first is now living in his Masterton Laboratory and Mike Gratten in the Papua New Guinea Eastern Highlands, both deserve our thanks and our support. I hope that many technologists will follow these examples in the future.

As individuals we can all make available aid in a form which is so vital to the success of any project. How many institute members would object to paying an extra $10/week as a subscription levy to build a fund the interest from which would provide a valuable source of funds. From our present membership a levy of $5.00 annually would amount to $6,000-$7,000 per year thus providing a source of aid income in a few years time which amongst other things could help sponsor trainees to the P.P.T.C. A recent class of 12 trainees at a water testing course were all sponsored, eight by World Health Organisation, three by Red Cross and one by the University Women’s Federation. Our Institute must put itself in a position where it can also provide these schemes. Of course the sponsorship could help finance the P.P.T.C. tutor around the Pacific both to assess future training needs and to follow up on the effectiveness of previous courses. The P.P.T.C. has now proved that it is fulfilling a valuable role and I hope that Government aid agencies will continue to support it but there are many peripheral areas where our institute must become involved. Along with their present approaches to Rotary for help they should also be looking to all Government aid agencies and to our own membership.

Finally the obvious questions arise—does it matter to us what happens in the Pacific? Why should we be concerned?

Some will consider that at present we have enough people requiring aid on our own doorstep who should be catered for first. Perhaps true but I would suggest that most who require aid in this country have at various stages had options on which they have made choices. A person born and living on a remote strip of coral sand with only coconut trees above, fish in the surrounding lagoon, a few cans of bully beef and no real prospect of any income has precious few options. Surely this person has the right to expect a reasonable basic health service. Can we expect properly cross-matched blood should a gastric ulcer bleed or a post partum haemorrhage occur.

Many Pacific Islanders still suffer from diseases which have been largely eliminated in this country with tuberculosis being one example. By aiding their ability to diagnose and treat these diseases we are helping to keep these wolves from returning to our door.
Skills which we are now seldom called on to use can relieve much suffering for others. We must also consider that the Pacific provides a big potential market for our produce. The Americans do not want our beef, the E.E.C. are trying to persuade us to take our lamb and butter elsewhere, the Iranians are broke as are many others who are often hungry, and our Government is paying our producers to increase production!

We may reach the point where we have to substantially increase our aid to our nearest neighbours so that they will have sufficient suffering for others. Because they also believe that the grass on the other side is greener they put pressure on their politicians who must then try to improve their economy. With few natural resources and little industry, apart from tourism, that is not easy. Under continuing pressure the politician seeks the easiest and only real way out—aid. In recent times Ronald Reagan and his defence secretary have worried aloud about an increasing Russian presence and interest in New Zealand. As New Zealanders many of us are either unaware or unconcerned, perhaps to our ultimate cost. As individuals we should all be concerned and prepared to question actions and decisions many of which, I think, are too important to be left in the hands of politicians. As a group of competent and well educated para-medical professionals we have an obligation to start setting an example by learning to understand the needs of our Pacific neighbours and by working with them for the betterment of all. If we continue as introspectively as we have been in the past it might well be us, our children or our children's children who find that they are in need of aid.

Acknowledgement

To Dr B. Mulvihill, Medical Superintendent, Dannevirke Hospital, for permission to publish and to Mrs Gwen Anderson for typing.

BOOK REVIEWS

Lymphoid Tissue, By G. J. Reynolds. Published by John Wright and Sons, Ltd, Bristol (1982). 113pp., illustrated, paperback.
Available from ANZ Books Pty 2/10 Conwy Place, Glenfield Auckland 10.
$NZ.

This book is one in the Institute of Medical Laboratory Sciences Monograph Series which follows on from their highly successful Laboratory Aids Series. Quite obviously it is a reflection of the current thinking in the histological analysis of lymphoid tissues, and will simply complement the laboratory manual in many centres. For others it sets out to expand on a subject which is undergoing a revolution in analytical approach, and gives it the depth and breadth not generally possible in a major work.

The author has successfully collected together those laboratory techniques which apply to lymphoid tissue. Many of the procedures are also applicable to other tissue, but the need for special treatment when applied to lymphoid tissue is discussed. Some of the methods may be new to the histologist, but all are described in detail so that even the inexperienced will be successful. In addition the rationale is explained where possible, a feature lacking in so many works.

The opening chapters describe the structure of normal lymphoid tissue and outline the role of the lymphocyte in the immune response. This introduction may prove heavy going for those with limited knowledge in this area.

The rest of the book takes an orderly multiparameter approach to the investigation of lymphoid tissue. "... for although the haematoxylin and eosin stained paraffin sections form the basis for all diagnoses, the additional information which can be obtained from other techniques improves the prospect of a correct diagnosis."

The following section on tissue preparation is full of hints and tips which will fascinate the general reader.

The next third of the book is divided into two chapters on enzyme histochemistry and immunocytochemistry. Both are nicely laid out but I felt that they lacked the confidence with which the rest of the book was written.

The final chapter is entitled "Surface Marker Techniques" and acts as an excellent introduction to this field.

The two sets of coloured photomicrographs show just how convincing the results of many of the techniques can be, and the black and white prints complement the text when required.

The book is short and contains enough general information to titillate even those histotechnologists whose interest may not warrant reading larger tomes. It is valuable for Specialist Level candidates and more than a browse for the morbid anatomist.

Brian C. Thackeray

LETTER TO THE EDITOR

Dear Sir,

A paper was published in the New Zealand Journal of Medical Laboratory Technology, December 1982, entitled "The Quality of Antibiotic Susceptibility Discs". I wish to correct the impression that this is a current survey. The discs were collected by the Department in 1980, and the work carried out early in 1981. By the end of 1981 Alpha Biologicals had changed their production methods to produce a 6.5 mm disc from Schleicher and Schuell 740-E paper to comply with the specifications agreed to between the Department of Health and the local manufacturers.

Yours faithfully,
G. J. Hill,
Manager,
Alpha Biologicals Ltd.

