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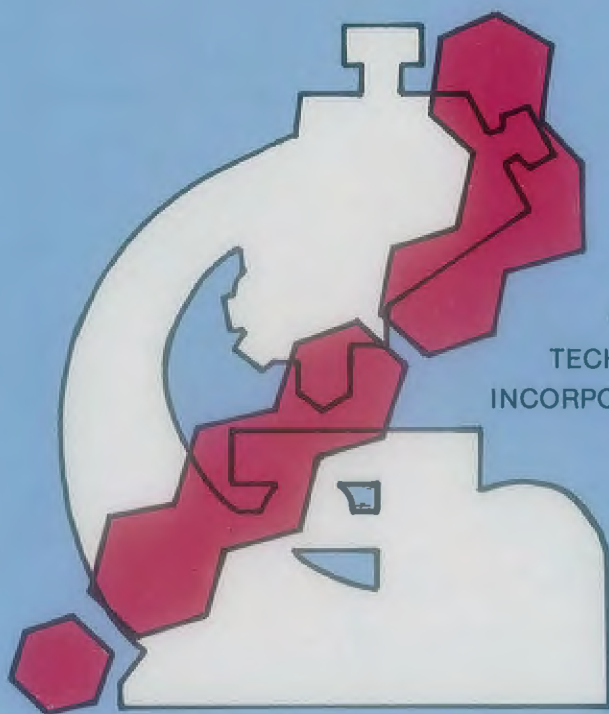

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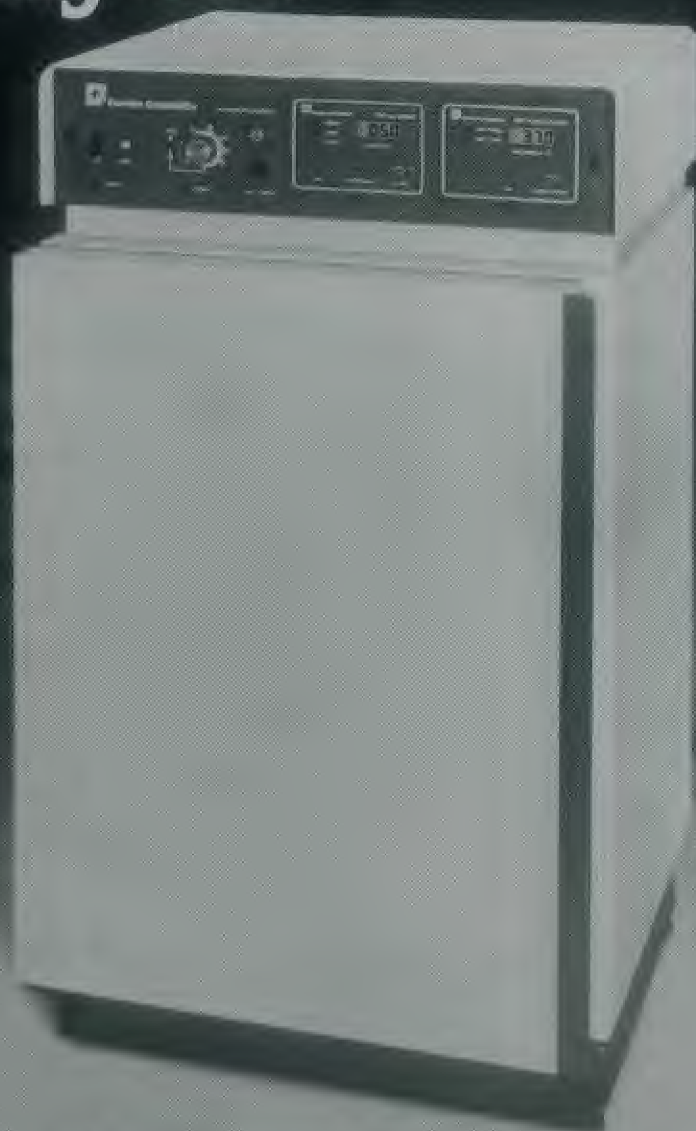

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A STATEMENT FROM THE EDITOR

With this issue of the Journal the form of the publications of the New Zealand Institute of Medical Laboratory Technology change. The Newsletter has ceased and its contents are included in the Journal which is now to be published six times a year. The arrangement of the contents of the Journal is experimental and I expect further changes to take place though it is my intention to maintain some fixed points.

The contents have been added to, principally by the addition of reviews and a series of articles on laboratory management. The editor will welcome constructive suggestions and material suitable for publication.

The introduction of 'Forum' has in the editors opinion been a success. Members have shown an interest in their affairs and this is as it should be.

During the past year the financial affairs of the Journal have shown a slight improvement. Expenditure has been controlled and income shows a small increase I hope this trend continues in 1982.

Hugh Matthews
Editor

This Journal is abstracted by: Biological Abstracts, Cumulative Index Nursing, and Allied Health Literature, Current Clinical Chemistry, Hospital Abstracts, Institut nautchnoi informatsii.

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

During this trial period a total of 308 group and hold requests were made for procedures in which 718 units would have previously been crossmatched.

During the survey there were 31 changes from group and hold status to blood being required. A total of 76 units were crossmatched, 43 units being used.

In the six month period there were 409 requests for blood, a total of 1344 units being crossmatched, with a usage of 823. This gives a C/T ratio of 1.63. Table 3 compares these findings with the previous 12 month period.

TABLE III

Period	Requested Blood	Used	Unused	C/T
Dec—May 1979 1980	2215	898	1317	2.47
June—Nov 1980 1980	1955	794	1161	2.46
Dec—May 1980 1981	1344	823	521	1.63

C/T = Crossmatch Transfusion Ratio

Discussion

Following the introduction of Low Ionic Strength Solution (L.I.S.S.) techniques, the time required to perform crossmatching has been reduced to approximately 15-20 mins. This shortened incubation time has virtually removed the necessity for emergency crossmatch techniques to be used in laboratories where L.I.S.S. crossmatching is used routinely. If a patient having surgery, unexpectedly requires blood for which the status was group and hold, there are two alternatives, the specimen already being held in the laboratory. Using L.I.S.S. techniques, this would allow either: a full crossmatch to be completed within 30 minutes of notification, or the issuing of uncrossmatched ABO and Rhesus D compatible blood. Rapid spin techniques would allow the checking of the ABO and Rh group of any donor unit uncrossmatched before it was issued, and the confirmation of the previously determined patient's group.

Allowing for the large range of volume expanders now available, a delay of 30 minutes for most surgical emergencies is not excessive. During the survey no problems were encountered in supplying blood when requested by the theatre following alteration from group and hold status, or was there a need to issue uncrossmatched blood.

The figure obtained in this survey agree very closely with those from larger or similar sized hospitals overseas. [5,6,12] in nine of the procedures first examined, group and hold status had been affixed by these hospitals. It is unlikely that surgical techniques would vary greatly between various countries, and similar status could be applied to patients in New Zealand. The second survey has substantiated these findings.

A 38% reduction in crossmatching occurred following the introduction of the revised blood ordering schedule. An improved C/T ratio of 1.63. was obtained. The decrease in blood stocks needing to be held to meet expected demand, allowed over the trial period for 400 units of in date blood to be dispatched to the Auckland Regional Blood Transfusion Service. In blood banks where transport of such blood to a regional centre is impractical, the reduction in units needing to be bled is a direct reduction in expenditure.

The success of this study has been assisted by the co-operation of medical staff. Adherence to the group and hold status was left to the discretion of the medical staff. The large saving in crossmatching; and better utilisation of the raw product, the donor unit, makes such a system a practical consideration for many laboratories.

Acknowledgements

I would like to express my thanks to all my staff for their assistance in compiling data, and to Val Crosby for preparing the manuscript.

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Silver-staining of active nucleolar organiser regions (NORs) in human chromosomes.

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Received for publication June 1981.

Abstract

A technique for the staining of active nucleolar organiser regions (NOR) with silver nitrate is described, as well as a combined technique for NORs and G bands. The methods have applications to human chromosomes from cultures of venous blood, marrow, fibroblast and amniotic cell cultures.

Introduction

Nucleolus organiser regions (NORs) are associated with the secondary constrictions of specific chromosomes and have been shown by experimentation with human-mouse/hybrid cells to be the sites of the 18s and 28s ribosomal RNA cistrons [1, 2].

In man, the 18s and 28s ribosomal RNA cistrons are localised in

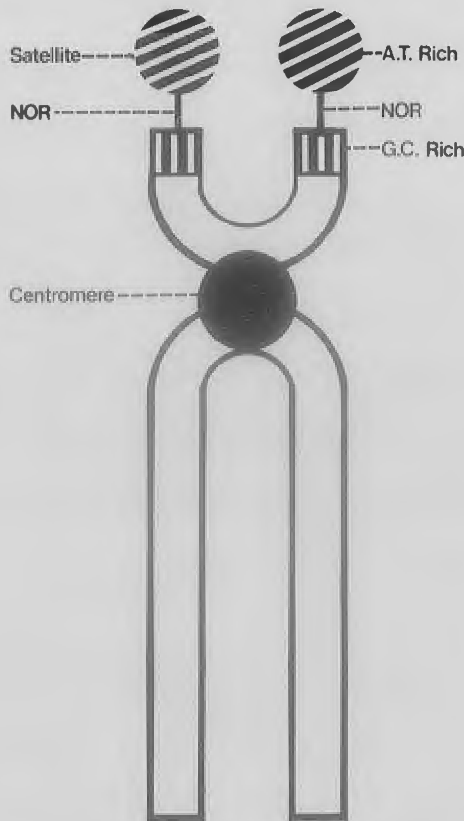

Fig. 1. Diagrammatic representation of acrocentric chromosome showing AT-rich satellite, NOR and GC-rich short arm.

the secondary constrictions (NORs/Stalks) of the short arms of the acrocentric chromosomes (13, 14, 15, 21 and 22) (Fig. 1). Quite recently silver-staining techniques have been employed to demonstrate these NORs [3,4]. It has been shown that only those NORs in mitotic cells which were functionally active during the preceding interphase are stainable with silver [5,6]. The silver positive material is considered not to be part of the chromosomes themselves, but an acidic protein accumulating around active NORs.

An important feature of the NORs is their considerable polymorphism. These variations reflect individual differences in size of Ag-stained NORs, which appears to be an inherited characteristic for a particular chromosome [7,8].

To demonstrate active NORs in this laboratory we use a modification of the method by Bloom and Goodpasture[9].

Materials and Methods

METHOD FOR SILVER-STAINING OF NORS.

Solutions and Reagents

1. Aq 50% w/v silver nitrate (Ag NO_3) in deionised-glass distilled water. The pH of the solution is adjusted to 4.5-5.0 with normal HCl as measured using pH paper. The solution is stored in a dark brown glass bottle at room temperature.
2. Deionized-glass distilled water.
3. 95% Ethyl alcohol.
4. Giemsa R66 stain.
   5 ml of Giemsa R66 made up to 20 ml with pH 6.8 Sorenson's phosphate buffer.
5. Leishman stain
   5 ml of Leishman stain made up to 20 ml with pH 6.8 Sorenson's phosphate buffer.

Materials

1. Moist chamber, consisting of wet absorbent cotton wool in a plastic petri dish with another smaller plastic dish acting as a raised platform (Fig 2.)

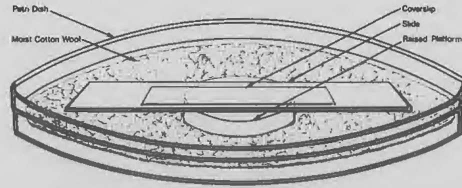

Fig. 2. Diagrammatic representation of moist chamber.

2. Grease-free large coverslips (22 x 60 m/m N°O, Chance Propper Ltd).

Procedure

1. Chromosomes are harvested in the normal way, spread by the drop technique and slides allowed to dry in the air.
2. Onto a grease-free coverslip, 6 large drops of Ag solution are added with a glass Pasteur pipette.
3. The slide is then gently lowered onto the coverslip (lengthways), allowing the Ag solution to travel and cover the length of the coverslip. The slide is then turned over with the coverslip uppermost and floating on the Ag solution.
4. The slide is then set in the moist chamber and incubated at 37°C for 36-48 hrs.
5. After incubation, remove slide from moist chamber and wash off coverslip with powered squirts of distilled water from a wash bottle.
6. Rinse x 2 in Coplin jars of distilled water, followed by a rinse in ethyl alcohol.
7. Remove from ethyl alcohol and allow to dry in air.
8. When dry, stain for only 1 minute in Giemsa or Leishman stain, so that when examined under microscope NORs are clearly seen stained brown-black, and the rest of the chromosome body a faint light blue-mauve (Fig. 3).

Notes on procedure

1. When staining with Giemsa or Leishman it is emphasised that, for good photography, the chromosome body must be stained very lightly ensuring clearly defined NORs.

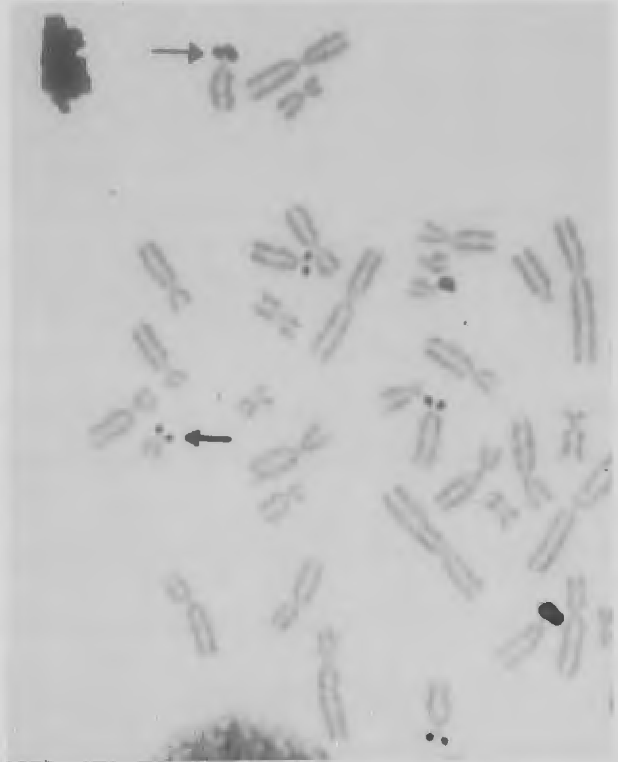

Fig. 3. Partial karyotype showing black stained NORs.

2. Some workers believe that spreading of slides must be done as soon as harvesting is complete, as the length of time in fixative reduces the staining ability of the silver due to the fixative's effect on the acidic proteins surrounding the NORs.

COMBINED AG/G METHOD FOR NORS AND G-BANDS.

Solutions, reagents and materials

As for NOR method with the following additions:

1. Working solution of 2 x SSC
   Sodium chloride 17.53 g
   Trisodium citrate 8.82 g
   Deionised or dist. H_2O 1000 cc
2. Trypsin bactotrypsin (Difco Cat. No. 0153)
   10 ml of sterile isotonic saline is added to a phial of bactotrypsin. 1 ml of this solution is diluted with 9 ml of isotonic saline for a working solution.

Procedure

The same procedure is followed as for the NOR method up to and including step 7, then continue in the following way:

1. Incubate slides in 2 x SSC for 1 hour at 40°C
2. Rinse x 2 in isotonic saline.
3. Treat slides in working solution of bactotrypsin for 20-30 seconds.
4. Rinse x 3 in isotonic saline.
5. Stain in Giemsa or Leishman stain for 4-6 minutes, wash rapidly in pH 6.8 buffer and blot dry.

Notes on Procedure

1. Put through control slides of same age to test time in trypsin solution.
2. Staining times in Giemsa or Leishman will vary from batch to batch. Over-staining will obscure bands and NORs, lean towards slight under-staining for good photographic results (Fig. 4).
3. All stages other than staining are carried out using Coplin jars. Staining is performed on a rack.

