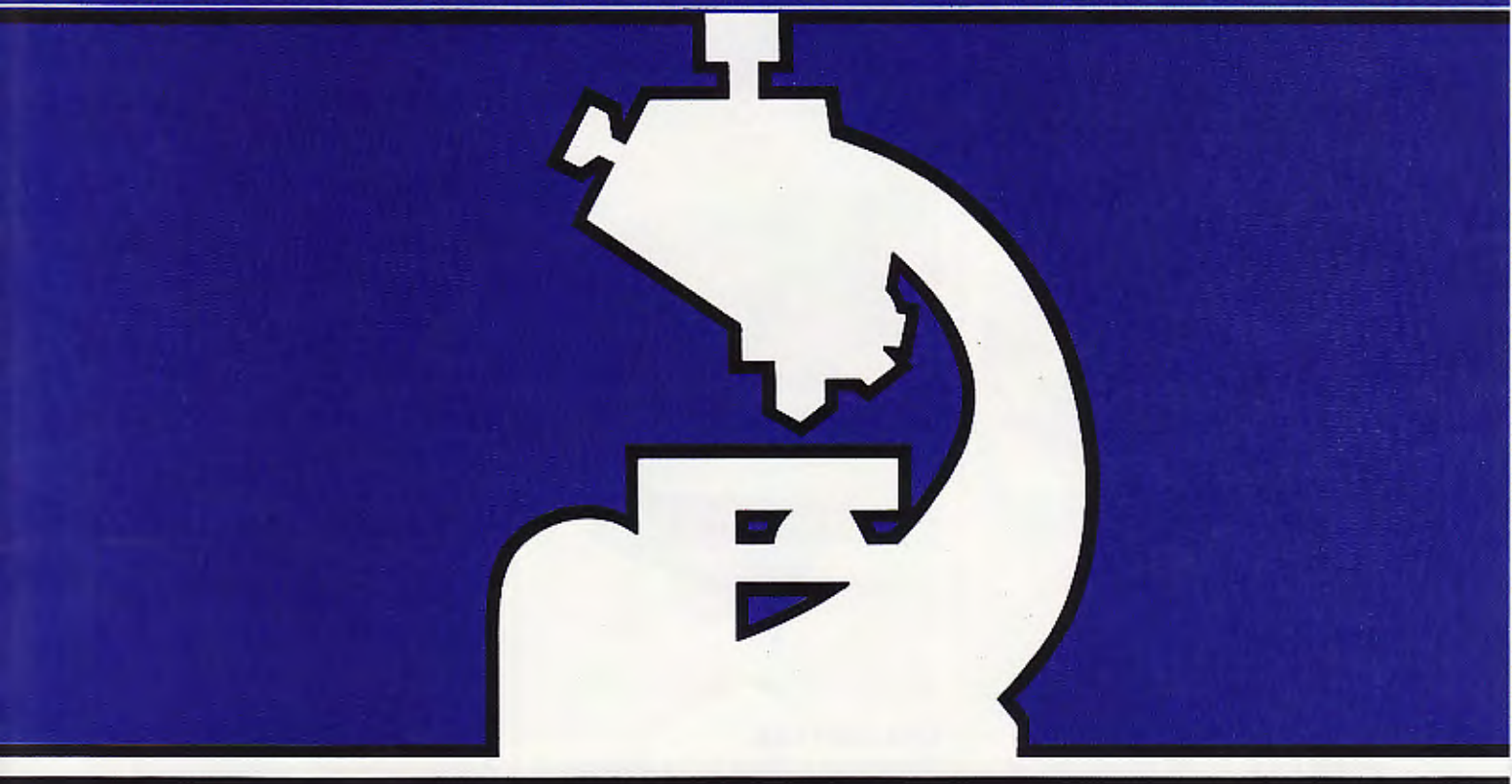
Volume 40 No.1 1986

ISSN.0028-8349

NEW ZEALAND JOURNAL OF

MEDICAL LABORATORY TECHNOLOGY



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THE NEW ZEALAND JOURNAL OF
MEDICAL LABORATORY TECHNOLOGY

Vol.40 No.1 March 1986 ISSN 0028-8349

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Subscriptions to the Journal for non-members requiring delivery in New Zealand is $NZ30.00 for 1 year surface mail paid. Single issues are $NZ10.00 surface mail paid.

Subscription to the Journal for non-members requiring delivery overseas is $NZ30.00 for 1 year plus $NZ4.20 surface mail paid. All subscriptions except for single issues are due in February.

DIRECTIONS FOR CONTRIBUTORS

From Vol. 36 No. 1 all papers published will be in the form known as "Vancouver Style" or Uniform Requirements for Manuscripts submitted to Biomedical Journals. Full details may be found in the New Zealand Journal of Medical Laboratory Technology, Vol. 36, No. 4, page 90 to 109 or from the Editor.

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ADVERTISER INQUIRIES

Inquiries regarding advertising rates and copy or blocks for advertising should be addressed to the Advertising Manager, Trish Reilly, 48 Towai St, St Heliers, Auckland 5, Phone 555-057.

DATES OF PUBLICATION

The months of publication for 1986 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.

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

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

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

Introduction

This, the seventh summary of results to be presented for publication, covers the last four surveys:-

NIPS 27 (November 1984)
NIPS 28 (February 1985)
NIPS 29 (May 1985)
NIPS 30 (August 1985)

These summaries are presented with no intention to pass judgement but rather for individual laboratories and technologists to be aware of their shortcomings and to take the steps necessary to correct their deficiencies.

A comprehensive summary and discussion of results is distributed to each participating laboratory after each survey which details results on a confidential basis and contains comments from the survey referees on the antibodies and/or abnormalities present. Laboratories presenting consistent deficiencies are encouraged to contact their regional transfusion centre for assistance and advice.

NIPS 27 (November 1984)

(a) *Grouping*

114	A^2B	Rh Positive,	R^1R^1,	K–
115	A^1B	Rh Negative,	r'r'',	K–
116	A^1	Rh Negative,	r''r,	K–
117	O	Rh Positive,	$R^{2u}r$,	K–

Comment — Basic errors in the ABO grouping were again evident in this survey. These included laboratories failing to obtain the expected reactions with their typing sera and transcription errors. A number of genotyping problems were also highlighted. Laboratories are continuing to report incorrectly cells that are apparent D_u. A number of laboratories reported cell 117 as being O Rh negative, D^u positive. To reiterate a cell that is D *or* D_u positive is reported as Rhesus positive. The only cell acceptable to be reported as Rh negative is one that is D *and* D^u negative.

(b) *Antibody Screening and Identification*

Serum 114 contains anti-A_1. Only one laboratory failed to detect the presence of this antibody and all who attempted identification were correct.

(c) *Cross Matching*

A number of laboratories failed to detect the incompatibility between serum 114 and (either one or both) of cells 115 and 116.

NIPS 28 (February 1985)

(a) *Grouping*

118	B	Rh Positive,	R^1r,	K–
119	O	Rh Positive,	R_1R_2,	DCT Positive
120	O	Rh Negative,	r'r,	K+
121	B	Rh Positive,	R_2r,	K–

Comment — No errors were made in the ABO grouping phase of this survey, however there were some errors in Rhesus genotyping due to transcription and failure of reagents to give the expected reactions. The positive DCT of cell 119 gave rise to incorrect Kell typing in three laboratories.

(b) *Antibody Screening and Identification*

Serum 118 does not contain a detectable antibody either in the cross match or against routinely available antibody screening cells. It did however contain an antibody against a low frequency antigen, anti-Wr^a.

(c) *Cross Matching*

Due to the positive DCT of cell 119, an apparent incompatibility was present. A number of laboratories failed to detect this reaction. A number of other reactions were detected which resulted in compatible cells being reported as incompatible and in one instance, a transcription error reporting cell 119 as being compatible and 120 as being incompatible.

Through this survey participants were requested to state the precautions carried out in their laboratories when dealing with specimens from suspected AIDS patients. The answers demonstrated a need for guidance and policy from the Health Department in this area.

NIPS 29 (May 1985)

(a) *Grouping*

122	A_1	Rh Positive,	RzR_1,	K–
123	A_1	Rh Negative,	rr,	K–
124	O	Rh Positive,	Ro^ur,	K–
125	O	Rh Positive,	R_1R_1,	K–

Comment — This survey once again highlighted transcription errors, incorrect anti serum reactions and incorrect terminology for the D^u positive cell (124).

(b) *Antibody Screening and Identification*

Serum 122 contained anti-$\bar{c}$ acting by enzyme and indirect Coomb techniques.

All participants detected the antibody in their routine screening and all who attempted the identification were correct.

(c) *Cross Matching*

All laboratories detected the incompatibility with cells 123 and 124 by enzyme and indirect Coombs techniques.

