Volume 41 No. 2. 1987

ISSN.0028-8349

NEW ZEALAND JOURNAL OF

MEDICAL LABORATORY TECHNOLOGY

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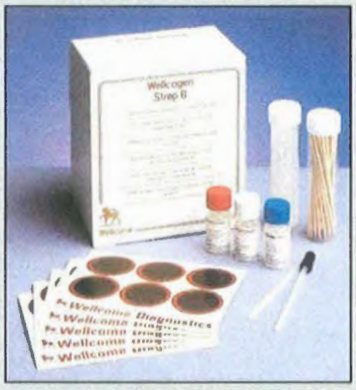

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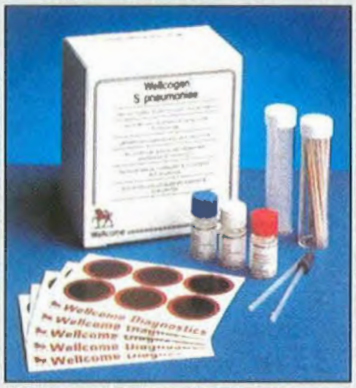

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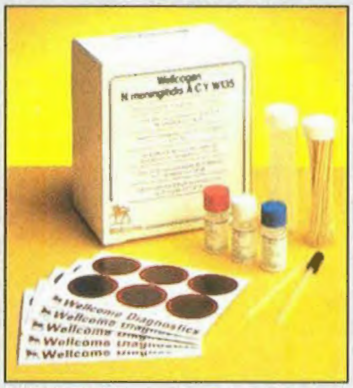

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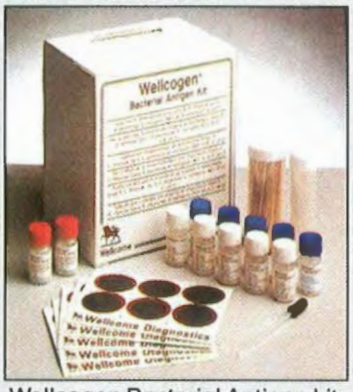

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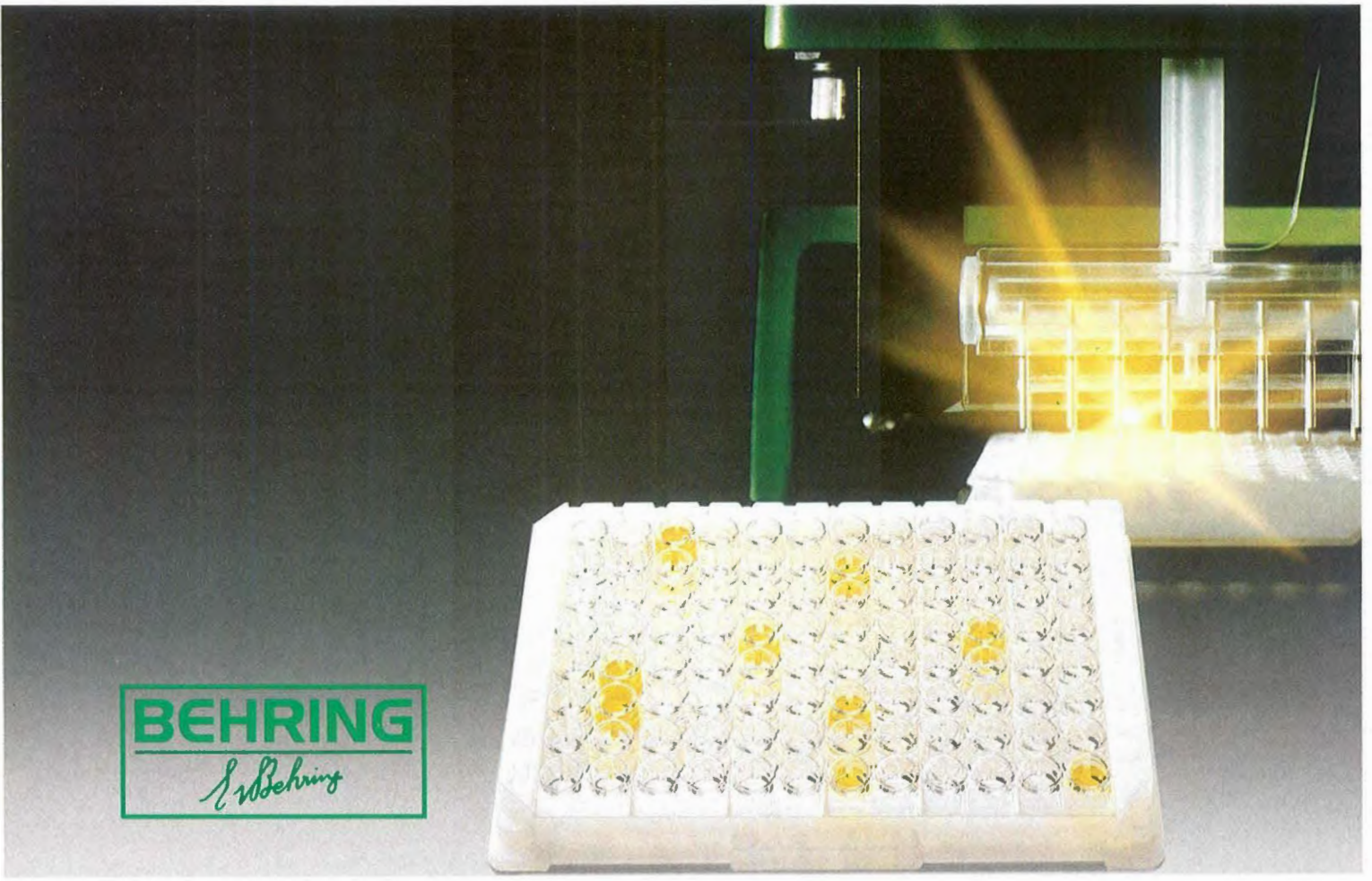

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MEDICAL LABORATORY TECHNOLOGY

Volume 41 No. 2. 1987 ISSN 0028-8349

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DATES OF PUBLICATION

The months of publication for 1987 are March, May, August and November.

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

A Simple Standardised Method for the Preparation of Pure Fab Fragments of Rabbit Immunoglobulin G

A.G. Benny, Scientific Officer, Robyn Lints, Research Assistant, S.M. Henry, Technologist.
Developmental Laboratory, Auckland Blood Transfusion Service, Park Ave, Auckland, New Zealand.
Correspondence to: A.G. Benny, Blood Transfusion Service, c/ Auckland Hospital, Private Bag, Auckland, New Zealand.

Abstract

A simple, standardised and rapid method for the preparation of Fab fragments of rabbit IgG is described. Specific Protein A binding IgG is prepared by ion exchange chromatography on DEAE - cellulose followed by affinity chromatography on Protein A - Sepharose. The IgG is cleaved to yield Fab and Fc fragments by incubation with standardised papain. The Fab fragments are recovered from the incubation mixture by chromatography on Protein A-Sepharose. Under optimal process conditions 60% of the initial IgG antibody activity may be recovered as Fab fragment activity. Fc fragments and undigested IgG are undetectable in the Fab fragment fraction.

Key words:
Fab, rabbit IgG, Protein A.

Introduction

The preparation of Fab fragments of rabbit IgG by simple limited proteolysis of the IgG molecule with papain was originally reported by Porter[1]. This procedure is widely used for the preparation of fragments for use in ELISA assays[2] and antibody binding site studies[3]. A number of modifications of the original method aimed at simplifying the preparation and purification of Fab fragments have been described[4,5,6,7]. We report our experience with recently published methods and a modification of the procedure to standardise and further simplify the preparation of high purity Fab fragments of rabbit IgG.

Methods

Antisera were either prepared in rabbits using standard immunisation procedures[8] or purchased from Dakopatt, Denmark. Gel filtration and DEAE-cellulose chromatographic media were from Phoenix Chemicals Ltd, NZ. Sephacryl S-200 and Protein A-Sepharose were obtained from Pharmacia, Sweden. A trial batch of Protein A-Sepharose was also obtained from the Biochemical Processing Centre, DSIR, NZ. Chromogenic substrate H-D-Pro-Phen-Arg-pNA was obtained from the Dept of Chemistry and Biochemistry, Massey University, NZ. Goat anti-rabbit IgG and Papain Type IV (2x crystallised) were from Sigma Chemical Co. USA. Disposable CX ultrafiltration concentrators were from Millipore, USA.

Papain assay

Papain was assayed using the chromogenic peptide substrate H-D-Pro-Phen-Arg-pNA in a kinetic rate reaction system. The assay contained 1000 µL buffer (0.01 M Na_3 PO_4-0.15 M NaCl-0.01 M EDTA-0.025 M B-mercaptoethanol pH 7.4) and 20 µL of papain (diluted 1:500 in assay buffer). The mixture was incubated at 37°C in a thermostated cuvette for 3 min. The reaction was started by the addition of 100 µL of pre-warmed 0.002 M chromogenic substrate. The reaction was monitored in a Shimadzu UV 160 spectrophotometer at 405 nm using the kinetic rate reaction mode. The rate of change of absorbance over the first 3 min of the reaction was converted to µmoles of pNA released per min using a molar absorptivity coefficient for pNA of 9920 L/mol/cm.

Preparation of Fab fragments

An immunoglobin fraction of the antisera was prepared using ion exchange chromatography on DEAE-cellulose with 0.02 M Na_3 PO_4 buffer pH 7.1. The immunoglobulin fraction (10mg) is loaded on a 10mm x 60mm column of Protein A Sepharose equilibrated in 0.15 M Na_3 PO_4-NaClpH 7.4 (PBS). Non-Protein A binding IgG is eluted with start buffer and may be discarded. Bound IgG is eluted with 0.1 M glycine pH 3.0 and the pH of the eluate immediately adjusted to pH 7.4 with solid Tris base. The protein A column is re-equilibrated in PBS. EDTA and B-mercaptoethanol are added to the eluate to final concentrations of 0.001 M and 0.025 M respectively. Papain is added in a ratio of 0.2 - 0.4 mmol pNa activity per mg IgG and the mixture is incubated at 37°C for 60 min. The proteolysed IgG is loaded directly on the Protein A-Sepharose column and the column eluted with PBS. Fab fragments are eluted with start buffer, concentrated to 5 mg/mL by ultrafiltration and dialysed against PBS containing 0.1% NaN_3 overnight at 4°C.

Fc fragments and any undigested IgG are recovered from the column by elution with 0.1 M glycine pH 3.0. The column is then re-equilibrated in PBS.

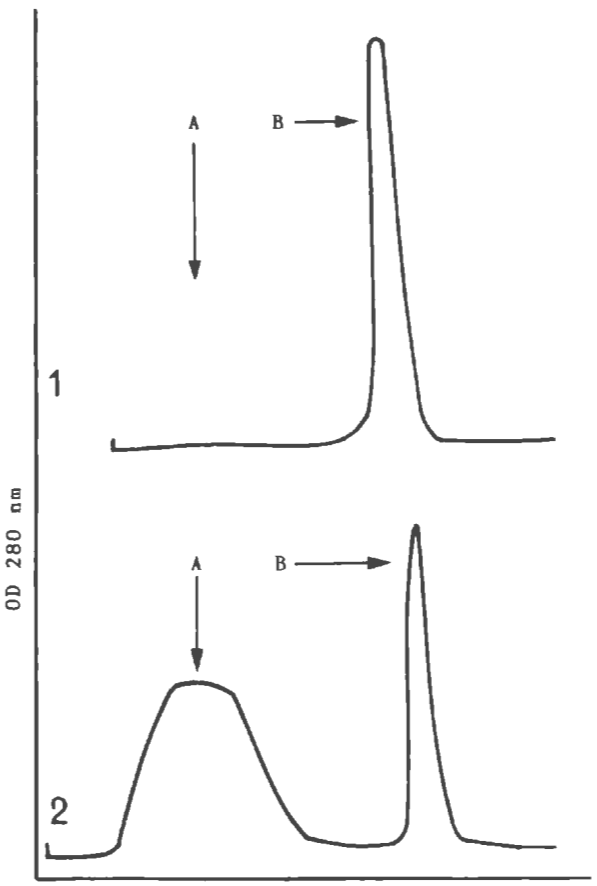

Figure 1

Pre and post papain treatment profiles of Rabbit IgG chromatographed on Protein A-Sepharose.
Profile 1 - before papain treatment
Profile 2 - after papain treatment
Peak A - unbound Protein A-Sepharose, eluates under starting buffer conditions.
Peak B - bound Protein A-Sepharose, eluted with 0.1 M glycine pH 3.0

Analysis of papain digest

The extent and specificity of the papain proteolysis of rabbit IgG was determined by SDS-polyacrylamide gel electrophoresis essentially as described by Weber and Osborne[9] and immunoelectrophoresis, crossed immunoelectrophoresis[10] and tandem crossed immunoelectrophoresis[11] against Goat anti-rabbit IgG. The antibody activity of the Fab fragments was estimated from the ability of the preparation to inhibit intact IgG antibody binding antigen in a standard rocket immunoelectrophoresis assay as modified by Porter[1].

RESULTS

Typical elution curves of a rabbit immunoglobulin fraction on Protein A Sepharose before and after papain treatment are shown in Figure 1. Less than 1% of the protein in the untreated fraction is eluted from the column under start buffer conditions whereas over 60% of the protein in the papain treated fraction is not bound to the Protein A. The effective recovery of total protein and antibody activity at each stage of the process is shown in Table 1.