Fig. 4. Ag/G-banded karyotype showing G-bands and active NORs on acrocentrics.

Results and Discussion

As with all banding techniques on human chromosomes, the best results are obtained on metaphases of good morphology. The degree of Ag-stainability depends, as we have previously stated, on NOR activity and also on technical factors. The staining consists of two stages, first an initial reduction of Ag^{++}-ions to metallic Ag, and second a further precipitation of Ag on the initial site. The precipitates will, therefore, grow in size with prolonged staining. Differences in the intensity of staining for a specific NOR can vary, even on the same slide, from metaphase to metaphase; nevertheless, the relative differences are constant from one NOR to the other in the same metaphase, as far as the technique allows.

In the development of this technique, confusion existed as to what exactly was staining with the silver, the stalk (NOR) or the AT-rich satellite (Fig. 1).

Further well-controlled experimentation confirmed that it was the chromosome stalk (NOR), and that the satellite was merely being 'drowned' by silver precipitation. Figure 5 shows clearly the NOR flanked by the AT-rich satellite and the GC-rich material on the proximal side of the short arm of the chromosomes.

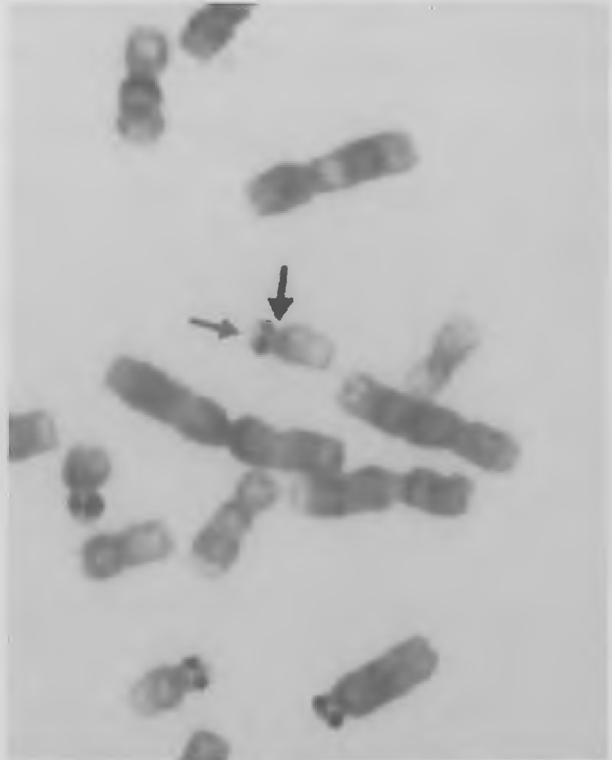

Fig. 5. Partial karyotype showing NOR flanked by AT-rich and GC-rich regions.

Since the early days of human chromosome studies, it was shown that acrocentric chromosomes are often seen in association or attraction (Fig. 6) and that they show considerable polymorphism in the NOR/satellite region. Before being clearly identified as normal variants, they caused considerable debate as being perhaps, extra genetic material causative of clinical conditions.

The Ag technique has been particularly useful in this identification procedure, establishing with certainty between

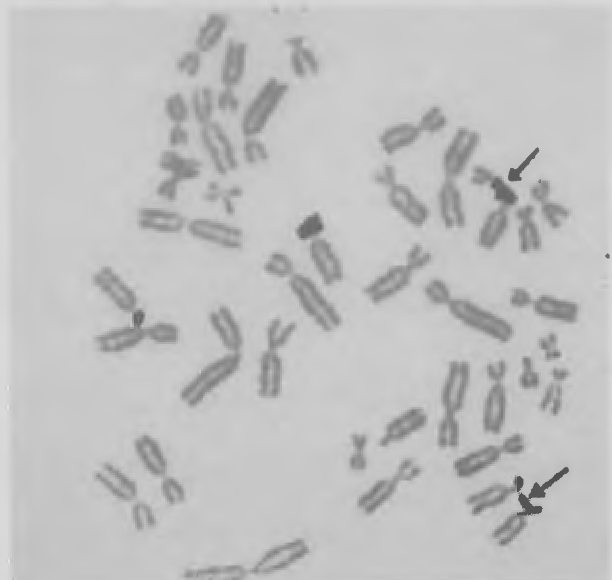

Fig. 6. Partial karyotype showing acrocentric association or attraction.

double, or even triple, NOR/satellite regions and other extra translocated chromatin material (Figs. 7, 8). Likewise, the Ag staining technique has been invaluable in aiding identification of small marker chromosomes, which have been estimated as having a frequency of 1 in 3,500 of the population [10].

Fig. 7. Small acrocentric showing double NOR. Note also how different activity of lower and upper NOR can occur.

Fig. 8. Large acrocentric showing double NOR.

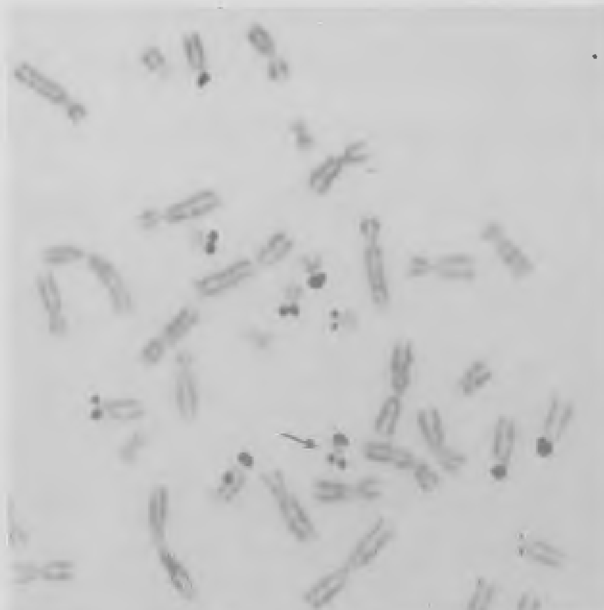

Fig. 9. Partial karyotype showing bisatellited microchromosome.

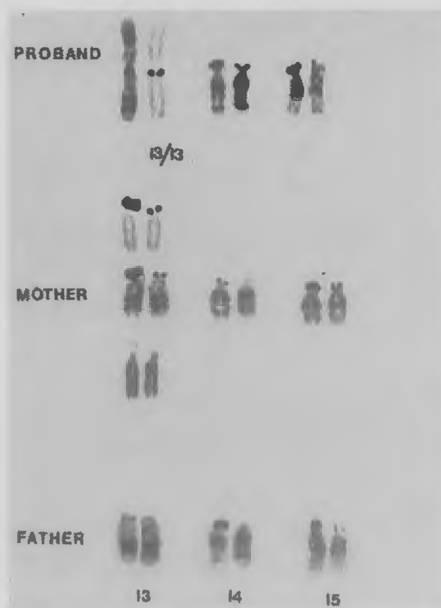

Fig. 10. Robersonian translocation of two 13 chromosomes showing silver blocs (NORs).

Many of these markers have been seen to be bisatellited structures arising from isochromosome formation, or else as a product of Robersonian translocations [11, 12] (Fig. 9).

The ability of these bisatellited microchromosomes to cause an abnormal phenotype is dependent on what additional genetic material they contain, but the NORs and satellites themselves are considered to be genetically inert.

It is not infrequent for the acrocentric chromosomes to be involved in Robersonian translocations. In cases of translocations where silver staining has been implemented, the majority show no silver-stained blocs, indicating formation in the classical accepted way, or else fusion of the short arms, again with the loss of NORs or, thirdly, the lesser possibility of inactive NORs on both the chromosomes involved. Occasionally, silver blocs can be demonstrated, Fig. 10 suggesting possible formation by fusion at the NORs of both chromosomes, or else a fusion between the NOR of one chromosome and the short arm of the other. It is noteworthy that, in Fig. 10, one of the maternal 13's possesses a particularly large NOR, suggesting its specific involvement in the proband's translocation product. In translocations where acrocentrics are involved with other chromosome types, the Ag technique had been instrumental in showing the exact location of the breakpoints.

In Fig. 11, we see that the short arm of a 4 homologue has actually attached itself to the NOR of a number 15 chromosome, although no active NOR could be demonstrated above the centromere on the 4 to show reciprocity.

The worth of this technique speaks for itself, especially in the differentiation between 'extra' chromatin material and familial variants. It is easy, inexpensive and requires no special apparatus or microscope attachments.

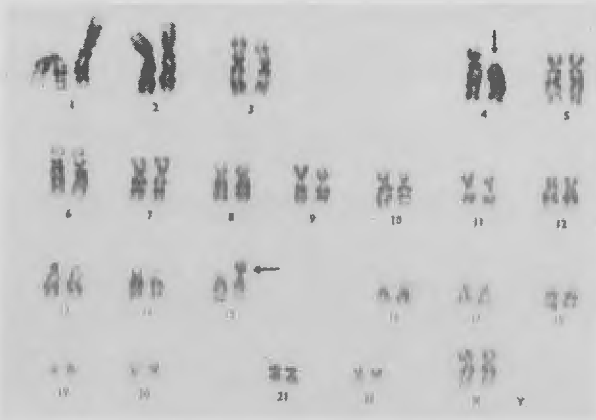

Fig. 11. Ag/G-banding showing translocation between short arms of one 4 and one 15 chromosome. Note NOR bloc on 15.

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Gas-Liquid Chromatography in Microbiology

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Abstract

The history, uses and potential for the use of gas-liquid chromatography (GLC) in the identification and detection of anaerobes and aerobes in the clinical microbiology laboratory is examined. Long chain fatty acid analysis of bacterial cell walls in the identification of certain aerobes and in the diagnosis of bacterial meningitis is examined. Rapid differentiation of tuberculous, viral and cryptococcal meningitis using electron capture GLC is reviewed. The feasibility of a clinical microbiology laboratory adopting GLC analysis as a routine procedure is discussed.

Keywords
Gas-liquid chromatography, Anaerobes, Meningitis, Fatty acids.

Introduction

Traditionally gas-liquid chromatography (GLC) has been a tool used primarily by the biochemists. However, recently it has begun to have increasing applications in the microbiological field.

Briefly, the technique of GLC is as follows; a microlitre quantity of the extract of the material to be analysed is injected into a heated coiled column, where it is instantly vaporized. An inert carrier gas sweeps the components along the column, at varying rates in proportion to such properties as molecular weight, solubility and boiling point. As they emerge from the end of the column they pass through a detector initiating an electrical response which is amplified and recorded as a peak on a chart. The time that the peak occurs in relation to that of the solvent is constant for a given set of conditions, and is used to identify the component.

Analysis of anaerobes

Anaerobes, by virtue of their distinctive metabolic pathways produce volatile fatty acid (VFA) end-products, which are not produced by facultative organisms (Figs. 1 and 2). Holdman, (18) using GLC analysis of broth cultures found that the pattern and approximate quantity of VFA's was constant for a given species. Non-volatile fatty acids, though not unique to anaerobes were also

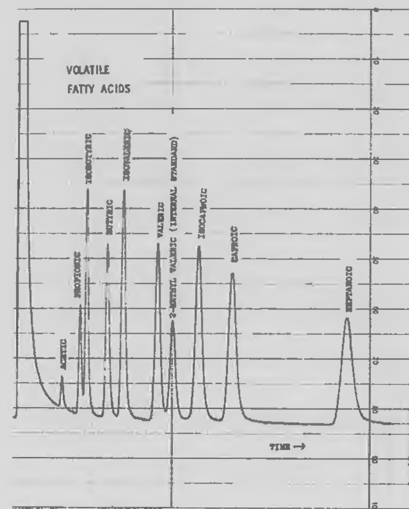

Fig. 1. Chromatogram of the volatile fatty acids significant in anaerobic identification.

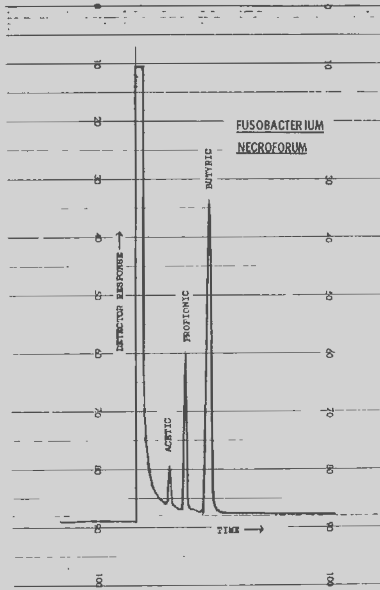

Fig. 2. Chromatogram of an extract from a peptone yeast glucose broth culture of *Fusobacterium necrophorum*.

found to be taxonomically useful (Fig. 3). Their analysis requires a simple methylation process before extraction to increase their volatility. A classification of the anaerobes was proposed in which fatty acid end-products played a major part, in placing strains not only into genera, but also into species. Thus the anaerobic gram negative rods were subdivided into two major groups: those producing major amounts of butyric acid (*Fusobacterium*) and those not (*Bacteroides*). Classification of non-spore-forming gram positive rods—*Propionibacterium, Lactobacillus, Eubacterium* and *Bifidobacterium* were also differentiated primarily on fatty acid end-products. Subsequently the fatty acid profiles of over 200 species of anaerobes together with their relevant biochemical reactions have been listed in the 'Anaerobe Laboratory Manual' (10).

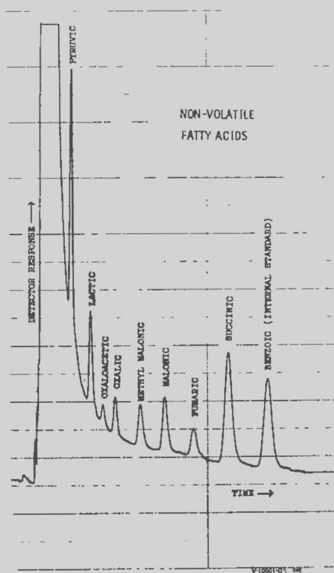

Fig. 3. Chromatogram of the methylated non-volatile fatty acids.

Extracts from clinical specimens may be made using the same techniques as used in preparing extracts from broth cultures. Demonstration of VFA's in purulent material has been shown by several investigators (11, 20) to provide rapid presumptive diagnosis of anaerobic infection (Fig. 4). The isolation and identification of anaerobes is often a lengthy process taking days, whereas demonstration of VFA's can be made within one hour of receipt of the specimen enabling the clinican to select initial antimicrobial therapy with greater accuracy. However, presumptive identification of the anaerobes is not usually possible as the majority of infections involve more than one species of anaerobe. No false positives have been found but occasionally false negatives may occur where the infecting species does not produce fatty acids as a metabolic product. Gorbach (8) claims that although most microbiologists are familiar with the distinctive odour of anaerobes, even experienced anaerobists can only detect it in approximately 50% of clinical specimens from anaerobic infections.

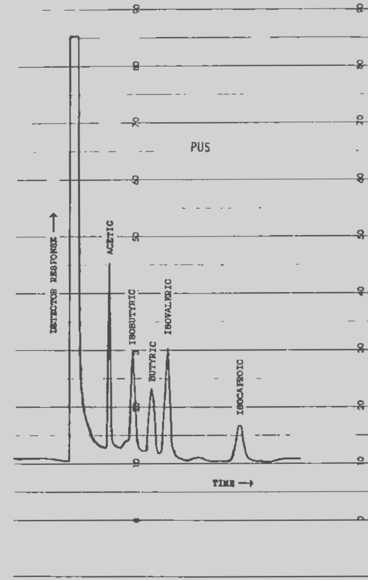

Fig. 4. Chromatogram of an extract of pus.