Two-Day Seminar in Laboratory Safety

A series of two-day seminars on Laboratory Safety will be held in Auckland, Hamilton, Wellington, Palmerston North, Christchurch and Dunedin between the 9th and 27th May, 1983. They will be conducted by Mr C. H. (Mike) Collins, M.B.E., F.I.M.I.S., F.I.Biol., a world expert in this field. The seminars will consist of two full days of lectures utilising various visual aids. The cost of the seminars will be $10 for the two days of lectures and will go towards defraying the costs of this venture. The Occupational Safety Trust Board has made a generous grant to the Institute and their contribution is gratefully acknowledged. It is hoped that as many people as possible should attend these seminars and so increase the awareness of laboratory safety in our profession.

The local branches in the above mentioned areas are responsible for organising the seminars in their own areas and any queries should be directed to your local branch or Regional Representative on Council.
ABSTRACTS

MICROBIOLOGY

A Transport Method for Swab Specimens Submitted for Aerobic and Anaerobic Bacteriology.
A simple transport media (Transport Deep) is shown to be suitable for fastidious aerobes and oxygen sensitive anaerobes. The media is basically a salts solution, is cheap and performed better than Stuarts medium in the maintenance of microorganisms during transport to the laboratory.

An Evaluation of the API-20 STREP System.
One hundred streptococci were tested with the API-20 STREP system and by Lancefield grouping and conventional biochemical tests. The API-20 STREP proved excellent in identifying viridans and Lancefield Groups A, B and D streptococci. There were a few problems with groups C and G streptococci. Most strains were identified in four hours.

Comparison of Acridine Orange, Methylene Blue and Gram Stains for Blood Cultures.
Eighteen thousand, nine hundred and seventy-two blood culture smears were examined within 24 hours of collection by gram, methylene blue (MB) and acridine orange stain (AO). The sensitivity of the AO was higher than the gram and MB stains regardless of the medium used. However false positives were a problem, some being caused by cross contamination, and others by non-viable contaminants in the blood culture media. The AO staining produced bright orange fluorescing organisms and as examination was done using 600 X magnification instead of 1000 X, scanning was quicker.

Technique for Extracting Niacin from Mycobacterium Tuberculosis Cultured on 7H-10 and 7H-11 Agars.
The author found the inconsistent niacin results from cultures grown on 7H-10 and 7H-11 agars to be because of insufficient extraction. The modified extraction method consists of flooding the cultures with 2ml of sterile saline and leaving them for two hours at 37°C. Of 173 isolates of M. tuberculosis grown on 7H-10 media 99% were niacin positive by this technique.

Comparison of Micro-ID and API20E in Rapid Identification of Enterobacteriaceae.
The Micro-ID and API20E systems were compared with conventional identification systems and evaluated as same day identification systems. They were tested using a heavy inoculation of organisms. The Micro-ID performed much better than API20E as a rapid identification system with 94.3% of isolates identified on the day of inoculation compared to only 83.5% with the API20E.

The authors studied the effectiveness of the Antibiotic Removal Device (ARD) in recovering bacteria from blood cultures of patients receiving antibiotics compared to the conventional system of blood cultures. The ARD significantly increased the detection of bacteremias as well as decreased the time required to detect these positive cultures.

Presumptive Identification of Streptococci with a New Test System.
The L-pyrrolidonyl-b-naphthylamide (PYR) test was used in conjunction with the CAMP and bile esculin tests to presumptively identify streptococci. The author wanted to see if it could replace the bacitracin and 6.5% NaCl tolerance tests in identifying Group A and enterococcal streptococci. The PYR test proved as sensitive as the bacitracin test but more specific. No Group C or G streptococci were PYR positive but 14.5% were positive with the bacitracin test. It appeared equal to the salt tolerance test in the differentiation of enterococcal and non-enterococcal streptococci.

The SeroSTAT Staph latex agglutination test was compared with the coagulase test for identifying Staphylococcus aureus and found to be as accurate as the tube coagulase test and much quicker. Of 160 strains of S. aureus, 159 gave positive results with the latex test whilst negative results were obtained with 266 of 267 isolates of Micrococccus species and Staphylococcal species other than S. aureus.

The authors found that penicillinase producing Neisseria gonorrhoeae (PPNG) could show weak or negative fluorescence when tested by fluorescent antibody techniques (FAT). They compared FAT on penicillin sensitive and PPNG strains using a commercial Difco anti-gonococcal conjugate and two laboratory prepared batches of antigonococcal conjugate, one containing PPNG and one without. The non penicillinase producing strains gave good fluorescence with all three methods. However the PPNG performed poorly with the Difco antisera and laboratory sera produced from non PPNG. There was much better fluorescence when the antisera included PPNG.

The authors compare a commercial ELISA kit (Rotazyme) with the traditional electron microscopy and immunofluorescence methods in the diagnosis of rotavirus gastroenteritis. The kit was specific and sensitivity was increased by adding EDTA, a modification that the authors suggest should be included in the method. The test was simple, the remaining disadvantage to the method being cost (over £1.00 per test).

Comparison of ELISA, SPACE, and Electron Microscopy for the Routine Diagnosis of Rotavirus Infection.
Now that commercial kits are available for the diagnosis of rotavirus infections the authors compared electron microscopy, ELISA (Rotazyme, Abbott) and solid phase aggregation of coupled erythrocytes (SPACE) (Wellcome Research Laboratories) for detecting rotavirus. Rotazyme was found to be as sensitive as electron microscopy but SPACE appeared to be less sensitive and less specific. The study indicates that Rotazyme is a practical test which most laboratories could use to diagnose Rotavirus gastroenteritis.
Biochemical Characterisation of Haemophilus Species with the Minitek Differentiation System.

102 Haemophilus strains were biotyped using the Minitek differentiation system and conventional methods. There was good correlation between both systems with key tests such as indole, urease and ornithine tests and fermentation of sucrose, xylose, and maltose, thus indicating that the Minitek differentiation system is reliable for identifying Haemophilus strains.

Serological Grouping of Beta Haemolytic Streptococci: A Comparison of Methods.