Freshly reconstituted Sigma papain (10 mg/mL in PBS) was

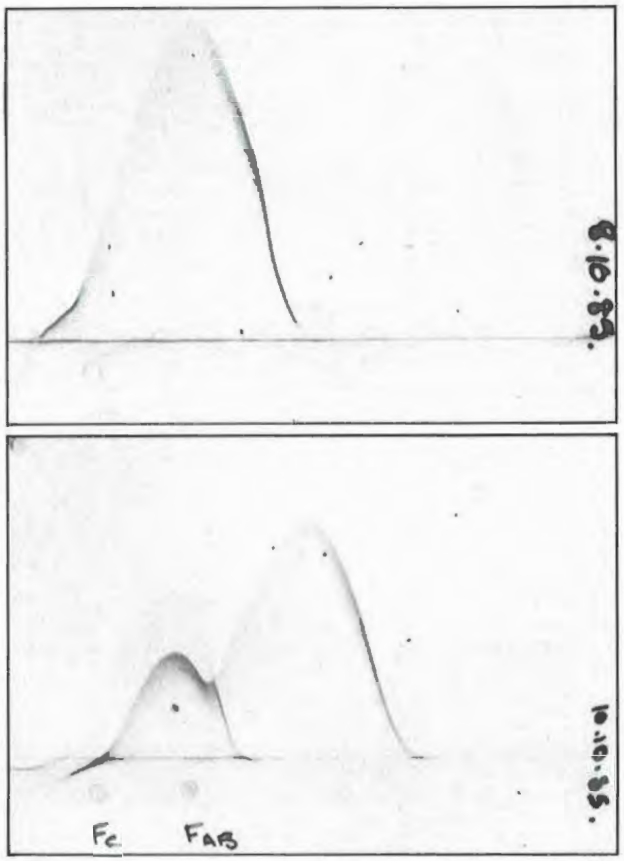

Figure 2

Crossed immunoelectrophoresis of Fab and Fc fractions of papain treated Rabbit IgG against Goat anti-Rabbit IgG.

a) Crossed immunoelectrophoresis of Fab fraction

b) Tandem crossed immunoelectrophoresis of Fc and Fab fractions.

assayed at 20μmol pNA activity per min per μg. Thawing and refreezing of the frozen stock solution resulted in less than 5% loss of activity. The frozen solution was stable for up to 1 month.

The optimum ratio of papain to immunoglobulin was found to be 0.39 mmol pNA activity per mg IgG. Lesser amounts of papain resulted in increased levels of non-proteolysed IgG. Addition of 1.0 mmol pNA activity per mg IgG results in detectable non-specific proteolysis, an increase in the content of non-active fragments in the Fab fraction and a consequent reduction in the yield of antibody activity. The final stablised Fab fragment preparation lost no detectable activity over a 12 month period when stored undiluted at 4°C. Long term storage of the preparation diluted to a working assay concentration resulted in significant loss of Fab activity.

SDS-Polyacrylamide electrophoresis of the Fab fraction under non-reducing conditions indicated a single protein band having a molecular weight of 50000 +/- 5000 daltons.

Analysis of the Fc and Fab fractions by crossed immunoelectrophoresis and tandem crossed immunoelectrophoresis against goat anti-rabbit IgG is shown in Figure 2. The Fab fraction contains only one component whereas the Fc fraction contains both Fc antigen and some Fab antigen (as non-proteolysed IgG).

Following successful development of the manual process a semi-automated chromatographic system utilising solenoid valves and a Pharmacia Frac 100 fraction collector was developed. This system resulted in a total process time for preparation of Fab fragments, excluding the papain incubation and final dialysis, of one hour. The automated process gave the same recovery and purity of Fab fragment fraction as the manual process.

Discussion

The method we have developed for preparation of Fab fragments is simple, readily standardised, rapid and results in a consistent recovery of high purity Fab fragments. Although primarily used for the preparation of Fab fragments of rabbit anti-Human IgG, initial results indicate that the recovery of active fragments of other animal antibodies with other specificities is accomplished using essentially the same reaction and column elution conditions.

Table 1

Distribution of total protein and immunological activity in Protein A column chromatography fractions of papain treated Rabbit IgG. (mean values from 15 runs).

Fraction	Total protein (mg)	Protein recovery (%)	Immunological activity recovery (%)
Starting antibody	10.7	100	100
Pre papain treatment			
Unbound Protein A	<1	<1	<1
Eluted Protein A	10.6	99	98
Post papain treatment			
Unbound Protein A	6.4	60	68
Eluted Protein A	2.9	27	5

The Protein A column was able to be used without significant loss of binding for at lease 50 column cycles. The recovery of active Fab fragment fraction was dependent primarily on the ratio of papain to IgG. Unless the capacity of the Protein A column was exceeded only, Fab fragments were detected in the start buffer eluate of the Protein A column run of the proteolysed IgG. The chromogenic peptide substrate assay for papain allowed close standardisation of each bath run and this resulted in a consistency in batch to batch recovery and yield of active Fab fragments. The Fab fragments prepared using this method have been used successfully in a modified Coombs test for the neutralisation of Human IgG bound to red blood cells[12]. The potential for scale up of the Fab process to a 1L column of Protein A Sepharose capable of fractioning 2 L of immunoglobulin fraction is under development.

Acknowledgement

This project was supported in part by a grant from the New Zealand Institute of Medical Laboratory Technology to S.M.H.

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Safety in N.Z. Medical Laboratories — A Survey

Jan Parker, ANZIMLT, BSc, Dip B Admin
Convenor, Safety Committee, NZIMLT Council

Introduction

Medical laboratories have long been aware of the hazards that exist in the working environment, both in terms of laboratory acquired infections and in terms of laboratory accidents. Grist[1] in a study of infections in British clinical laboratories concluded that 'there appears to be scope for improvement in bacteriological bench techniques' and numerous studies have been made which identify Hepatitis B as an occupational hazard for laboratory personnel[2,3]. The advent of AIDS has resulted in a reassessment of laboratory practices and general upgrading of precautions taken to protect a possible 'at risk' group of workers. Waldron[4] speaks of the grave fears of contracting infection expressed by those whose work brings them in contact with blood or body fluids from patients with AIDS. A study by Hisch[5] and his colleagues of 33 hospital employees who had accidentally exposed themselves to blood from patients with AIDS suggests that the risks are lower than those of contracting Hepatitis B but two other cases reported in the Lancet[6,7] are less encouraging. Collins[8] published a list of laboratory precautions designed to reduce the risks of working with pathological material and many of these provisions have been incorporated into the working environment.

The 1985/6 wage round for hospital laboratory workers emphasised the importance placed on safety provisions with the availability of hepatitis vaccination and the provision of safe footwear for laboratory workers among the issues raised.

Survey Scope and Method

The purpose of the questionnaire was to assess the safety procedures that were followed in medical laboratories at the beginning of 1985 and determine what changes have occurred since then as a result of increased awareness of safety requirements. Section A defines safety procedures prior to January 1985, Section B defines current measures.

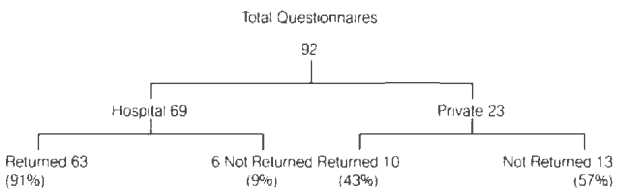
The questionnaire was distributed by mail in August 1986 to all medical laboratories in New Zealand, both public and private. The cutoff date for return was set at October 1st 1986 and the results analysed. The mailing list was obtained from the Secretary of the N.Z. Institute of Medical Laboratory Technology. Wording of the questionnaire was discussed locally to remove possible ambiguities before the final format was arrived at. Included with the questionnaire was an introduction explaining the nature and purpose of the study

Results

Response

92 questionnaires were distributed, 23 to private laboratories and 69 to hospital laboratories. Replies were received from 9 of the private laboratories and 63 of the hospital laboratories (Fig. 1). The lower return rate (43%) for private laboratories may relate to the fact that they do not come under the umbrella of the NZIMLT for wages and conditions and may have perceived such a survey as having no direct effect on them. The return rate of 91% for the hospital laboratories is very high for a postal survey of this type and may be attributed to the high interest in this subject.

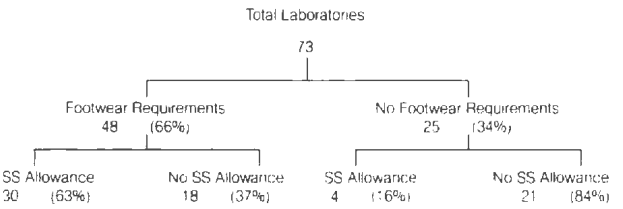
Figure 1:
Return Rate of Postal Survey



Footwear

The 1985/6 wage round saw a footwear allowance established on safety grounds for laboratory workers. Prior to January 1985 24 laboratories had any requirements for footwear in the laboratory although 13 of these only related to what could not be worn, e.g. no jandals or open shoes. Currently 48 laboratories have specific footwear requirements, most fairly comprehensive, e.g. closed heel and toe, flat no slip sole, leather upper. Of these laboratories 30 are receiving shoe and stocking allowance from their employers. Four laboratories without any requirements also indicated that they are receiving the allowance (Fig. 2). Centres not receiving any footwear allowance include all the private laboratories and a number of small hospital laboratories where the number of workers is low and their industrial muscle less.

Figure 2:
Receipt of Shoe and Stocking Allowance



Gloves

A joint working party on the prevention of infection in clinical laboratories[9] emphasised that 'The wearing of gloves is the proper professional precaution where any spillage or contamination is likely.' Prior to January 1985, 26 (36%) laboratories were using gloves routinely for handling potentially hazardous material. This number has now increased to 51 (70%) but more than 1/3 of these report some degree of allergy problem, usually in the form of skin rashes and contact dermatitis. Some laboratories reported particular brands of gloves as being more of a problem than others, apparently relating to the degree of powdering.

Safety Masks

Protection for the eyes is very important according to WHO[10] as transmission by droplet transfer can occur through the conjunctivae but few laboratories use some form of safety mask or goggle routinely Prior to January 1985, 23 (32%) laboratories used eye protection and the number is now 36 (49%) but many of the users indicated that usage was limited to TB work or that although such protection was available its use was not compulsory.

Safety Cabinets

Use of safety cabinets of all classes is increasing, from 44% of laboratories prior to January 1985 to 58% currently (Table 1) of those laboratories without safety cabinets only two reported having them on order. One laboratory had requested a safety cabinet in the design of their new laboratory but while the fittings had been put in the cabinet was not installed as the Hospital Board considered it too expensive at $7,000.

Table 1:
Distribution of Safety Cabinets

Type	Prior to Jan 1985	August 1986
Class II	12	19
Class I	11	14
Unspecified	8*	8*
None	41	31

*Two quoted as being inferior.

Uniforms

There has been a move throughout the country away from laboratory coats and towards the use of gowns (Table 2). Several laboratories stated however that gowns were only used for TB work. Five laboratories reported also using aprons and in several areas disposable gowns are provided for dealing with specimens from known AIDS patients.

Centrifuges

According to the 'Howie' code[11] the use of sealed centrifuge buckets to reduce dissemination of droplets is required for adequate protection from Category B1, B2 and C micro-organisms and agents. Prior to January 1985 45 laboratories reported only having unsealed centrifuges. This number has now dropped to 30 but 50 laboratories

Table 2:
Types of Laboratory Garment

	Pre Jan 1985	August 1986
Coats only	41	29
Gowns only	14	17
Coats/Gowns	13	22
Uniforms	5	5

reported still having unsealed centrifuges in use. Although some of this change will have been achieved by purchases of new centrifuges as the number of laboratories who have sufficient to allow standing time after a breakage has increased from 42 to 51. This means that 22 laboratories are unable to comply with the requirement to leave the machine unopened for 30 minutes after a breakage has occurred[11]

Showers

An increasing number of laboratories (partly as a result of TELARC requirements) have safety showers fitted (Table 3). Of those laboratories without showers 7 indicated that there were plans to have them installed, in some cases associated with a new laboratory. One laboratory reported having no space for a safety shower but with a hand held unit fitted to existing taps that should not be a problem.

Table 3:
Types of Safety Showers

	Pre Jan 1985	August 1986
OH		12
HH		16
OH/HH		3
Unspecified	24	7

OH = Overhead HH = Handheld

Disposal

The Howie Code of Practice[13] specifically states that infected or potentially infected material must not leave the laboratory unless it has been effectively autoclaved or is transported to an incinerator in a safe manner. Forty-seven laboratories reported that prior to January 1985 all infectious material was autoclaved before disposal, this number has now increased to 50 with one laboratory incinerating waste. This still leaves 22 laboratories who apparently allow waste to leave the laboratory as a potentially infectious hazard.

Prior to January 1985 a large variety of proprietory disinfectants were in use (Table 4). Currently 45 laboratories solely or principally use hypochlorite in some form and 19 use Medol, mainly in Microbiology. The range of dilutions quoted for hypochlorite was huge, ranging from 0.1%-30%. The Howie Code of Practice[13] quotes 1000 ppm (1%) for general use, 2,500 ppm (2.5%) for pipette jars and 10,000 ppm (10%) for blood spillage from a stock solution of 10,000 ppm available chlorine.

Table 4:
Laboratory Disinfectants in Use Prior to January 1985

Medol	Alcohol	Glutaraldehyde	Sudol
Hypochlorite	Janda	Milton's	Nonidet
Biophedrin	Zorbitol	Kemklen	Savlon
Pyroneg	Mucocit	Alcide	Extran
Phenolics	Methanol	Chlorodux	Wavride

Hepatitis Vaccination

A number of studies have established the increased risk of Hepatitis B infection for paramedics. It has been shown that HBsAg can contaminate environmental surfaces, work benches and laboratory refrigerators[14,15]. Dienstag[16] concluded that 'even in the absence of recognisable invasion there remains an ever present but insidious Hepatitis B hazard.' Valenzuela[17] in a Seattle study found that paramedics are at increased risk of Hepatitis B infection and recommended that vaccination should be considered for such workers. Two laboratories in this survey reported receiving vaccination about the beginning of 1985. Currently 43 have been vaccinated (62% of hospital laboratories and 40% of private laboratories) with a further 14 indicating that it is intended to be done. A breakdown of the dosages administered is shown in Table 5. A letter to the NZ Medical Journal in October 1985 recommended that in innoculation programmes of this type 4 mcg of H-B vax be considered the minimum allowable dose to obviate the risk of non-production of antibodies. A newsletter to principal or charge technologists from the NZIMLT (11 April 1986) cautioned workers 'against receiving low dose (5 mcg or less) hepatitis vaccine as it may not prove effective.' It is disturbing to find that 8 laboratories indicate receiving low dosage vaccination.

All small laboratories have either received or are to receive vaccination. Two major boards have not offered vaccination to staff, probably because of the costs involved, and one of these has indicated that staff may elect to have vaccination at their own expense.

Table 5:
H-B vax Dosages

Dosage	No. of Laboratories
Not indicated	9
2 mcg	4
5 mcg	4
10 mcg	5
20 mcg (full dose)	12
10 mcg < 30 yrs 20 mcg > 30 yrs	8

Health Checks

The use of routine chest X-rays has actually decreased from 25 to 16 with nearly half the laboratories reporting that these were only carried out on new staff or on staff currently performing TB work.