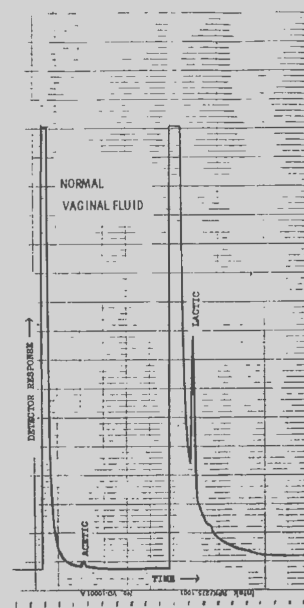

Fig. 5. Chromatogram of normal vaginal fluid.

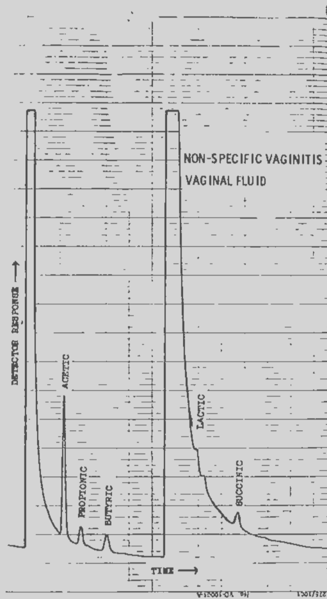

Fig. 6. Chromatogram of vaginal fluid from a patient with non-specific vaginitis.

Early differentiation between aerobic and anaerobic septicaemia by GLC of blood cultures has similarly been proven useful (22). Sondag et al (21) found that by analysis of those broths that show pleomorphic or fusiform gram negative bacilli, or gram positive bacilli, they could presumptively identify isolates of *Bacteroides, Fusobacterium,* and *Clostridium.* Presumptive identification in this situation is facilitated by the usual involvement of only one species.

To study the cause of non-specific vaginitis Spiegel and associates (23) analysed the vaginal fluids of symptomatic and normal women using quantitative cultures and GLC analysis for the short chain fatty acids. Normal vaginal fluid was shown to contain predominantly lactate with lactobacilli and streptococci (lactate producers) being the predominant organisms (Fig. 5). In non-specific vaginitis, the lactate was decreased whereas, succinate and the VFA's were increased (Fig. 6). The predominant organisms isolated in this latter group were *Gardnerella vaginalis* (acetate producers) and anaerobic organisms (producers of succinate and VFA's).

Analysis of aerobes

An alternative approach to the classification of organisms other than by analysis of metabolic end-products is through the study of cell structure components. Long chain fatty acids (LCFA) from bacterial cell walls were first examined by Abel and his colleagues (1) who found that members within the *Enterobacteriaceae* showed distinctive chromatographic patterns. Subsequently, profiles have been established for many other organisms including certain clostridia (6), pathogenic and non-pathogenic neisseria (13, 17), *Pseudomonas* (17) and yeasts (7). This technique shows most promise in the identification of organisms that are either slow growing or closely related and difficult to differentiate. *Mycobacterium* sp may take weeks to identify by conventional methods but Ohashi and his colleagues (19) demonstrated the feasibility of using GLC as a means of rapid identification. In their studies of ten different species the profiles obtained were sufficiently characteristic to permit speciation even though the individual fatty acids were not identified. Similarly, the chromatographic detection of cleavage products of mycolic acid present in the cell wall of tuberculous mycobacteria has been used to differentiate these organisms from the closely related genera of *Nocardia, Rhodococcus* and *Corynebacterium* (9).

Gas chromatographs of sera from patients with suspected candidaemia have in one study (14), proven to be sufficiently characteristic that diagnosis of candidaemia by GLC could be made before the blood cultures became positive. However, using the same analytical techniques, no abnormal profiles could be detected in sera from bacteraemic patients. Mitruka et al (15) in their work on mice and rats could identify the specific organism causing bacteraemia by GLC of the serum. But the degree of infection was extraordinarily heavy (10^4-10^7 bacteria/ml of blood); levels rarely encountered in the human clinical situation.

Diagnosis of meningitis

In response to the difficulties of diagnosing partially treated bacterial meningitis, Brice et al (2) have investigated the possibility of an alternative approach using GLC. Cellular fatty acids and carbohydrates were extracted and analysed; initially from pure cultures of common meningitis organisms and then from the CSF of experimentally infected dogs. Though the initial results appear promising, the technique has yet to be evaluated in the human clinical situation.

The rapid differentiation of tuberculous, cryptococcal and viral meningitis has always been a diagnostic difficulty. Craven and his colleagues (5) at the Centre for Disease Control in Atlanta have approached this problem by investigating the possibility of using electron capture GLC to detect traces of amines, hydroxy acids and alcohols as markers of the infecting agent. The technique has its difficulties due to the extreme sensitivity of the electron capture detector and the extraction procedure being very prone to contamination. However, they were able to demonstrate reproducible patterns of components characteristic of the disease which disappeared on recovery of the patient. Similar techniques have been applied to the differential diagnosis of gonococcal, staphylococcal, streptococcal and traumatic arthritis (4) and also to identify the causes of septic and aseptic pleural effusions (3).

Practical applications

Current developments indicate that GLC may prove to be of valuable assistance in the diagnosis and differentiation of meningitis, early detection of candidaemia, diagnosis of non-specific vaginitis and the identification of closely related and slow growing organisms. The technique is rapid in that incubation for bacterial growth is not required but the procedures for extraction can be complex.

However in the field of anaerobic microbiology GLC has become well established and is widely used in the diagnosis of anaerobic infections as well as assisting in the identification of anaerobic isolates. The decision to include GLC as part of microbiology laboratory's routine should be based on the number of specimens involving anaerobes that the laboratory deals with. A gas chromatograph equipped with the more sensitive flame ionization detector offers greater versatility but a machine fitted with the cheaper thermal conductivity detector is adequate for all anaerobic work and costs no more than a new microscope. Many of the other applications described in this article may necessitate use of more sophisticated gas chromatographic technology. Sometimes an under-utilized gas chromatograph may be available in a nearby department and an arrangement may be made which eliminates any major additional expenditure. It will be found that as expertise increases with familiarization of the technique, the benefits gained in relation to the relatively small amount of time involved will be great.

Acknowledgement

All chromatograms courtesy of the Director, Laboratory Services, Dunedin Public Hospital.

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TECHNICAL COMMUNICATION

A Simple Method for the Calibration of Autoclave Temperature Probes

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Checking the calibration of thermocouple probes and chart recorders used in monitoring autoclave temperatures is an important part of ensuring that the required temperature is being achieved. Boiling water is not adequate for this check because the temperature is not sufficiently close to that used in autoclaving to permit accurate calibration. The problem is to find a solvent with a suitable boiling point which does not produce noxious or toxic fumes in the atmosphere.

Our solution to this problem was to use a reflux condensor, fitted through a 24/29 joint to a 250 ml boiling flask to avoid release of fumes into the air and to conserve the solvent (fig. 1). Autoclave probes are introduced through side arms in the flask. The side arms contain rubber wads which have been punctured to allow entry of probes or a calibrated thermometer and are self-sealing when these are removed. The flask is placed in a temperature controlled heating mantle. The flask was manufactured by a glassblower at a local laboratory supply house[1]. The calibrated thermometer is necessary because the boiling point of the solvent will vary slightly with barometric pressure and will fall substantially if the solvent becomes contaminated. It is not convenient to run water through the reflux condenser while it is in use at the autoclave, but if filled with cold water before use, there is no noticeable temperature increase for well over one hour.

Solutions produced in this unit are autoclaved at 117°C and n-butanol, which boils at this temperature, has been found to be a suitable solvent for calibration. It is necessary to add about 25 g glass balls to prevent overheating.

In summary, the apparatus described provides a simple, convenient method for calibrating autoclave probes.

[1]Auckland Glass Ltd, Auckland, New Zealand.

Fig. 1.

The Management of the Laboratory

This is the first in a series of articles which are intended to introduce Medical Technologists to the concepts of Scientific Management, to encourage further study and to aid in the efficient running of diagnostic laboratories.

Introducing the New Employee to their job

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Induction is the name given to the function of introducing a newly engaged employee into the workplace. Also termed placement or orientation of staff it is a task shared by both line and staff and falls between the selection and training processes. It should be an organized programme of reception and introduction for newcomers which begins on their arrival and is designed to help them 'fit' into the new environment as quickly and efficiently as possible.

Mussman (1953)[4] contends that orientation should be designed to (1) create favourable impressions and attitudes toward the company and work; (2) foster a sense of belonging; (3) facilitate learning and integration into the work group; (4) reduce adjustment problems involved in the awkwardness and ignorance of the new environment; (5) create a sense of security and confidence so that the training process can be facilitated.

In the past this step was regarded as being of little consequence and employees were often left very much in the dark as to their actual role in the overall layout of things. The first days on a job are anxious and disturbing ones for most people and sink or swim policies only add to the confusion. Laboratories, handling as they do a complex set of interrelated tasks, may appear to the newcomer as a totally incomprehensible system where everyone else appears to have a specific task and little time to spare for a newcomer. Many staff in later years comment on their very real fear of the work initially and their worries about their own ability to perform it. Over a period of time they discovered where the cafeteria was, learnt to write up the worksheets and gained enough courage to answer the telephone without anxiously (and often surreptitiously) checking to see if anyone else would take the call. Filing systems can test the abilities of the most practical beginners and the whereabouts of results which have not reached the files may pose problems even for the veteran. Gomersall and Myers (1966)[2] in a special experimental induction programme set up at Texas Instruments showed that fewer training hours were required by those put through the programme and that they subsequently showed higher productivity and lower absentee rates than a control group.

A lot of time and effort is expended to recruit and select suitable staff at all levels in the laboratory. There are advertisements to be prepared and place, applicants to be processed, references to be obtained and studied, and interviews to be conducted. Several staff members may be involved and in larger organizations the personnel department will also have played a part, so that administrative costs can be considerable. Grant & Smith (1975)[3] found that labour turnover is much higher among employees with less than six months service than it is among any other group of workers and it is an expensive business to take staff on only to have them leave after a short space of time. Should the worker leave before becoming productive the loss is total and in a job with such a long lead up time as medical technology this could apply to any person who leaves within the first year. It is equally dysfunctional to retain dissatisfied or incompetent staff who feel obliged to stay put due to the current economic situation and the lack of comparable job opportunities. If such staff showed promise when hired (and one assumes they did to have been taken on) and have failed to live up to expectations it could be because their induction was poorly or inadequately carried out.

Spriegal (1957)[6] noted that 'satisfied employees are always found to have a feeling of belonging' and it is this feeling of belonging that we seek to nurture in the induction process. The greater the speed and efficiency with which a worker can be assimilated into the organization and the sooner they identify with the department they are in the less likely they are to leave. If an employee is to do their job effectively they must first identify with the aims and objectives of the organization. This means knowing something about its goals, authority structure, and administration. In the larger organization such as a hospital with its high and constant rate of recruitment the first phase of the programme is normally conducted by the personnel department who are in a position to organize frequent short induction courses. These courses are fairly general and include basic information on wages, working conditions and organizational policies for all new staff. In the smaller unit where there is no separate personnel function the laboratory manager must assume responsibility for this essentially staff function and should be familiar with all the pertinent data. The personnel department can show the new employee the relationship of their particular job to the organisation as a whole, defining the goals of the organisation and the employee's part in achieving these goals. The typical orientation programme is largely informational and pretty much standardized consisting of a verbal presentation supplemented by the provision of an employee handbook. Good induction procedures are designed to cover all information about the organization, the people in it and the actual job. A typical course might include the following—

(1) The organization and its output
(2) Departments within the organization and their interdependence. This could be supplemented by a guided tour.
(3) Amenities and employee services. The location and conditions for use of the cafeteria. Staff buying privileges, e.g. PSIS, Superannuation, life assurance and employee welfare. Social activities, e.g. squash club, bowling club.
(4) Organizational rules and regulations and the reasons for their existence. The need for the confidentiality of patient data. Dismissal and suspension of staff. Convictions against the law on the part of employees. Complaints procedure and counselling facilities. Rulings on secondary employment. The execution of private work on the organization premises. Provisions for jury leave. Leave without pay and sick leave.
(5) Organizational structure and a brief who's who.
(6) Health and safety at work.
(7) Training opportunities within the organization.
(8) Plans for the future of the organization.

Obviously this all comprises too much information for any individual to absorb and retain in a relatively short space of time so that a booklet should be prepared covering all aspects and issued in the initial stages of the induction process.

The purpose of this initial induction is threefold—first to give the new employee all information required; second to give adequate opportunity to the new employee to ask questions and discuss problems; third to help the new employee settle into their new environment with the least possible confusion. Crane (1979)[1] stressed that employees' initial impressions of the organization may shape their attitudes about their work situations and affect their performance long after they are hired so all effort must be made to ensure that these first impressions are favourable ones.

After the initial orientation by the personnel department the real responsibility rests with the line manager. Many of the details given to the new staff member will have gone in one ear and out the other and must be reinforced within the workplace. It is now the time to explain the department's function and the part the employee is expected to play within the department. The first few weeks is really a probationary period when good habits should be

established and bad ones corrected. Unsuitable staff should be removed within the first year and preferably within the first three months so that followup by the manager is essential. The manager's role should be well defined:-

(1) Get what information you need from the personnel department.
(2) Orientate the worker.

a) Job title and description.
b) Safety-training is essential very early in the induction process in the laboratory. The manager is responsible for ensuring that all new employees know and understand safety rules and regulations. This will include basic information on storage of chemicals, handling of specimens and bans on eating and smoking which are enforced in all laboratories.
c) Security regulations.
d) Pay procedures—location and filling out of timesheets, pay day, method of payment, overtime payment.
e) Hours of work—starting time, lunch breaks, quitting time, overtime, shiftwork, callback.
f) Holidays—time allowed, when taken, rate of pay.
g) Departmental goals, e.g. 1: to have reports out by 3pm. e.g. 2: to conform to laid down quality control requirements.

(3) Induct the new worker into the group.
(4) Check up on the progress of the new worker at frequent intervals. An effort should be made to remember their name and use it, to enquire how they are getting on and to build their confidence.

The new employees gets their first impressions on their job at this point and these will form the foundation for future growth and development. Crane (1979)[1] stated that employees' introduction to their new job should be designed to make them feel welcome and needed and present a favourable image of the work place. It requires little effort to show interest in people's progress in an informal way. In larger institutions with frequent department changes and day release or block courses involved it is easy for trainees to feel completely unnoticed for the first year. It is a good idea if the manager is unable to undertake induction of new staff personally to have a senior staff member designated for this task who is selected because of their personal interest in people and their interpersonal skills as well as their technical competence. It is not satisfactory to simply attach the new staff member to a junior member of the staff and expect them to pick things up as they go along. Sikula (1976)[5] found that a good induction programme will 'lead to reduced job learning time, higher output, better attendance and less waste because of lowered employee anxiety and stress.'

Within the laboratory staff induction should always begin in the specimen reception area so that a logical flow through in work patterns can be established. Without this initial step it is possible to find staff who after some considerable time are still unaware of the correct handling procedures for a wide variety of tests because they have not assimilated basic building blocks of information. The learning pace should be slow and deliberate with one task being learned at a time and not moving on until it is mastered. Learning must be active not passive with guidance provided and plenty of on the job coaching. Laboratories are particularly suitable for setting up vestibule training where an area is set up away from the work area to approximate as closely as possible actual working conditions. Skills can then be learned on a one-to-one basis without the added stress of time constraints. It is vital that the supervisor has teaching abilities and will not pass on inefficient or unsafe work habits. In our Biochemistry Laboratory new staff are taught in the first instance in the reception area how to label up and prepare a small range of simple tests such as electrolyte and liver function screens. This is slowly extended until by the end of several weeks they are coping with selected racks of unusual or complicated requests involving specimens for posting away, addition of special preservatives and other specialized treatment. Staff are permitted to work at their own pace out of the mainstream of work so they do not cause a bottleneck and they are encouraged to ask questions and take such notes as they deem necessary. This is all carried out under the direct supervision of a senior staff member who decides when they are ready to work unsupervised. All procedures are documented and every attempt is made to ensure an atmosphere where the new worker is not made to feel stupid or inferior. A slow pace is both permitted and encouraged and mistakes are expected in the early stages. The laboratory is not a suitable place for trial and error learning and by the time the new member is put into the mainstream of work unassisted they should have worked through a selected graduated series of tasks and formed good working habits. It is a well appreciated fact that complex tasks are learnt most effectively by breaking the job into several parts to be learnt in turn. This philosophy of not receiving too much information at one time applies equally to all disciplines, and additional information should be supplied when necessary. Special instruction must also be given in how to answer telephone enquiries, the layout of the filing system and who to go for additional information on a number of topics.