NIPS 30 (August 1985)

(a) *Grouping*

126	B	Rh Positive,	$R_1{}^ur$,	K–
127	B	Rh Positive,	rr,	K–
128	O	Rh Positive,	R_2r,	K–
129	O	Rh Positive,	R_1r,	K–

Comment — A classical clerical error was made by one laboratory in the ABO grouping of this survey. Technical errors were once again apparent with laboratories obtaining incorrect reactions with their anti sera and others failing to test for D^u in apparent D negative samples. The incorrect reporting of D negative D^u positive cells still causes some concern.

(b) *Antibody Screening and Identification*

All participants who screened the serum detected the antibody and all who attempted the antibody identification correctly identified it as anti-D.

(c) *Cross Matching*

Some errors were made in this phase of the survey, the worst being one laboratory who correctly detected the incompatibilities but reported both as being compatible!!

Cell 126 was from a patient who is of the rare D mosaic type and is in fact Rh^B, lacking the A, C and D components of the D antigen, to which she has produced an antibody namely anti-Rh^{ACD}. This antibody reacts with all normal D positive cells and therefore appears to be anti-D. In other words the patient is D positive but has a non auto anti-D in her serum.

General Comment

Since the last summary of results there has been a slight reduction in the number of participating laboratories due to the closure of blood banking operations in two hospitals. Although the survey is distributed to all laboratories undertaking blood banking work, it is disappointing to note that there has not been a 100% return of results for analysis.

It appears that we are still dogged by the traditional source of major errors namely those of a clerical nature, whereby the correct reactions are obtained but incorrect interpretations are written down. This can usually be overcome quite simply by employing independent checks and calling back of results.

Three of the four surveys here presented, included a D^u cell and in each case a number of laboratories failed to check apparent D negative cells for D^u. The misreporting of these cells causes the organisers some concern as in each of the three surveys, a few laboratories were still reporting cells to be Rhesus negative, D^u positive. Once again to reinforce the correct terminology, a cell that is D **or** D^u positive must be reported as Rhesus positive and a cell that is D **and** D^u negative is recorded as being Rhesus negative.

One of the most encouraging features in this series of surveys was that on each occasion all participants who attempted identification successfully identified the antibodies in the sera.

If laboratories are concerned about any matters relating to blood banking, they are encouraged to contact their regional transfusion centres for help and advice.

The survey remains a popular form of external quality control and does so because of the interest shown by participants and their recognition of the fact that the maintenance of good standards is an essential requirement of Blood Transfusion work. Once again the organisers would like to record their appreciation to all participants for their continued support, criticisms and supply of raw material.

The organisers wish to thank Mrs Lorraine Moffat for the typing of survey summaries.

Group A Streptococcal Antibody Titres in Adults

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Abstract

Streptococcal antibody titres to anti-streptolysin O (ASO), anti-hyaluronidase (AH), anti-deoxyribonuclease B (ADNaseB) and anti-streptokinase (ASK) were established in 354 supposedly normal blood donors aged between 16 to 65 years. Geometric mean antibody titres of 93 for ASO, 66 for AH, 108 for ADNaseB and 119 for ASK were significantly lower than that observed in children.

Key Words

Group A streptococcal antibodies, adult titres, ASO, AH, ADNaseB, ASK.

Introduction

Group A β-haemolytic streptococci continue to be important in the aetiology of human streptococcal disease. They are important not only for primary inflammatory components but also for secondary toxicosis and immunological sequelae.[1]

Many intracellular and extracellular antigenic components of streptococci stimulate the production of specific antibodies[1,2]. These antibodies, notably anti-streptolysin O (ASO), anti-hyaluronidase (AH), anti-deoxyribonuclease B (ADNaseB) and anti-streptokinase (ASK), can act as important markers of antecedent group A streptococcal infection. However these antibodies are known to vary with the age of the patient, season and geographical area. Thus, it is necessary to establish baseline titres to help in the interpretation of such antibody titres, where a rising titre cannot be established. A serum antibody level is judged to be abnormally elevated if it exceeds the upper limit of normal for that population. The upper limit is defined as that level exceeded by no more than 20% of a normal population[2,3].

A previous paper has already established the streptococcal baseline titres in a group of 12 year old school children[4]. This paper compares the baseline titres to ASO, AH, ADNaseB and ASK in 354 normal adults derived from normal specimens submitted to the Waikato regional blood bank.

Material and Methods

The serum samples were obtained from 354 supposedly normal blood donors aged between 16 to 65 years in late 1984. The sera were stored at −30°C till tested.

ASO titres were carried out by the microtitre technique adapted CDC procedure using sheep cells and 'Roche' streptolysin 'O' reagent. AH titres were carried out by the microtitre technique adapted from the handbook of Microtitre Procedures (publisher Dynatech Corp. 1972. Editor Theodore B. Conrath) using 'Difco' reagents. The adaptation consisted of adding India ink to the substrate to give a clearcut endpoint. ASK titres were carried out by microtitre technique using 'Fujirebio' Serodia-ASK kit. This kit is different from the previous Kinase kit. This new kit is prepared using artificial gelatin particle carriers instead of the tanned sheep cells used in the old kit. ADNaseB titres were determined by a microtitre technique using the Wampole Streptonase-B kit and Imidazole Gelatin buffer prepared in our laboratory.

Table 1

ANTIGEN	ANTIBODY TITRE	
	MALE	FEMALE
Streptolysin 'O'	93	93
Hyaluronidase	75	58
DNaseB	109	197
Streptokinase	122	116

Geometric mean antistreptococcal titres in Adult Men and Women

Results and Discussion

Although the isolation and identification of bacteria is generally the preferred method for diagnosis of infection, serological testing for specific antibodies can be an important adjunct. However because of the varied infections that streptococci cause it is necessary to perform a range of antibody tests in order to detect antecedent streptococcal infection. For example although high ASO titres are produced in streptococcal throat infections, low ASO titres are produced in skin infections. Thus 60-80% of streptococcal infections are detected by ASO titres alone, 80-90% when both ASO and AH titres are used and 95% when ASO, AH and ASK are used.

Table 1 shows the geometric mean antibody titres for ASO, AH,

Table 2

ANTIGEN	AGE GROUPS			
	16-25 (n=147)	26-35 (n=88)	36-45 (n=62)	>45 (n=57)
Streptolysin 'O'	98	91	94	84
Hyaluronidase	62	59	71	68
DNaseB	112	104	112	101
Streptokinase	119	108	140	115

Geometric mean antistreptococcal titres in adults according to age

ADNaseB, ASK in 354 adults, whilst Table 2 shows the distribution of the results according to age.

All antibody titres were significantly reduced when compared with the respective titres observed in children. This is thought to reflect the lower prevalence of streptococcal infections in adults, and hence less antigenic stimulation.

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Problems Observed with the 1983 and 1985 Proficiency Testing Programmes in Leptospirosis Serology

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Abstract

The results and the methodologies used by laboratories participating in the 1983 and 1985 leptospirosis seriology proficiency testing programmes have been analysed. The variations in methodologies are recorded and the wide disparity of results commented upon.

Introduction

For the last ten years the Reference Immunology Laboratory of the National Health Institute has distributed serological proficiency programmes in a number of fields including *Brucella, Toxoplasma* and *Leptospira* serology. While there is always some variation in results between laboratories, that observed for *Leptospira* serology had been found to be beyond an acceptable range. Therefore with the 1983 programme a questionnaire on methodology was sent to participating laboratories. This was repeated with the 1985 programme.

This paper summarises the findings of these two questionnaires and the results obtained by participating laboratories in the microscopic agglutination test (MAT).

Method and Materials

Sera: These are usually obtained from patients who have sero-converted. They are lyophylised before sending. Usually they are sent as random pairs, such that the laboratory's internal reproducibility can also be assessed.

Questionnaire: A wide range of questions on all aspects of the MAT were asked as well as on other aspects of leptospirosis serology for those laboratories performing other tests.

Results

The results of the questionnaire concerning the media used to grow the antigen and the densities used and how they were obtained are given in tables 1, 2 and 3. In 1983, eight different starting dilutions for the titrations were used with five of the 19 laboratories using 1:50 and five using 1:25. Other starting dilutions used by one or two laboratories each varied from 1:10 to 1:100 with dilutions such as 1:12, 1:30 and 1:32 being employed by some. In 1985, there were nine different starting dilutions among 17 laboratories with four starting at 1:50 and three at 1:10. All others were used by only one or two laboratories. Only one laboratory in the 1985 programme stated that it would titrate to the endpoint. Otherwise final dilutions used varied from 1:800 to 1:51,200. Twelve different final dilutions were quoted by the 19 laboratories in 1983 and 14 different ones by the 17 laboratories in 1985. The incubation times used by the different laboratories and the incubation temperatures are given in tables 4 and 5.