Fire Safety

The number of laboratories who have routine fire drills has remained the same at 30. One laboratory commented that they had so many false alarms they didn't need fire drills. Forty-two laboratories reported training staff in the use of fire extinguishers although some commented that it was on a very infrequent basis. A similar number trained staff in use of CPR.

Safety Manuals

Forty-three laboratories (59%) had access to safety manuals with all the larger centres and some of the smaller ones having locally prepared manuals.

Other publications listed included:

Lab Safety: Principles and Practices (Miller)
Hospital Acquired Infections (C.H. Collins)
People at Work, Their Health, Safety and Welfare (W.I. Glass)
Clinical Laboratory Safety (S. Ross)
The Howie Code
Laboratory Safety Manual (WHO 1983)

Safety Requests Disallowed

1. Fire safety blankets and safety cabinet for TB (not given A priority by HOD)
2. Hands free wash basins
3. Staff facilities minimal or absent. Requests fobbed off by reference to long-standing plans for a new laboratory
4. Hepatitis vaccination
5. Showers
6. Showers
7. HBsAg vaccination not denied but much foot dragging
8. Fume extraction Histology approved 1983 but not activated
9. Safety hood planned but not installed

Several laboratories made the point that they found their boards very supportive, particularly in relation to matters of safety.

Conclusion

It is obvious that in the period of time since the beginning of 1985 the standards of safety in medical laboratories have responded to the challenge. The numbers of staff wearing appropriate attire and the provision and standard of equipment for handling infectious material has improved. Decontamination of material before disposal or recycling is still less than satisfactory and it is worth reiterating Collins' statement[19] that laboratory staff should be able to render their own

refuse safe for other people to handle. A more standardised approach to the use and dilution of disinfectants is necessary and there is a market for a lightweight, well-fitting, powdered but powder free disposable glove. It is disturbing that only a little over 1/3 of laboratories saw a need for fire drills in an area which often contains flammables and explosives and where staff may be responsible for evacuating patients as well as themselves.

Collins[20] found that serious objections are raised to the costs of items required by the Howie Code for laboratory safety, particularly safety cabinets and safety buckets for centrifuges. The evidence is that over the time period studied in this survey some progress has been made in these areas, but there is still a long way to go. The cost of safety in medical laboratories is high, but the cost of unsafe procedures may be far higher.

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Comparison of the Relative Specificities of Six Enzyme Immunosorbent Assays for HIV-1 Antibody Detection

Paul M. Austin M.Sc. (Hons) Research Officer, Ian W. Steed ANZIMLT Charge Technologist
Research and Development Section, Diagnostic Serology Laboratory, Auckland Regional Blood Centre.

Abstract
The relative specificities of six commercial EIA anti-HIV-1 detection kits is outlined, based on screening of a blood donor population. The results demonstrate that a competitive type assay has superior specificity than any of its competitors.

Key words
specificity, EIA, HIV-1, Wellcozyme, HLA-DR4.

Introduction
From the first licensing of a commercial test kit for the detection of antibody to human immunodeficiency virus-1 (HIV-1) in 1985 by the United States Food and Drug Administration (FDA) a number of other manufacturers have developed products requiring evaluation.

The rationale behind the screening of blood donations for anti-HIV-1 is to detect HIV antibody positive donations and thus prevent transfusion Acquired Immune Deficiency Syndrome (AIDS) occurring. Sensitive screening methods must be used and these must also be technically easy to operate in view of the large numbers of samples that require testing. In addition the chosen method must show high specificity for anti-HIV-1.

Whilst the elimination of anti-HIV-1 from blood donations must remain as the primary objective, an equally important factor, especially in those geographical areas where there is a small donor base, is the unnecessary exclusion of blood from transfusion as a consequence of false positive results from screening tests.

This study compares the relative specificities of six commercial enzyme immunoassays (EIA) by screening a normal blood donor population for anti-HIV-1.

Materials and Methods

Sera

A total of 2203 randomly selected blood donor sera were obtained for anti-HIV-1 screening from the Auckland Regional Blood Centre. Not all kits could be tested using the same sera as kits were received at different time intervals. The numbers of sera tested by each kit is presented in Table 1.

Commercial assays

Six commercial enzyme immunoassays (EIA) for anti-HIV-1 detection were supplied by the following companies:

1. ELECTRONUCLEONICS INC. (ENI) [Columbia, U.S.A.]
2. DU PONT [Wellington, U.S.A.]
3. CELLULAR PRODUCTS INC. (RETRO-TEK AAV) [Buffalo, U.S.A.]
4. GENETIC SYSTEMS CORP. [Seattle, U.S.A.]
5. WELLCOME LABORATORIES (WELLCOZYME) [Dartford, U.K.]
6. BEHRING INSTITUTE (ENZYGNOST) [Marburg, West Germany].

All assays except the Wellcome Laboratories (WL), a competitive assay, were based upon the indirect "sandwich" principle of EIA. Of the six assays that were evaluated, the one supplied by Cellular Products Inc. (C.P.I.) was undergoing development and as such was not intended for full scale blood screening.

With the exception of the kit supplied by Genetic Systems (G.S.), all assays were performed as per the manufacturers protocol. Halving of serum and diluent volumes for the G.S. method had no significant effect upon resultant absorbance values. This modification was used as it permitted a greater compatibility with laboratory organization.

The test kit supplied by Du Pont (D.P.), offered either a direct well addition, or a pre-dilution of serum. Direct well addition of serum was found to increase the number of false positives. Therefore, the data presented in this study was obtained using a pre-dilution of serum.

Screening of sera was carried out using each of the five commercial assays in parallel with the ENI supplied kit which had been previously adopted for routine use by the N.Z. Blood Transfusion Services. Sera that were initially seropositive, were re-tested in duplicate. If either of the duplicates returned a positive result the sera was subjected to a confirmatory test (Western Blot).

Results

The data presented in Table 1, illustrates that the W.L. assay achieved the highest specificity. Specificity is calculated as:

$$\frac{\text{No. initially positive}}{\text{No. tested}} \times \frac{100}{1}$$

Assays supplied by ENI and G.S. had almost identical specificities (99.6 and 99.7 percent respectively), followed by the C.P.I. and D.P. assays. In terms of specificity the kit supplied by the Behring Institute (B.I.) was inferior at 97.7 percent.

In terms of reproducibility of results, (determined by retesting initially antibody positive sera) the assay supplied by C.P.I. was superior (100 percent) followed by D.P., B.I., E.N.I., and G.S.

There existed no correlation between the positives scored by any assay in comparison with ENI. Unfortunately long delays in kit deliveries meant that all such sera were not able to be tested by all assays.

The ten sera that were repeatably positive (four by B.I. and two each by ENI, D.P.and C.P.I.) were all negative by Western Blot analyses.

Table 1.

Determination of the specificities of six comercial enzyme immunoassays that detect antibody to HIV-1.

Assay (No. tested)	No. Initial positive	No Repeat positive	Specificity %
ENI (2203)	8 (0.36%)	2 (25%)	99.6
DU PONT (604)	4 (0.66%)	2 (50%)	99.3
CPI (327)	2 (0.61%)	2 (100%)	99.4
G. SYSTEMS (327)	1 (0.30%)	0 (0%)	99.7
WELLCOZYME (503)	0 (0%)	N/A	100.0
BEHRING (442)	10 (2.3%)	4 (40%)	97.7

Numbers of sera tested by each assay is depicted beneath the assay name.

Discussion

Anti-HIV-1 assays designated for blood donor screening must be both sensitive and specific. If sensitivity studies are to be meaningful, the operator must have a panel of sera that includes patients at all stages of AIDS. A normal donor population will include very few high risk individuals as most of these will have been removed from donation by self exclusion programmes. Thus, the only sensitivity work that a Blood Transfusion Service can undertake, will be dilution series of known Western Blot positive sera. Shortages of Western Blot positive sera together with transit delays of the anti-HIV-1 detection kits prevented a comparison of the sensitivities of the six EIA methods used in the present study. Although some assays may be able to detect antibody at higher titres than others, this may not necessarily correlate with detection of antibody at early stages of infection.

Our data shows good agreement with other evaluation studies of blood donor populations. In such a study[1], the Genetic Systems assay had a specificity of 99.7 percent after testing 768 sera. Two independent studies [2, 3] gave the same specifications as the present study for the D.P. and W.L. assays. The only variation from published literature is for the B.I. assay, where our determination of specificity resulted in a much lower value (97.7 percent) compared to others [2, 3]. This may be because the B.I distributes ENI reagents under its own trademark[4]. Early batches of ENI reagents, which differed from later

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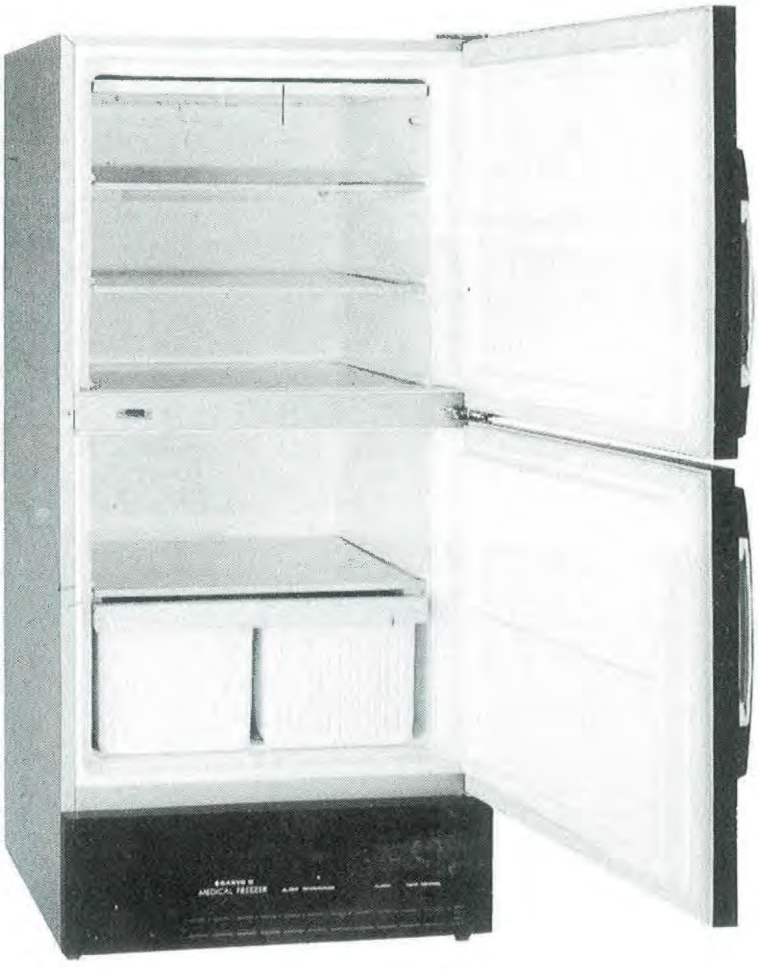

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batches in terms of the specimen diluent and microplate composition gave a higher percentage of false positives. It was these early ENI reagents that the Behring Institute supplied to the laboratory for evaluation.

HLA class II antigens especially DR 4 can cause false positive results in EIA assays[5]. The DR 4 antigens are known to be present in a cell line (H9) which is used by ENI, B.I., D.P. and W.L. to propagate their HIV-1 isolates. The origin of the cell line used by C.P.I. could not be established. The assay supplied by G.S. uses a CEM cell line[6] for virus propagation which appears to lack any HLA class II antigens[1]. In view of these facts it is not surprising that the Genetic Systems assay achieved the second highest percent specificity. It is possible that the high specificity demonstrated by the W.L. assay is due in part to a negation of the effect of HLA cross reactivity by the competitive nature of the assay. Although to a large extent false positivity can be attributed to HLA antigen cross-reactivity, the different HIV-1 isolates used by the various commercial firms for microplate coating could account for the lack of correlation demonstrated by ENI and the other assays in scoring a sample positive for anti-HIV-1.

In conclusion, the present study evaluated the relative specificities of six commercial EIA methods for anti-HIV-1 detection. The method supplied by W.L. was the most specific. In decreased order of specificity were the kits supplied by ENI, G.S., C.P.I. and D.P., with a range of only 0.4 percent between them. There was a further drop in specificity to the kit supplied by the Behring Institute.

For a blood screening assay to be an effective one high specificity should be linked with high sensitivity. The Wellcozyme method appears to possess such sensitivity, and, the results of a recent study[7] showed that it correctly identified as positive 163 immunoblot confirmed samples, and in the process was significantly more sensitive $P<0.05$ than five other commercial assays. Also, in the same study the method failed to score any samples positive from a panel made up of sera from anti HLA-DR-4, auto-immune patients, cancer patients, other viral diseases and from sera that had been stored/frozen.

This combination of high sensitivity and specificity, rapid assay performance time and competitive cost enabled Wellcome Laboratories to tender successfully for the supply of test kits for blood donor screening in New Zealand.

Acknowledgements

We would like to thank Dr D.G. Woodfield for his valuable comments during the preparation of this manuscript. Also thanks to D. Chapman for performing the Western Blot test.

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Medical Laboratory Technology Training in the Netherlands

R.W.L. Siebers ANZIMLT, Technical Officer, Department of Medicine, Wellington Clinical School, Wellington, and H.E.E. Benjamins, Charge Technologist, Laboratory Services, Regional Hospital, Middelburg, Netherlands.

A review of medical laboratory technology training in the Netherlands is presented here based on discussions held by R. Siebers on a recent trip to the Netherlands, with H. Benjamins who for many years was on the Executive of both the Dutch Association of Medical Technologists and the International Association of Medical Laboratory Technologists.