One hundred and eight beta haemolytic streptococci were Lancefield grouped in parallel using the autoclave extraction and capillary precipitation method and three commercial grouping kits—Streptex, Streptosoc and Phadebact Streptococcus Test. The autoclave extraction method was taken as the standard and the commercial methods compared with it for accuracy, time required and cost. Streptex was the most accurate and covered all the medically important streptococci.

However it was the most expensive and time consuming. Streptosoc and Phadebact were 95% accurate giving cross reactions and wrong identification with some of the Group C strains. They required less time and were cheaper, than Streptex. The author pointed out that there is really no improvement of the methods over the autoclave extraction method unless same day identification is required.

A Rapid Method for Detection of Trichomonas Vaginalis.

This paper describes a modification of the acridine orange stain. Air dried smears from vaginal swabs received in Stuarts medium were agitated for 10 seconds in 0.25g/l solution of acridine orange in 20ml/l acetic acid. They were then differentiated in two lots of 20ml/l ethanol in 8.5g/l aqueous NaCl for 10 seconds. Differentiation was stopped by immersion in 8.5g/l NaCl and slides stored in this. Results were comparable with culture in Trichosel broth and better than direct wet preparation.

Spot Indole Test: Evaluation of Four Reagents.

Spot indole tests were done on 359 strains of gram negative bacilli using Kovacs reagent, p-dimethylaminobenzaldehyde + Ehrlich reagent + p-dimethylaminocinnamaldehyde (DMACA). Strains were tested on 5% sheep blood agar (SBA), trypticase soy agar (TSA) and MacConkey agar. All reagents were found to be accurate in detecting indole when the spot test used colonies from SBA and TSA but not MacConkey agar. The DMACA reagent was the only one to detect indole from Providencia alcalafaciens, all reagents having the same accuracy with other members of the Enterobacteriaceae.

Shirley Gainsford

HISTOLOGY

Use of Orcein in Detecting Hepatitis B Antigen in Paraffin Sections of Liver.

This study has shown that different batches of orcein perform differently and may even fail. The natural versus synthetic product is discussed, and the best results are achieved with fresh solutions.

Immunohistochemical Identification of Mast Cells in Paraffin- and Epon-Embedded Tissues Using Platelet Factor 4--.

An immunoperoxidase method has been developed for staining heparin in the granules of mast cells. The method employs human platelet factor 4 (or anti-heparin) and a rabbit antiserum to this polypeptide. Platelet factor 4 binds to mast cell heparin and provides the basis for immunoperoxidase staining using the rabbit antiserum.

Combined Light and Electron Microscope in Routine Histopathology.

A report on the authors' experience with a prototype combined light and electron microscope (the LEM2000) with particular reference to its application in routine surgical pathology. Its major advantages over conventional transmission electron microscopes were due to the large grid size, low magnification and built-in microprocessor for recording areas of interest.

Diagnostic Ultrastructure Pathology—Sub-specialty or Special Stain.

A number of examples are used to show the value of electron microscopy in the diagnosis of some diseases. The high resolving power of EM means that diagnosis is by different criteria to LM. EM should be a sub-specialty of individual disciplines rather than a separate specialty or a sophisticated special stain.

Brian Thackeray

HAEMATOLOGY

Circulating Immunological Complexes in the Course of Rheumatoid Arthritis and Systemic Lupus Erythematosus.

The author discusses an original method of detecting circulating immune complexes based on immunoelectrophoresis on serum sediments obtained after precipitation with polyethylene glycol. He discusses immune complexes with regard to rheumatoid arthritis and systemic lupus erythematosus.

Anticoagulation by Constant Subcutaneous Heparin Infusion.

The authors describe a preliminary trial of regulating therapeutic anticoagulation with heparin given by continuous subcutaneous infusion. They found effective levels of anticoagulation were achieved in all five patients with no major complications during therapy.

The Antithrombin III Locus is Linked to the Duffy Blood Group and to IgM. Assignment of AT3 to Ig22-Iq25.

The authors have established linkage between AT3 and two markers carried on chromosome 1, the Duffy blood group and IgM. In addition they suggest a regional location for the AT3 locus within Ig22-Iq25.
Bone Marrow Hemosiderin Does Not Always Reflect Body Iron Stores.
Examination of the bone marrow for hemosiderin is regarded as the most sensitive and reliable test for iron deficiency. Absence of stainable iron from the marrow of an anaemic patient is considered to be the ultimate proof of decreased total body iron. The authors describe two cases of autoimmune haemolytic anaemia in which there was little or no iron in the marrow but large amounts in the spleen, which had been the major site of accelerated red cell destruction.

A New Aspect of Platelet Aggregation and a Test to Measure it.
Blood platelets which aggregate either in vivo or during collection of samples are not taken into account when aggregation is measured on platelet-rich-plasma. The authors present a test to measure aggregation in whole blood without ignoring these hyperactive platelets. It is based upon the principle that aggregation is arrested when a smear is prepared and that fixed and aggregated platelets can be counted differentially on smears.

An Evaluation of APTT Monitoring of Low-Dose Heparin Dosage in Hip Surgery.
The authors undertook this study to determine both the degree of anticoagulation required to protect high-risk patients from post-operative deep vein thrombosis and the effectiveness of the APTT test to monitor the heparin. They found that the APTT should be about or just above 50 seconds with a normal range of 38-45 seconds, using a standardised cephalin reagent prepared at Withington Hospital, Manchester.

Cytogenetic Analysis of Bone Marrow and Peripheral Blood Samples Stored in Fixative for Several Years.
The authors have developed a method which improves the spreading of chromosomes and permits banding analysis of cytogenetic samples of bone marrow and unstimulated peripheral blood which have been stored in fixative for up to 15 years.

The Effects of Inaccurate Blood Sample Volume on Prothrombin Time and Activated Partial Thromboplastin Time.
In a small trial the authors studied the ratio of plasma to anticoagulant with prothrombin time and activated partial thromboplastin time determinations. They concluded that overfilling the tube rarely affected results, but underfilling, or decreasing the plasma to anticoagulant ratio, produced profound affects, especially if the true PT or a PPT was elevated.

A Collaborative Study on the Suitability of Commercial, Assayed Plasmas for One-Stage Factor VIII Assays.
The authors’ collaborative study confirm their previous report on the possible lack of credibility of the reference values of some commercial assayed plasmas.