The Induction process in the laboratory does not finish after the initial few weeks work orientation. The system is such that it is a continuing process required for each new set of tasks. The worker who has completed a stint in Microbiology is by no means prepared for the work that will present in Haemotology or Histology. Even within the same department work in, for example, a toxicology subsection may provide little preparation for work in an immunology subsection and planned job rotation is necessary to give competent all round worker.

If the manager neglects induction and fails to follow through with new workers the following will occur (1) increased labour turnover; (2) increased recruitment and hiring costs; (3) dissatisfied and unproductive employees; (4) low morale; (5) an unnecessarily long settling in period. Much of the success of subsequent training and performance depends on good induction and it can always be justified on a dollars-and-cents basis.

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LETTER TO THE EDITOR

Dear Sir,

I read with interest the article by D. E. Roser in the N.Z.J. Med. Lab. Tech. (November 1981) on Toxocara Infection Resulting in the Formation of an Anti-A in a Group A Individual. I would, however, like to draw your attention to a significant error in the Discussion with regard to the diagnosis of Toxocara.

D. E. Roser states that "the definitive diagnosis of Toxocara infestation can be made only by the presence of ova from the stools". In the normal host for *Toxocara canis* or *T.cati,* i.e. dogs or cats respectively, this is correct but in humans (and I assume he means humans in this case) the Toxocara worm does not migrate to the intestine and therefore does not produce eggs in the faeces.

Humans are accidental hosts to Toxocara with fertile eggs being ingested mainly by children who indulge in pica. Hatching occurs in the small intestine, and the released larvae penetrate the mucosa, migrate to the liver via the portal circulation, follow vascular channels to the lungs and then enter the systemic circulation. When the size of the larve exceeds the diameter of the blood vessel, they are impeded, actively bore through the vessel wass and migrate aimlessly in the surrounding tissue, hence the term visceral larva migrans for this disease. Most of theses larvae apparently become dormant and can remain viable for many years. At a later time they may once again become encapsulated by host response and are destroyed.

The clinical and pathological manifestations in visceral larva migrans result from mechanical damage caused by the migrating larvae and by the often severe inflammatory response stimulated by their presence.

Faecal examination is therefore a waste of time for the diagnosis of Toxocara and may give a false negative impression to the clinician. Only on extremely rare occasions will the larvae complete the normal life cycle and mature in the gut. There are few reports in the literature where adult worms have been recovered from the intestine of man and definitively identified, the most recent by von Reyn 1978. A faecal concentrate should still be made however, to exclude other helminthiasis.

The only definitive means of diagnosing Toxocara in humans is to biopsy the suspected organ and demonstrate the larvae histologically but this is usually difficult and impractical. Laboratory diagnosis is normally made by various serological tests[2], sera from New Zealand being sent to the Centre for Disease Control, Atlanta. Chronic eosinophilia, clinical symptoms, a history of pica, and exposure to dogs are other empirical means.

The dog roundworm *T.canis* is the major cause of toxocariasis, however the cat roundworm, *T.cati*, and other animal parasites, are also potentially capable of producing visceral larva migrans.

Because Toxocara is in the Part III Microbiology syllabus students should be aware of the life history and the correct approach to the diagnosis of this potentially serious disease.

There is an excellent review of the subject by Schantz & Glickman, 1978[3].

Yours sincerely
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22/1/82

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Books Received

Harpers Review of Biochemistry. D. W. Martin; P. A. Mayes; V. W. Rodwell; 18 edition, 614 pages, price $31.50. Publishers Lange Medical Publications, obtained from Peryer Educational Books, C.P.O. Box 833, Christchurch.

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Book Reviews

Rapid Virus Diagnosis. Application of Immunofluorescence. 2nd Edition 1980. P. S. Gardner & J. McQuillan. Butterworths, London. Available from Butterworths, N.Z. C.P.O. Box 472, Wellington. 317 pp. $87.20.

The application of immunofluorescence to diagnostic virology has been increasingly used by virologists in the last few years. Appearing six years after the first and excellent edition, this second edition has been considerably expanded to include new ideas and current developments in technology.

The text begins with an examination of the principles of fluorescence microscopy then looks at the various methods for the production of antisera and conjugates. This is followed by immunofluorescence techniques, directions as to achieving specificity and to the control of non-specific fluorescence. After a very practical chapter on the preparation of suitable specimens, there follows an examination of the current methods of detection of each viral group by immunofluorescence.

Two new chapters have been added to this edition. Firstly, one on the detection of virus specific IgM by immunofluorescence, which looks at comparisons of the various methods for detection of IgM activity, sources of error, and then gives examples of the situation where the IgM fluorescence technique has been applied. Secondly, there is a chapter examining the application of the immunofluorescence technique to clinical virology. This deals with

the management of patients and the use of antiviral drugs and looks at many aspects of the situation including, virus infection outside the acute phase of illness, rapid techniques in fatal infections, immunosuppression and viral infection, unusual symptons exhibited to common viruses, those viruses which are difficult to cultivate, cross infection prevention, viral diagnosis in areas distant from a virus laboratory, rapid diagnosis in epidemiology, and finally, immunofluorescence as a laboratory aid.

Not only are these two new chapters very informative, but also I was pleasantly surprised to find that the text had been extensively revised throughout. The added material, also containing new plates and charts, is included in a comprehensive succinct form that complements the lucidity of the text. Arguments are expounded fairly and the references expanded to include all recent material.

There are other advantages to this edition. The format and type face are larger, the layout more clearly presented, and, to facilitate reference, chapter subheadings are now listed in the Contents.

This book certainly has much to commend it compared to the previous edition and would be essential for any technologist wishing to explore the field of viral immunofluorescence, as well as being a text highly recommended to anyone interested in the principles of immunofluorescence.

Elizabeth Poole, Scientific Officer
Virology Dept, Dunedin Public Hospital.

Medical Microbiological Techniques. F. J. Baker: M. R. Breach. Butterworths, London. Available from Butterworths N.Z. C.P.O. Box 472, Wellington. 547 pp. $56.90.

Medical Microbiological Techniques is a welcome successor to the useful but now rather dated text book Handbook of Bacteriological Technique. Completion of the new edition was delayed by the untimely death of Mike Breach. Baker was subsequently joined by colleagues Ian Leighton and Paul Taylor and the book was completed for publication in 1980.

Medical Microbiological Techniques continues the same format used in previous editions but has been updated and enlarged. Sections on safety, quality control and automation have been added and the serology section now includes electrophoresis, immunofluorescence techniques and ELISA. The book is divided into 18 sections including general, medical bacteriology, medical mycology, medical virology, medical parasitology, antimicrobial compounds and techniques, and 6 appendices which include bibliography, culture media, formulae or culture media, preparation of stains and reagents, McCradys probability tables, measuring fluid by drops, and SI units, gas cylinders, conversion factors and buffer solutions.

Medical Microbiology is essentially a bench book with the main emphasis on techniques, although theoretical aspects have not been entirely neglected. I like the logical, clear, concise, step by step format of this book. In the systematic bacteriology section for example the account of each organism usually commences with a description of the genus, a brief outline of the epidemiology of the organism, identification including film appearance and cultural characteristics, followed by a list of diagnostic tests and the expected result. Tables listing the main characteristics of the various species within the genus are usually included. The descriptions of individual tests are detailed in a simple numbered step by step manner which would serve as an excellent model for microbiology examination candidates to follow.

As would be expected in a textbook which covers most areas of microbiology in 574 pages the authors have concentrated essentially on the more common aspects of microbiology.

In the main the detail is reliable and up to date, although it was surprising to read the statement that Clostridium perfringens food poisoning was confined to heat resistant strains, and the technologist who tries to observe acid as well as gas in McKenzie's brilliant green bile broth in the Eijkman test is doomed to disappointment. These minor blemishes do not detract too greatly from the overall acceptability of the book.

I would recommend Medical Microbiological Techniques as a useful bench book and also as part of the library for Microbiology students studying for the NZCS (Paramedical) or Part II examinations.

A. F. Harper.

Radioisotope Laboratory Techniques. R. A. Faires and G. G. J. Boswell. 4th Edition. 1981. Butterworths London. Available from Butterworths N.Z. C.P.O. Box 472, Wellington. 335pp. Hardback. $47

This is a welcome update of the popular text produced earlier by Faires and Parks. It is attractively and clearly presented, well set out and accurate. An excellent bench book, it fulfils well the author's aim of presenting practical guidance on the use of radioisotopes to a wide variety of scientists. This book could usefully be found on the shelves of hospital physicists and RIA laboratories, University practical and research laboratories and any other laboratory using or contemplating using radioisotopes. Whilst the text is not suitable for trainee radiographers it is eminently suitable for medical laboratory technologists taking the nuclear medicine option of the N.Z.I.M.L.T. course.

Radioisotope Laboratory Techniques is a well organised book, divided into 21 chapters, each covering one main topic.

The early chapters discuss basic concepts which are often glossed over or assumed by other texts. The definitions and descriptions in the sections on basic nuclear physics and the production and properties of radioisotopes are simple, clear and easily visualised. Because of its English origin the units employed are S.I. rather than the old-fashioned units which would probably be found in a comparable American publication.

Much practical and up to date information is given in the chapters on health physics, the control of radiation hazards and decontamination and disposal of waste. This together with data on laboratory apparatus, the design of laboratories and the choice of counting equipment will be invaluable for scientists planning or outfitting new laboratories or working with radioisotopes for the first time.

Later chapters deal with methods of gaining optimum information from radioisotope work. Discussed in detail are the correct preparation of samples for counting and the most appropriate counter for the radioisotope being measured. Optimisation of counter response is also considered as are the statistics of counting.

The book ends with brief descriptions of a wide variety of applications of radioisotopes and radiation and a separate chapter on autoradiography and gamma radiography. There are also 9 appendices containing various useful definitions and tables and a moderately useful list of suppliers of radioisotope equipment.

This is a publication to be recommended. It is concise, accurate and well produced with a useful index, clear diagrams and tables and very few typographical errors. Although not a treatise on any one subject it gives a good up to date range of references for those who would wish more detail.

S. A. Douglas
Senior Scientific Officer,
Department of Nuclear Medicine,
Dunedin Hospital.

Microbiology 1981. David Schlessinger Ed.; American Society for Microbiology 1913 I Street N.W. Washington DC 20006, U.S.A. US$22 clothbound, 424 pages, available June 1981.

Microbiology is an annual publication containing articles dealing with recent technical developments in microbiology and immunology.

The fields covered are extensive; however the majority of topics are concerned with molecular and genetic microbiology. The short sections of Legionellosis and Candidiasis are detailed and informative. However as the majority of the book contains material that is not relevant to the clinical laboratory and is of such a specialised nature most clinical laboratories could not justify its purchase.

T. Chew.

Medical Laboratory Statistics: Institute of Medical Laboratory Sciences Monographs Series. Paul W. Strike, Bristol, England. John Wright & Co. 42-44 Triangle West Bristol, BS8 IEX England. 203 pp. (Available from The Editor, Box 6168, Dunedin $15).

This text is intended for medical laboratory staff, at all levels of experience and qualification, who seek a practical statistical knowledge.

The introductory chapters provide a basic knowledge for anyone undertaking a specific statistical analysis programme, studying statistical analysis or having a general interest in the subject. The following chapters, especially Chapter 5, Clinical Reference Values, Chapter 6, Quality Control and Chapter 10, Method Comparison Studies, provide sound material for practical application. These chapters are written independently of each other and may be selected for individual use, although it is recommended that the book be read as a whole, as often problem areas are revised. A number of schematic diagrams and tables each with an accurate explanation, supplement each section of the text. Chapter 11, Final Thoughts, provides sound advice to anyone considering embarking on a research project.

The intelligent use of this text would allow the application of a wide variety of statistical techniques in the analysis of routine, new and comparative data in the laboratory.

The purpose of this book is to provide workers in medical and scientific laboratories a current practical working knowledge of statistics. This fundamental statistical knowledge also allows one to analyse more critically the statistical content of the material published in journals.

This comprehensive, soft covered text will be useful to those working in the medical laboratory for general use on the bench or as an examination reference book.

Les M. Milligan

Abstracts

Abstracts are prepared by Errol Crutch (Haematology); Sue Gainsford (Microbiology); Brian Thackeray (Histology).

HAEMATOLOGY

Haemoglobin H Disease and Mental Retardation. Weatherall, M.D., et al (1981), *New England Journal of Medicine* **305** 607.

Each of three families of Northern European origin contains a mentally retarded son with haemoglobin H disease. One parent is a carrier of mild alpha-thalassaemia and the other is normal, suggesting that this form of haemoglobin H disease results from the interaction between an inherited defect of alpha-chain production on one member of the pair in chromosome 16 and a new mutation on the other. The authors suggested that this type of mutation may have been overlooked in other mentally retarded patients.

Antithrombin-III and Platelets in Haemodialysis Patients. Brandt, P., Jespersen, J. and Sorenson, L. H. (1981), *Nephron* **28** 1.

Plasma antithrombin III levels in 18 patients on maintenance haemodialysis were measured functionally and immunologically before and after dialysis. Simultaneous counts of platelets were made. The dialysis was seen to induce small but significant decreases in antithrombin III levels and platelet counts. Replacement of intravenous heparin with low-dose, subcutaneous heparin is suggested.

Migraine: a Platelet Disorder. Hanington, Edda, Jones, R. J., Amess, J. A. L. & Wachowicz, B. (1981), *The Lancet* **8249** 720.

The hypothesis that migraine is caused by a primary abnormality of platelet behaviour was investigated in a total of 77 migraine patients and control subjects. Platelets from migraine patients differ significantly, both in adhesion and aggregation, from normal platelets. The authors therefore consider that migraine should be included among common disorders of the blood.

Red Cell Exchange: Treatment of Babesiosis in a Splenectomized Patient. Cahill, K. M., et al (1981), *Transfusion* **21** 193.

A splenectomized woman with a history of hepatic disorders was diagnosed as having babesiosis. The patient was unsuccessfully treated with chloroquine and pentamidine isothionate. A parasitemia of 15 per cent was reduced permanently to less than 1 per cent after a red blood cell exchange, but a low grade parasitemia still existed 10 months after onset. The authors discuss this patient, the most severe clinical case to survive.

Terminal Deoxynucleotidyl Transferase-Containing Cells in Peripheral Blood: Implications for the Surveillance of Patients with Lymphoblastic Leukaemia or Lymphoma in Remission. Frochlich, T. W., et al (1981), *Blood* **58** 214.

An indirect immunofluorescence assay was used to quantitate TdT-containing cells in the peripheral blood from normal subjects, patients with acute lymphoblastic leukaemia and lymphoblastic lymphoma. The authors found that the indirect immunofluorescence assay for TdT detected a small population of cells in normal peripheral blood, but in patients with ALL, progressive increases above this normal level were associated with subsequent bone marrow relapse.

The Bleeding Time is Longer Than Normal in Haemophilia. Eyster, M. Elaine, Gordon, R. A. & Ballard, J. O. (1981), *Blood* **58** 719.