There exists at present two levels of education for laboratory personnel in the Netherlands; a higher professional level termed HBO (Hoger Beroep Onderwijs — higher professional education) and below that the MBO (Middelbaar Beroeps Onderwijs — technical vocational education). Entry to either stream (or to university) depends mainly on the secondary schooling education received and is presented in figure 1. The HBO Institutions (comparable to the NZ Technical Institutes) prepare students after their secondary schooling for the applied arts and sciences. There are more than 400 such Institutions with approximately 200,000 students compared to 13 Universities with approximately 150,000 students in the Netherlands. At present these 400 odd Institutions are being re-organised into 45 large-scale Institutions; and of about 20 such Institutions at present with a laboratory technology department the re-organisation will most likely limit the study of laboratory technology to about 10 Institutions in the future. The HBO and MBO programmes are currently offered by the same Institutions and as a result of the intended changes mentioned above, the HBO and MBO programmes will be separated according to the restructured HBO and MBO Institutions. For laboratory education at these Institutions the HBO and MBO programmes are renamed the HLO (Higher Laboratory Education) and MLO (General Laboratory Education) and as such will be referred to in the rest of this report

The first year of study in the Laboratory Technology Institutions for either level is a general one mainly covering the topics of chemistry, physics and mathematics. Being a selection year drop-out usually takes place at the end of this first year. For the next two years successful first year students select the option of further laboratory technology training in either the medical, chemical or botanical field. For the HLO Medical Laboratory Technology option students either specialise in clinical chemistry (including haematology), microbiology or cyto-histopathology. The Institutions are more or less free in their training programmes and Table 1 gives a rough estimation of the hours spent teaching (both theoretical and practical) in each subject. There is a council for higher professional education which tries to co-ordinate the Institutions' programmes, and this Council's Laboratory Committee is restructuring the laboratory education at present. However this Committee's advice to the Education Department is not necessarily followed.

At the end of the third year exams are set, supervision of which is provided by members of the academic staff of each Institution's Laboratory Department. During the fourth (and final) year HLO students enter the hospital laboratory for the first time for practical laboratory experience where they are further trained in routine and some more complex procedures and observe management and daily routines of a hospital laboratory. After six months of this they do a specific project on which they write a treatise and present this project orally before their tutors. Thus, at the end of four years of training they qualify, and then apply for advertised positions throughout the country in their particular speciality

Over the last few years several HLO qualified technologists were unemployed or employed in other than hospital based laboratories, however it is predicted that unemployment amongst HLO technologists will rapidly diminish in the near future. The lower MLO qualified technologists are less fortunate. Many of them cannot find suitable hospital laboratory jobs or are employed outside of hospital laboratories. The Dutch Government would like them to have hospital laboratory positions but Heads of hospital laboratories prefer to limit their staff to no more than about 20% comprised of MLO technologists. The Dutch Association of Medical Technologists, which includes both HLO and MLO trained members, is encouraging the Institutions to reduce their intake of MLO students. Currently about 400 students complete the HLO Course each year and for the MLO Course this number is about 420. It is possible for MLO trained technologists to do the HLO Course but it will take them another four years and failure rates for these students of up to 50% are not uncommon. There used to be a class of laboratory assistants in the past who were entirely "in-house" trained but this has been abolished and hospital laboratories nowadays are totally staffed by qualified medical laboratory technologists mainly with an HLO qualification. This HLO qualification is essential for medical technologists wishing to attain charge technologist or Section Head positions.

	HLO			MLO
	Clin Chem	Micro	Histo-Cyto	Clin Chem
Clinical Chemistry	400	200	200	400
Microbiology	180	360	180	180
Haematology	200	200	200	180
Histology	30	30	100	15
Cytology	30	30	200	15
Immunology	100	150	120	—
Dutch	60	60	60	120
English	60	60	60	90
Mathematics	100	80	80	120
Statistics	60	40	40	60
Computer Sciences	90	60	60	60
Inorganic Chemistry	200	200	200	300
Organic Chemistry	100	100	100	90
Analytical Chemistry	120	120	120	60
Biochemistry	60	60	60	40
Biology	180	180	180	200
Physics	200	200	160	300
Physical Chemistry	90	80	60	30
Electronics	30	30	30	—
Instrument Techn	90	30	30	30
Lab. Safety	15	15	15	15
Cell Biology	30	60	60	—
Anatomy	60	60	90	30
Physiology	120	200	200	60
Other subjects	100	100	100	120

Table 1
Hours (approx) of teaching in each subject

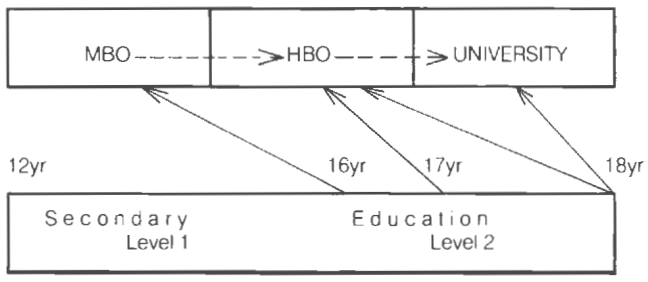

Figure 1
Education System Structure

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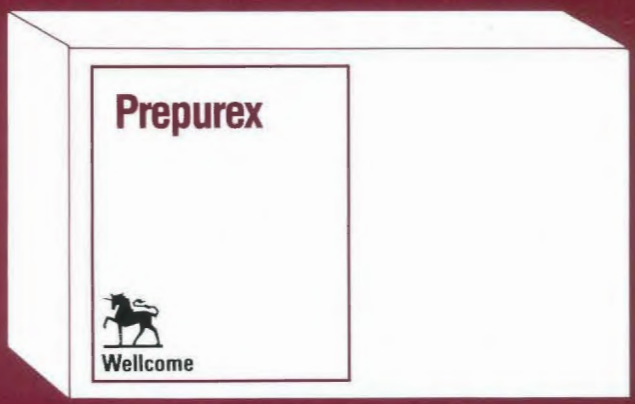

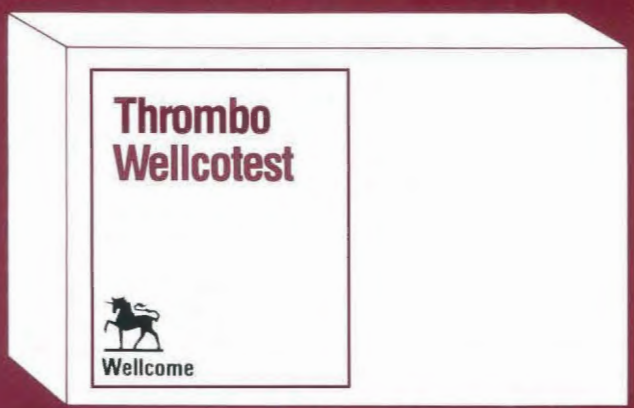

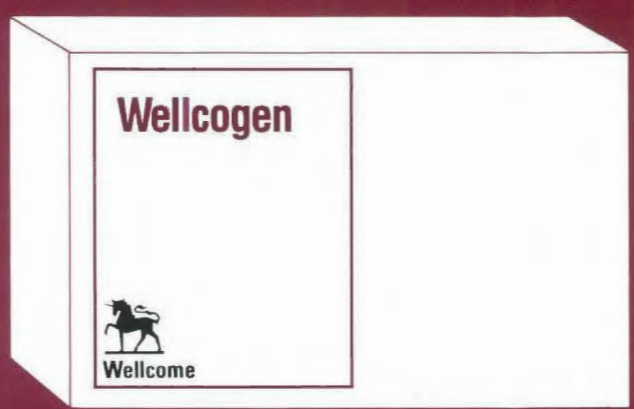

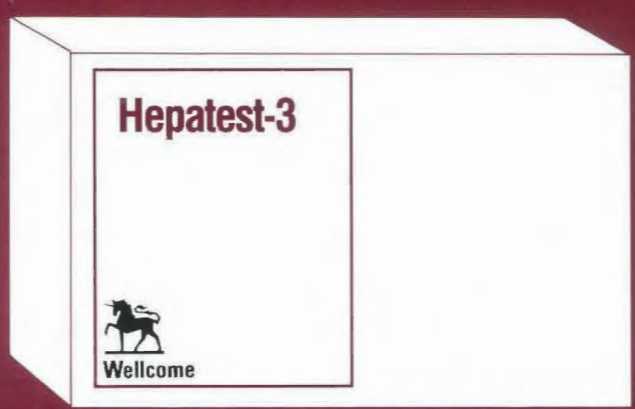

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Council of elected members from 11 divisions which is similar in structure to the New Zealand Institute. They also have a permanent secretariat and a Journal Committee which produces the Dutch Association's monthly Journal named "Analyse" the Journal for medical technologists. The majority of articles published (totally in Dutch nowadays) are of a review nature of topical subjects generally, written by medical specialists or University trained clinical biochemists and occasionally by medical technologists. Association matters, advertisements and job positions comprise the rest of the Journal contents. About 60% of qualified technologists (both HLO and MLO) belong to the Association, and membership also consists of special, interested, donating and honorary members and students.

1986 Eli Lilly Award

Report on the South Pacific Congress on Medical Laboratory Science, Sydney, Australia. 19 — 22 August 1986.

Murray Carter

Microbiology Department, Taranaki Base Hospital, New Plymouth.

This years Congress attracted more than 500 delegates, with the majority coming from Australia (440) and New Zealand (70). There were also small numbers of delegates from most of the South Pacific Islands, such as Tonga, Samoa, Vanuatu and Fiji.

The Congress itself was preceded by an Education Day. The object of the education day was to give delegates an opportunity to learn of the various changes that have taken place over the past decade, and to hear of some of the recent innovations in concept and techniques for each of the specialities in medical laboratory science. The fields covered were, Microbiology, Biochemistry, Haematology, Immunology, Endocrinology, Cytology and Virology.

The speakers were all well recognised experts and in general succeeded in presenting what were often complex issues (DNA probes, Monoclonal antibodies, Cell markers) in such a manner that the non-specialist was able to understand and appreciate the information. I attended the following sessions of the Congress.

Applications of DNA Probe Technology in Microbiology

The speakers in this symposium focused their attention on the use of DNA probes in detecting specific pathogens (both bacterial and viral) in clinical specimens, the detection of virulence factors in bacteria (Enterotoxin production in *E.coli*), and the value of probes in identification of micro-organisms recovered from clinical specimens by standard methods. The techniques of using DNA probes are now emerging from the reference laboratory environment and within the next few years will become routine in the diagnostic microbiology laboratory. They will allow more rapid detection of a wide variety of pathogens, the early institution of specific treatment, a reduction in demand on laboratory services, and shorter hospital stay for many patients.

Serological Diagnosis of Infectious Diseases

Topics covered were the detection of Toxoplasma specific IgM antibody using an IgM capture assay, the diagnosis of postnatally acquired Rubella, a comparison of methods for Rubella antibody screening, and the serological diagnosis of *Bordetella pertussis* infection in adults.

I was particularly interested in the paper on *B. pertussis* infections in adults. The organism can be isolated from only about 50% of cases occurring in children, with rates as low as 10% in infected adults. This group of workers using an ELISA method, were able to demonstrate that serum IgA response occurs in *B. pertussis* infections but not following vaccination. Testing in serum of 214 adults with persisting cough (1 month or more) demonstrated significant IgA antibody in 29%, thus establishing *B. pertussis* as an important cause of prolonged cough in adults. This test enables a rapid diagnosis of whooping cough to be made, the system being highly sensitive and specific.

Reporting Dilemmas.

The age old problem of microbiologists! The bacterial flora of the female genital tract, the gastrointestinal tract and the skin were discussed. The resident and transient microbiota (normal flora) which are regularly present may be altered by physiological, pathological, or environmental factors. In some circumstances the normal flora may be causing infection and so the decision has to be made whether c not to assign clinical significance to an isolate. This requires a knowledge of the body's indigenous bacterial flora, the ability of an organism to invade the body, calculation of the probability that an organism is colonising a site without causing infection, and so on.

Rapid Identification Techniques for Bacteria

The papers reviewed the most recent techniques which have been developed for rapidly identifying bacteria in the laboratory. There has been a re-evaluation of latex agglutination technology and recognition of its accuracy, simplicity, and economy. This has led to the marketing of a wide range of latex tests which have many applications in the routine diagnostic microbiology laboratory.

Iatrogenic Illness

Iatrongenic illness is physician induced disease. This is normally

interpreted as disorders that result from diagnostic or therapeutic interventions.

Iatrogenesis is a widely recognised and accepted consequence of certain treatment regimes — cytotoxic drug therapy for malignant disease, but it is rarely considered that it may result from the incorrect utilisation or interpretation of laboratory investigations, or as a result of errors which may occur in the collection or processing of laboratory data. This session provided timely reminders that laboratory workers have responsibilities in ensuring that accurate and relevant results are given to the clinician.

The other aspect of iatrogenic illness that was examined was the causative role of therapeutic drugs and how the laboratory can provide a very useful function in the prevention of many of the side effects of drug therapy by being able to monitor the serum levels. Thus, toxic levels (and sub-therapeutic levels) can be detected.

Sexually Transmitted Diseases

Topics covered included a review of recent advances in the diagnosis of Herpes simplex infections, a protocol for screening hospital and sexually transmitted disease patients (VD Clinic) for syphilis, and the results of a survey carried out in Australia to determine the incidence of penicillinase producing *Neisseria gonorrhoeae* (PPNG). The incidence of PPNG in New Zealand is still quite low and it would appear that the organism is not yet endemic here as it is in Australia.

Acquired Immune Deficiency Disease (AIDS)

Speakers at this session discussed the clinical and therapeutic aspects, the diagnosis of AIDS, and reviewed AIDS in New South Wales. Much of the material was well known. However, the implications for the health system of large numbers of AIDS patients presenting for diagnosis and treatment in the years to come, are extremely serious.

A varied social programme was organised, including a welcome reception held at the Sydney Opera House, for all delegates, restaurant dining, the Congress Dinner, and optional Sydney and Harbour Tours. This gave delegates an opportunity to renew old aquaintances, cement new friendships and exchange ideas and points of view in an informal setting.

I would like to acknowledge the assistance of Eli Lilly (NZ) Ltd in assisting me to attend this Congress.

LETTERS TO THE EDITOR

Dear Sir,

re: **The Inexpensive Enzyme Linked Immunosorbent Assay for the Detection of Hepatitis B Surface Antigen**

We have found that rapid method's[1] sensitivity is influenced in particular by the age of the conjugate, and, to a lesser extent the age of the coated microplate. To offset this problem, we designated two bottles of conjugate (one for each incubation protocol) and, as the "rapid conjugate" began to lose its sensitivity (as detected by quality control graphs) it was transferred to the "overnight conjugate" bottle, and fresh conjugate was prepared.

Another interesting finding was that the type of diluent used [Enzygnost supplied anti-HBs negative control or pooled normal human serum (NHS) negative for HBsAg/anti-HBs by EIA] to dilute the Enzygnost supplied positive control had a significant effect, $P<0.001$, upon optical density (O.D.) values. It was determined that some factor (probably very low levels of anti-HBs) in the pooled NHS as opposed to a higher background signal caused a depressive effect upon O.D. readings.