Genetic Variants of Haemophilia B Detected by Immunodiagnostic Assay: Implications for Prenatal Diagnosis.
The authors suggest that a new immunodiagnostic assay of factor IX antigen in plasma should permit prenatal diagnosis of haemophilia B in 80% of families with severe and moderate forms of the disease. Their method is sensitive enough to detect low levels of factor IX antigen present in normal 16-20 week fetuses.

Hepatitis and Haemophilia Therapy in Australia.
The authors have studied 243 Australian haemophiliacs over four-and-a-half years. Commercial blood products are not used in Australia, and patients were treated with products of unpaid donors screened for hepatitis B surface antigen. Antibody to hepatitis B surface antigen was detected in 83% of the haemophiliacs, 5.4% of patients had hepatitis B, and there were 66 cases of non-A, non-B hepatitis during the study.

The Variability of Immunologic Laboratory Tests.
To determine the clinical reliability of certain immunologic tests, serum complement C3, DNA binding and fluorescent antinuclear factor antibodies were measured blindly at two University Immunology laboratories on duplicate sera from 667 patients with connective tissue disease. Twenty-seven percent percent patients were differently classified for C3, 15% for anti DNA and 11% for ANA tests.

Optical Method for Haematocrit Determination.
The authors have developed an optical method for determining haematocrit using an He-Ne laser and an optical fibre. From the meter reading and a calibration chart drawn up from centrifuged bloods a rapid haematocrit may be obtained.

Spurious Elevation of the Electronically Determined Mean Corpuscular Volume and Haematocrit Caused by Hyperglycaemia.
Spurious elevation of the electronically determined MCV and Hct, caused by hyperglycaemia is normalised when the blood glucose levels are lowered. The magnitude is less pronounced with the Coulter S than the Coulter S-plus.

Enzyme Immunoassay for Factor VIII-Related Antigen.
The author describes a simple enzyme-linked immuno-sorbent assay (ELISA) for the quantitation of Factor VIII-related antigen. The simplicity and specificity of the ELISA technique should make it a useful alternative to the more difficult and time-consuming Laurell method.

Symptomless Abnormalities: ESR.
The author briefly discusses the ESR under such headings as methods, normal ranges, in pregnancy and the elderly, grossly elevated ESRS, etc, and concludes that the ESR is a long-established, simple and reliable test that must be interpreted in the context of its known limitations.

Malaria.
This issue of the British Medical Bulletin contains 18 papers on malaria, including life-cycle, cultivation of parasites, red cell involvement, immunity, immunodiagnosis, chemotherapy, and control.

Errol Crutch
INSTITUTE BUSINESS
Office-Bearers of the N.Z.I.M.L.T. 1983-84

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A. F. Harper
11 Turere Place, Wanganui

Vice-Presidents
C. Campbell
K. McLoughlin

Secretary
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Treasurer
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Blood Transfusion Service, Auckland

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M. Young, D. Reilly, J. Elliot, J. E. Lucas, P. McLeod

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Membership Secretary
Margaret Young,
Laboratory, Waikato Hospital, Hamilton

Membership Fees and Enquiries

Membership fees for the year beginning April 1, 1983 are:
For Fellows — $40 reducible to $35 if paid by June 30 that year.

For Associates — $40 reducible to $35 if paid by June 30 that year.

For Members — $30 reducible to $25 if paid by June 30 that year.

For Non-practising Members — $20 reducible to $15 if paid by June 30 that year.

All membership fees, changes of address or particulars, applications for membership or changes in status should be sent to the Membership Secretary at the address given above.

Members wishing to receive their publications by airmail should contact the Editor to make the necessary arrangement.

EXTRACTS FROM THE MINUTES OF THE NZIMLT COUNCIL MEETING HELD IN AUCKLAND ON 25 AND 26 NOVEMBER 1982

Present
Mr A. Harper (Chairman), Mr C. Campbell, Mr K. McLoughlin, Mr W. Wilson, Mr D. Reilly, Mrs M. Young, Mr J. Elliot, Mr P. McLeod, Mr J. Lucas, Mr H. Matthews, Mr B. T. Edwards.

Business arising
The Secretary reported that a letter was yet to go to the Department of Health regarding the reimbursment of postage expenses that were incurred by the Institute in obtaining copies of work load manual from Canada.

A letter from Mr H. Bloore thanking the Institute for bestowing life membership on him was received.

A letter from Mr G. Rose thanking the Institute for bestowing life membership on him was received.

It was resolved that a letter be written to the Medical Laboratory Technologists' Board advising that the Annual General Meeting expressed concern that due to the introduction of simple laboratory equipment many other people including nurses are performing laboratory tests which is seen by the Institute as contravention of section 32 of the Medical and Dental Auxiliaries Act.

W. Wilson/P. McLeod

Correspondence
The letter from Mr P. McLeod regarding telephone rentals was received and it was resolved that the Secretary write to the Hospital Boards' Association saying that using the Pharmacists' Award as the sole criteria for determining eligibility for telephone rental refunds is inappropriate for medical laboratory technology workers in many circumstances.

W. Wilson/J. Elliot

Mrs M. Young informed the meeting that the Waikato Hospital Board advised staff that under DG 19 people with limited registration would not be paid as staff technologists. It was resolved that this matter be referred to the Negotiations Committee for action.

M. Young/D. Reilly

It was resolved that the letter from the Medical Laboratory Technologists' Board regarding the management syllabus be received.

W. Wilson/C. Campbell

It was resolved that the letter from Mr K. James be received and that the President write to the Minister of Health expressing grave concern at negotiations taking place within the Waikato Hospital Board whereby some of the work of a major hospital laboratory could be contracted out to a private medical laboratory. Copies to be sent to the Hospital Boards' Association, New Zealand Society of Pathologists, Waikato Hospital Board and to the New Zealand Association of Clinical Biochemists.

M. Young/W. Wilson

It was resolved that the Central North Island Branch urgently convene a meeting to discuss this problem.