Bleeding times were performed on 71 haemophiliacs using the simplate 11 device. They had a mean bleeding time of 7.65 + 3.20 minutes compared to the control group of 5.35 + 1.49 minutes. This abnormality is not related to disease severity, recent transfusions, or the use of nonsteroidal anti-inflammatory drugs. Patients with factor VIII procoagulant deficiency and a prolonged bleeding time do not necessarily have von Willebrand's disease or haemophilia with a coexistent platelet function abnormality. This observation has important diagnostic implications.

An Assessment of an Amidolytic Assay for Factor VII in the Laboratory Control of Oral Anticoagulants. Poller, L., Thomson, Jean M., Bodzenta, Anna., Easton, Ann C., Latallo, Z. S. and Chmielewska, Joanna. (1981), *Br. J. Haematol* **49** 69.

A comparison has been made between the prothrombin time test using British Comparative Thromboplastin and a chromogenic substrate assay for Factor VII in the assessment of laboratory control of oral anticoagulants in short-term and long-term patients. The amidolytic assay offers a limited but dependable guide to dosage in long-term patients but the complexity of the technique in its present militates against its adoption for routine anticoagulant control in hospital laboratories.

D.N.A. Antibodies in Systemic Lupus Erythematosus—An Evaluation and a Comparison of Two Techniques. Browne, Orla, Holland, P. D. J. and Maguire, Pauline. (1981), *Irish Medical Journal* **74** 188.

Two techniques for the demonstration of double stranded DNA antibodies are compared, i.e. Farr's radioimmunoassay and the indirect fluorescence technique using *Crithidia lucilliae* as the source of DNA and the former is to be recommended, both for its sensitivity and its reliability.

Double-Stranded DNA Antibodies: A Comparison of Four Methods of Detection. Somerfield, S. D., Roberts, M. W. and Booth, R. J. (1981), *J. Clin. Pathol* **34** 1032.

The authors compared the following four techniques:-Farr assay, haemagglutination, *Crithidia lucilliae* kinetoplast fluorescence and human metaphase chromosome fluorescence assay. The authors' experiments demonstrated that immunofluorescence tests using human metaphase chromosomes correlated extremely well with results of other, more established tests for double stranded DNA antibodies. They say that this observation, together with the relative simplicity, reliability and increased sensitivity of the metaphase assay, provide very compelling reasons for the adoption of this method as a routine laboratory test for ds DNA antibodies.

Zinc Acetate as a Precipitant of Unstable Haemoglobins. Carrell, R. W. and Lehmann, H. (1981), *J. Clin. Pathol* **34** 796.

Whereas the addition of zinc acetate to normal haemoglobin at pH 7.4 results in a clear solution, addition to unstable haemoglobin results in precipitate formation. The authors suggest that zinc acetate may be a useful laboratory tool in a routine test for discovering the common unstable haemoglobins.

Comparison of Liquid and Dried Sodium Citrate as the Anticoagulant for Thrombo Test and Prothrombin Time Estimations. Hoctor, D., Bottomley, J., Hyde, K., Gowenlock, A. H. and Maciver, J. E. (1981), *J. Clin. Pathol.* **34** 902.

Samples which are taken for the quick one-stage prothrombin time estimation for the control of patients receiving oral anticoagulant treatment are by convention taken into liquid sodium citrate anticoagulant. Commercial tubes are available containing dried sodium citrate which have been criticised by some workers on the grounds that there is a greater risk of haemolysis and consequently activation of coagulation factors. The authors in this study have found this to be untrue and therefore no clinically significant difference between the values given by the two anticoagulants.

E. R. C.

HISTOLOGY

Improved Iron-Haematoxylin Stain for Elastic Fibres. Musto, Linda. (1981), *Stain Technol.* **56**, 185.

A modification of Verhoef's elastic tissue stain with connective tissue counterstaining is described. The modified procedure requires no differentiation of the elastic fibres, thus eliminating the problem of over or understaining of elastic fibres. The method is recommended for routine use, particularly when photomicrography is desired.

Improvements in Histological Techniques for Epoxy-Resin Embedding Bone Specimens. Watts, R. H., Green, D. and Howells, G. R. (1981), *Stain Technol.* **56**, 155.

A procedure is presented in which some of the processing difficulties with fixation, embedding and cutting whole mouse bones and large bone pieces from other species are considered.

Glycol Methacrylate Embedding in General Histopathology. Green, G. H. and Kurrein, F. (1981), *Association of Clinical Pathologists Broadsheet 97.*

A very practical review of work in this area to date with the routine laboratory in mind.

B.C.T.

MICROBIOLOGY

Indirect Enzyme Linked Immunosorbent Assay (ELISA): Practical Aspects of Standardisation and Quality Control. McLaren, Moira, L,. Lillywhite, Jane, E. and Andrew, C. S. (1981), *Med. Lab. Sci.* **38**, 245.

In this review article the principle and technical performance of each step of the indirect ELISA test is discussed along with quality control.

***Clostridium difficile*—A Toxigenic Pathogen.** Burdon, D. W. (1981), *Med. Lab. Sci.* **38**, 253.

This is a brief review article on *Cl. difficile* and its toxins as a cause of pseudomembranous colitis. The diagnostic findings on 44 patients showed, *Cl. difficile* was isolated in the absence of detectable cytotoxin or histological evidence of colitis and that the faecal cytotoxin test was negative in 20% of cases of pseudomembranous colitis.

Evaluation of Commercially Available Diagnostic Test Kits for Rubella. Castellano, G. A., Madden, D. L., Hazzard, G. T., Cleghorn, C. S., Vails, D. V., Ley, A. C., Tzan, N. R. and Sever, J. L. (1981), *J. Inf. Dis.* **143**, 578.

Three haemagglutination inhibition methods and eleven commercial diagnostic test kits were compared for the determination of immunity and serologic diagnosis of rubella. Some of the kits with high specificity were low in sensitivity and vice versa. Only four kits had an acceptable high degree of specificity and sensitivity.

The commercial kits included Rubelisa, Rubacell, Rubindex, Fiax, Rubesure, Cordia R, Rubella HAI Kaolin, Rubella HAI heparin Mn Cl_2 and Ruba-tect Kaolin and heparin Mn Cl_2.

Isolation of Actinomycetes from Cervical Specimens. Traynor, R. M., Parratt, D., Duguid, Helen L. D. and Duncan, I. D. (1981), *J. Clin. Pathol.* **34**, 914.

In this study actinomycetes were isolated from 13 of 15 women who had actinomycetes-like organisms seen in cervical smears. It is suggested that the high isolation rate of actinomycetes is due to incubation of 10-14 days, the use of metronidazole 2.5 mg/l in the Columbia blood agar isolation media and a dilution technique where the swab is placed in thioglycollate broth from which tenfold dilutions are made and subcultured.

Rapid Identification of *Corynebacterium vaginale* in Non Purulent Vaginitis. Wells, J. I. and Goei, S. H. (1981), *J. Clin. Path.* **34**, 917.

A simple set of primary tests was used to identify *C. vaginale* on the day of its isolation. A second set of tests confirmed the identification of *C. vaginale* with 94% of isolates. It is suggested that hippurate hydrolysis be included in the primary tests to give an accuracy of identification of 97%.

Enhancement of Recovery of *Neisseria meningitidis* by Gelatin in Blood Culture Media. Pai, C. H. and Sorger, S. (1981), *J. clin. Microbiol.* **14**, 20.

Neisseria meningitidis was isolated from seven patients in Columbia broth sodium polyanethol-sulfonate and 1% gelatin. Only two blood cultures from these patients were positive in media without gelatin.

Comparison of Acridine Orange and Gram Stains for Detection of Microorganisms in Cerebrospinal Fluid and Other Clinical Specimens. Lauer, B.A., Teller, L. B. and Mirrett, S. (1981), *J. Clin. Microbiol. 14,* 201.

A comparison of the acridine orange (AO) and Gram stain in detecting bacteria was made on 209 cerebrospinal fluids and 288 other body fluids. The AO was slightly move sensitive and could detect bacteria when about 10^4 colony forming units per ml were present in a specimen whereas the Gram stain requires about 10^5 colony forming units per ml. An advantage of the AO stain was that smears could be examined at low magnification but granules from disintergrating leucocytes could be confused with cocci. The authors suggest that the AO stain is useful for examining purulent specimens that have a negative Gram stain.

Primary Isolation of *Neisseria gonorrhoeae* on the Haemoglobin Free New York City Medium. Granato, P. A., Schneible-Smith, Cheryl and Weiner, L. B. (1981), *J. clin. Microbiol.* **14**, 206.

New York City (NYC) medium with and without haemoglobin was used as a primary isolation media for culturing 1010 clinical specimens for *N. gonorrhoeae.* The colonies on NYC with haemoglobin were usually larger than those on NYC without but the 187 gonococci isolated grew about the same number of colonies on both media and in the same incubation period. The study therefore shows that the cost of NYC media can be reduced by eliminating haemoglobin with no effect on the isolation of *N. gonorrhoeae.*

Lysostaphin Disk Test for Routine Presumptive Identification of Staphylococci. Poutrel, B. and Caffin, L. P. (1981), *J. clin. Microbiol.* **13**, 1023.

Ten species of staphylcocci and seven species of micrococci were tested for susceptibility to lysostaphin by a disc diffusion test. All the staphylococci species were susceptible and all the micrococci species resistant. The test was quick, easy to perform and the lysostaphin discs stable for at least 3 months @ 4°C.

Modified Oxidase and Benzidine Tests for Separation of Staphylococci from Micrococci. Faller, A. and Schleifer, K. H. (1981), *J. clin. Microbiol.* **13**, 1031.

Two rapid methods for the differentiation of staphylococci and micrococci are described. Both tests were very accurate and the simpler of the two, the oxidase test is suggested as the method of choice.

Comparison of the Phadebact Gonococcus Test with the Rapid Fermentation Method. Futrovsky, Susan, L., Gaydos, Charlotte, A. and Keiser, J. (1981), *J. clin. Microbiol.* **14**, 89.

93 isolates of oxidase positive gram negative diplococci were tested with the Phadebact Gonococcus Test and rapid fermentation test. The direct Phadebact Test was done on 46 isolates but 39% were difficult to interpret so the remaining 47 isolates were tested after boiling when all but two isolates gave positive interpretable results. No positive reactions were found with *Neisseria meningitidis,* Neisseria species and Moraxella species. Tests were done using 5μl, 10μl, 20μl, amounts of Phadebact reagent with 10μl and 20μl amounts producing good coaggulatination.
S. G.

LIBRARY

Librarian Mr J. Lucas, Haematology Department, Dunedin Hospital, Dunedin.

List of Current Periodicals

The following Journals have recently been received by the N.Z.I.M.L.T. Any of these Journals may be borrowed by applying to the Librarian.

Laboratory Medicine Vol. 12, No. 6.
1. Continuing Education in Haematology: Myeloproliferative Disorders: Blood and Marrow Changes.
2. Continuing Education: Bacteriology; Laboratory Diagnosis of Antibiotic-Associated Colitis.
3. Blood Gas Systems: Major Determinants of Performance.
4. A Guide to Purchasing a Fluorescence Microscope.
5. Inhibition of *N. gonorrhoeae* in Transgrow Medium due to Excessive CO_2 Concentration.
6. Effectiveness of a New Tissue Processor in Meeting OHSA Limits for Certain Tissue Processing Reagents.
7. Cost-Effective Scheme for the Identification of Enteric Gram-Negative Bacilli.

Laboratory Medicine Vol. 12, No. 8.
1. Continuing Education—Haematology. Acute Leukaemias: Acute Nonlymphocytic Leukaemia.
2. Continuing Education—Microbiology. Campylobacter fetus ss jejuni: Background and Laboratory Diagnosis.
3. Transfusion of Cytomegalovirus: A Review of the Problem.
4. Misdiagnosis of Combinations of HbS and other β-Chain Abnormal Haemoglobins using Simple Electrophoretic Procedures.
5. Triple Staining for Pancreatic Islet Cells in Plastic Embedded Sections.
6. Two Cases of Weak Agglutination with Anti-B Reagent.

Laboratory Medicine Vol. 12, 9
1. Continuing Education: Serum Ferritin and its Relationship to Iron Deficiency.
2. Continuing Education: Transfusion Patient Identification and Related Problems.
3. Identification of Enterobacteriaceae in Microtube Test Panels.
4. Granulocyte Transfusion—A Review.
5. Interferons—A Review.
6. Septicaemia Caused by Curved Bacteria—A Case Report.

Canadian Journal of Medical Technology Vol. 43, 3
1. Anti-P_1: A Clinically Significant Antibody.
2. A Simple Solution to the Problem of Cell Loss and Gross Contamination with Gelman GA-1 Filters.
3. Evaluation of Commercially Available Anti-Human IgG F.I.T.C. Conjugates.
4. Fatal Pneumonitis Associated with an Ampicillin Resistant, non-Beta-Lactamase-Producing Strain of Haemophilus paraphrophilus.
5. An Evaluation of a Low Ionic Strength Saline/Bovine Albumin Medium (EM-V^{TM}) for Human Red Cell Antigen-Antibody Testing.

Medical Biology Vol. 59, 1 & 2

Laboratory World July 1981
1. What Happens When the President is Shot? A fascinating account of the chaos that occurs when an emergency of this nature hits the laboratory. Three tubes of blood were received in the Crossmatch Laboratory labelled Ronald Reagan, John Doe I and John Doe II requiring blood and blood products for surgery!!! Reagan's blood specimen was originally received unlabelled!! The problems arose not from within the laboratory but rather from outsiders. People wanted to be able to say that they helped save the President, etc. and eventually the laboratory closed its doors to all save those doing the crossmatching. Outside the laboratory the Secret Service compounded the confusion by blocking all elevators except one, lining the corridors, refusing to allow staff to move around or move from the floor to take blood samples, etc. After successful surgery some people not only tried to steal laboratory reports for souvenirs but some enterprising folk actually tried to steal the sample of Reagan's blood to put on slides and sell!!
2. RIA for Reliable Early Pregnancy Detection.

Aust. J. Med. Lab. Sci. Vol. 2: 4
1. An Evaluation of the Phadebact Gonococcus Test for the Confirmation of *N. gonorrhoeae.*
2. *C. jejuni* Infection as a Cause of Septic Abortion.
3. The Value of the Saline Dilution Curve in the Prothrombin Time Estimation.
4. Comparison of the Manufacturer's Method for EMIT-dau Opiate Assay and a Modified Method Using Reduced Sample and Reagent Volumes.
5. Cord Serum. Proteins and their Relationship to Fetal Outcome.

Lab. World Vol. 32: 9
1. A New Test to Identify Depression.
2. Legionnaire's Disease.
3. Instrument Report: Roche's Cobas-Bio Analyzer.

Med. Lab. Sci. Vol. 38: 4
1. Numerous Articles Relating to Hepatitis Testing.
2. Red Cell Antibody Screening: A Comparative Evaluation of Four Manual Techniques.
3. Platelet Counting Errors with the Coulter S-Plus.

INSTITUTE BUSINESS

Office-Bearers of the N.Z.I.M.L.T. 1981-82.

President
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11 Turere Place, Wanganui

Immediate Past President
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Editor
H. Matthews
Immunohaematology Dept., Dunedin Hospital, or, The Editor, Box 6168, Dunedin.

Membership Secretary
C. S. Curtis
Hamilton Medical Laboratory, P.O. Box 52, Hamilton

Membership Fees and Enquiries
Membership fees for the year beginning April 1, 1981 are:
For Fellows—$37 reducible to $32 if paid by June 30 that year.
For Associates—$35 reducible to $30 if paid by June 30 that year.
For Members—$26 reducible to $21 if paid by June 30 that year.
For Student Members—$21 reducible to $16 if paid by June 30 that year.
For Non-practising Members—$13 reducible to $8 if paid by June 30 that year.