We hope that these findings will prove useful to laboratories utilising this method of screening for HBsAg.

Yours sincerely

P.M. Austin MSc(Hons)
Research Officer
Diagnostic Serology Laboratory
Auckland Regional Blood Centre

Reference:

1. Steed, I.W., Anderson, R.A.M., Austin, P.M. An Inexpensive Enzyme Linked Immunosorbent Assay for the Detection of Hepatitis B Surface Antigen.
New Zealand Journal of Medical Laboratory Technology (1987) 41(1):8-9.

FIJI MEDICAL LABORATORY TECHNOLOGISTS ASSOCIATION

ANNUAL CONFERENCE

28th — 30th AUGUST 1987

THEME: THE LABORATORY IN CLINICAL MEDICINE

Dear Sir,

Re: Fiji Medical Laboratory Technologists Conference

We write to inform you that the Annual Conference for Fiji Medical Laboratory Technologists Association is scheduled to be held from 28th-30th August, 1987, with the venue yet to be confirmed.

We have conducted seminars regularly over the last few years and have found them to be quite successful. Discussions on topics of interest and presentation of papers in the field of paramedical technology has contributed significantly to the growth and development of laboratory technology in Fiji.

The theme of this years seminar will be "Laboratory in Clinical Medicine". Quite like the previous years we are expecting continued support from overseas organisations like yours in way of papers and discussions in areas relating to the theme of this seminar.

We cordially invite you and members of your organisation to participate in the seminar. May we also regretably add that for your participation our association is not in a position to offer any financial assistance.

We await your response with keen interest.

Yours sincerely

Mrs Sarojini Krishna
Secretary, Seminar Organising Committee

A Step Forward?

Dear Sir,

Quotable quote from a recently typed report on monitoring oxygen levels in babies.

'The unit has a new machine for doing blood guesses'!

Sounds useful!

Yours faithfully

Andrea Ramirez
Immunohaematologist

Canterbury Hospital Board Pathology Services 75th Anniversary

A reunion of current and former staff is being held in Christchurch on Friday 3 July and Saturday 4 July, 1987, to mark the 75th Anniversary of Pathology Services in the Canterbury Hospital Board.

Former staff are urged to attend. A programme and registration details are available from Barrie Edwards, Pathology Services, Christchurch Hospital, Private Bag, Christchurch.

The Pacific Way

A Brief Outline of the Development and Operations of the Leprosy Trust Board (The Leper Man Appeal)

The Pacific Way has in past editions of the N.Z.I.M.L.T. Journal outlined the work in the Pacific of organisations such as Volunteer Service Abroad (V.S.A.) and The Red Cross. The Leprosy Trust Board has been providing assistance to the Pacific area since the 1930's and it would seem appropriate to outline the work of this organisation in a similar way.

The Leprosy Trust Board of New Zealand exists to continue the work laid down by the late Patrick Twomey. It devotes its energies to soliciting contributions within New Zealand which, in turn, are used in helping towards the eradication of leprosy in the Pacific Islands, the rehabilitation of sufferers, and the continuation of the vital research work being carried on in New Zealand. During its existence the Leprosy Trust Board has allocated more trhan $9.25 million in its fight to control and eventually eradicate leprosy in the South Pacific region. Although many improvements have been made in the control and treatment of leprosy, there are still approximately 4,000 patients in the South Pacific and about 60 patients in New Zealand alone.

Multi Drug Therapy (MDT) is the most recently developed method of treating leprosy. It is a relatively expensive, but effective, programme — the costs of both the drugs themselves, and getting them to the patients, are high. It is essential that this programme be supervised, as each patient receives regular injections and assessments requiring a great deal of travelling for medical staff.

The work of the Leprosy Trust Board (L.T.B.) is now centred on this new M.D.T. programme and the educational process needed to counteract the stigma of leprosy. As a small but significant part of this educational programme, the L.T.B. assists, by way of sponsorships, many V.S.A. workers concerned with anything connected with health and leprosy in particular. The Board pays 75% of the air fares for New Zealand medical student electives who wish to go to Vanuatu to further their medical studies. Leprosy is a disease requiring knowledge which can only be gained by clinical work with the patients. The hope is that New Zealand doctors will gain at least some of this knowledge by undertaking a stint in the Pacific area.

Current research work at the Auckland Medical School is aimed at producing an effective vaccine against leprosy. In most people the immune system functions to prevent the growth of *Mycobacterium leprae* the organism causing leprosy. But for people in whom this control does not function, the important problem is to learn how to persuade the immune system to provide protection. With the help of funding from the Leprosy Trust Board and other organisations, scientists led by Professor James Watson at the Immunobiology Department of Auckland University Medical School, are carrying out a research programme directed towards understanding the immune response to *M. leprae*. Professor Watson considers his unit fortunate to be associated with the Leprosy Trust Board who are prepared to provide funds for research. Most organisations working in the field of leprosy expend funds on drug programmes, social and rehabilitation needs, nursing etc., but very little is expended on basic research to producing a vaccine. If other voluntary organisations working in the field of leprosy, directed more finance to the problem of "getting rid of the disease rather than just alleviating the problem" the production of a reliable 100% one shot vaccine for leprosy sufferers would proceed at a faster rate. The Unit has developed close relationships with other laboratories working in the *M. leprae* field. Professor Watson says "We seem to have become part of a network of laboratories, one in Boston, the laboratory at Cavill, Louisiana, the laboratory at Mill Hill and the Institute of Tropical Hygiene in London and a laboratory in Sydney. They are all working in the leprosy field, albeit in slightly different areas. All the skills and expertise we develop are freely circulated amongst these laboratories — as are their findings referred to us. No laboratory by itself has the "person power" or the reagents needed without such co-operation and co-ordination of work. This same network of

Dr J.W. ("Uggie") Lee, World Health Organisation Leprologist for the South Pacific area (left) and Mr Pierre van den Wijngaert, the General Secretary of the International Federation of Anti-Leprosy Associations (I.L.E.P.), the co-ordinating body for all leprosy organisations throughout the world. Half of Dr Lee's salary is funded by the Leprosy Trust Board as half his time is spent conducting surveys for the Board in the Pacific area.

The Ravages Of Leprosy

Absorption of fingers, crippling due to nerve and muscular damage. Leg amputated because of physical and bacillus damage aggravated by chronic ulcerations.

Patient on the left has been fitted with a modern prosthesis while the patient on the right prepares himself for a similar aid. Both patients are from Kiribati and were sent to Twomey Hospital in Suva for prosthesis at the expense of the L.T.B.

laboratories also exists among those trying to find vaccines etc., for other diseases such as cancer, malaria and so on".

It is practically impossible for any one laboratory to produce successful results of any research without calling on the resources of other laboratories and their technical staff.

In addition to the M.D.T. programme and Professor Watson's research programme the nature and extent of the Board's work is best illustrated by the following list of where some allocations have been made. The list is by no means complete.

CHURCH MEDICAL MISSIONS

ANGLICAN — Church of Melanesia Trust Board, Honiara, Solomon Islands, for medical work, mainly at the Hospital of the Epiphany, Malaita, St. Clare's Hospital, Taroaniara and Lolowai, Vanuatu.

CATHOLIC — Marist and Dominican Mission medical work on Bouganiville, Solomon Islands, and Vanuatu.

UNITED CHURCH — Medical work Helena Goldie Hospital, Munda, Solomon Islands

SEVENTH DAY ADVENTIST CHURCH — Medical work mainly at Atoifi, Malaita, Solomon Islands.

SOUTH SEA EVANGELICAL CHURCH — Medical work at Nafinua.

GOVERNMENT MEDICAL DEPARTMENTS:

WESTERN SAMOA LEPROSY TRUST BOARD: The L.T.B. Samoa has an interest in a self-help boat building project which has helped a number of former patients. Currently assistance is being given with the introduction of multi drug therapy

TONGAN LEPROSY PATIENTS' TRUST COMMITTEE: This ecumenical committee presently chaired by the Anglican Bishop, with members drawn from all churches in Tonga together with representatives of the Government Health Services, promotes the health and well-being of leprosy sufferers in the country. Funds from the Board are used by the committee to help overcome the housing problems of leprosy victims and, using voluntary labour, many substantial houses with modern washing and toilet facilities have been built. A four-wheel-drive vehicle also figures prominently in the grant to Tonga.

TUVALU AND KIRIBATI: Efforts are being hindered by the nature of the countries with their scattered islands and by their virtual isolation, as well as uncertain links with the rest of the Pacific. Lack of technicians results in poor maintenance of hospital equipment and, on two recent occasions, lack of aircraft has prevented visits. A comprehensive leprosy programme is needed in these countries.

TAHITI: The grant is administered by a local committee and the Chief of Public Health. Items not readily provided by the Government, comforts for leprosy patients, spectacles and so on, are covered by the grant.

NEW CALEDONIA: An active committee has been responsible for funds here for a long time. It provides recreational halls, cinemas and other entertainment for patients. More recently it has provided grants for discharged patients experiencing difficulties in finding homes.

NIUE: The grant in Niue cares for more impecunious former patients. It provides a family with groceries for a year and the fund is administered by the Department of Health.

SOLOMON ISLANDS: The grant covers new clinics, finance for renovations to existing clinics and various forms of transport. It also covers wages of leprosy field workers on Malaita and Guadalcanal. A pilot multi drug therapy programme at Mbinu, Guadalcanal is in progress.

VANUATU: The grant covers items similar to those provided for the Solomon Islands.

FIJI: The Leprosy Trust Board (Fiji) Inc., administers the grants made to Fiji. Such items as footwear for the Twomey Hospital shoe shop, financial support for the occupational therapy tutor, laboratory wages and supplies, extra clerical assistance for the hospital, replacement transport cost, money for extra clothing for patients, modest rehabilitation allowances for patients and families of patients since discharged

History of the Leper Man Appeal

The Appeal had its beginnings for the 25 leprosy patients isolated on Quail Island in Lyttleton Harbour during the 1920's. Mr Benjamin Pratt, who worked for the Gas Company in Christchurch, had started an appeal for Christmas comforts and other needs for the patients. He interested members of the public in assisting with visits of singing groups, church groups and other diversions, as well as providing material comforts. Prior to Mr Pratt commencing his appeal, Mr Patrick Joseph Twomey had joined an Order of his church which sent him to Fiji to teach. In the early 1920's Mr Twomey came in touch with many leprosy sufferers, who, in those days, were indeed revolting sights as little could be done for them beyond "tender loving care" and the use of Chaulmoogra oil. This oil was a reasonable efficacious treatment but very painful. It had to be injected under hospital conditions which had earlier required the establishment of the Central Lepers Hospital on the island of Makogai, some 80 miles from the main Fiji Island of Viti Levu. Pat Twomey befriended several patients and tried to do what he could for them. The tropics were never kind to Pat who was prone to rheumatics and became ill to such an extent that he was invalided back to New Zealand. He eventually resigned from the Order and took up various employment, finishing up as a meter reader and clerk with the Gas Company in Christchurch. While there, he met Mr Benjamin Pratt. With their common interest in leprosy sufferers they joined forces in the work for the patients in Quail Island.

In 1925 Quail Island was closed as a leprosarium and the remaining patients were transferred to Makogai where they joined a much larger family of approximately 750 leprosy sufferers from around the South Pacific. It was obvious that if anything worthwhile was to be done for this much larger family, then the Appeal efforts in New Zealand had to be developed well beyond the minor needs of the Quail Island situation.

Prior to his death in 1930, Mr Pratt asked Mr Twomey if he would take over the entire Appeal. Patrick Twomey threw himself into the task with zeal and real dedication. It was not long before he was widely known as "The Leper Man". The Appeal returns developed to such an extent that by 1939 several thousand dollars were coming in and it was deemed wise to form a Trust Board. The first Board was formed in September 1939. The Leprosy Trust Board with responsibilities extending to the whole of the South Pacific, was set up in 1942.

A New Zealand Technologist in Peru

W.L. Johns, ANZIMLT

Since May 1986 I have been working with the Aguaruna and Huambisa Council, a jungle Indian group in the Upland Rain Forest of Northern Peru.

The 35,000 Aguarunas and Huambisas are part of the Jivaro Group, who were head hunters (as head hunters they recognised only Jivaro heads worth taking and shrinking) they repelled two Inca invasions and were locked into internecian feuds until the 1960's.

The Aguaruna and Huambisa Council (Consejo) was founded in 1977 and gradually obtained through the Government, land titles to all the Indian communities. The Council is composed of delegates representing the Indian communities living on the banks of the rivers: Maranon, Chiriaco, Cenepa, Nieva and Santaigo. They have developed their own projects, and have given the highest priority to the development of a Primary Health Programme.

In the late 1970's one of the Aguarunas began to use a microscope to improve diagnostic ability. 'Brujeria' a complex system of witchcraft is an integral part of everyday life. The jungle Indians saw something almost magical about the use of the microscope, the careful 'ritual' of preparing the specimens and at the end, they could see the actual body of the person, 'moving things' that caused disease.

They decided they would have a small laboratory at each Health Centre and in 1983 their own people attended a training course at the Lima Hospital for Tropical Diseases. I am on a two year contract with the Catholic Institute for International Relations (a member of the British Volunteer Programme, which sends volunteers to parts of Latin America, Africa, and the Middle East). Once I had settled in at Napuruka, the centre of the Councils activities, I set out, over the following six months, to visit each of the five laboratories.

The work of the laboratoristas (as they are called in the jungle) helps the health promoters to diagnose and treat patients. We use techniques that are simple and low cost and our range of tests is small: blood smears to diagnose malaria, microscope examination of stool samples for parasites, the staining of sputum specimens for T.B., urinalysis and the the detection of anaemia by doing a haemoglobin test.

Because the travelling distances are so large, two or three days from one end of the zone to the other, we have started a system enabling us to take the laboratories to the people. What was essential for our 'mobile lab' was a box suitable to carry safely our microscope slides, stain and reagent bottles. In September, during a two week training course the technicians assembled their own mobile lab boxes. They started with a strong plastic beer box; it would not rot in the high humidity of the jungle. The divisions inside were ideal for stain bottles. Plywood was used for the base and lid. Rather than use steel hinges that would soon rust, we used strips of car tyres.