In order to compare the results of the various laboratories, firstly all titres given were converted onto the <1:25, 1:25, 1:50 etc scale such that the highest dilution on that scale up to the titre quoted was used. A number of mathematical techniques exist for expressing the "spread" of serological results. One such technique minimises the difference between a 'negative' result (<1:25) and a low positive result (1:25). This is the Mean Absolute Deviation (MAD). The titres reported for each serum were converted from the geometric scale to the arithmetic scale such that <1:25 became 1, 1:25 became 2, 1:50 became 3, 1:12,800 became 11, etc. The means of all the results were calculated on this arithmetic scale and from these were calculated the MAD for each set of sera.

In addition the Standard Deviation (SD) around the geometric mean was calculated for each set of sera. This is another technique for the expression of the spread of results. It assumes that a titre of <1:25 implies that the level of antibodies in that serum is zero. For this determination the geometric titres were again converted to an arithmetic scale, but <1:25 became 1 and values for all subsequent titres were calculated as follows for 1:25. The number 1 was added to each reciprocal, thus 1:25 became 26. The usual method of determining standard deviations was applied to the logarithm to base 10 of all these values. Where identical serum pairs were sent, the results from each were combined.

Table 1

MEDIA USED FOR GROWING MAT ANTIGENS

Media used	No. of Laboratories using media in 1983 programme	1985 programme
EMJH-like media	14	11
Ellinghausen	2	2
Chang	1	1
Other	2	3
Total	19	17

Table 2

METHOD USED FOR DETERMINING DENSITY

Method used	No. of Laboratories using method in 1983 programme	1985 programme
Visually	10	10
Microscopically	3	1
Colony Counter	4	2
Spectrophotometer	1	4
Age of Culture	1	0
Nephelometer	1	0
Total	20*	17

* One laboratory used two methods

Discussion

The methodology for the MAT has been standardised for some

Table 3

ESTIMATED ANTIGEN DENSITY USED IN MAT

Density used	No. of Laboratories using density in 1983 programme	1985 programme
Visual	3	4
10^7	0	1
10^8	11	7
10^9	0	1
Spectrophotometer	1	4
Brown's tube	1	0
Total	16	17

time, although it appears that some laboratories have not considered applying it. It was most recently set down again at the meeting in 1982 of the International Committee on Systematic Bacteriology Subcommittee on the Taxonomy of *Leptospira* (Stallman 1984). According to this Subcommittee the MAT should be performed as follows:

> *Microscopic* agglutination test. Well-growing live cloned cultures with densities of approximately 2 x 10^8 leptospires per mL are used as antigens.
> Serial two-fold dilutions of serum in phosphate-buffered saline (pH 7.2) starting at 1:25 are prepared. Equal amounts of antigen and diluted serum are mixed and incubated 1.5 to 4 hours at 30°C. The serum-antigen mixtures are then examined by dark-field microscopy for agglutination. The endpoint is defined as that dilution of serum which shows 50% agglutination, leaving 50% free cells compared with a control culture diluted 1:2 in phosphate-buffered saline.

Table 4

MAT INCUBATION TIMES USED BY LABORATORIES

Incubation time (hr)	No. of Laboratories using time in 1983 programme	1985 programme
0.5	1	0
1.0	2	2
1.25	1	1
1.5	3	4
1.75	0	1
2.0	9	6
2.5	0	1
3.0	1	2
2.0-3.0	1	0
1.5-4.0	1	0
Total	19	17

Table 5

MAT INCUBATION TEMPERATURES USED BY LABORATORIES

Incubation temperature (°C)	No. of Laboratories using temperature in 1983 programme	1985 programme
20	0	1
28	2	3
29	1	0
30	9	4
32	1	1
37	6	8
Total	19	17

This shows that while the medium for growing the antigen is not fully specified the concentration of antigen is. Similarly, while some variation in time of incubation is accepted, a standard temperature is required. If none of these variations mattered and similar results were obtained by the laboratories then there would be no problem. However, when identical sera can produce a normal distribution of titres which range from <1:25 to 1:51,200, then it is considered that this is a cause for concern.

Leptospirosis is a notifiable disease in New Zealand and due to its diffuse symptomatology and due to the problems associated with the isolation of the organisms, serology remains the diagnostic technique of choice. If there is this type of variation between laboratories then comparable diagnoses become impossible.

As a result of the comment sent to laboratories after the 1983 survey, it was hoped that there might be some improvement. The comparison presented in table 6 in fact shows the reverse, with both the MAD and SD having increased for each of the antigens whose sera were tested. These results draw attention to a need for standardisation of the leptospiral MAT. As only a relatively small number of laboratories is involved, this should not pose too big a problem.

Acknowledgement

This paper is published with the authority of the Director-General of Health, Department of Health, Wellington.

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Table 6

MEAN ABSOLUTE DEVIATIONS FOR SERA IN PROGRAMMES

Antigen	*1983 Programme* Serum No.	Geometric Mean Titre	Mean Absolute Deviation	Standard Deviation	*1985 Programme* Serum No.	Geometric Mean Titre	Mean Absolute Deviation	Standard Deviation
Pomona	2,9	5.63	1.33	5.79	4,10	7.17	1.66	5.91
	4,6	4.78	1.32	5.85	5,9	8.53	2.10	10.21
	5,8	6.39	1.58	6.56				
Hardjo	1,7	4.41	1.44	6.91	2,8	9.00	1.88	8.40
Tarassovi	3,10	6.72	1.67	11.97	3,6	7.61	2.32	10.32
Icterohaemorrhageae	2,9	2.72	1.00	12.91	5,9	3.03	1.91	14.50
					7	4.00	2.44	19.30
Mean			1.39	8.33			2.05	11.44

A Review of the Hepatitis Antigen Proficiency Survey (HAPS)

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Introduction

Quality control of hepatitis serology is of considerable importance, as accurate clinical diagnosis and a low incidence of post transfusion hepatitis depends on a high standard of hepatitis serology.

In 1981 the Auckland Blood Transfusion Centre (ABTC) realised the need for improved quality control of hepatitis testing in New Zealand. Accordingly, in 1981, sets of experimental sera were forwarded to a number of laboratories known to be undertaking hepatitis testing. After evaluation of the test results, a decision was made to continue with the experimental quality control programme under the name of the Hepatitis Antigen Proficiency Survey (HAPS). Between 1981-1984 four panels of sera were released to New Zealand laboratories. Recently the programme has been brought under the auspices of the Testing Laboratory Registration Council of New Zealand (TELARC).

To ensure that there was external quality control of the Auckland Hepatitis Laboratory, we began to participate in the USA Bureau of Biologics Hepatitis Quality Assurance Programme as well as the hepatitis proficiency survey programme prepared by the New South Wales Red Cross Blood Transfusion Service. In addition there has been liaison with the United Kingdom through their Hepatitis Proficiency programme.

In this paper, our experience to date is summarized.

Materials and Methods

Serum Samples

Sera positive or negative for hepatitis B surface antigen (HBsAg) were included in each survey. HBsAg samples were subtyped for ad and ay and diluted in serum known to be negative for hepatitis B markers. In the latest survey samples positive for antibody to hepatitis B antigen (anti-HBs) and antibody to hepatitis B core antigen (anti-HBc) were also included.

Sodium azide 0.1% was added to all sera and samples were aliquotted in 1 mL quantities.

Quantitation of HBsAg in ng/mL was performed by radio-immunoassay (RIA) technology (Abbott Laboratories) comparing preparations of HBsAg of known HBsAg concentration with the HAPS samples, both before and after aliquotting.

Distribution

Sera were sent in liquid form in sealed vials carefully packaged in absorbant material and in sealed plastic bags. In the first three HAPS surveys, samples were sent by air freight and in HAPS 4 by airmail. During the latter distribution, experiments were carried out to ensure that there was no untoward deterioration of hepatitis markers during the longer transport at room temperature.

All sera samples were coded and participants were asked to return their results within 2 weeks. Results were analysed using the code number for each laboratory to ensure confidentiality. Regional Blood Transfusion Directors were given the code numbers of public laboratories in their region carrying out blood donor unit accreditation for HBsAg.

Preparation of Reports

All results returned to the ABTC were entered into an Apple II computer using a General Manager Programme. This method enabled grouping of results from different laboratories using various technologies to be appropriately formatted. A review of the results was then prepared for general distribution.

In each survey various comments were received which were taken into account in the design of the next HAPS survey.

Results

Table 1 outlines the number of participants in each of the four HAPS issues. Information is also given on the methodologies used by laboratories between 1981-1984.

Table 1

		HAPS Survey Number							
		1		2		3		4	
		No	%	No	%	No	%	No	%
Labs using:	RIA	7	22	22	60	12	32	5	15
	EIA	-	-	6	16	10	27	18	53
	PHA	30	94	36	97	30	81	23	68
More than one methodology		6	19	9	24	12	32	10	29
No. of participating laboratories		32		37		37		34	

Numbers of laboratories participating in HAPS and methodologies used in HAPS 1-4.