The fee for Student Members commencing their initial employment in a medical laboratory between October 1, 1980, and September 30, 1981 is waived.

New members who do not qualify as Student Members and also Reinstated Members are required to pay the full fee.

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.

GRATUITIES FOR SERVICE

The granting of gratuities to persons employed by Hospital Boards is provided for under section 52A of the Hospitals Act and its amendments. Those receiving a gratuity are required to pay tax on it but only on 5% of the total amount.

Members who believe they may be eligible to receive a gratuity should consult the Act and also Board regulations and Policy on the matter.

COUNCIL NOTES

Council met at Auckland on the 26th and 27th of November. Mr A. F. Harper in the chair.

Negotiations

Standard conditions of employment (DG48)
The Hospital Services Committee (H.S.C.) of the S.S.C.C. has announced its wish to negotiate changes in DG48, the interested parties including the N.Z.I.M.L.T. have been invited to form a joint committee to negotiate with the H.S.C.

Hours of work at Wanganui
The council of the N.Z.I.M.L.T. resolved to fully support the staff of the Wanganui Hospital laboratory in their effort to resist having their hours of work amended by the introduction of a shift system.

Salary Negotiations
The Institute's Negotiating Committee has received an offer on the recent salary claim.

The offer was a very small percentage increase for Grade V technologists only. No increase was offered for laboratory assistants or technologists. This is unacceptable to Council.

Council has decided to reject this offer and take the case to Tribunal in an attempt to gain the improvements sought for all laboratory workers.

The result of rejecting this offer is that no staff employed in laboratories under D.G.19 will gain any salary increases until after the case has been heard by the Tribunal. This includes the 1982 annual general adjustment for State Servants.

It is unlikely that the Tribunal case will be heard before July/August 1982 but you will get back pay on the annual general adjustment after the Tribunal gives its decision. Council will continue to keep you informed of developments.

Annual General Adjustment

The Annual General Adjustment to State Service salaries has been agreed but **will not apply to laboratory workers until our application to Tribunal has been completed.**

The agreement includes a 9.2% increase for rates at $12,969 or above and a 7.2% increase for all rates below that level with the exception of commencing rates for School Certificate and University Entrance where there is **no increase.** An additional step is inserted into basic scales throughout the State Services at $8,382 which has the effect of reducing the first annual increment after U.E. commencing rate to $736 instead of $1,472 and increases by a year the progression to the top of a scale. A translation formula involving acceleration of incremental date has been agreed for those currently on the U.E. rate.

The minimum adult rate is set at $10,350 (current $10,097) for persons moving to this allowance at age 20. Those in receipt of the present allowance are to be "grandfathered" and paid an allowance of 7.21% on $10,097 or $10,824.

In due course these increases will apply to laboratory workers back dated to 10.11.81. the Tribunal being so willing.

EDUCATION

Massey B.Sc Course
A Workshop was held at Massey University on the 17th-18th October. Those in attendance as M.T.B. representatives were Syd Shepherd, Colvin Campbell, Kevin McLoughlin, Mike Gill and Alan Harper.

Massey was represented by:- Prof. Dick Batt, Dean of Science; Prof. Don Bacon, Microbiology; Dr John Clark, Microbiology/Immunology; Dr Graeme Midwinter, Biochemistry; Dr Margaret Wilson, Biochemistry; Dr Bob Greenway, Biochemistry; Dr John McIntosh, Biochemistry/Haematology; Dr Ken Couchman, Haematology.

The weekend was devoted to discussions aimed at arriving at a suitable format for the course and sub group discussions where the

requirements of the various disciplines were discussed in greater depth. Time did not allow for detailed syllabi to be written. Sufficient progress was made to supply the necessary information required by the University Council and the University Grants Committee.

The format of the proposed course is as follows:-

200 Level		
Extramural Autumn February to April	Microbiology A = 6 credits	No practicals
Intermural Winter May to July	Biochemistry A = 6 credits Microbiology B = 6 credits Mammalian Physiology (including Histology) = 6 credits	4 lectures and 6 hours practicals per subject per week.
Extramural Spring August to October	Biochemistry B = 6 credits	

300 Level		
Intermural Autumn Feb. to April	Clinical Biochemistry A = 6 credits Medical Microbiology A = 6 credits Haematology/including Immunohaematology A = 6 credits	4 lectures 9 hours practicals subject per week Total—26 hours/week Candidates choose 2 out of 3
Extramural Winter term May to July	Tutorial Programme and projects in major subject	
Intermural Spring August to October	Clinical Biochemistry B = 6 credits Medical Microbiology B = 6 credits Haematology B = 6 credits Immunohaematology B = 6 credits *Special Topics = 6 credits	4 lectures 12 hours practical per subject per week

Would supply 6 credits from an approved course. For a double major student would take 2 out of 3 in the autumn term and the corresponding 2 in the spring term. For a major/minor 2 subjects autumn term one corresponding subject spring term plus. Minor disciplines or computing or electronics are suggested as special topics.

With the suggested format there would be only one block course at either the 200-300 level at one time. This would place less strain on student accommodation and cause less inconvenience with laboratory staffing.

Completion of the course would require the student to attain 102 credits made up as follows = N.Z.C.S. = 48 credits, 200 level 30 credits, 300 level 24 credits.

Generally students receive only 36 credits for N.Z.C. other than N.Z.C.S. (Paramedical). Students would require to be granted leave on pay to attend block courses. There is already provision for this in Health Department regulations. The greatest obstacle to the establishment of the course will be obtaining Hospital Boards co-operation in the granting of leave. An early meeting with Hospital Boards Association representatives is seen as having top priority. We should not lose sight of the fact that it is generally agreed that some formal education is necessary in years 4 and 5 of the C.O.P.

Whether the Massey Course goes ahead or not leave to attend at least some block courses appears necessary.

Massey staff are confident that the extramural studies will not be beyond the capability of the students. With the filtering process at the N.Z.C.S. level and with a motivated group of students being involved, they expect a pass rate of about 80%. The student would need to spend approximately 12 hours study per week.

A Joint Board of study is to be formed comprising a Chairman appointed by the University plus an equal number of nominees from the M.T.B. and the University.

The degree would be a B.Sc in Medical Laboratory Sciences but would be known as a B.Sc degree and would not include this description in brackets.

The new science block will not be completed in time for the course to start before 1984 although if given higher priority it could start in a temporary building in 1983.

Diploma

Des Philip, Dr Alec Sinclair and Alan Harper met with Mr Mills, Chairman of A.A.V.A. on the 29th October to officially inform the Authority that the M.T.B. had asked for the Diploma Proposal to be deferred for two years.

N.Z.C.S. Medical Biology

A potentially serious situation has arisen in relation to the revised syllabus which will be circulated for comment soon.

The only exposure our students get to histological techniques arises from the practical section of the current medical biology syllabus. In the revised syllabus histological technique has been virtually eliminated. The main reason given for this deletion is that histology is never examined. This reflects the bias of the examiners not the requirements of the majority of the students. Of the 131 students who sat medical biology last year approximately 90 would have been N.Z.C.S. (paramedical) students.

When the syllabus is received for comment it must be made clear to A.A.V.A. by the N.Z.I.M.L.T., M.T.B. and individual laboratories that the revised syllabus is unacceptable.

MANAGEMENT REPORT

The Australian Association of Clinical Biochemists has kindly given to the N.Z.I.M.L.T. the following evaluations which they have carried out:

Instruments:		Evaluated
AACB—1	Ames Dextrometer	1980
AACB—2	Bansch and Lomb Spectronic 2100	1979
AACB—3	Beckman Astra 8	1980
AACB—4	Beckman Glucose Analyser 2	1977
AACB—6	Beckman Immunochemistry System	1979
AACB—7	Chemetrics Analyser	1977
AACB—8	Chemtek System	1979
AACB—9	ENI Gemeni	1977
AACB—10	FIAX IGG System	1978
AACB—11	Behring Laser Nephelometer	1977
AACB—12	Hyland Laser Nephelometer	1977
AACB—13	IL Multistat III	1979
AACB—14	Radiometer ABL II	1976
AACB—15	Yellow Springs Glucose Analyser	1976
AACB—19	Beckman BUN Analyser 2 (urea in urine)	
AACB—20	Abbott VP Analyser	1980
AACB—21	Calbiochem Behring Calprint System	1980
AACB—33	Worthington Triglyceride (500nm) Reagent Kit	
AACB—36	Technicon C800 System	1980
AACB—37	IL 502 Na/K Ion Selective Electrode System	1981
AACB—38	Quality Control Programme for the Ames Eyetone	1980

Other AACB publications are available and are listed in the May 1981 N.Z.I.M.L.T. Newsletter. However these will have to be requested from Australia and no doubt there will be some delivery delays. The AACB publications listed above can be requested from:

Mr Paul McLeod, C/o Microbiology Dept, Public Hospital, Nelson.

POLICY

The following policies of the N.Z.I.M.L.T. were reaffirmed.

No. 1

That all committees and meetings convened under the auspices of the N.Z. Institute of Medical Laboratory Technology (Inc.) be subject to a standard reference of parliamentary procedure and that this be "A Guide for Meetings and Organisations", by Renton.

No. 3

Council will make and administer awards to members of the Institute, the details of each award will be recorded and may be amended from time to time by resolution of Council. The summary of these details shall be published annually in the Newsletter.

No. 5

That Medical Supply Companies should not be approached to aid in the finance of Branch meetings, companies may be invited to Regional Seminars and although donations may be accepted money is not to be solicited.

No. 6

That the Council must be informed in advance of national workshops, seminars or similar gatherings which are being conducted under the aegis of N.Z.I.M.L.T. Branch organisations.

Rules

A new edition of the "Rules Book" with amendments has been prepared and will be distributed to members when available.

AUDIO VISUAL AIDS

Council has approved the terms of reference for the Audio Visual Aids Committee and has also approved the Rules for Lending; these are reproduced below.

Lending of N.Z.I.M.L.T. Audio-Visual Training Aids

1. All Audio-visual Training Aids are the property of the New Zealand Institute of Medical Laboratory Technology (Inc.) and must not be reproduced without permission of the Institute.
2. A catalogue of all material available will be supplied to all laboratories and will be updated from time to time.
3. All requests for the lending of these aids must be in writing to: The Convener, N.Z.I.M.L.T. Audio-Visual Aids Committee, Microbiology Division, Department of Laboratory Services, Wellington Hospital, Wellington, or any other address as may be notified from time to time.
4. There will be no rental charge for borrowing any of the Audio-Visual Aids, and the committee will meet costs of sending the material to the borrower.
5. The borrower will be responsible for meeting costs in returning the material.
6. The material must be returned to the Convenor not later than 1 week after receipt by the borrower.
7. An overdue charge of $10.00 per week or part thereof will be charged if the material is not returned by the due date.
8. A charge of $1.50 per slide and $5.00 per tape will be made for any slides or tapes damaged during the loan period.
9. Hand-books supplied as part of the material may be retained by the borrower without cost.

MEMBERSHIP REPORT NOVEMBER 1981

Membership	NOV 81	SEPT 81	NOV 80
Membership as at 25th November,	1550	1586	1492
Less Resignations (1), G.N.A. (6), Duplications (1)	8	78	20
	1542	1508	1472
Plus Membership Applications (9) and Reinstatements (9)	18	42	99
Total Membership:	**1560**	**1550**	**1571**

Our Membership is as follows:		
Hospital Laboratories	1102	1123
Other Government Laboratories	61	58
Private Medical Laboratories	183	186
Other Employment	28	23
Non-Practising	113	106
Overseas	65	73
Unknown Employment	8	16

A total of 177 members remain unfinancial this year, and will be removed from the roll after the 31st December 1981, if fees are not received by then. A final notice and account has been prepared and will be sent shortly, in the hope that some may be retained as members.

Associateship Certificates have been prepared and will be distributed in December. A printing error, and the need to find another artist to inscribe the certificates has caused delay in their preparation.

Applications for Membership as at 26 November 1981.
K. L. Brownlie, Dunedin; **J. R. Deroles,** Wellington; **C. J. Docherty,** Dunedin; **S. R. Johnson,** Palmerston North; **J. Walkingshaw,** Invercargill; **M. S. Wilson,** Dunedin.

Applications for Associateship—New Members
R. S. Bishop, Rotorua; **D. J. Bryant,** Auckland; **P. J. Ellingsen,** Christchurch.

Resignations
L. Wadsworth, Auckland.

Mail Returned, no Forwarding Address
G. I. Cave, Whakatane; **R. E. Jones,** Hamilton; **M. J. Harper,** Hastings; **R. G. Hewlett,** Hamilton; **S. M. Prendergast,** Wellington; **E. L. Thorpe,** Hamilton.

MISCELLANEOUS

Badges

The Treasurer has been given authority to produce and sell to members small badges which will be gold coloured and the shape of a microscope the size to be approximately that of a 5c piece.

M.L.T.B.

A meeting of the board was held on December 9-10; the following information has been supplied by Mr B. Main.

M.L.T.B. Examinations 1978-81

HAEM II	1978	1979	1980	1981
Candidates	42	40	33	41
Failed	11	4	5	6
Average Mark	57	61	58	60
Pass Rate	74%	90%	85%	85%

IMMUNOHAEM II	1978	1979	1980	1981
Candidates	22	11	20	15
Failed	0	1	3	4
Average Mark	68.5	62.5	64.5	60.5
Pass Rate	100%	91%	85%	73%

CLIN BIOCH II				
Candidates	42	43	41	37
Failed	17	4	12	11
Average Mark	62.5	61	58.5	58
Pass Rate	60%	91%	71%	70%

MICRO II				
Candidates	55	42	44	37
Failed	4	7	7	6
Average Mark	58	57.5	57	58
Pass Rate	86%	84%	84%	83%

HISTOL II				
Candidates	2	4	3	2
Failed	0	1	0	0
Average Mark	53.5	50	61.5	56
Pass Rate	100%	75%	100%	100%

IMMUNOLOGY II				
Candidates	4	2	6	5
Failed	0	1	0	0
Average Mark	62	63.5	60	65
Pass Rate	100%	50%	100%	100%

HAEM III				
	16	21	17	8
	2	7	3	1
	61	55	60	58
	87.5%	67%	82%	88%

IMMUNOHAEM III				
	8	10	2	8
	1	3	0	4
	65	60	64	54
	88%	70%	100%	50%

CLIN BIOCH III				
	29	17	21	17
	9	7	6	9
	56	56	55	53
	69%	59%	71%	47%

MICRO III				
	11	14	17	16
	3	0	2	3
	58	61	62	65
	64%	100%	88%	81%

HISTOL III				
	4	0	1	2
	0		0	2
	58		69	49
	100%		100%	0

IMMUNOLOGY III				
	3	2	1	3
	0	0	0	0
	68	75	65	62
	100%	100%	100%	100%

NUCLEAR MED II				
Candidates	1	1	5	0
Failed	0	0	1	0
Average Mark	61.5	61	58.5	0
Pass Rate	100%	100%	80%	0

CYTOLOGY II	1978	1979	1980	1981
Candidates	0	0	1	0
Failed			0	
Average Mark			63	
Pass Rate			100%	

VIROLOGY II				
Candidates				4
Failed				0
Average Mark				71
Pass Rate				100%

NUCLEAR MED III	1978	1979	1980	1981
	1	0	0	0
	0			
	68.5			
	100%			

CYTOLOGY III				
	0	0	0	0

VIROLOGY III				
				0

Note: Partial passes have been recorded as FAIL. Partial Pass Total 32; Fail Theory 15; Fail Practical 17.