We take as part of our canoe cargo, a microscope in a carrying case. A steel bucket is used to carry a hand operated centrifuge, test tube rack and staining rack. These community visits are done with the river supervisors. Our mobile laboratory service is a kind of "travelling circus". Our temporary lab may be located in the communities school, outside the health post, or in a building used for meetings.

In the afternoons, using a small portable water testing kit (Del Agua) we do water testing. Next morning the results are given to the community's Health Promoter. Water testing and the protection of 'springs' will become a vital part of the Councils health programme for "prevention".

One of the laboratories at the Nieva Health Centre.

Once on the river we are subject to changes in the weather. In the morning there may be a mystical mood to the river, with mist leaving only the faintest outline of the riverbank on the other side. A few hours of brilliant sunshine may follow then by midday heavy rain has set in. On these journeys all the while we pass the endless thick rain forest. There are birds to look at like bright red headed kingfishers. Butterflies rest on the banks, waving their yellow and luminous blue wings.

My travels by canoe about the zone, visiting each of the five Health Centres and giving a refresher course to the laboratoristas gradually allowed me to build up a picture of their health programme. Yet it wasn't until I attended my first health meeting of the Santarios (primary health workers) that I clearly understood how the Council's programme worked.

Laboratoristas using the New Zealand made DELPHI Haemoglobinometer during the refresher course September '86.

The four day assembly of the Santorios began with the election of officials, chairman and secretary. In front of me about 80 of the 120 Santarios, the women including the recently trained Santarias (women health workers) occupied the front three rows.

Each of the five supervisors, one for each river, got up and gave the report about their sector. Following this was a report by the supervisor of the womans programme and that of the director of the whole programme. As advisers, one of the doctors, then myself gave our reports. The reports over, everyone had an opportunity to join in the lively and sometimes lengthy debates: "Fuel not always available, could a laboratorista take year off? Was it the Communities or the whole health programmes responsibility to find money to repair the kerosine refrigerators?" With the debating at an end, voting took place.

Those in the front row that had dozed off in the afternoon sun, woke startled at all the talk about snakes. The Council's newly built Serpentarium will crystalize the venom and send it overseas. This is part of the Council's plan to help the Health Programme to be self financing. The director of this part of the programme wrote up on the blackboard the prices he was willing to pay, in allowing them to stock the Serpentarium. Prices ranged from £8 = US$12 = NZ$24 to £28 = US$42 = NZ$84 for the more valuable snakes.

Our presence at such meetings is to encourage participation, to suggest options for discussions — in short our role is to act as a catalyst. I was left in no doubt of the considerable organizational ability of the Aguarunas and Huambisas have meant the continuing of their self development project. The same organizational potential was used in the past for emergency mobilization or fusion of Antagonistic feuding units or when the Aguarunas in 1979 achieved international prominence when they ejected the German film maker Werner Herzog from Indian territory, during the filming of "Fitzcaraldo".

Buying equipment and supplies in Peru is time consuming and frustrating. Three laboratory suppliers in Lima were presented with a list of lab items. Weeks passed and our replies started to trickle in.

Warren Johns and the five laboratoristas on a retraining course September '86.

These agents simply couldn't supply us — out of 111 items on our list they managed to supply 44 items. A good, low cost microscope suitable for the jungle was not available. They simply didn't know about: polypropylene non breakable test tubes, filariasis filtration kits, and a battery operated haemoglobin meter. We couldn't buy stains like: Fields & Giemsa. In nearly every case when an item **could** be prepared they were far more expensive than U.K. prices; microscope slides were about four times more expensive, and pasteur pipettes 12 times more expensive.

We did try to use our Peruvian money to buy lab equipment overseas but soon we were entangled in an impenetrable thicket of red tape. Complicated exchange regulations and import regulations made it **very** difficult to buy overseas.

Once a routine is established, with the help of the laboratory technicians the mobile labs plan to carry out a survey that would give the health programme a better idea of the state of health. They would have their own information about the incidence of anaemia and parasites throughout the area and use this information to bring about changes and improvements to the health programme.

The Aguaruna and Huambisa Council's Health Programme is one of the few primary health programmes to have their own laboratoristas. We are then, part of an experiment in using laboratories at the "grass roots" level. Our water testing kit and battery powered haemoglobin meters are very much part of this experiment. Modern equipment is chosen for its reliability, robustness, sensitivity, low cost and simplicity in execution. The new knowledge and equipment is not an end in itself but meant to help defend and serve the traditional culture.

North of the Bombay Hills: What's Happening in Haematology

A news column by the Auckland Haematology Charge Technologists Group. Many of the matters considered by this group, have interest beyond the Auckland area and we propose to present in this and subsequent issues of the Journal, a regular section concerning our activities. We welcome feedback, if you have comment or require further information, contact the sub-committee convener whose name appears below each item. Contributions to the news column do not necessarily reflect the views of the Editor, nor the policy of the Council of the Institute.

Who are the Auckland Haematology Charge Technologists?

The Auckland Haematology Charge Technologists Group (H.C.T.) has as its members the Charge Haematologists from the Haematology Departments of the Public Hospitals and Private Laboratories located in the Auckland urban area.

The institutions represented are:

Auckland Hospital, Auckland Regional Blood Centre, Auckland School of Medical Laboratory Technology, Diagnostic Laboratory, Green Lane Hospital, Medical Laboratory, Middlemore Hospital, National Women's Hospital, North Shore Hospital, Princess Mary Hospital for Children and St Helens Hospital.

The H.C.T. came together in 1971 as an informal group to discuss mutual problems that occurred in the various laboratories around the city. The Group remained relatively unstructured until about five years ago when it moved to become more formal with an appointed chairperson, organised sub-committees and interests beyond that of "technical problems". The Group is also now represented on the Haematology Sub-Committee of the Auckland Hospital Board Advisory Committee on Laboratory Services.

Current projects being undertaken by the H.C.T. include:

1. Syllabus review for the Certificate and Specialist level Haematology Examinations.
2. Standardisation of haematology nomenclature and reporting.
3. Combined purchasing of consumable items.
4. Instrument and methodology evaluations.

Syllabus Review

In September 1985, the Haematology Charge Technologists Group was asked by the Medical Laboratory Technologists Board to review the syllabi for both the Certificate and Specialist Haematology Examinations. Originally it was hoped that the project could be completed in time for it to be used in 1987, but as the review progressed it became apparent that a total re-write of the syllabi was required.

A sub-committee of four was formed and charged with the review by the H.C.T. This sub-committee has met on average once a fortnight and has spent in excess of 600 manhours on the review. The sub-committee has also co-opted the help of at least 15 other people, both technical and medical to advise in specialist fields, thus ensuring the widest possible informed comment.

The syllabus is divided into four major sections:

Section A. General Laboratory Practice.

Section B. Laboratory Procedures.

Section C. Haemopoietic System (theory). (This section was prepared by Robin Allen, Waikato Hospital).

Section D. Clinical and Laboratory Haematology.

Currently the four sections of the syllabi are virtually complete, Section A, B and C are keyed into a word processor and Section D awaits final typing and a limited circulation in the Auckland area for comment. It is hoped that the entire document will be completed by the end of April, when it will be distributed to centres throughout New Zealand for comment before the final draft is presented to the June meeting of the Medical Laboratory Technologists Board for approval, for implementation in 1988.

The Syllabus Review Sub-Committee realises that it is impossible to prepare a document that all users will be satisfied with. The information available and the rapid technological changes involved in medical technology have made the committee very aware that a document of this nature should be compiled in conjunction with those having the appropriate **educational** skills to do so. Consideration will have to be given to this point in the preparation of future syllabi.

Marilyn Eales
Middlemore Hospital

Standardisation

About 18 months ago the Haematology Charge Technologists Group embarked on a project to standardise Haematology nomenclature and reporting in the Auckland area. The aim of the project is to provide a standard nomenclature for blood cells and expression of results that can be used in Haematology laboratories. Terminology has been chosen with a preference for simple, widely understood words and with reference to current literature.

The advantages of a standardised reporting system are seen as:

1. Consistency of reporting where tests from a single patient may be processed on different sites.
2. Medical staff on rotation are not faced with differing terms and quantitation.
3. Persons reporting, use terms and quantitations that are clearly defined.
4. Tutors can use a standard (commonly understood) terminology.

To date the general Haematology and red cell sections of the standardisation document have been completed and are currently on a six month trial in both Hospital and Private Laboratories. The white cell and platelet sections are nearly complete and should be ready for trial towards the end of April. At the completion of each trial the experience of the participating laboratories will be reviewed and changes made if necessary. Already feedback on the general Haematology and red cell sections indicates a wide acceptance of the proposals.

We are looking forward to the next stage of the project which is to produce a set of 35mm colour slides to illustrate the standardisation text.

As each section of the standardisation document is completed, we hope to be able to publish it in future issues of the Journal.

Bert Nixon
Auckland Hospital

Laboratory Consumables

This sub-committee works closely with the Supply Department of the Auckland Hospital Board (A.H.B.) and the H.C.T. Group to rationalise the purchasing of commonly used laboratory items (reagents, materials etc.). The convener liaises with each group member to assist easy communication.

An annual tender is prepared for laboratory consumables used by the Haematology Departments of A.H.B. institutions. Quotations are reviewed and recommendations are made for purchase. Individual departments are encouraged to consider a single supplier for each item.

Advice is given with regard to quality, supply and acceptability of laboratory supplies held at the A.H.B. Central Store.

Complaints arising from tender items and Central Store stock are notified through the convener to group members. An investigation protocol is followed to provide essential information for follow-up action, which is then taken by the convener.

Investigation Registers

The Departments of Haematology record evaluations of new and existing procedures, products and instrumentation, using standardised evaluation protocols. Summaries of these protocols are held in the following areas:

1. General Haematology — North Shore Hospital, held by David Underwood.
2. Haemostasis — Auckland Hospital, held by Alan Johns.

An annual update disseminates the information and saves duplicate investigations as well as ensuring adequate protocols are followed

David Underwood
North Shore Hospital

Education

As Haematology Tutor I find it of great benefit to be included as a member of the Haematology Charge Technologists Group. Information and problems which are discussed within this forum may directly relate to my involvement with the education and training of laboratory students.

Attempts to resolve difficulties are enhanced by the co-operative nature of the Group where the commitment of the students to their education and their service time is recognised and supported.

I am able to provide a suitable link for the H.C.T. to the external institutions involved with education and examinations, The Medical Laboratory Technologists Board, Auckland Technical Institute and the N.Z.I.M.L.T. who communicate with the Auckland School of Medical Laboratory Technology.

Ann Watson
Haematology Tutor
A.S.M.L.T.

NZIMLT SCHOLARSHIP

This award, consisting of $500 donated by the NZIMLT, is to be used **either** for the purpose of funding a research project which cannot otherwise be undertaken **or** to attend an overseas scientific meeting. The Scholarship is open to all financial members of the NZIMLT. Applications must be made on the official application form available from the Secretary of the NZIMLT.

Acceptance of the Scholarship will require the recipient **either** to prepare an article for publication in the NZIMLT Journal relating to that research **or** prepare a full report on the meeting attended for publication in the NZIMLT journal.

Applications close on **1 July 1987** with the Secretary, NZIMLT, Haematology Dept, Christchurch Hospital, Christchurch. The successful applicant will be announced at the Annual Scientific Meeting.

INSTITUTE BUSINESS

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Membership Fees and Enquiries

Membership fees for the year beginning April 1, 1987 are:
For Fellows — $55 Sub
$5.50 GST

For Associates — $55.00 Sub
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For Members — $40 Sub
$4.00 GST

For Non-practising Members — $30 Sub
$3.00 GST

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

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

CORRESPONDENCE

HEPATITIS VACCINATION

Mr B.R. Edwards
Hon. Secretary
The New Zealand Institute of Medical Laboratory Technology (Inc)
Haematology Department
Christchurch Hospital
Christchurch

Dear Mr Edwards

Your letter concerning the variations in doses of Hepatitis B vaccine offered to laboratory staff was discussed by the committee at its last meeting.

The committee considered that the dosage given was an employer responsibility and recommendations in respect of a national programme of immunisation for Hepatitis B have been made in that the manufacturers recommended doses of vaccine should be used. The committee considered that any deviation from this is a matter between the employer and employee.

Yours sincerely

Nemu Lallu (Mrs)
Secretary, Communicable Disease Control Advisory Committee

Membership Sub-Committee Report

Since our November meeting there have been the following changes:

	11.3.87	12.11.86	17.8.86	27.6.86
Membership:	1717	1724	1735	1792
Less G.N.A.	24	10	24	78
Less deletions (unfinancial)	251	—	—	9
Less deceased	1	—	—	1
	1432	1701	1709	1672
plus applications	103	14	12	62
plus reinstatements	1	2	3	1
	1536	1717	1724	1735