The number of participating laboratories has remained fairly steady but appears to cover most laboratories performing hepatitis testing. Throughout the 4 year period although the majority of laboratories have used passive haemagglutination assay (PHA) techniques, there has been a marked swing towards enzyme immunoassay (EIA) technology which is now used by 53% of laboratories. Accordingly, there has been a decline in the number of laboratories using PHA and RIA techniques.

Sensitivity of detection of HBsAg

There has been a significant improvement in the ability of laboratories to detect HBsAg at low levels. This has resulted from the introduction of more sensitive test methods and many can now detect levels of HBsAg below 2 ng/mL. However, those laboratories using exclusively PHA methods did not reach this level of sensitivity and could only detect HBsAg at the level of 10-20 ng/mL. The best of the RIA or EIA technologies detected HBsAg at levels of between 0.2-0.5 ng/mL.

Verification of positive results

Both PHA and EIA tests are prone to false positive results some of which are repeatably positive but prove to be negative by another methodology e.g. RIA. False positives were commonly recorded by laboratories which did not confirm their PHA positives by EIA, RIA or inhibition techniques. Inhibition techniques appear to be seldom used by laboratories.

Detection of subtypes of HBsAg

The HAPS 4 results suggest that all techniques being used in New Zealand would pick up both ad and ay subtypes of HBsAg with comparable sensitivity.

Discussion

Over the period 1981-1984, there has been an encouraging trend towards greater sensitivity and accuracy of results. This has been largely achieved by the more widespread use of EIA technology and an increase in the number of laboratories using more than one methodology.

The continued high level of participation by laboratories suggests that the survey is a useful internal quality control of test procedures. Accordingly, HAPS has been accepted by TELARC as a formal national quality control programme.

Problems still remain in some areas. Firstly, it is generally recognised that for both clinical and transfusion purposes, tests

should be capable of detecting less than 2 ng/mL of HBsAG. A proportion of laboratories cannot reach this standard at the present time and may need to move towards RIA or EIA methodologies.

Secondly, verification procedures should be used on any sample detected as being positive for HBsAg. This requires inhibition procedures or testing by an alternative methodology. With weak positives, a positive test for anti-HBc is a useful support test as most positive HBsAg samples are also positive for anti-HBc. In some countries, e.g. Canada, all HBsAg positive results detected in routine testing are verified by a central reference laboratory. More use of reference laboratories should be made in New Zealand.

Sufficient information has not yet been obtained to comment on the sensitivity of tests to detect other hepatitis B markers. In future surveys more attention will be focused on this area.

In summary, the HAPS survey has proved a useful addition to the quality control surveys being carried out in New Zealand. Participation by the majority of New Zealand laboratories indicates that this type of survey, if further developed and expanded, will provide a useful role in ensuring high standards of hepatitis serology testing throughout the country.

The Echis Ratio. A useful test in the diagnosis of Vitamin K deficiency

Christine M. Hickton FNZIMLT, Lynette M. Honeybone ANZIMLT
Haematology Department, Christchurch Hospital, Christchurch

Introduction:

Vitamin K, a fat soluble vitamin, is essential for the gamma carboxylation of the precursor forms of the coagulation factors II, VII, IX and X to produce the active factors. The non-carboxylated forms of these proteins can be activated following stimulus of the clotting process but at a rate which is too slow to provide physiologically adequate haemostasis and clot formation[1].

The venom of the snake Echis carinatus is able to activate both carboxylated and non-carboxylated forms of factors II and X[2,3] to form thrombin and subsequently a fibrin clot. Echis venom has been used in the laboratory to distinguish between Vitamin K deficiency and hepatocellular disorders both of which produce a prolonged prothrombin time. This brief report describes our experience using the Echis clotting time to distinguish between hepatocellular failure and suspected Vitamin K deficiency, a relatively common problem in most coagulation laboratories.

Material and Methods:

4.5mL of blood was collected into siliconised vacutainer tubes (BD 6464) containing 0.5mL of buffered sodium citrate solution 0.105M.

Samples were centrifuged at 2550g for 10 minutes at 4°C and the plasma separated and stored at 4°C until tested.

Prothrombin time was measured essentially as described by Biggs[4] using New Zealand Standardised Thromboplastin prepared locally. Results were expressed as a ratio of

$$\frac{\text{Patient clotting time}}{\text{Control clotting time}}.$$

Echis carinatus venom (Sigma) was diluted in saline to a working concentration of 0.3mg/mL. This reagent was stable stored at −30°C until used.

200 μL of pooled normal plasma or patients plasma was pre-warmed to 37°C in 12 x 75mm plastic test tubes for 1 minute. After this time 100 μL of Echis carinatus venom was added and the time taken for clot formation noted.

These concentrations were chosen to give a clotting time using normal plasma of 14-18 seconds to allow the results to be easily compared to the Prothrombin results.

The tests were performed in duplicate and reported as a ratio, as described for the Prothrombin time.

Table 1

	Prothrombin Ratio	*Echis Ratio*	*Clinical Diagnosis*
1	2.6	1.1	warfarin therapy
2	2.9	1.1	warfarin therapy
3	1.3	1.0	warfarin therapy
4	2.3	1.1	warfarin therapy
5	2.2	1.2	warfarin therapy
6	10.8	1.2	warfarin therapy

Table 2

	Prothrombin Ratio	*Echis Ratio*	*Clinical Diagnosis*
1	1.9 (1.1)*	0.9	obstructive jaundice
2	3.7 (1.2)	1.1	rat poison ingestion
3	3.2 (1.1)	1.1	obstructive jaundice
4	1.8	1.2	malnutrition
5	3.2 (1.1)	1.2	obstructive jaundice
6	1.8 (1.2)	1.1	Acute Myeloid Leukaemia

* Results in brackets are post IV Vitamin K.

Results:

Prothombin Ratio and Echis Ratio were performed on;

a) 6 patients receiving oral anticoagulant therapy (Table 1).
b) 6 patients with clinical details suggestive of vitamin K deficiency (Table 2).
c) 6 patients with hepatocellular disease (Table 3).

All six patients receiving oral anticoagulant therapy (Table 1) had prolonged prothrombin ratio with normal Echis ratio.

In the six cases of presumed Vitamin K deficiency that we tested (Table 2), there was a normal Echis ratio despite an increase in the prothrombin ratio. In the five patients whose Vitamin K deficiency was treated with an intravenous injection of Vitamin K, there was normalisation of the prothrombin ratio within 24 hours. In other patients with documented liver disease (Table 3) there was prolongation of both the prothrombin ratio and the Echis ratio. Of the two patients who were treated with Vitamin K injection and on whom we received follow up samples, there was a slight shortening of the prothrombin ratio, indicating that the abnormality was mainly due to a lack of production of coagulation factors although there was some degree of Vitamin K deficiency.

Discussion:

Other techniques which have been used to distinguish Vitamin K deficiency from liver disease are assay of factor V, (factor V is reduced in liver disease but does not require Vitamin K for its production), or a clinical trial of Vitamin K.

We have found the Echis ratio to be a simple and inexpensive

Table 3

	Prothrombin Ratio	*Echis Ratio*	*Clinical Diagnosis*
1	3.7	3.5	liver disease
2	9.6	3.0	hepatic failure
3	1.8	2.0	decreased liver function
4	2.1	1.7	liver disease
5	5.7 (3.6)*	2.3 (2.2)	hepatitis B
6	2.9 (2.1)	1.8	hepatitis

* Results in brackets are post IV Vitamin K.

test that rapidly distinguishes between the coagulation abnormalities due to Vitamin K deficiency and those due to other hepatocellular disease. This confirms the experience of others[3].

Acknowledgements:
The authors wish to thank Drs D.N.J. Hart and D.C. Heaton for their help in the preparation of this manuscript.

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3. Corrigan, J.J. Jr., Earnest, D.L., Factor II antigen in liver disease and warfarin induced vitamin K deficiency. *Am J Haematol,* 1980; **8:** 249-255.
4. Biggs Human Blood Coagulation Haemostasis and Thrombosis 1972. Blackwell Scientific Publications.

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 1986** with the Secretary, NZIMLT, Haematology Dept, Christchurch Hospital, Christchurch. The successful applicant will be announced at the Annual Scientific Meeting.

The Pacific Way

New Zealand Red Cross and The Pacific Paramedical Training Centre

Jerry Talbot, Secretary General, The New Zealand Red Cross Society (Inc.,)

In the early 1970's the enthusiasm of one of the New Zealand Red Cross Society's national executive members, Dr Ron McKenzie, saw the recognition of the need to offer training in medical laboratory technology to developing countries in the Pacific. Acknowledging the important role played by paramedical personnel in the delivery of health care led to the offer of a Red Cross scholarship to a laboratory technician from Kiribati to come to New Zealand for three months to receive technical training.