K. McLoughlin/W. Wilson

It was resolved that the circular letter from the North Canterbury Hospital Board regarding accumulation of leave be received and that if requested by the staff of the NCHB a letter be sent to the Director General of Health expressing concern over the contents of section 5.

C. Campbell/K. McLoughlin

It was resolved that the letter from Professor Tasashi Murachi regarding the possible exchanges between New Zealand and Japan be received and published in the Journal.

W. Wilson/J. Elliot

Health Services Re-Organisation
It was resolved that the report by Mr J. Elliot be received.

J. Elliot/W. Wilson

It was resolved that the Secretary write to the Director General of Health indicating our agreement with the Public Sector Advisory Committee Report in regard to the Health Services Personnel Commission being the sole employer in the health service and expressing our concern at the Department's decision to disregard this recommendation and continue with the status quo.

J. Elliot/W. Wilson

It was resolved that the Secretary write to Mr K. Ronald saying that a Bill is to be introduced to this session regarding establishment of an Area Health Board and asking for any comments he has regarding any possible effect on our members.

W. Wilson/J. Elliot
Annual Scientific Meeting
Mr. Elliot gave a brief report on the progress of the 1983 Annual Scientific Meeting and asked the Council to consider over night a nomination for the TH Pullar Address.

Treasurer's Report
It was resolved that the Treasurer's Report be received.

W. Wilson/K. McLoughlin
It was resolved that the statement of finance showing income and expenditure to the 10 November 1982 be adopted.

W. Wilson/J. Lucas
It was resolved that cheque Nos 416-460 and 920-936 inclusive issued in payment of accounts and expenses be approved.

W. Wilson/J. Lucas
It was resolved that $5000 be reinvested with General Finance Company for 12 months at 15.25%.

W. Wilson/J. Lucas
It was resolved that the letter from Bowen, Impney and Sage, Chartered Accountants be received.

W. Wilson/K. McLoughlin
It was resolved that Mr. Wilson approach a chartered accountant to audit the Institute's accounts and give financial advice.

W. Wilson/J. Elliot

COMMITTEE REPORTS

Education
It was resolved that a select committee of K. McLoughlin, B. T. Edwards and J. Elliot be appointed to consider the establishment of a National Post-Graduate Committee.

C. Campbell/J. Lucas

Negotiations
It was resolved that pertinent Combined State Union information be circulated by the CSU representative to all regional representatives.

J. Elliot/M. Young
It was resolved that the Negotiations Committee investigate provision for sabbatical leave for possible inclusion in a future claim.

K. McLoughlin/P. McLeod
It was resolved that the Secretary write to the Department of Health, requesting information regarding proposed changes to the Grading Committee Regulations.

W. Wilson/C. Campbell

Membership Recruitment
It was resolved that the next meeting of Council be held in Auckland on 24 and 25 February with a meeting of local technologists to be arranged through the Auckland Branch.

D. Reilly/W. Wilson
It was resolved that the question of dis-establishment of positions for medical laboratory technologists be considered at the February meeting.

C. Campbell/K. McLoughlin

Safety
It was resolved that Mr C. Collins be invited to tour New Zealand through the Committee for Continuing Education.

J. Lucas/W. Wilson
It was resolved that Mr Elliot appoint a representative to attend the Department of Health's meeting on Formaldehyde Guidelines.

J. Lucas/W. Wilson

Awards
It was resolved that the Eli Lilly Award be rejected as it was not open to both hospital and private medical laboratory staff.

B. Edwards/J. Elliot
It was resolved that the offer from Medic DDS Ltd to sponsor a Part III Biology prize be approved.

J. Lucas/J. Elliot

Management
It was resolved that Mr. P. McLeod represent the Institute at any meeting with the NZACB and the NZACP regarding workload units.

W. Wilson/J. Lucas

Overseas Aid
It was resolved that $500 be given to the Pacific Paramedical Training Centre to purchase a water bath.

J. Elliot/J. Lucas
It was resolved that the Overseas Aid Committee determine the aims and objectives of a Pacific Aid Trust.

W. Wilson/J. Elliot
It was resolved that the letter from Miss M. Eales be received and that she be advised that Mr. McKenzie had already made an approach to Rotary.

B. Edwards/J. Elliot
It was resolved that the Secretary write to Mr. McKenzie asking what progress has been made regarding the funding of the Pacific Paramedical Training Centre and expressing concern that the Institute has not been requested to lobby Government in support of continued funding.

B. Edwards/W. Wilson

Fellowship
It was resolved that Gerard R. Verkaak be granted Fellowship of the NZIMLT in recognition of his thesis entitled "A Study of the Immunogenicity of Whole Blood Transfusions with Special Regard to Leucocyte Antibody Development and the Affects of Storage Thereon."

K. McLoughlin/P. McLeod
It was resolved that Leslie M. Milligan be granted Fellowship of the NZIMLT in recognition of his thesis entitled "A Study of the Nature and Significance of Microaggregates and Transfusion Therapy."

K. McLoughlin/P. McLeod

Membership
It was resolved that Miss V. O'Brien and Miss I. Kimer be approved as members.

D. Reilly/K. McLoughlin

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<tr>
<th>Membership</th>
<th>Nov. 82</th>
<th>Aug. 82</th>
<th>Nov. 81</th>
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<td>ASH Resignations</td>
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<td>79</td>
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<td>1399</td>
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<td>TOTAL MEMBERSHIP</td>
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Our Membership Summary is as follows:

- Hospital Laboratories: 1050
- Other Government Employment: 59
- Private Medical Laboratories: 169
- Non-practising: 108
- Overseas: 52
- Unknown Employment: 8

APPLICATIONS FOR MEMBERSHIP AS AT 18TH NOVEMBER 1982

T. A. Barry, Gisborne; P. J. Bishell, Blenheim; M. D. Corson, Auckland; K. L. Duley, Dannevirke; W. F. Gaze, Dunedin; K. R. Gladwin, Auckland; R. T. Halliday, Blenheim; D. L. MacFarlane, Gisborne; J. M. Parker, Gisborne; M. T. Powick, Blenheim; P. A. Pratt, Auckland; C. Tisdale, Auckland; A. M. Waldron, Blenheim; C. Webster, Dunedin; M. J. Wigmore, Thames; V. O'Brien; I. Kimer.