Application For Membership

Mrs Penelope SNOW, Wellington; Mr Darryl ROSS, Auckland; Miss Natalie CHEVIS, Auckland; Miss Patricia TAGGART, Dunedin; Mrs Andrea WESTON, Palmerston North; Miss Angela MOTYL, Auckland; Miss Gail BARRAR, Auckland; Miss Tracey SMITH, Dannevirke; Miss Alison FERGUSON, Auckland; Mr Bryan RAILL, Auckland, Ms Jacqueline NIELSEN, Auckland; Mr David BLOEMENDAL, Auckland, Miss Maria VANDEWAARDT, Auckland; Miss Angela WOODS, Wellington, Miss Jane FIELD, Wellington, Miss Megan HARRIGAN, Dannevirke, Miss Jacqueline HAGENSON, Taumarunui; Miss Yvonne WUTHRICH, Tauranga; Miss Janis BRIGHT, Auckland; Miss Diana WALKER, Auckland; Mrs Fiona COLE, Auckland; Mr Steven SCHISCHKA, Auckland; Miss Joanne McDONALD, Auckland; Miss Christine RONALDS, Auckland; Mr Peter ROBSON, Auckland; Miss Jacqueline RAYNER, Auckland; Miss Edwina ROGERSON, Auckland; Miss Jan HUTCHINS, Auckland; Miss Roxanne CALDER, Auckland; Miss Tracy BRADFIELD, Invercargill; Miss Lynette EDEN, Invercargill, Miss Catherine BAIRD, Invercargill, Miss Tina BERTAUT, Auckland; Miss Elizabeth LAWRIE, Dargaville; Miss Christine WAGSTAFF, Tauranga; Miss Gina DAVIES, Auckland, Miss Wendy MUNRO, Auckland; Miss Charissa READE, Auckland; Miss Catherine TOCKER, Auckland; Miss Deborah HOEY, Auckland; Miss Paulette BRENKLEY, Auckland; Miss Wendy HUME, Auckland; Miss Jodi ROBERTS, Auckland; Miss Karin TURNER, Auckland; Miss Juliet KEATING, Auckland; Mrs Tarisha PATEL, Whangarei; Miss Rachel MATTHEWS, Whangarei; Miss Alison DUNCAN, Dunedin; Mrs Susan BRAAN-STROO, Auckland; Miss Rachel GREENWOOD, Auckland; Miss Anna BAILLIE, Hamilton; Miss Janine MANTON, Auckland; Miss Sujata NATHOO, Auckland; Miss Monique LE LIEVRE, Auckland; Mr Harry PASESE, Auckland, Miss Michelle EASTON, Auckland; Miss Karen LAKER, Auckland, Miss Jennifer RUSSELL, Hamilton; Mr Shayne ANDREW, Hamilton; Miss Alison BLAKE, Hamilton; Miss Vanita NAHNA, Hamilton; Miss Karen PARKINSON, Hamilton; Miss Ann TIPLER, Stratford; Miss Tracey KEREMETE, Christchurch; Miss Deirdre STRATTON, Invercargill; Miss Kathryn SYKES, Christchurch; Mrs Lauren HALE, Christchurch; Miss Susan RIDDLE, Lower Hutt; Miss Trudy EDWARDS, Lower Hutt; Miss Megan FINLAYSON, Kawakawa; Miss Margot QUINN, Auckland; Miss Shona SMITH, Auckland; Miss Jan PRITCHARD, Whangarei, Miss Maria TOOMER, Palmerston North; Miss Maria WOOD-ALLEN, Tauranga; Miss Debra CRAIG, Tauranga; Miss Karyn Reynish, Hawera, Ms Julie PEACOCK, Auckland; Mr Timothy BRADLEY, Auckland; Mrs Heather OADES, Auckland; Mr Rodney SMITH, Auckland; Miss Bridget ARAHILL, Gisborne; Miss Louise ALLISON, Auckland; Miss Pamela SMITH, Dunedin; Miss Caroline MARINUS, Wellington; Miss Ekaterina DMITRIEFF, Auckland; Mrs Christine PRIESTLEY, Hamilton; Miss Lisa BLOORE, Hamilton; Mrs Suzanne TAYLOR, Masterton; Miss Michelle POOL, Masterton; Miss Deborah McPHERSON, Auckland; Miss Joanne LESTER, Christchurch; Miss Kathryn PEEL, Auckland; Miss Evelyn PLIM, Auckland; Miss Angela SMITH, Auckland; Mrs Wendy DOUGLAS, Hamilton; Miss Greta MAKAN, Auckland

Applications For Associateship

Mr Stephen THOMAS, Auckland; Mrs Judith CULL, Auckland; Ms Helen LEGGE, Christchurch; Mrs Robin PARNHAM, Wellington; Mrs Gayleen BOYD, Dunedin; Mr Thomas HENDERSON, Mosgiel.

Reinstatement

Mr David SCARROW, Tauranga.

Resignations

Mrs A. CHARLES, Timaru; Mrs C. COCKS, Auckland; Mrs E THOMPSON, Auckland; Ms L. ANDERSON, Wellington; Miss J. KINGI, Dunedin; Mrs H EGERTON, Auckland; Miss W. BRYDON, Auckland; Miss A. KENA, Auckland; Mrs J LAST, Dannevirke; Mrs J. WOOD, Ashburton; Miss E. CHEYNE, New Plymouth, Miss G. KIRKBY, Dunedin; Mrs S. KNYN, Palmerston North; Mr B. SCOTT, Palmerston North; Mrs A. WAYMOUTH, Invercargill; Mrs S. THOMPSON, Fielding; Mrs L. WOOD, Hamilton; Miss L. TER VEER, Hamilton; Mr R. PARKINSON, Dunedin; Mr J. SIMPSON, Christchurch; Mrs C. THOMPSON, Tauranga; Mr D. BOLITHO, Dunedin; Mr A PRINSEP, Christchurch; Mrs L. HUNTER, Auckland.

Gone No Address

Mr C. CONNELL, Auckland; Miss C. BOWDEN, Wellington; Mrs J. TURNER, Auckland; Mrs J. TOWNSLEY, Auckland; Mrs J CHARLESWORTH, Auckland; Mrs G. BOONE, Auckland; Miss K. MATTHEWS, Auckland; Miss D. ROBERTSON, Auckland; Miss J. WALTON, Hamilton.

Deceased

Mr D. WHILLANS, Auckland.

Report to the Council of the NZIMLT on the Third Annual Meeting of the Fiji Medical Laboratory Technologists Association

Introduction:

The meeting was held in Suva, Fiji, on the 5-7 December, 1986 at the Travelodge Hotel. There were approximately 45 registrants and the venue, one Conference Room, was well suited and equipped.

Programme:

The invited speakers were Drs J. Gwynne and J. Foagali (formerly of New Zealand, now of Brisbane, Australia), Dr K. Singh (local pathologist, and myself. The sessions were well organised and there was reasonable discussion for most. The quality of material generally was good with several local speakers giving excellent presentations.

General:

I had the opportunity to meet with Mr Rajenda Parmar, former and current President. He expressed a real interest in a continued liaison with the NZIMLT and, in particular, assistance with improvements in their training programme. To this end early in 1987 he will be sending a proposed curriculum for a possible Diploma Course to be run by the Fiji Medical School to us for comment. The curriculum he has written himself with comments from others. Presently their training consists of a three year course for a Certificate in Proficiency and he advises that there is a reasonable chance that this could be upgraded to a Diploma. His ultimate aim is to have a Bachelor Degree course but accepts that this is some years away. It has been agreed that their Annual Scientific Meeting will be scheduled earlier in the year, probably May/June, in an effort to attract New Zealand and Australian support. They will endeavour to supply details of their 1987 meeting as soon as possible so that it can be promoted in New Zealand.

Noticeable was the lack of trade support and this is an area in which the NZIMLT may well be able to assist in suggesting to our commercial colleagues they might like to support the Fijian meeting.

Recommendations:

1. That we continue our support for the Fijian Medical Laboratory Technologists Association (FMLTA) and offer to promote their annual Scientific Meeting to our membership and commercial colleagues.
2. That we consider sponsoring technical workshops either in conjunction with, or separate to their Annual Scientific Meeting.
3. That we consider sponsorship for the laboratory workers of other Pacific Islands to enable attendance at the FMLTA Scientific Meeting as the technologies and topics discussed at this meeting are more relevant to them than are most of the presentations at our Annual Scientific Meeting.

Observations:

1. It is clear that the FMLTA has progressed very well in the three years of its existence and I was very impressed by the degree of accord and unification between Fijian Medical Laboratory personnel. I was also impressed by the confidence, dedication and enthusiasm of many of their senior personnel.
2. It would be my impression that the future of this Association is very good and their Scientific meetings could become a major meeting for the Central Pacific Island Nations. Travel between Fiji and many of the Central Pacific Islands is for many better than exists between them and New Zealand or Australia.
3. The Fijians indicated that they find communication and co-operation with New Zealand very good and would like this to continue.

W.J. WILSON,
Vice-President,
23 December, 1986.

HS 48 AMENDMENTS

9 February 1987

HSPC Circular 1987/8

CHIEF EXECUTIVES OF ALL HOSPITAL AND AREA HEALTH BOARDS

Dear Sir

HS48: 1986 BLOCK A NEGOTIATIONS

1. Attached is Amending Determination No HS2326 which formally introduces amendments to the provisions for Bereavement Leave as a result of an agreement reached between the State Services Co-ordinating Committee and Combined State Unions in the 1986 Block A negotiations.
2. Boards have already been notified of amendments to the qualifying period of 20 working days' annual leave and the lodging allowance in HSPC Circular 1986/128, as a result of 1986 Block A negotiations. However one point in relation to the amended annual leave provision as it applies to employees who have resigned needs to be clarified.
3. *Annual Leave*
   The amendment is effective from 1 December 1985 which means employees who will have completed 7or more years' service on or after 1 December 1985 will now be eligible for a fourth week of annual leave on the anniversary date of their appointment and in succeeding leave years. However, employees who qualify but who have resigned in the period

1.12.85 to 6.8.86 inclusive are excluded from receiving an extra week's paid leave because 6 August 1986 was the date of agreement to this provision. Employees who qualify but who have resigned *since 6 August 1986* may, *on application* to the board, be paid for an extra week's leave.

I apologise for any inconvenience caused.

Bereavement Leave for Death in New Zealand or Overseas

4. The basic intent of this revised provision is to provide every reasonable opportunity for an employee to discharge any obligation and/or to pay respects to a deceased person with whom the employee has had a close association. Such obligations may exist because of blood or family ties or because of particular cultural requirements such as attendance at all or part of a Tangihanga (or its equivalent).
5. Approval for special leave on pay may be given by the board.
6. In granting time off therefore, and for how long, the board must take into account the following points:
   (1) The closeness of the association between the employee and the deceased;
   (NOTE: This association need not be a blood relationship).
   (2) Whether the employee has to take significant responsibility for any or all of the arrangements to do with the ceremonies resulting from the death;
   (3) The amount of time needed to discharge properly any responsibilities or obligations;
   (4) Reasonable travelling time should be allowed, but for cases involving overseas travel that may not be the full period of travel;
   (5) A decision must be made as quickly as possible so that the employee is given the maximum time possible to make any arrangements necessary. In most cases the necessary approval will be given immediately, but may be given retrospectively where necessary;
   (6) If paid special leave is not appropriate then annual leave or leave without pay should be granted, but as a last resort.
7. The new HS48 provision refers to administrative advice in the Health Service Personnel Manual, Chapter 4.8. The Manual will be amended to incorporate the above advice on the application of this provision in due course. In the meantime the revised provision should be read in conjunction with the advice contained in this circular letter
8. Any matters of doubt or difficulty should be referred to this office for decision.

Yours faithfully,

T.J. Neilson
for Chief Executive.

HEALTH SERVICE AMENDING DETERMINATION NO HS2326

Pursuant to the State Services Conditions of Employment Act 1977, the Health Service Personnel Commission hereby makes the following amending determination

Application of Amending Determination

1. Health Service Determination No HS48 as amended from time to time is further adjusted as follows.
2. Clause 7(1), *Bereavement Leave*, is revoked and is replaced with Clause 7(1), *Bereavement Leave for Death in New Zealand or Overseas*, which reads

   "(a) A board may approve special bereavement leave on pay for an employee to discharge any obligation and/or to pay respects to a deceased person with whom the employee has had a close association. Such obligations may exist because of blood or family ties or because of particular cultural requirements such as attendance at all or part of a Tangihanga (or its equivalent). The length of time off shall be at the discretion of the board in accordance with the administrative advice set out in the Health Service Personnel Manual, Chapter 4.8.

   (b) If a bereavement occurs while an employee is absent on annual leave, sick leave on pay, or other special leave on pay, such leave may be interrupted and bereavement leave granted in terms of subclause (1)(a) above. This provision will not apply if the employee is on leave without pay."
3. A replacement page incorporating the amendment prescribed in paragraph 2 above is attached.
4. This amending determination shall take effect on and from the date of this determination.

Dated at Wellington this 8th day of February 1987.

J.R. MARTIN, Chairman.
M.C. BAZLEY, Member.
R. McEWAN, Member.

22 48/48/2326
February 1987

7. *SPECIAL LEAVE*

   (1) *Bereavement Leave for Death in New Zealand or Overseas*

   (a) A board may approve special bereavement leave on pay for an employee to discharge any obligation and/or to pay respects to a deceased person with whom the employee has had a close association. Such obligations may exist because of blood or family ties or because of particular cultural requirements such as attendance at all or part of a Tangihanga (or its equivalent). The length of time off shall be at the discretion of the board in accordance with the administrative advice set out in the Health Service Personnel Manual, Chapter 4.8.

   (b) If a bereavement occurs while an employee is absent on annual leave, sick leave on pay, or other special leave on pay, such leave may be interrupted and bereavement leave granted in terms of subclause (1)(a) above. This provision will not apply if the employee is on leave without pay

   (2) *Maternity Leave*

   (a) Maternity leave *shall* be granted to a female employee as leave without pay; it is not to be granted as sick leave on pay. Providing an application for leave of absence under this heading is received at least one month before it applies.