By 1980, the development of the Red Cross programme co-ordinated by Dr McKenzie was well proven. In the period 1975-80, nine laboratory technicians had been to New Zealand for training which had been requested by the island authorities. The Red Cross were receiving requests they could not meet for the lack of funds and concern about overstretching training facilities. Trainees were being placed in selected hospitals where technology appropriate to their own island laboratories was most readily available. The Red Cross also depended upon the goodwill of key medical laboratory technologists in these hospitals to co-ordinate and supervise the training programme. We were never disappointed in this regard. Already busy technologists gave a great deal of their time and expertise in the hospitals and, in many cases, did a great deal to look after the trainees outside the laboratory.

With the redevelopment of the Wellington Hospital, some laboratory space became available and the Hospital Board agreed to allow the Red Cross to rent 1,700 square feet. This then became the basis on which it became possible to develop a specially equipped facility to train individuals from developing countries in areas of medical laboratory technology. Dr McKenzie and Professor H.C. Ford, Wellington Clinical School of Medicine, became co-chairmen of the Pacific Paramedical Training Centre as we know it today. The Ministry of Foreign Affairs provided a grant which made it possible to appoint a Tutor/Co-ordinator and other essential support and guidance came from the Health Department and the New Zealand Institute of Medical Laboratory Technology.

From the Red Cross point of view this wider involvement with other agencies has allowed, not only a much increased capacity to meet important training needs, but has brought together a range of skills, resources and contacts with operating partners that may not have otherwise been possible.

Why should Red Cross be interested in such a specialised field? The traditional link at an international level between blood banking and Red Cross explains only part of the interest. An overseas branch of the New Zealand Red Cross was formed in Western Samoa in 1952. As an organisation, there has been an historical interest in building up Red Cross committees within the Pacific Islands so that they may become active in supporting the developing health services of their countries and to enable an important localised response in times of disaster, especially those caused by hurricane.

Complementing the attempts to nurture the growth of Red Cross in the Pacific, the New Zealand Red Cross has undertaken a number of larger projects, many of which have been directed towards help with raising standards of health. For example, large financial grants were made to the Fiji School of Medicine to enable it to upgrade its library, a splint making workshop was established and a splint maker trained to service a programme for disabled children in Western Samoa and a physiotherapy clinic was built in Tonga. Big is certainly not always best. Red Cross has also been involved in important small scale projects — providing bicycles as transport for public health nurses on Tuvalu, travel costs for nurses to attend courses in Papua New Guinea and employing a blood bank assistant in Vanuatu.

Dr Ron McKenzie.
National Executive Member, New Zealand Red Cross Society, Co-Chairman Pacific Paramedical Training Centre.

The development of independent states in the Pacific has seen a widening of our contacts over the years. Within the Red Cross context, New Zealand hosted the first Pacific Regional Meeting of

Francis Tavalo, a Red Cross trainee from the Solomon Islands at work. Francis undertook a course early in 1985 studying diarrhoeal diseases and acute infections of childhood.

Red Cross Societies in 1983. Eight island countries came together with other interested Red Cross Societies and decided their own priorities for future development. This regional structure for deciding Red Cross directions in the area has been formalised within the League of Red Cross Societies — our World federation.

This organisational development reinforces important linkages within the international community and there have been implications for the P.P.T.C. Through New Zealand Red Cross' own intiatives, scholarships for study in New Zealand have been awarded to trainees from the Cook Islands, Western Samoa, Tonga, Fiji, Kiribati, Vanuatu, Solomon Islands, Papua New Guinea and, further afield, Indonesia and South Korea. In recent times, however, the League of Red Cross Societies' secretariat, based in Geneva, has more fully appreciated the value of the facilities provided by the P.P.T.C. and in 1985 awarded their own scholarships to allow two blood bank personnel, one from the Philippines and one from Swaziland, to undertake study in Wellington.

Red Cross is proud to be part of the P.P.T.C. As an organisation, Red Cross has the advantage of a set of international contacts, we have some funds to support the institution and to bring trainees to New Zealand and we are able to provide accounting support to meet some of the administrative requirements. The other partners in the management of the P.P.T.C. bring the range of additional skills and resources necessary for its continued successs.

Three courses are being offered in 1986 by the Pacific Paramedical Training Centre. They are:

LABORATORY EQUIPMENT MAINTENANCE AND MANAGEMENT COURSE
February 10 — April 4, 1986 (8 weeks).

This course is designed for senior laboratory workers who are responsible for equipment maintenance and the general administration of their work areas. Topics will include basic wiring (simple circuitry), plugs, fuses, replacement wiring, use of tools and checking instruments. Maintenance of microscopes, photo electric equipment, centrifuges, waterbaths, stills,, balances, checking of autoclaves, commissioning of new equipment and laboratory safety, including the storage of chemicals and firefighting. Preparation of standard curves and quality control. Revision of basic chemistry and calculations. Preparation of standard laboratory solutions and reagents. Laboratory personnel management, equipment maintenance programmes, budgeting and laboratory statistics and record keeping. A first aid training programme will be run in conjunction with this Course.

BLOOK BANK TECHNOLOGY/HAEMATOLOGY
May 5 — July 25, 1986 (12 weeks)

The Course will cover both the theoretical and practical aspects of basic blood bank technology and will include the following topics:

1. Blood bank organisation and management.
2. Donor motivation, recruitment, selection and documentation procedures.
3. Blood grouping and antibody screening.
4. Cross matching.
5. Haemolytic disease of the newborn.
6. Transfusion reaction investigation.

MEDICAL MICROBIOLOGY
September 1 — November 2, 1986 (12 weeks)

This course includes the laboratory diagnosis of sexually transmitted diseases, laboratory diagnosis of acute respiratory infections and diarrhoeal diseases, general medical microbiology and serology. (Serology will include Hepatitis B methods).

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- ☒ The Data Manager would not function as stated.
- ☒ The RA-1000 is difficult to operate.

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- ☑ Data Manager units are now operating very successfully in Australia and New Zealand.
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Membership fees for the year beginning April 1, 1985 are:
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All membership fees, changes of address or particulars, applications for membership or changes in status should be sent to the Membership Secretary at the address given above.

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

CORRESPONDENCE

Re: Aids and A.C.C.

B. Cornere,
The Convenor, Aids Task Force
N.Z. Institute of Medical Laboratory Technology (Inc.)
c/o Department of Microbiology
Green Lane Hospital Auckland

Dear Mr Cornere,

Further to my letter of the 2 August, the problem of the acceptance of the disease AIDS as an occupational disease has been frequently raised. You will appreciate, of course, that by now the Corporation has defined its attitude towards claims that may be lodged from persons who may suffer from AIDS.

Basically, the Accident Compensation legislation excludes any claim for compensation based on disease. An exception, however, occurs where the disease can be related to the person's occupation. In technical terms, compensation will be paid for any disability arising from disease which is due to the nature of the person's employment.

Applying the legal test as set out in the legislation to the disease AIDS, claims would be acceptable if it could be shown that the disease was contracted as a result of the person's work in a laboratory or during the course of the person's work by coming in direct contact with infected material or by receiving wounds from an object that carried the AIDS virus.

I trust that the foregoing comments will prove to be of assistance.

Yours sincerely
H. Lynch
Compensation Controller

Study Leave

Circular Letter (Hosp) No. 1985/115
Chief Executives of Hospital Board and Area Health Boards

Dear Sir/Madam
APPROVALS FOR STUDY LEAVE

1 The Minister has recently given general approval to hospital boards and area health boards to pay salaries, grants or travelling allowances and expenses to any employee while (a) undergoing study or training (whether in New Zealand or elsewhere) or (b) while attending any conference or meeting provided that:

(i) the purpose of the study, course conference or meeting is for training or staff development and is relevant to the employee's position (note that this does not include meetings of employee organisations); and

(ii) the duration of the study, training course conference is less than 42 days; and

(iii) payments of grants are limited to actual and reasonable accommodation expenses (up to whatever maxima may be set by the Health Service Personnel Commission from time to time); and

(iv) payments of fares are limited to economy class fares.

2 Leave for meetings or conferences of employee organisations is overseen by the Health Service Personnel Commission.

3 Applications to pay salaries etc for courses of study, conferences, etc for longer periods should be directed to the Hospitals Staffing Section of the Department of Health.

P.G. O'Connor
for Director
Division of Hospitals

Re: Single Banding of Salary Grades

Mr T. Neilson
Health Service Personnel Commission
P.O. Box 10-242 Wellington

Dear Mr Neilson

I have been instructed by the National Council of NZIMLT to write to you urging clarification regarding the position of banding.

Prior to the establishment of your Commission the former Laboratory Officers Salaries Grading Committee were responsible not only for the setting of the position grade but also determining the step at which a new appointee would start.

With the establishment of the Commission it was our understanding that an appointee would commence at the salary appropriate to the grade which was determined by the HSPC. This has always had the full support of this Council although the former Laboratory Officers Salaries Grading Committee were anxious that there be double banding in order to offer some increased salary prospects for each appointee.