APPLICATIONS FOR ASSOCIATESHIP AS AT 18TH NOVEMBER 1982

B. J. Howarth, Hamilton; G. Jones, Hamilton; P. J. Moore, Blenheim.

RESIGNATIONS

G.N.A.
S. G. Andrews, Australia; J. M. Forsyth, Dunedin; T. J. Fought, Auckland; J. M. Knudson, Dunedin; J. Murphy, Dunedin.

NON-PRACTICING MEMBERS
Mrs S. D. Darby, Brisbane.
Inter-Service Claims: Block A

The application of an extra week's annual leave on completion of eight years' service in the current leave year has been agreed as the one item to be improved in this year's Block A negotiations.

Motor Vehicle Allowance

The State Services Co-ordinating Committee has agreed to the introduction of new rates with effect from 1 January 1983.

Interview with Ministers of State Services and Housing and Assistant Minister of Finance—22.11.82


Messrs Thorp, Tucker, Burgess, Needlman, Grant, Wilson, Best, Bunker, McKenzie and Delahunt (CSU).

In respect of the third item—the application of loans to employees in the hospital sector—Mr Thomson said he understood this matter had been under discussion for some time. Mr Tucker said that it had been going on for several years and it was one of the matters discussed at his first interview with the Minister on taking up his current position. Mr Thomson asked whether the proposal included nurses. Mr Thorp indicated that it did. Mr Thomson asked the officials for comment. Mr Middlemass said he thought it would be logical to look at this issue but he felt that progress was unlikely until next year. Mr Thorp asked whether they meant that there had been no consideration over all this time. Mr Thomson said that reports had been received from Treasury and the SSCC. Mr Middlemass said the Cabinet looked at the matter in October 1981 but deferred it. Mr Thomson said he would promise that the first Cabinet Committee in the new year would consider up-dated reports on the matter. Mr Tucker said that the progress on this matter was quite unsatisfactory and that the hospital employees had received cavalier treatment from the Government. Mr Thomson said the best he could do was to promise consideration at the first Cabinet Meeting in 1983.

MLTB NOTES

Dear Sir,

The Examiners for Haematology Part III 1981 Examinations included a question on Management in Paper B. Controversy arose over the inclusion of this management question (Management is in the Part II and III Syllabus) and many wise heads wondered what sort of answers such a question would invite.

Every candidate who attempted the question obtained good marks and presented the answer logically and well. One candidate wrote a very original answer which impressed the examiners.

The Chief Examiners report for Haematology Part II and III, 1981 Examinations mentioned on page 10 that: "Candidate...wrote a revealing account in his/her own words (avoiding management jargon) of staff relationships which might be worthy of publication in the N.Z.I.M.T. Journal", and further went on to say that I should pursue this at a later date. I am therefore pursuing it and at the risk of it being considered a controversial answer I seek permission to publish it in the N.Z.I.M.T. Journal. It should have a sobering influence on many of the opponents of Management Methods and Theory. I am tempted to title it "To see ourselves as others see us" but I will leave that to your discretion.

I have enclosed the relevant correspondence relating to permission to publish it from the Medical Technologists' Board.

Yours faithfully,

Marilyn M. Eales.

Question and Answer from 1981 Haematology Examinations

Part III, Paper II

Question

You have just been appointed Charge Haematology Technologist of a busy department. Staff morale is low and the quality of the work being done is poor.

(a) List what you consider to be some of the causes of bad staff relationships.

(b) How could this situation be improved?

Answer

(a) In my experience some of the causes of bad staff relationships are:

(i) breakdown of communication between senior staff and junior staff;

(ii) a bad example being given by people "in charge";

(iii) excessive workload;

(iv) senior people not doing their share of work;

(v) lack of discipline;

(vi) lack of out-of-work activities for all staff to participate in;

(vii) staff being assigned to one area of the laboratory for extended periods of time;

(viii) lack of teaching;

(ix) unpleasant working conditions i.e., physical surroundings.

(i) It is very important for "bosses" to be approachable. As a junior staff member you need to feel that if you have something to communicate, you can approach your senior without fear of being pushed aside because you are "only a junior". Often it is the people at the bench, doing the routine work that have the most useful suggestions about how to improve a method, or what is going wrong with a specific test. It is their job to do the work, develop, and maintain and improve standards of work in the laboratory. If junior staff sense that the senior-in-charge is not willing to listen to them, or cannot be bothered making improvements, he/she is not going to be respected.

(ii) For a boss to be respected is of utmost importance and this requires certain characteristics in this person. He must set a good example—you cannot expect people to work any harder than seniors. If the boss has half an hour for tea, so will all his staff; if he always arrives late for work, then no-one is going to try to be punctual. It is his responsibility to have good working habits; e.g. in tidying up after performing tests, not taking short cuts, obeying the rules of the laboratory. He must also maintain adequate stocks of reagents, etc., and keep up to date with the latest developments in his field. Therefore he should have not only integrity of character but also management ability.

(iii) Staff should not be burdened with more work than they can cope with. It is easy to see how people's tempers start to fray when they are extremely busy and begin to panic. They quickly start to snap at each other, their morale goes down, and consequently the quality of work becomes poor. Thus there should be sufficient staff members at all times, taking into account people have days off work: this requires careful organisation.

(iv) One of the most infuriating situations in a laboratory can be a person sitting in his office reading the paper while everyone else is working hard to get results out. Here again there will be loss of respect and people will not feel motivated to work, resulting in deterioration of work quality.

(v) A certain amount of discipline is needed in a working situation, and therefore the senior staff need an air of authority and a certain aloofness (in a positive sense), i.e., you cannot be everybody's "buddy" anymore. Staff need to see that if they step out of line, it will be noticed and eventually reprimanded. This is not bad for anyone, and serves to let everyone know that you cannot get away with anything for too long. This may reduce people talking behind each other's backs, a very nasty disrupter of relationships.

(vi) It can be very good for general morale if staff are able to relate to each other out-of-work. This builds friendships that are firmer and have a broader basis than those that are purely work related.