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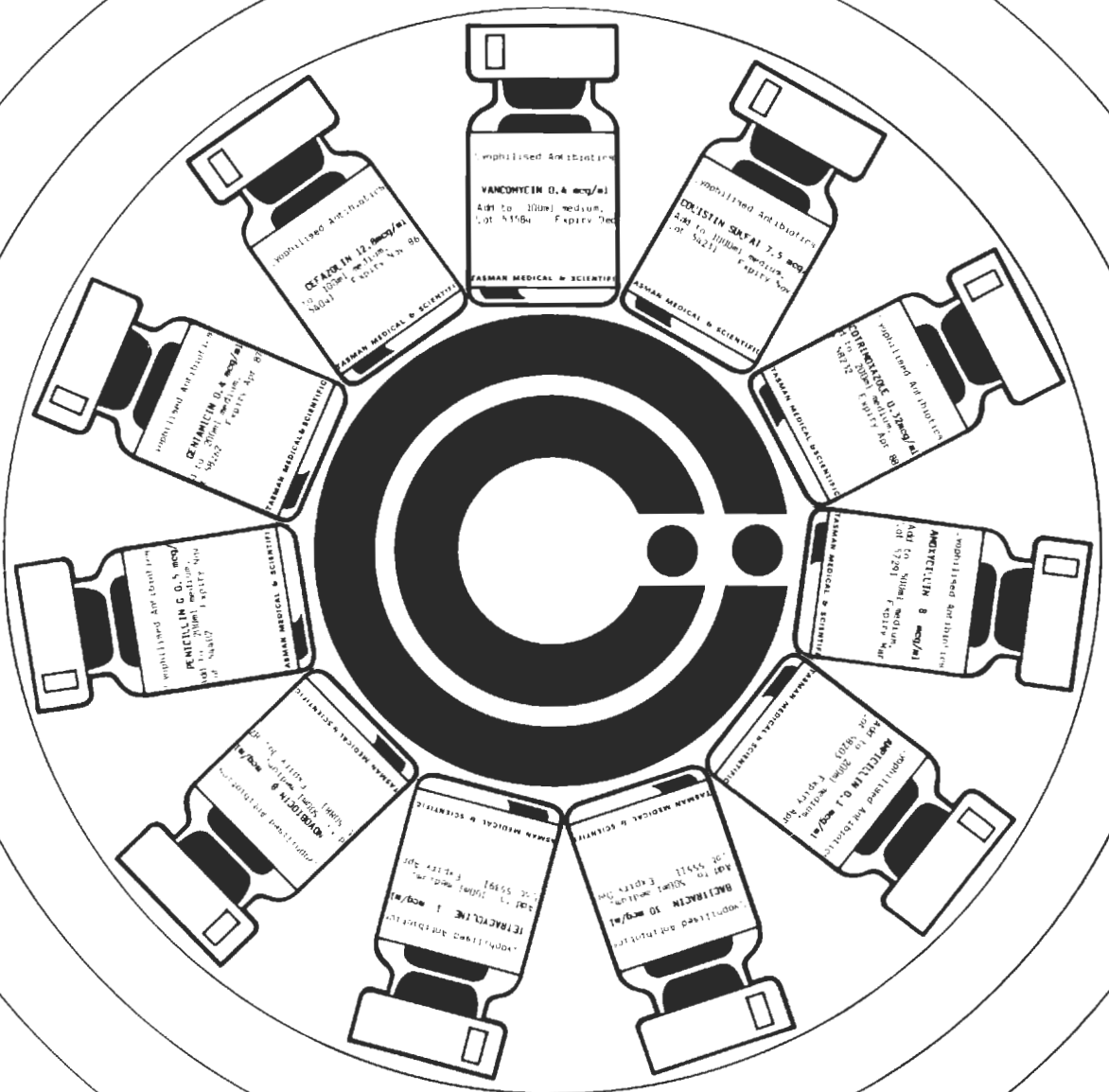

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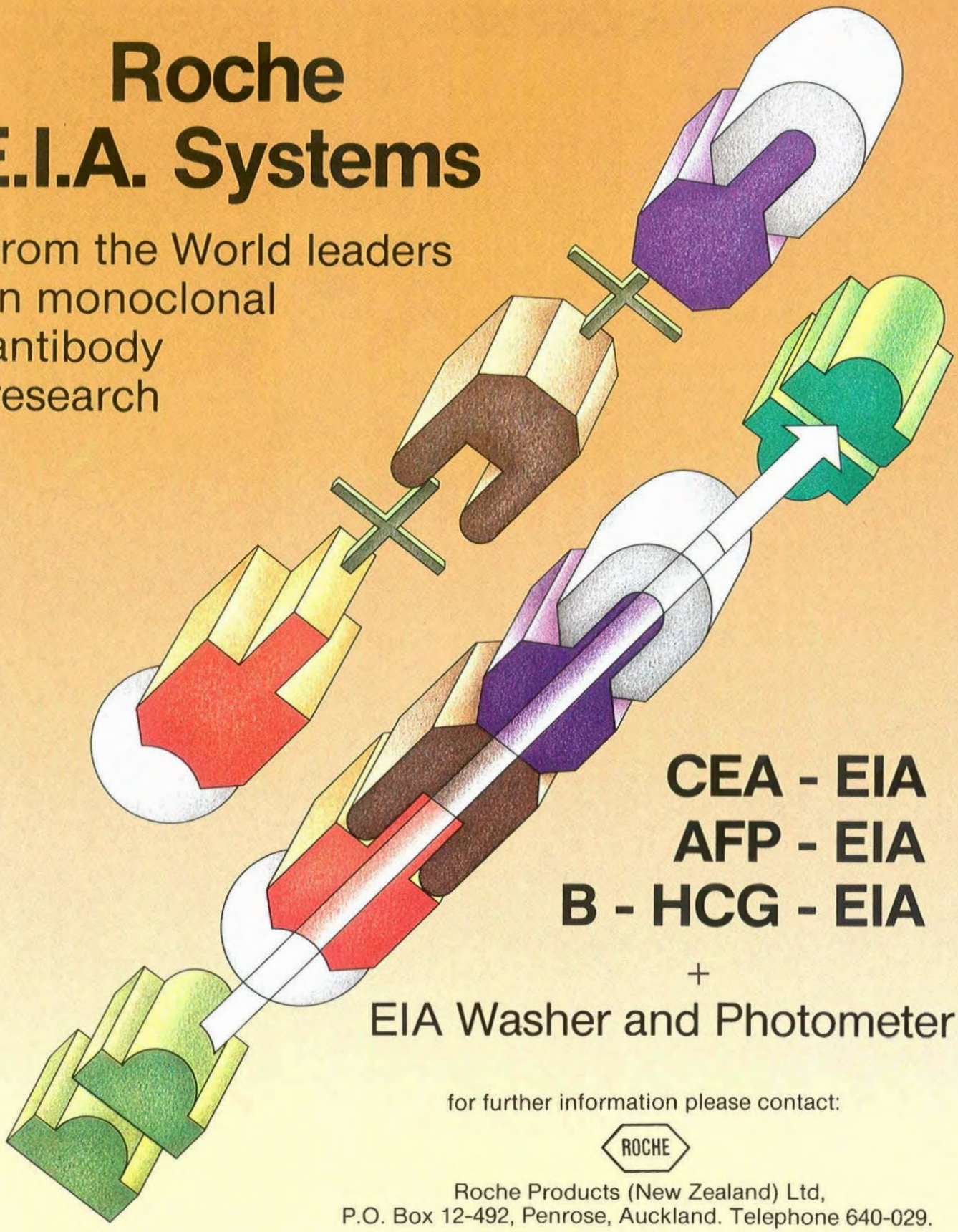

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Auckland Hospital

MICROBIOLOGY OF SEXUALLY TRANSMITTED DISEASES — WET WORKSHOP

GUEST SPEAKERS:

Dr P.J. Say	**Dept. of Venereology, Auckland Hospital.**
Dr B. Bremner	**Microbiology Dept, Auckland Hospital.**
Dr D. Bromiley	**Department of Venereology, Auckland Hospital.**

TOPICS:

i **Gonorrhoea**	**— isolation and culture methods —**
	— identification — fluorescent antibody
	— rapid CHO
	— co-agglutination
	— Gono check enzyme
	— sensitivity testing — PPNG
	— antigen serology — monoclonal co-agglutination
ii **Chlamydia**	**— isolation — culture**
	— antigen detection
	— antibody serology
	Clinical aspects and treatment
iii **Mycoplasma**	**— isolation and identification**
	Clinical aspects and treatment
Mycoplasma Ureaplasma	**— isolation and identification**
	Clinical aspects and treatment
iv **Gardnerella and Mobiluncus**	**— isolation and clinical aspects**

SPECIAL SESSIONS:

- **Sexual abuse and rape crisis**
- **Tropical veneral disease**
- **Handling large numbers of specimens**

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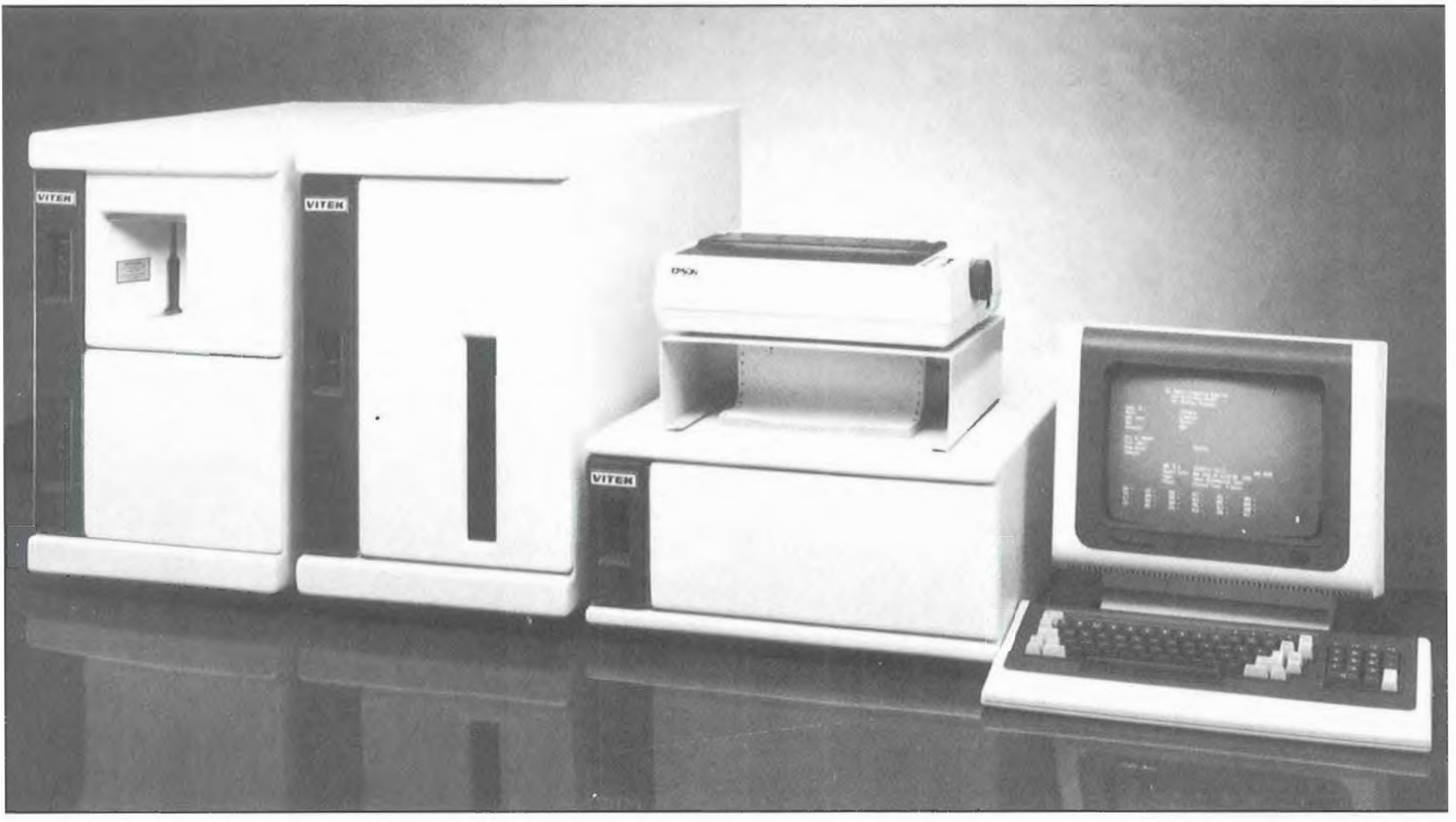

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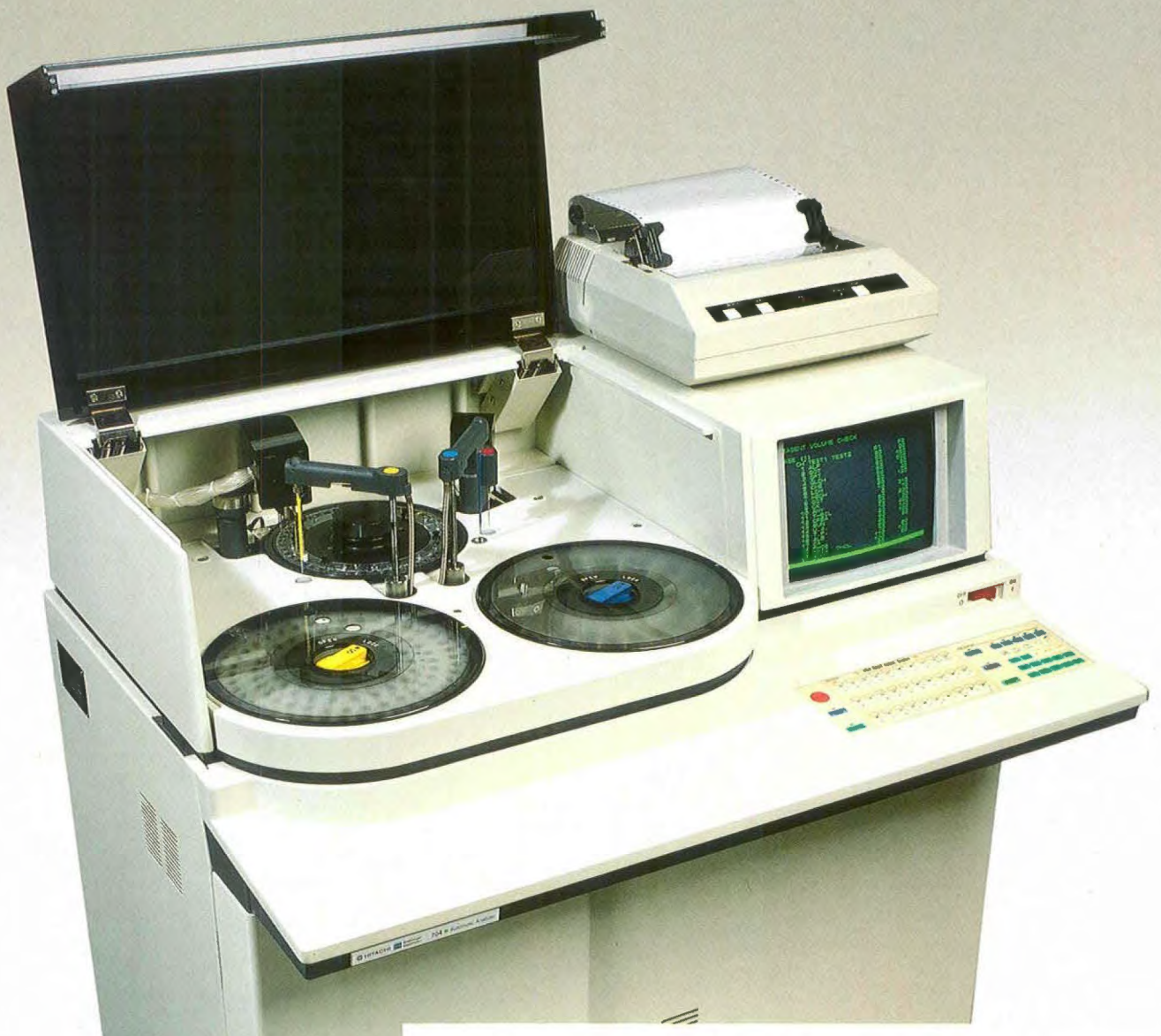

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