It is still the view of this Council that single banding should apply which would mean that a person appointed to a position which represents a promotion would start at the bottom step of the grade appropriate to that position. After 12 months they would then move to the top step of that grade. Council is also under the

impression that this is supported by the Commission but there does seem to be some variation in interpretation throughout the country.

I would be grateful if you could clarify the position so as we can then make it known to our members.

Yours sincerely
B.T. Edwards
Secretary NZIMLT

Single Banding of Salary Grades

Mr B.T. Edwards
Secretary
N.Z. Institute of Medical Laboratory Technology (Inc)
Haematology Department
Christchurch Hospital
Private Bag Christchurch

Dear Mr Edwards,

The Commission has determined gradings for positions for hospital and area health boards and Boards have been advised. With the exception of some boards, authority to determine a commencing salary within the grading range of the position now lies with specified officers of the board.

In relation to laboratory positions, there is now no broad banding and all positions are single graded.

Yours sincerely
M.J. Chapman
for Chief Executive H.S.P.C.

Grading of Staff

Chief Executives of Hospital and Area Health Boards

Dear Sir/Madam

Recently we issued a comprehensive list of gradings of positions in the health service and said in our covering letter that with few exceptions, positions were no longer broadbanded.

Prior to the issue of that list there may however, have been instances where employees were appointed at a lower grade than that now determined for the position and were to "work their way through" to the substantive grade, e.g. grading for the position say grade 5 and person appointed at grade 4. In such cases where employees are still on the lower grade they are to be promoted to the substantive grade for the position. Any such promotions should be effective from 30 August 1985.

Yours faithfully
A. Houlihan
for Chief Executive H.S.P.C.

Re: Grading Applications

Dear Sir,

It would be helpful if your Association could advise its members that they can expect any grading application (either submitted by their board under Section 26 or a personal application under Section 27) will normally take at least two to three months to complete. If inadequate information is provided or there are other matters to be researched and resolved in relation to the application it may take longer. While we appreciate that your members get frustrated at delays they should not have unrealistic expectations that we can process large numbers of applications without some backlogs and delays. As we have explained before we backdate the date of application of reviews where this is appropriate to avoid disadvantaging the applicant.

Yours faithfully
Paul Geoghegan
for Chief Executive H.S.P.C.

New State Servant on Transfer Loan Scheme — Eligibility for Health Service Employees under the State Services Conditions of Employment Act 1977

HSPC Circular 1985/86
Chief Executives of all Hospital Boards and Area Health Boards

Dear Madam/Sir

1 Being able to put the right person in the right place is essential to the efficient and flexible functioning of the Health Service. The demand for employees with different skills at different locations varies and during a career an employee may have to change locations a number of times. Access to housing finance is often a major factor affecting an employee's decision to transfer.

2 A recent decision of Government has resulted in employees of the Health Service becoming eligible for the State Servant on Transfer Loan Scheme. The scheme, which covers most State employing authorities, guarantees eligible employees' access to concession mortgage finance. Eligibility is restricted to those employees whose conditions of employment are determined by negotiation under the provisions of the State Services Conditions of Employment Act 1977 (i.e. staff employed in terms of Health Service and Ministerial Determinations).

3 The Loan Scheme itself has recently undergone major changes and these are specified below:

(a) Loan Amounts
The Government has approved a new loan maximum of $50,000 or 70 percent of valuation (whichever is the lesser) to either build or buy a home. This is comparable to loan amounts available from major private sector mortgage lending institutions.

(b) Interest Rate
In order to make the high loan amount available and to recognise loan market conditions, it has been necessary to put the mortgage interest rate at 16 percent. This still represents an interest subsidy of up to 5 percent on current market first mortgage interest rates. The loan maximum will reduce the need for high cost second mortgage finance.

The scheme's loan maximum and interest rate will be reviewed annually to reflect movements in the terms and conditions of private sector first mortgages. The interest rate review will affect both new and existing clients. Any adjustment in the interest rate will be made on the annual review date of loans. For example if private sector first mortgage rates fall the scheme's interest rate will be reduced accordingly.

It is understood that any concessionary interest rate above 14% will not attract fringe benefit tax.

(c) Eligibility
Applicants must:
(i) Be employed under a Determination prescribed in terms of the State Services Conditions of Employment Act 1977;
(ii) On transferring from one locality to another be entitled to a reimbursement of transfer and removal expenses.

Transferring employees with dependants are eligible for a loan to purchase their first home. Those without dependants must have owned a house at their former location.

(d) Termination
Employees with a State Servant on Transfer Loan who leave the State Services either by resignation or retirement will have their interest rate increased immediately to a rate in line with current private sector first mortgage rates.

(e) Implementation of the New Scheme
The new scheme is effective from 23 September 1985.

All employees who have transferred in the 2 years prior to 23 September 1985 and who are eligible under the new scheme may apply for a loan provided they have not already purchased a house at the new location.

Employees who transferred in the 2 years prior to 23 September 1985 may make applications for loans under the new scheme within three years of their transfer.

(f) Existing State Servant on Transfer Loan Scheme Clients
The interest rates applying to all transfer loans granted under the previous scheme will be reviewed. The review will be carried out in terms of the Housing Corporation's review of interest rates of its modest income earner clients and the same review conditions will apply. The details of this have yet to be finalised.

Any inquiries concerning the State Servant on Transfer Loan Scheme should be directed to the Housing Corporation.

4 As further information becomes available, the Commission will issue explanatory circulars e.g.

Course 1:

South Pacific Congress on Medical Laboratory Science

Centre:
Sydney Hilton Hotel, 19-22 August 1986

Content:
August 19
Education day — Where we are now
August 20-22
Profferred papers

Course 2:

An Immunology Update

Content:
Lectures Covering

a) **Selected Topics:**
Cells and tissues of the Immune System
The Complement System
Inflammation
Immunity to Infection
Defects in the Immune System
Auto-Immunity

b) **Immunology In Practice:**
Immunoprecipitation Techniques
Immunofluorescent Procedures
Immunoenzymes Assays
Cell Culture Techniques
Hybridoma Technology, Monoclonal Antibodies

Authors:
Dr J. McKay, Mr D. Haines,
Immunology Department,
Wallace Block Auckland Hospital.

Centres:
Auckland, Hamilton, Napier, Dunedin.

Dates:
September 1986, exact dates to be advised.

Course 3:

Virology Seminar

Content:
Topics to include:

a) Concepts of Diagnostic Virology.

b) Laboratory Investigational procedures.
Historical Techniques — "How did we do it".
Present day methods including rapid virus diagnosis.
Future prospects — "Where are we going".

c) Overview of viral diseases both endemic and exotic.

d) Antiviral agents and vaccines.

Author:
Elizabeth Poole, Scientific Officer
Virology Department,
Dunedin Hospital.

Centres:
Subject to sufficient interest it is planned to hold this one day course in the following areas:-

Auckland, Hamilton, Tauranga, Napier, Palmerston North, Wellington, Nelson and Christchurch.

Dates:
November 1986, exact dates to be advised.

Course 4:

The Clinical and Laboratory Aspects of Infectious Hepatitis

Outline:
A two day workshop including:-

1. Lectures on Classification, Epidemiology, Diagnosis and Control of Hepatitis.
2. Practical sessions covering new serological tests for Hepatitis markers.

Speakers:
Invitations have been extended to speakers who are acknowledged experts in this field.

Arranged by:-

Mr A. Milne
Whakatane Hospital, Whakatane

Mr I. Steed
Auckland Blood Transfusion Service

Centre: North Shore Hospital Laboratory Complex.
Date: May 22, 23, 1986

Course 5:

Microcomputer Workshop

Outline:

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Technicon H·1's flexible reporting system enables laboratories to issue to the wards or doctor only that information which they require – the remaining information is held on hard copy should further interpretation be required.

system in the world, providing to single cell level.