(vii) A person left in one area of the laboratory, with one area of responsibility for too long may get bored, so it is good to circulate staff from area to area as frequently as possible without unsettling them or lowering the standard of work.

(viii) No-one likes doing something that they do not feel competent at, or do not feel confident about. It is therefore mandatory that a good teaching system is maintained in the laboratory, with every training staff member being put through a set pattern, so that no-one misses out. Often it is a good idea for one senior person to be in charge of teaching people coming through the department, or delegating this responsibility to experts in particular areas.
(ix) Pleasant working conditions may be enhanced by agreeable temperatures in the laboratory, adequate lighting, working space and a few bright colours and pictures.

(b) In answering (a) I have also answered (b) often, but I will summarise briefly:

Bosss should be approachable; willing to listen to complaints or suggestions, and to change things if necessary.

Senior staff need to be enthusiastic and interested in their work as this is usually contagious and all staff should enjoy what they are doing. The boss's example must be a good one.

Never should the workload be too heavy nor should it be too slack. Ideally it should be well balanced so that people will not panic, but not become bored either.

Staff need to be motivated and encouraged, and working conditions should be as pleasant as possible. People should be aware that not only will they be noticed if they do something wrong, but not become bored either.

In the laboratory there should also be an effective system of quality control to detect poor precision/accuracy in results obtained. A downturn in these can be an indication of people's morale sinking low and/or a burdensome workload.

**MANAGEMENT**

N.C.C.L.S. PUBLICATIONS AS OF NOVEMBER 1982

The following publications are available on loan to members applying in writing to: Mr P. Mctool, C/o Laboratory, Public Hospital, Nelson.

**Clinical Chemistry**


**Immunodiagnostic**


**Evaluation Protocols**


**Haematology**


**Immunohaematology Blood Banking**

I/BB1-A—Specifications for Standard Isotonic Sodium Chloride for Immunohaematological Testing.

**Instrumentation**


**Laboratory Administration and Labelling**


**Ligand Assay**


**Microbiology**


**National Reference System in Clinical Chemistry (NRSCC)**


**Toxicology**

T/DM 2-T—Standard for Development of Requisite Form for Therapeutic Drug Monitoring and/or Overdose Toxicology. T/DM 2-T—Guidelines for Developing and Using Chromatographic Methods for Drug Monitoring and Toxicology Part I: Chromatographic Sample Preparation.
New Board of Health to be Appointed

A call for suggested members of the reconstituted Board of Health to be set up early in 1983, has been announced by the Minister of Health.

I am approaching specific organisations for their suggestions but I welcome input from any group with an interest in health. I hope to have received all names for consideration by early in the New Year." The Minister said 75 organisations as well as all universities, technical institutes, schools or nursing and hospital boards, would be approached.

Reconstituting the Board of Health and its committees under the Health Amendment Act (No. 2) 1982 was the first step in the reorganisation of the health services resulting from the Special Advisory Committee on Health Services Reorganisation chaired by Sir Alan Danks.

The Special Advisory Committee was set up in 1976 to examine New Zealand's health services in the light of future needs. Included in its terms of reference was the requirement to advise the Minister of Health on "the establishment, constitution, terms of reference and membership of sector and 'ad hoc' advisory bodies."

Patient Care Trends Change

The trends towards more intensive care for patients in hospital, and the provision of daycare, domiciliary and outpatient care to reduce inpatient numbers are continuing.

These trends are confirmed by the health statistics report, Hospital Management Data 1982 prepared by the National Health Statistics Centre. "Compared with the 1981 year, admissions of patients into hospitals rose by slightly over 1%. The average time a bed was used was also down by slightly less than 1%.

"These trends are largely accounted for by the increasing demands on hospital board services by the ageing population. In most cases boards have responded from within existing resources," he said.

The number of new day patients treated in the 1982 year was 15.3% higher than the previous year, compared with an increase of 11.7 between 1980 and 1981. Total outpatient attendances rose by 7% after showing little change for the previous two years. Total cases dealt with by domiciliary services increased by almost 3% compared with last year.

The report, issued annually, covers all aspects of hospital management. These included general treatment services for all types of illness, diagnostic services (pathology and x-ray only), "hotel" services (housekeeping, laundry and dietary), maintenance and engineering services including grounds, administration including transport and board administration, domiciliary services and nursing service statistics.

"As far as staffing is concerned, there was a net decrease of 245.7 full-time equivalent positions compared with the previous year. Increases totalling 299.7 positions were recorded by 16 hospital boards and decreases totalling 545.4 positions were recorded by 13 boards and Lake Alice Hospital."

FORUM

Dear Sir,

I am under the impression that too many technologists are being trained for too few available positions in New Zealand. It seems that some manpower planning on a national basis is urgently required to ascertain the number of technologists required, say for the next 10 years, in both the hospital and private laboratories.

David Bolitho, in a paper published in the May 1974 N.Z.I.M.L.T. "Newsletter", forecast a serious surplus of technologists, and his forecast seems to have come true.

Perhaps a manpower planning committee can be set up by the N.Z.I.M.L.T. Council as soon as possible to investigate this matter.

Yours faithfully,

J. E. Horner, Charge Technologist.

Exchange Visits

Dear Sir,

As you know we have a visit this week from Professor Takashi Murachi, of the Department of Clinical Science, Faculty of Medicine, Kyoto University, Japan.

Professor Murachi expressed great interest in the idea of exchanging Medical Technologists between New Zealand and Japan. After discussing our present and projected training systems, he felt that suitable Japanese graduates from their three-year training system could come here to attempt a Certificate (Part II) level year with great advantages to the student. Similarly he felt people from our Institute, particularly those with involvement in computerisation, could derive great benefit from reciprocal study in Japan.

I told him that I would pass his thoughts on to Council so that the matter could be pursued further if interest was shown. His address is: Professor Takashi Murachi, Department of Clinical Science, Faculty of Medicine, Kyoto University, Kyoto 606, Japan.

Yours faithfully,

J. C. Mann.

OBITUARY

IRENE ALLISON LINDBERG

Irene Lindberg passed away on 14 January 1983, after a short illness.