Total Candidates Sitting M.L.T.B. Examinations

	1976	1977
PART II	**143**	**173**
PART III	**64**	**42**
	207*	**215**

	1978	1979	1980	1981
	168	**143**	**153**	**141**
	72	**64**	**59**	**54**
	240	**207**	**212**	**195**

Clinical Biochemistry Part II

Pass List 1981

Ayrton, S. D., Wanganui Base Hospital; **Bakker (nee Dunn),** T. M. Middlemore Hospital; **Brauer,** R. M., Diagnostic Laboratory, Auckland; **Cavanagh,** J. M. Christchurch Hospital; **Corson,** M. D. National Women's Hospital; **Forlong (nee Hunter),** S. L. Diagnostic Laboratory, Auckland; **Forsyth,** B. J. Wanganui Base Hospital; **Glogoski,** S. Auckland Hospital; **Greenwood (nee Ashby),** S. M. Middlemore Hospital; **Haworth (nee Weskett),** R. H. Medical Laboratory, Palmerston North; **Henderson,** D. L. Hutt Hospital; **Herd,** G. C. E. Northland Base Hospital; **Hill,** P. J. Middlemore Hospital; **Holliss,** B. Green Lane Hospital; **Jackson (nee Johnston),** J. A. Taranaki Base Hospital; **Larder (nee McGowan),** R. W. National Women's Hospital; **McLean,** J. M. National Women's Hospital; **Powick,** M. Wairau Hospital; **Russell (nee Campbell),** C. Auckland Hospital; **Suckling,** P. A. Wellington Hospital; **Thomas,** D. A. Green Lane Hospital; **Thompson,** A. D. Green Lane Hospital; **Turner (nee Curle),** S. J. Wellington Hospital; **Vallis (nee Jeffries),** L. M. Wellington Hospital; **Worters,** C. J. Auckland Hospital; **Wrigley,** L. J. Princess Mary Laboratory, Auckland Hospital.

Clinical Biochemistry Part III

Coburn (nee Tocker), D. M. Palmerston North Hospital; **Crabbe,** C. G. Palmerston North Hospital; **Dineen (nee Palmer),** H. J. Wellington Hospital; **Jones,** P. St Helen's Hospital, Auckland; **O'Shea (nee Strong),** L. P. Southland Hospital; **Sherwood,** G. R. Christchurch Hospital; **Storrie,** A. J. Southland Hospital, Kew; **Vaughan (nee Thomas),** T. R. Princess Mary Laboratory, Auckland Hospital.

Haematology Part II

Adams, D. R. Dunedin Hospital; **Best (nee Tebbutt),** K. E. Napier Hospital; **Bickerton,** G. K. Middlemore Hospital; **Brehmer,** C. N. H. Auckland Hospital; **Brown (nee Fransen),** J. D. Hutt Hospital; **Burnside (nee Campbell),** S. E. Wellington Hospital; **Cottell,** B. R. Waikato Hospital; **Edwards,** P. D. Dunedin Hospital; **Evans,** D. A. Auckland Hospital; **Garland (nee Spencer),** R. A. Princess Mary Laboratory, Auckland Hospital; **Geurts,** M. J. Waikato Hospital; **Hall,** S. A. Princess Mary Laboratory, Auckland Hospital; **Hawkins,** P. Christchurch Hospital; **Haycock,** R. A. Palmerston North Hospital; **Jensen,** P. National Women's Hospital; **Johnson,** S. R. Medical Laboratory, Palmerston North; **Kennedy,** M. L. Cook Hospital; **Kuypers (nee Gardener),** J. G. Green Lane Hospital; **Lawson,** J. C. Auckland Hospital; **Mackie,** W. G. Cook Hospital; **Melling (nee Henshaw),** D. S. Diagnostic Laboratory, Auckland; **Mitchell,** H. M. Palmerston North Hospital; **Moore,** A. F. Christchurch Hospital; **Pearce (nee Broad),** J. S. Taranaki Base Hospital; **Pogson,** L. B. National Women's Hospital; **Reeve,** R. A. Taranaki Base Hospital; **Rofe** J. D. Rotorua Hospital; **Scott (nee Manson),** H. L. Hutt Hospital; **Simpson,** A. Middlemore Hospital; **Spurdle,** J. A. Green Lane Hospital; **Steed,** I. W. Green Lane Hospital; **Tate,** L. A. Green Lane Hospital; **Tillett,** R. D. Christchurch Hospital; **Walton (nee Fletcher),** B. D. National Women's Hospital; **Wharton (nee Robson),** J. M. Taranaki Base Hospital.

Haematology Part III

Chew (nee Holmes), R. M. Dunedin Hospital; **Connolly,** F. Christchurch Hospital; **Hinton (nee Atkinson),** R. K. Christchurch Hospital; **Kendall (nee Simpson),** J. C. Wanganui Base Hospital; **Lanham,** R. B. National Women's Hospital; **Rutherford (nee Case),** J. M. Middlemore Hospital; **van Essen,** M. Auckland Hospital.

Histology Part II

Grantham, M. M. Waikato Hospital; **Ryan,** L. A. National Women's Hospital.

Immunohaematology Part II

Anderson, L. J. Waikato Hospital; **Ball,** S. Wellington Hospital; **Bundza,** L. C. Blood Transfusion Service, Auckland; **Campbell,** S. J. Rotorua Hospital; **Chisholm,** J. E. Te Kuiti Hospital; **Mace,** A. C. Tauranga Hospital; **Maxfield,** R. M. Wellington Hospital; **O'Connor,** N. A. Southland Hospital; **Shue,** J. Dunedin Hospital; **Smith,** D. J. Blood Transfusion Service, Auckland.

Immunohaematology Part III

Cameron, J. E. Wellington Hospital; **Compton (nee McDonald),** J. M. Blood Transfusion Service, Auckland; **Jacobs (nee Allen),** S. E. Christchurch Hospital; **Mollison (nee Blackwell),** D. L. Rotorua Hospital.

Immunology Part II

Ellwood (nee Cross), L. J. Auckland Hospital; **Hartley,** W. A. Christchurch Hospital; **McPherson (nee Walker),** J. M. Hamilton Medical Laboratory; **Parminter (nee Wallace),** B. F. Auckland Hospital; **Worsfold (nee Adams),** J. Wellington Hospital.

Immunology Part III

Cottell (nee Wyatt) R. M. Hamilton Medical Laboratory; **Little (nee Nelson),** B. R. Auckland Hospital; **Southern,** M.A.E.Christchurch Hospital.

Microbiology Part II

Bell (nee Cliffe), D. L. Auckland Hospital; **Bell,** H. M. Dunedin Hospital; **Benyon,** V. M. Grey Hospital; **Bouwhuis,** J. J. Hamilton Medical Laboratory; **Clarke,** C. N. Tauranga Hospital; **Cleave,** P. M. Napier Hospital; **Ewen (nee Johnston),** S. E. Waikato Hospital; **Fisk,** S. G. Palmerston North Hospital; **Green,** J. E. Christchurch Hospital; **Guild,** I. A. Green Lane Hospital; **Haines,** A. J. National Women's Hospital; **Hart (nee Watson),** J. A. Rotorua Hospital; **Hooker,** G. J. Christchurch Hospital; **King,** R. I. Cook Hospital; **Lander,** A. G. Hutt Hospital; **Lee,** C. A. Taranaki Base Hospital; **Mains (nee Field),** S. A. Medical Laboratory, Wellington; **Parbhu,** M. Auckland Hospital; **Parslow,** G. J. Dunedin Hospital; **Rees,** M. T. Middlemore Hospital; **Sanson,** H. M. Ashburton Hospital; **Sargon,** R. S. G. National Women's Hospital; **Scarrow,** D. J. Waikato Hospital; **Shore,** K. P. National Women's Hospital; **Taylor,** L. M. National Women's Hospital; **Timpany,** L. E. Southland Hospital; **Titchener,** L. M. National Women's Hospital; **Watts (nee Mellalieu),** S. J. Tauranga Hospital; **Wedd,** K. E. Waikato Hospital; **White,** D. J. M. Hamilton Medical Laboratory; **Wood (nee Mee),** S. E. Hamilton Medical Laboratory.

Microbiology Part III

Broadley, D. M. Christchurch Hospital; **Gatman,** M. R. Auckland Hospital; **Gregoriadis (nee Adams),** R. A. Wellington Hospital; **Hill,** S. A. Wellington Hospital; **Jackson,** C. R. Wellington Hospital; **Maguire (nee Joosten),** H. J. Wellington Hospital; **Mills,** G. M. Christchurch Hospital; **Mitchell,** D. L. Christchurch Hospital; **Morris,** B. R. Cook Hospital; **Roberts,** S. A. Middlemore Hospital; **Rogers,** K. Auckland Hospital; **Swager (nee Trayes),** T. Auckland Hospital; **Walkingshaw,** J. Southland Hospital.

Virology Part II

Jenkins (nee Muschamp), R. E. Dunedin Hospital; **Norrish (nee Corlett),** J. H. Dunedin Hospital; **Ritchie (nee Intemann),** J. C. Auckland Hospital; **Rutledge (nee Annan),** R. M. Christchurch Hospital.

Certificate of Proficiency in Medical Laboratory Technology 1981

Anderson, Linley Joy, Waikato Hospital, CBII(80) IHII(81); **Bakker (nee Dunn),** Tracey Margaret, Middlemore Hospital, MII(80), CBII(81); **Bell,** Heather Margaret, Dunedin Hospital, IHII(80) MII(81); **Best (nee Tebbutt),** Karen Eleanor, Napier Hospital, CBII(79), HII(81); **Broadley,** Dianne Margaret, Christchurch Hospital, MII(80), MIII(81); **Cameron,** Julie Elizabeth, Wellington Hospital, IHII(80), IHIII(81); **Chew (nee Holmes),** Rhonda Mae, Dunedin Hospital, HII(80), HIII(81); **Chisholm,** Jan Ellen, Te Kuiti Hospital, HII(80), IHII(81); **Cleave,** Peter Martyn, Napier Hospital, CBII(78), MII(81); **Coburn (nee Tocker),** Dale Margaret, Palmerston North Hospital, CBII(80), CBIII(81)LR; **Compton (nee McDonald),** Jillian Marie, Blood Transfusion Service, Auckland, IHII(80), IHIII(81); **Connolly,** Frances, Christchurch Hospital, HII(80), HIII(81); **Cottell, (nee Wyatt),** Rona Margaret, Hamilton Medical Laboratory, IMMII(80), IMMIII(81); **Fisk,** Stevan Grahame, Palmerston North Hospital, IHII(80), MII(81); **Forsyth,** Bruce James, Wanganui Base Hospital, MII(80), CBII(81); **Grantham,** Marina May, Waikato Hospital, HII(78), HISTII(81); **Greenwood (nee Ashby)** Susan Maree, Middlemore Hospital, HII(80), CBII(81); **Gregoriadis (nee Adams),** Rebecca Anne, Wellington Hospital; MII(80), MIII(81); **Hart (nee Watson),** Julie Alice, Rotorua Hospital, HII(80), MII(81); **Hill,** Philip John, Middlemore Hospital, HII(80), CBII(81); **Hill,** Susan Alexandra, Wellington Hospital, MII(80), MIII(81); **Hinton (nee Atkinson),** Robyn Kay, Christchurch Hospital, HII(80), HIII(81); **Jacobs (nee Allen),** Sandra Elizabeth, Christchurch Hospital, IHII(80), IHIII(81); **Jenkins (nee Muschamp),** Rachael Ellen, Dunedin Hospital, MII(80), VII(81); **Jensen,** Pamela Aileen, National Women's Hospital, MII(80), HII(81); **Johnson,** Stephen Rodney, Medical Laboratory, Palmerston North, CBII(79), MII(80), HII(81); **King,** Roger Ian, Cook Hospital, Gisborne, CBII(80), MII(81); **Larder (nee McGowan),** Rona Winifred, National Women's Hospital, HII(80), CBII(81); **Little (nee Nelson),** Barbara Ruth, Auckland Hospital, IMMII(80), IMMIII(81); **Mackie,** Warwick Grant, Cook Hospital, Gisborne, MII(80), HII(81); **Maguire (nee Joosten),** Henrietta Joan, Wellington Hospital, MII(80), MIII(81); **McPherson (nee Walker),** Jan Marie,

Hamilton Medical Laboratory, IHII(80), IMMII(81); **Melling (nee Henshaw),** Dell Shelley, Diagnostic Laboratory, Auckland, MII(80), HII(81); **Mills,** Geoffrey Malcolm, Christchurch Hospital, MII(80), MIII(81); **Mitchell,** Donna Louise, Christchurch Hospital, MII(80), MIII(81); **O'Shea (nee Strong),** Lexie Peta, Southland Hospital, CBII(80), CBIII(81); **Parslow,** Gayleen Joy, Dunedin Hospital, CBII(80), MII(81); **Pearce (nee Broad),** Julia Suzanne, Taranaki Base Hospital, MII(80), HII(81); **Pogson,** Lynda Beverley, National Women's Hospital, MII(80), HII(81); **Reeve,** Ruth Anne, Taranaki Base Hospital, CBII(79), HII(81); **Roberts,** Sally Ann, Middlemore Hospital, MII(80), MIII(81); **Rutherford (nee Case),** Jacqueline Mary, Middlemore Hospital, H&I II(73), HIII(81); **Rutledge (nee Annan),** Rosemary Margaret, Christchurch Hospital, MII(80), VII(81); **Sanson,** Helen Margaret, Ashburton Hospital, CBII(80), MIII(81); **Sargon,** Russell Stanley, National Women's Hospital, CBII(80), MII(81); **Sherwood,** Gary Robert, Christchurch Hospital, CBII(80), CBIII(81); **Shue,** Jennifer, Dunedin Hospital, CBII(80), IHII(81); **Southern,** Michael Andrew Eric, Christchurch Hospital, IMMII(80), IMMIII(81)LR; **Spurdle,** Jeffrey Alan, Green Lane Hospital CBII(80), HII(81); **Steed,** Ian William, Green Lane Hospital, CBII(80), HII(81); **Swager (nee Trayes),** Terri, Auckland Hospital, MII(80), MIII(81); **Tate,** Lynley Anne, Green Lane Hospital, CBII(80), HII(81); **Taylor,** Linda Marie, National Women's Hospital, HII(80), MII(8I); **Thompson,** Angela Dilyse, Green Lane Hospital, HII(80), CBII(81); **Walkingshaw,** John, Southland Hospital, MII(80), MIII(81)LR; **Walton (nee Fletcher),** Barbara Dale, National Women's Hospital, CBII(79), HII(81).

TELARC

Registration

Registration has been granted in the field of Medical Testing to Hamilton Medical Laboratory for tests on clinical specimens.

Amendments to Acts

The Testing Laboratory Registration Act 1972 has been amended by the Testing Laboratory Registration Amendment Act 1981 (22 Oct 1981). This amendment amends section 4 (1) of the principal act to add the Director-General of Health or his nominated deputy to the Council.

The current representative of the Department of Health is Dr Alec Sinclair, Deputy Director Division of Hospitals.

Laboratory Management Course

Telarc is to repeat its short management course. This is to be held in late February, full details are available from Telarc, Box 37042 Parnell, Auckland. Phone 778-621.

FORUM

Forum has been in operation since March 1981. During this period no letters have been rejected though several have been withdrawn before publication.

When writing to the editor would correspondents please use either double spaced typing or if hand written every other line or a wide space between lines. This is to enable the typesetters to read the copy easily and also leaves room for the editor to make corrections.

Dear Hugh,

Thank you for the opportunity to comment on Ron's letter. He is perhaps a little too sensitive.

In my address I sought to draw attention to the danger of having a distorted view of the purpose of laboratory work. In his letter he has picked up this point. My remark was a fair statement of the superficial relative ranking within the laboratory at the two periods. Histology had a true rating, in the spirit of my remark, in 1947 which it still has today. Many of the more prominent disciplines of today are, I believe, inflated in their ranking. In fact, I think interdisciplinary comparison is irrelevant. It is the absolute value of work done which is the one important issue.