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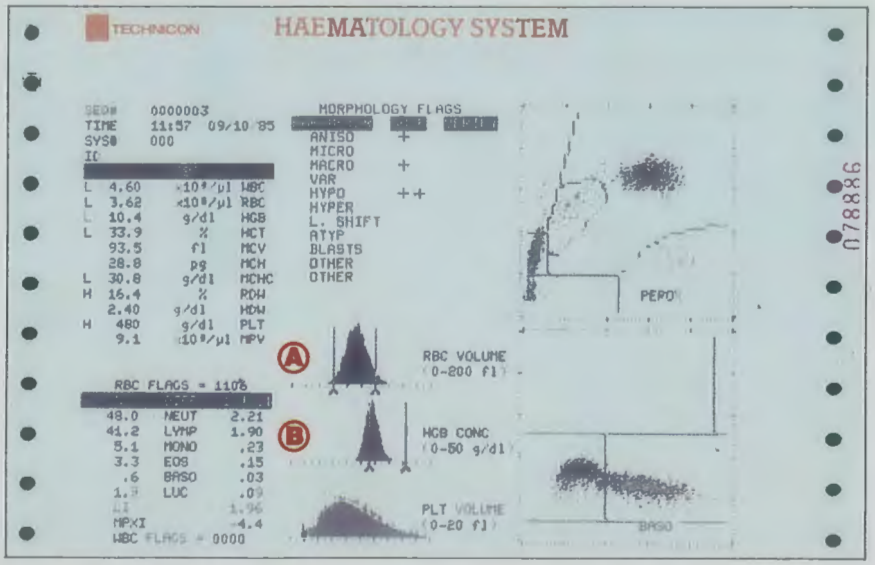

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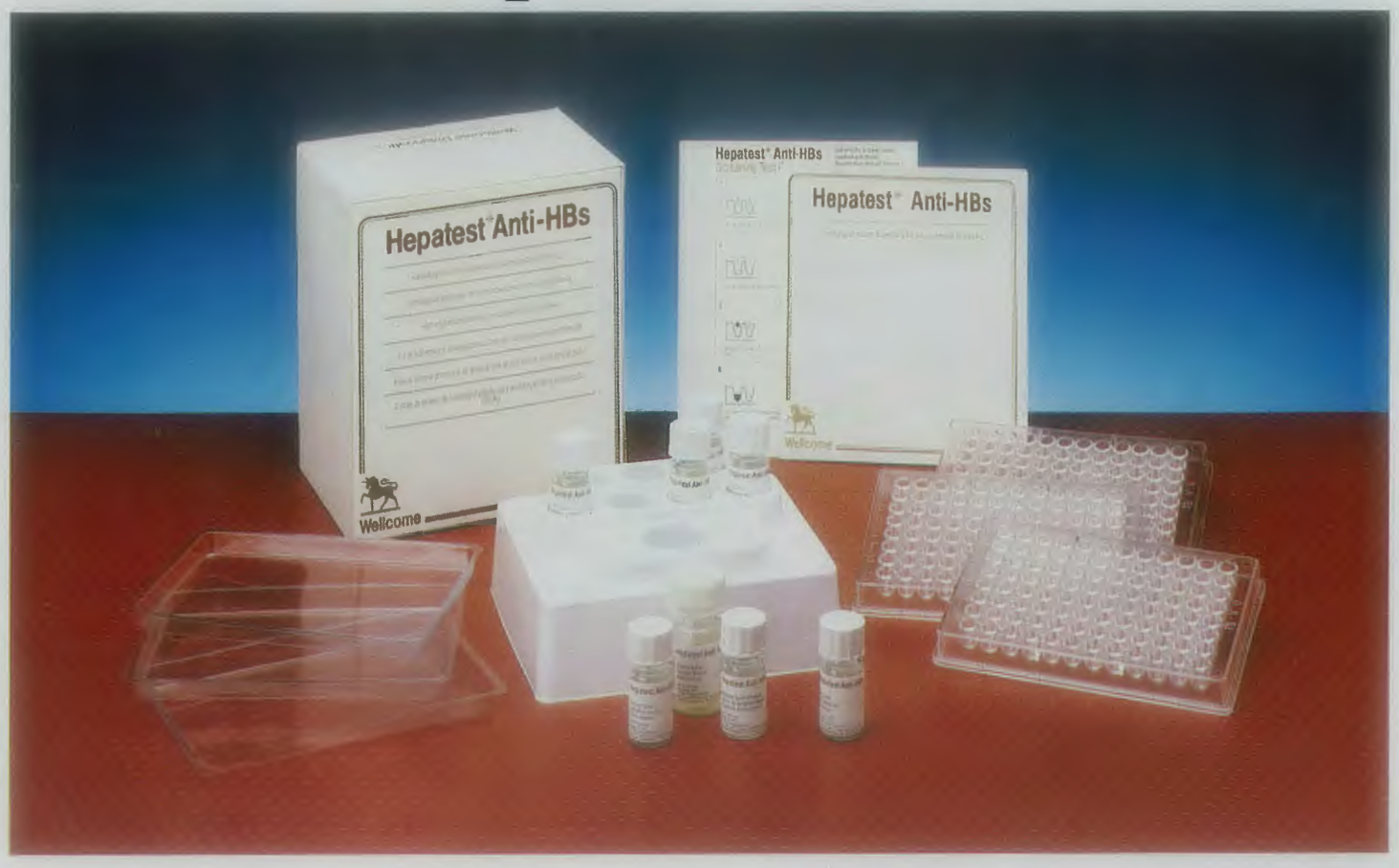

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- The most comprehensive kit available, including all necessary plates and lids

*Results from external evaluation.

Wellcome Diagnostics

Wellcome New Zealand Ltd, 731 Great South Road, Otahuhu. Telephone 276-1877

or **Circle 23 on Readers Reply Card.**

*Hepatest is a registered trade mark

TKW.8545

processing package and provides a guided tour of most of the facilities of the package with special emphasis on its use in the laboratory. It is primarily aimed at those with no previous experience but those who have used such a package should find information to reinforce their skills.

Basic Programming (Course b)
Commodore BASIC is a version of Microsoft BASIC. This same language is implemented on many common microcomputers. The same structures and commands are almost directly applicable to the Apple and IBM PC type computers.

The course is an informal one based on material successfully used for a similar workshop for the last three years. The emphasis is on self-learning at the key board.

The aim of the course is to provide a structured introduction to programming a microcomputer in the laboratory environment. No previous experience is assumed.

Because of the number of computers the workshop is **limited to 20 participants in total.** Those wishing to attend must state which course they require in their request for registration as participants will be provided with individual sets of course material.

Participants are expected to work at their own pace and supervisors are available to give individual assistance. Beginners may not complete the entire course during the day but material is designed so that topics not covered at the keyboard will still be able to be understood, in the light of the experience gained.

Venue:
Rosmini College, Dominion Street, Takapuna.

Commencing 0930 hours

Rosmini College has a fully equipped computer studies classroom with twenty Commodore C64 microcomputers, all linked to disk drives and printers.

Course Organiser:
Eric Johnston,
Department of Clinical Chemistry,
Auckland Hospital.

Date:
Saturday July 5 1986.

CONTINUING EDUCATION 1986 PLANNING GUIDE

Complete, copy and send to:
D.M. Reilly
Convenor Continuing Education
PO Box 35-276 Browns Bay Auckland 10

Name: .....
Laboratory: .....
Address: .....
.....
Please list the courses you would like to register for:
.....
.....
.....
.....
.....

Course 6

Parasitology Test & Teach

Content:
As a follow up to last year's workshop a series of slides and specimen preparations will be available during the year for Technologists to comment on.

All correspondence will be confidential.

Author:
Mr G. Paltridge
Microbiology Dept Christchurch Hospital

Meeting of Interest:

Mechanisms of Red Cell Haemolysis

Christchurch Clinical School of Medicine
May 6-8 1986

This meeting will cover specialised areas of enzyme defects and haemoglobinopathies associated with haemolysis. Amongst the contributors will be Dr Ernest Beutler, Scripps Institute; Professor H.F. Bunn, Harvard; Dr A.D. Stephens, St Bartholomews' Hospital and a number of other distinguished speakers from both academia and diagnostic laboratories. The meeting will be of practical as well as theoretical value.

This meeting is organised by the Christchurch Clinical School of Medicine and sponsored by the Canterbury Postgraduate Medical Society and the NZIMLT

Registrations:
Conference Secretariat
Postgraduate Office
Clinical School of Medicine
PO Box 4345 Christchurch

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New Zealand
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or **Circle 24 on Readers Reply Card.**

(a) how boards should apply on behalf of employees for loans
(b) obligation of notification when an employee with a loan terminates employment
(c) mechanism of how the loan scheme for the Health Service will be administered through the Secretary of the Commission.

H.F. Smith
Chief Executive H.S.P.C.

Report of WHO Meetings in Nagasaki and Tokyo

I attended a meeting in Nagasaki of the World Health Organisation Task Force on Hepatitis B as Temporary Adviser from 29 September for three days and another WHO meeting on AIDS, hepatitis delta and hepatitis NANB in Tokyo as observer from 4 October 1985, also for three days. This is my report of the meetings.

Nagasaki — Hepatitis B

The objectives of the meeting of the Western Pacific Region which deals with 70% of the world's hepatitis B was:-

1. To review progress in the production of HBV vaccines and diagnostic reagents and in the preparation of a vaccination programme;

2. To finalise draft regional guidelines for the formulation of diagnostic procedures and strategies for the control of hepatitis B;

3. To recommend ways of encouraging member states to develop plans of action based on the regional guidelines and means of collaboration in that area.

Thirty-eight doctors from the Western Pacific Regional Office (WPRO) area, America, India and Geneva attended and workers from most countries presented progress reports and plans for immunisation.

Strategies for control vary from country to country depending on HBV prevalence, proportion of HBeAg positive carriers amongst pregnant women, the relative wealth of the country, and other factors.

India has high rates of HBV carriage but a number of other health problems demand priority.