Irene began work as a trainee at Whakatane in 1964, moving to Rotorua where she completed her Intermediate examination in 1966 and her Part II Microbiology in 1968. She moved to Masterton in 1971 completing her COP with Part II Chemical Pathology in the same year. A move to Lower Hutt in 1975 saw her start with Drs Alexander and McCaffery in their laboratory in 1977, in Microbiology. She completed a part III Microbiology in 1979 and was a charge technologist in that department until the time of her death.

Irene's interests outside work were many. Her interest in religion occupied a good part of her time. She was involved with Youth groups and Bible Class activities. She was currently partaking in an Education for Ministry programme and her active involvement in general church activities will be missed.

Irene was a keen squash player and she took an interest in the local spinning groups. Irene also was involved in the Family Centre group for volunteer social workers.

Her deep concern for people led her to take four months leave of absence in 1980 to join the Red Cross Aid team in Kampuchea.

N.C.P.

Lower Hutt.
TARANAKI HOSPITAL BOARD

CHARGE TECHNOLOGIST — HAEMATOLOGY
TARANAKI BASE HOSPITAL

Applications are invited for an impending vacancy for the position of Charge Technologist — Haematology in the Pathology Laboratories at the modern Taranaki Base Hospital in New Plymouth.

The appointee will be responsible for the efficient provision of Haematology services including supervision and training of Technologists and Laboratory assistant staff.

Applicants should hold the qualification of registered medical laboratory technologist with Haematology Part 3. Those with Part 2 could also be considered.

Salary in accordance with Hospital Service Determination D.G. 19.

Conditions of Appointment and application forms are available from the undersigned by whom applications will be received until Friday, 29 April, 1983.

CHIEF EXECUTIVE,
TARANAKI HOSPITAL BOARD,
PRIVATE BAG,
NEW PLYMOUTH.

SITUATION WANTED

American Medical Technologist, M.T. ASCP Registered (American Society of Clinical Pathologists, Chicago, Illinois) desires position as a Senior Trainee. Experienced in all fields of medical technology but have particular specialties in parasitology and microbiology. Also interested in multiple transfusions.

B.S. in Biology/Medical Technology, MT internship at Children’s Hospital of San Francisco, California. Certified by the Center for Disease Control, Atlanta, Georgia in parasitology and clinical microbiology.

Five years experience at Seaside Hospital and Medical Clinic, Crescent City, California, August 1977—present. Board background and knowledge of all tests, duties include supervision of all testing procedures for evening shift.


Applicant is available and willing to travel to New Zealand for interviews. Applicant has been granted “graduate status” by New Zealand Board of Medical Technology for acceptance to seek position as a Senior Trainee. Resume and letters of recommendation will be sent on request.

Mr Jay Havard, M.T. (ASCP), 401 Park Place, Crescent City, California 95531, USA.

POSITION WANTED

WANTED: Permanent laboratory position. Registered U.S. Medical Technologist desires position. MLTB will allow Part III exam after one year for limited registration. Have had three years experience in Microbiology, including supervisory experience. Qualified to accept a position in other areas. Resume and references available.

Phone 534-4866, Auckland, or write Beverly Klaty, 11 Endymion Place, Half Moon Bay, Auckland.

HAEMATOLOGY TECHNOLOGIST

A vacancy has occurred in the Haematology Department, Medical Laboratory, Dunedin for a REGISTERED TECHNOLOGIST. This is a senior position.

Salary will be dependent upon previous experience.

For further information regarding this position reply to:

ADMINISTRATION OFFICER,
MEDICAL LABORATORY,
P.O. BOX 6064,
DUNEDIN.

WELLINGTON HOSPITAL BOARD

STAFF TECHNOLOGIST

HISTOLOGY DEPARTMENT

HUTT HOSPITAL

A situation exists for a Staff Technologist with Part III Histology in the Pathology Department, Hutt Hospital.

The department carries out routine histology for a busy 433-bed general hospital. Because of new laboratory facilities and increased workload it is hoped to expand into Immuno-fluorescence and enzyme Histochemistry in the near future.

Salary and conditions of employment as contained in Hospital Service Determination D.G. 19.

Applications in writing, stating qualifications and experience to:

The Pathologist, Hutt Hospital, Private Bag, Lower Hutt.

POSITION WANTED

A New Zealand Registered Technologist requires a position as a Medical Technologist. Qualifications: Certificate of Proficiency, Haematology Part II, Immunohaematology Part II.

Previously worked at Dunedin Hospital Laboratories for eight years as a trainee and Staff Technologist in the Haematology and Immunohaematology laboratories, then took a position as a Medical Technologist in Papua New Guinea for two years.

In Papua New Guinea I was involved in all aspects of laboratory work, Haematology, Immunohaematology, Biochemistry, Microbiology, Parasitology Tb and leprosy as well as teaching Medical Officers, Laboratory Assistants and Nursing Staff.

I am prepared to accept any position in New Zealand whether it be in a laboratory or a teaching position.

I will be happy to provide any further information you may require.

Lloyd R. Rigby, 61 Law Street, Dunedin.

SITUATIONS WANTED

Mr Khoon XAYALITH, 12A Brookfield Street, St Heliers, AUCKLAND 5, Tele 559-505, is seeking a position. For the past two years Mr Xayalith has worked for a private medical laboratory in Auckland in the Bacteriology department. Previous to that he lived in Laos where he trained for 3 years and then spent 4 years with the Army Hospital Board and Institute of Science working in Haematology, Blood Bank and Biochemistry.

Mr Xayalith is 32 years old, married with 2 children and is used to working under pressure and wishes to put his talents to full use in N.Z.

WANTED TO BUY

Hawksley Haemazed ESR stands and racks. Any number considered.

Contact: Haematology Department, Medical Laboratory, PO Box 52, Hamilton.
The long established and well recognised range of Gurr stains and microscopy products now contains two new ranges of biological stains.

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Gurr stains with this symbol satisfy the physical and chemical requirements and fulfil the staining criteria given in Conn's Biological Stains (Williams and Wilkins & Co, USA) and are of consistent superior quality.

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