Yours sincerely,
Malcolm Donnell, Auckland. 30/10/81

Dear Sir,

It is interesting to note how over the years examiners for the Part III examinations have commented "only students showing above average aptitude or very strong self motivation should be encouraged to proceed to Part III level". Does this mean that average students who have gained their Certificate of Proficiency by passing two Part II's, and who wish to further their qualifications should be discouraged from sitting Part III exams? Secondly, how does one determine that a student is "showing above average aptitude"? If this is done by the exam results then how does one differentiate between a student who has obtained "C" grades with say 50% Theory and 50% Practical from a student who has obtained "C" grades with say 64% Theory and 64% Practical?

Perhaps students should be given marks instead of grades or perhaps grades should be subdivided to indicate 5% increments.

e.g. C− = 50-54%
C = 55-59%
C+ = 60-64%
B− = 65-69% etc.

This latter system should satisfy those who prefer grades to marks, while at the same time giving administrative staff and students a better indication of their ability to cope with the higher standard demanded of Part III candidates.

Yours faithfully,
Ron Law, Auckland.

Editor
Dear Sir,

I wish to bring forward two topics for discussion through this column.

The first, safety and its provision. It is my belief that as the Professional Body representing the wider interests of medical laboratory workers, the "institute" should endeavour to have introduced, an enforceable code of safety practices. In factories, shops, offices and other commercial premises, legal requirements for safety procedures and remedial equipment etc. exist. To the best of my knowledge no such requirements exist for medical laboratories which, despite assurances to the contrary, are, I believe, potentially highly hazardous workplaces. I cite for example: Compressed gas used for various instruments and in microbiology, the use of strong acids and bases, volatile organic solvents, potentially explosive chemicals, carcinogens and teratogens, pathogenic organisms, and one factor frequently overlooked (not restricted to laboratories) the floor surface, and the polish used on it. (Some polishes on vinyl render the floor near impossible to walk on when splashed with water). Relatively harmless in isolation perhaps, but in combination . . .? It is my contention that the solution to this problem is to lay down a mandatory minimum code of safety practice.

The second point I wish to raise may be viewed as somewhat contentious by those people in our larger laboratories; however my comments are in no way intended to be denigratory: The Charge positions in many of N.Z.'s smaller laboratories are Grade II. However the responsibility carried by these people is considerable, and not strictly related to the work load/staff establishment levels, the objective factors upon which the Gradings are based. How much less responsibility is there in running a small laboratory providing microbiology, chemical pathology, haematology and immunohaematology services than in running for instance a chemical pathology or haematology laboratory? Some factors frequently not taken into account are: Absence of a Pathologist and the consequent involvement in clinical decisions; the almost constant availability to call staff that is required; the absence of colleagues with which to discuss problems and new ideas; and the significant problem of taking decisions and responsibility in disciplines in which one has no specialist qualification.

One solution would be to negotiate (a forlorn hope I suspect however) an "allowance" to be added to these people's salaries.

In my defence, before I'm written off as an egotistical, small lab, kiwi whinger, I hasten to add that it is my constant wish and desire to join those people in larger laboratories, if only one of them would retire or resign, or transfer, or . . . otherwise create a position for me.

Yours faithfully
T. A. Smale
Laboratory
Oamaru Hospital.
18/1/82

Dear Sir,

It is disappointing that John M. MacKay, in the N.Z.I.M.L.T. November Newsletter, views the general tone of the correspondence from Messrs Kennedy and Legge regarding the proposed Massey degree course as negative.

Indeed, Mr Kennedy states in his opening paragraph "I have never been opposed to universities offering degree courses to our people . . ." and concludes with a very positive ". . . we should revert . . . to tidying up our existing course and pursue the possibility of cross-crediting into an existing university degree."

Whilst I agree with Mr MacKay when he states that those to be affected by the change to a degree course are still at school and that none of us are in a position to say whether or not these people will approve of the course, as Mr Kennedy states "Most of the trainees we take on express, at the time of interview, a desire not to go to university but rather to be trained theoretically and practically in a working environment and to be paid whilst doing so."

Despite Mr Harper's comment that one can only speculate as to how many students would drop out at the NZCS stage, there is the very real danger of a large number of students opting out at the NZCS level and the possibility cannot and should not be ignored.

Further, Mr Legge's reference to the national shortage of midwives caused, as was proposed, by the change from a regional based programme to a centralised training system, highlights the danger of centralised training schemes.

As D. R. Romain pointed out in the May Newsletter "qualifications of a higher level are being demanded by every professional body."

I'm sure all members of the Institute agree with that sentiment. The point is do we want a degree course based on a centralised training system, as the Massey proposition is.

I wonder whether the Education Sub-Committee have discussed the possibility of a degree course with the University of Otago which, it should be remembered, has affiliated clinical schools in Dunedin, Christchurch and Wellington, and the University of Auckland; perhaps the Polytechnical Institutes may, in the near future, themselves be offering their own degree courses (as the British Polytechnics have done with success).

Are we not rushing into a course of action where our own interests may not be best served?

Are we, as Mr Kennedy suggests, merely willing to grasp at anything that has university status, regardless of the consequences, the only reason being to "improve professional status"?

I appeal to the members of the Education Sub-Committee, think wisely before acting. Do what you think, really think, is best for the membership and future membership, not what is best for Massey.

Remember, fools rush in . . .

Yours faithfully,
H. C. Potter, Christchurch. 9/12/81

Dear Sir,

There appears to be a misapprehension regarding a possible BSc course at Massey University. The impression given is that it is the only university interested in receiving medical technology students. As far as I am aware it is the only university to be approached officially by the N.Z.I.M.L.T. regarding a BSc course. Certainly the University Grants Committee has not been approached by the N.Z.I.M.L.T. regarding alternative universities for a BSc course. A further unanswered question is that of the possibility of the Polytechs awarding degrees in the future.

From the information I have none of these approaches have been resolved and it is incorrect, therefore, to promote Massey as the only possibility for a degree course.

Yours sincerely,
M. Legge. 18/12/81

Editor
Dear Sir,

A number of years ago a group of "Young Turks" from Christchurch complained bitterly about the unfairness of the Institute's electoral system as constituted at that time, i.e., 'First Past the Post.'

This system gave rise to the inevitable, yet fully understandable, block voting emanating from the various centres which, in turn, caused great bitterness and alienation in the Institute ranks. The concern and agitation of those "Young Turks" led to the adoption of our present system.

With the advent of preferential voting the internal antagonism that existed virtually disappeared. Thank goodness.

Any person standing for office, whether it be at Branch level or Council level knows full well that should he/she be elected he/she will have the backing of the majority.

Let us take an example of three candidates sharing the votes on a 35-33-32 percentage basis. Under the "First Past the Post" system it means that a person could be elected having received only 35% of the vote? Or, even worse, a 26-25-25-24 split on a four way candidature could mean a victory with only 26% of the vote.

Is this fair?

With parochial block voting from centres—No way!!! What about the question of a tied vote! Who decides then? With preferential voting candidates have a fairer chance of sharing the vote until a 50% majority is achieved.

At the same time as bringing in preferential voting we also brought in the "Standing for One Position Only" scheme, which also helped enormously to afford the N.Z.I.M.L.T. one of the most democratic electoral systems present in a New Zealand governing body. I am sure that we would all hate to see this system eroded.

Perhaps those "Young Turks" memories are growing old. I would like to put it to them to recall those days when bitterness and alienation prevailed and to ask them to reconsider their motion to return us to those bad old days.

The geographic spread of our Institute is not suited to "First Past the Past" elections!

Some form of preferential voting must be maintained.

Up and coming "Young Turks" will not probably be aware of the "Aggro" that existed ten years or so ago. Perhaps they might like to ask around? It has taken time for our Institute to mature. It is not perfect by any means, but for goodness sake do not let us erode away the successful advancements that we have made.

Yours sincerely
B. S. Collins
Principal Medical Laboratory Technologist
Waipukurau
28/1/82

HISTORICAL NOTES

Organs and Organisms: A few reminiscences

Keith B. Ronald
Chief Technologist, Northland Base Hospital, Whangarei

World War II saw me a volunteer assigned—because I could read and write and had a few science units behind me—to an Army Hospital Lab.

The Officer in charge was Lt.—later Captain Jack Peddie whose insistence on constant attention to technical detail in each section of the laboratory and his tolerance of the personal idiosyncracies of his staff earned him our lasting respect.

SITUATIONS WANTED

Medical Technologist registered by the American Society for Clinical Pathologists and regarded as a graduate technologist by the Medical Laboratory Technologists' Board of New Zealand desires work in a laboratory in a New Zealand hospital. I have ½ year part-time and 1 year full-time experience postgraduate in a modern four hundred bed hospital, the laboratory of which is approved by national accrediting organisations. My main experience is in immunohaematology, haematology, and the basic chemistries performed on modern equipment.

I will be happy to supply any information you may need.

Please contact:
Cheryl A. Neckers
2227 Windsor Ave. S.W.
Roanoke, Virginia 24015
U.S.A.

American Medical Technologist registered in New Zealand by MTB seeks employment in New Zealand. Six years experience in Haematology and Urinalysis, three years experience supervision. Teaching experience in these areas. Please contact: Mary L. Duffy, 444 Custer Avenue, Evanston, Illinois, 60202 U.S.A.

Registered ASCP, MLT Age 25, single, Wayne State University, BSc. Medical Technology 1979. Seeks post in New Zealand, preferably North.

Main interest Microbiology but accomplished in other areas. Involved in teaching Medical Technology and continuing education. Please write to: Miss Beverly J. Klaty, 345 Beverley Island Drive, Pontiac, MICHIGAN 48054, U.S.A.

Christchurch biochemistry vacancy required for Grade 1 or 2 laboratory officer with 15 years hospital biochemistry experience in United Kingdon, New Zealand, registration confirmed. Mr R. S. Counter FIMLS, 8 Marlbrook Lane, Marlbrook, Bromsgrove, United Kingdom.

Wieke Reiss, age 23 who is resident in New Zealand seeks a position. Wieke is registered for biochemistry only and seeks a training position to obtain full registration by the M.L.T.B. Please contact Wieke Reiss, C/- Jan Koek, 74 East Street, Pukekohe. Phone 88-012.

FOR SALE

OFFICIAL N.Z.I.M.L.T. TIES

These are once again available for sale and supply is limited, so be in early to avoid disappointment. The ties are in the official Institute dark blue and are decorated with discreet rampant microscopes and will become a genuine collector's item. Price $2.50 Available from The Librarian N.Z.I.M.L.T. Haematology Department, Dunedin Hospital, Dunedin.

Ames-Miles Awards for Immunology 1982

The I.A.M.L.T. invite original papers for five new awards in the broad subject area of Immunology.

The five awards, each to the value of U.S.$2000 will be sponsored by Ames-Miles and will be given to the best paper submitted from candidates of member societies of each of the following five regions.

(a) Europe, Africa and Arab region.
(b) American region (including Caribbean countries)
(c) Latin American region.
(d) Far East region (including Australia, New Zealand, Hong Kong, Malaysia, Singapore and all of South East Asia).
(e) Japan region (Including Japan, Korea and Taiwan).

The general conditions governing the awards are:

1. The awards will be known as the Ames-Miles award for Immunology.
2. All papers submitted for consideration must be the sole and original work of the applicant.
3. Applications for the award must be submitted in triplicate, in either English or French.
4. Applications should include:
   (i) Three copies of the paper.
   (ii) A separate document detailing the name, home address, professional address of the applicant.
   (iii) Evidence from the applicant's professional association of current membership.
5. I.A.M.L.T. reserves the right to publish the papers of those selected for the award.
6. Closing date for applications 31st March, 1982.

It is hoped to announce the names of those selected for the award in advance of the 15th Congress of the I.A.M.L.T. in Amsterdam. Winners may use their award to attend the conference. A presentation of the citation of the award will take place at the conference when either the winner, or a representative of his national association will be acknowledged.

Applications to:
A. McMinn,
I.A.M.L.T. Executive Office
External Relations Unit
Liverpool Polytechnic
Byrom Street
Liverpool L3 3AF
UNITED KINGDOM

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DIRECTIONS FOR CONTRIBUTORS

From Vol. 36 No. 1 all papers published will be in the form known as "Vancouver Style" or Uniform Requirements for Manuscripts submitted to Biomedical Journals. Full details may be found in the New Zealand Medical Journal April 11, 1979 No. 633 Vol. 89, pages 259-264 or Medical Laboratory Sciences 1978, 36, 319-328, or from the Editor. The Journal intends to publish a copy of the instructions in 1982.

Intending contributors should submit their material to the Editor, P.O. Box 6168, Dunedin, New Zealand. Acceptance is at the discretion of the Editor, and no undertaking is given that any article will be published in a particular issue. The copy deadline for each is the first of the month prior to the month of publication.

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Inquiries regarding advertising rates and copy or blocks for advertising should be addressed to the Advertising Manager, Allied Press, P.O. Box 181, Dunedin, New Zealand. Telephone (24) 774-760.

DATES OF PUBLICATION

The dates of publication for 1982 are April 23, June 18th, August 20th, October 22nd, December 17th.

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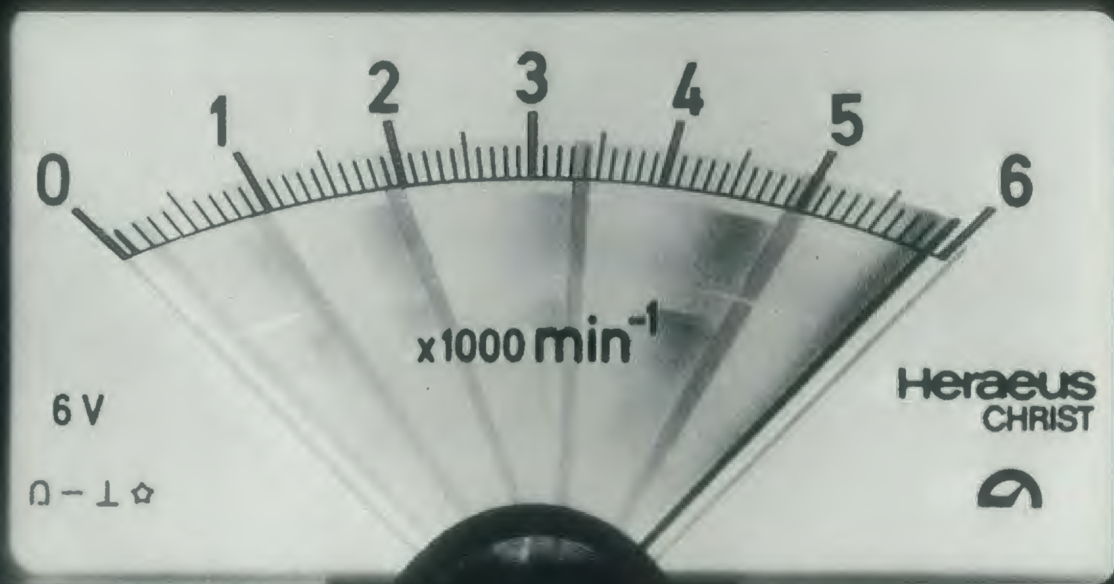

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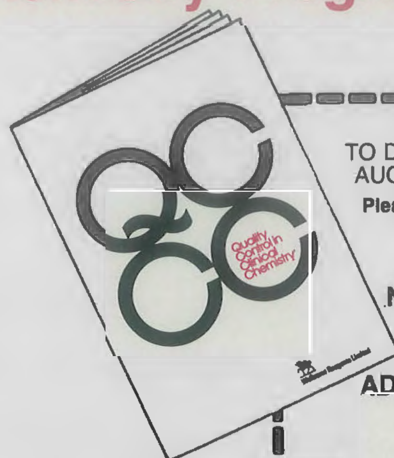

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