Nationalist China, with carrier rates around those found in New Zealand Maoris, is gearing up for large scale production of plasma derived vaccine, sufficient for three paediatric doses for each of the 16-18 million newborn each year. They plan to extend immunisation to all pre-schoolers.

Korea, two companies are producing plasma derived vaccine and at least one will be licenced by the WHO soon. Cost is expected to be about $US5 per adult dose. The Korean government together with the Korean Medical Association launched a campaign of education about the risks of hepatitis B in 1982. The government is funding immunisation of all newborn and susceptible children and is supporting production of both plasma derived and new (recombinant DNA) vaccines.

Hong Kong began its vaccination programme in April 1983. Targets were:-

1. All infants born to HBsAg positive mothers, regardless of HBeAg status. HBIG given concurrently with dose 1.

2. Health Care personnel.

American Samoa will have its immunisation programme funded by the American government. The aim is total elimination of hepatitis B virus transmission in American Samoa by September 1987, and close surveillance of all cases of viral hepatitis from now on. They expect to succeed.

The Phillipines is a country with epidemiology similar to ours. Realising that a programme aimed at the newborn of only HBsAg positive mothers will leave over 70% of children at risk, they have opted for home production of plasma derived vaccine and the use of lower doses. Poverty is their main problem, but they have the skill and the will to get the programme going.

Japan has the problem of huge numbers of children and wide variations in their marker rates throughout the land. They also suffer from a power structure whereby a powerful paediatrician has deemed it unwise to immunise newborn before the age of two months, and nobody seems prepared to challenge this ruling which was the subject of much criticism at Nagasaki. Otherwise Japan has many experts in hepatitis B and a logical policy will emerge when vaccine prices drop.

Singapore offers vaccine to all newborn of HBsAg positive mothers regardless of HBeAg status. Other high risk groups have been protected. They have found no difference in response between 5mcg and 10mcg doses x 3.

Thailand workers were not present but it is known that in that country a control programme is either underway or at an advanced state in planning. Their HBV marker rates are less than peak rates in Maoris.

I presented New Zealand data on prevalence of HBV markers in mixed race communities, trials of low doses of vaccine, and our programme of control. There was much interest and no criticism. Our swift protection of all children less than five years old and all susceptible 5-12 or 13 year olds was described as a model but it will not be achievable in some poorer countries.

An independent assessment of my paper may be received from the Chairman, Dr K Nishioka of the Tokyo Metropolitan Institute of Medical Science, or the 'reporter' Professor Ian Gust of Fairfield Hospital, Melbourne.

Points brought out in discussion

1. Better data on incidence and prevalence of HBV and other hepatitis viruses is needed, here and overseas. GP cases require serological testing. Diagnosis and notifications must be improved.

2. If children of HBsAg positive, HBeAg negative mothers are to be denied immunisation, sibs of the newborn ought to be screened before the birth and protection offered where indicated.

3. Low doses of vaccine are indicated for many countries considering universal or partially selective immunisation policies if the alternative is **no doses.**

4. Plasma derived vaccines are unquestionnably safe and will be in use in 10 years time. Yeast based vaccines are good. There are still some fears of the oncogenic potential of HBsAg expressed by mammalian cells.

5. Fears were expressed about the entry of Delta virus into carrier populations. We had only one Delta positive from over 500 carriers in Kawerau. The spread of the HBsAg dependent virus in our carrier population could be devastating. I believe we have been lucky to date, and that the great risk from an outbreak of Delta super-infection contributes to a case for extending the programme of control of HBV infection currently being undertaken in the Eastern Bay of Plenty to other high risk areas.

Tokyo — Hepatitis Delta, H-NANB, LAV/HTLV III

Objectives were to review progress in research and epidemiology and methods for testing for the above and to recommend plans for collaborative research.

I heard all the working papers and have copies if anyone wishes to see them.

The main areas of interest for me were:-

1. Diagnostic methods.
2. Risks to laboratory and other staff.
3. Lack of comparable data between countries with lack of clear criteria for selection of subjects.
4. Risks of AIDS infections in communities where efficient spread of HBV has been proven, as in the Eastern Bay of Plenty.

This fear was expressed by Dr Purcell of Bethesda, Maryland, Dr Umenai of Manila, and others. All were clearly concerned about risks to children from HBV, H-Delta virus and AIDS, especially in areas where weeping sores on children were common. We should not take refuge in the observation that AIDS may be less infectious.

We should study the transmission ot hepatitis B amongst children in New Zealand in the hope of identifying and perhaps eliminating opportunities for the spread of other blood borne viruses.

On the major matter of AIDS testing, Dr R Gerety, who was responsible for passing test kits in the FDA (USA) was very critical of delays in implementation of testing because of claimed lack of equipment to read the tests. EYEBALL technology is adequate. THERE IS NO NEED FOR EXPENSIVE EQUIPMENT TO READ RESULTS.

New Zealand, more than any other country represented in Nagasaki and Tokyo, had the means to control hepatitis B infection in children. They are all trying to or wanting to immunise because they are all aware of the consequences of inaction.

If we are not prepared to protect all susceptible children (<12 or 13 years old), then we must protect all pre-schoolers in high risk areas. Failing this we ought to start with all NEWBORN in high risk areas. The very least we can get away with is selective immunisation of the highest risk group, polynesians — mainly MAORI.

We have a model for control which is inexpensive and effective. We should use it elsewhere in New Zealand then help other poorer countries tackle their problems.

A Milne
Chief Technologist Whakatane Hospital

Report on Laboratory Assistants Questionnaire

On behalf of the Laboratory Assistants Committee I would like to thank all those who filled in and returned the questionnaire.

Over 900 laboratory workers are employed as Laboratory Assistants throughout New Zealand, and 335 replies were received. Of those who replied 129 were already members of the NZIMLT and several showed willingness to join if present negotiations were successful. Where reasons for not being members were given they were — lack of interest in Laboratory Assistants, inability of NZIMLT to negotiate salaries and conditions of employment on their behalf especially in private laboratories. Some were unaware of the existence of the NZIMLT. The blame for the latter I lay at the feet of members who work in the same laboratory.

Qualifications

Of the 335 replies qualifications were as follows:

QTA	129	COP	10
QTO	8	BSC	10
NZCS	28	NZRNS	22

212 wanted further qualifications. The suggestions were varied namely:

QTO, advanced QTA, specialist examination in own department, NZCS, Certificate level in own subject, second QTA etc.

The main idea was for some qualification in order to gain entry to the Senior Laboratory Assistants scale, as great difficulty has been experienced in many laboratories to do this. It was pointed out that these extra qualifications should be optional only. The obvious disadvantage of introducing further qualifications after QTA is that those with QTA only may find it harder to advance to the SLA scale. A major advantage for those with several years experience after QTA would be a deeper theoretical knowledge with more subsequent job satisfaction. It is now possible for laboratory assistants to apply to the Health Services Personnel Commission personally for promotion to the SLA scale if their department heads do not wish to apply on their behalf.

Council is proposing two laboratory assistant scales in present negotiations, one for unqualified assistants and a second senior scale for those with QTA and those with other qualifications e.g. NZCS. It is hoped if this is approved it will solve many of these promotion problems.

Comments and Grievances

Underpaid — "Slave Labour"
Difficulty in advancement to SLA scale
Fear of Hepatitis and AIDS
Insufficient remuneration for shift work
Sole charge allowance when working unsupervised on shift work
No transport or meals on shift
Treated as inferiors by Staff Technologists
Council does not represent Laboratory Assistants
Need for a union
Never get to conferences or continuing education courses
No input in staff meetings
Name change (28)
No safety lectures
Double increment for first QTA
No financial recognition for QTA when on minimum adult wage
No financial recognition for second or subsequent QTA
Blood donor staff on week collections away from home receive no allowances

It was obvious that some complaints were localised to either one laboratory or one area. I should point out that many replies had no grievances whatsoever and that others stated that they were completely satisfied with their employment and happy with their co-workers.

Council will be acquainted with the results of the questionnaire for use in future discussions and negotiations. The conditions of employment e.g. shift work, meals, hours of work etc. affect all laboratory workers, laboratory assistants being a cross-section of the total work force, but laboratory assistants obviously have grievances common to their own group.

It is important to note that laboratory assistants have full voting rights as financial members of the NZIMLT. If unable to attend meetings of the Institute you may submit proxy votes. You have the means at your disposal to have a say in your future. Think about it!

Margaret Young,
Laboratory Assistants Committee Convenor

Clinical Biochemistry Examination Review

Jan Parker, ANZIMLT, BSc, Dip Bus Admin

Following directly as a result of Dr P. Schwartz's seminars I am initiating a pilot scheme to assist examination candidates for the Board's examinations in Clinical Biochemistry. The February, April and June editions of the Journal will contain two sections of exam type questions for Certificate and Specialist level candidates. Each section is designed to take one hour and it is suggested that candidates study the relevant section of the syllabus (1985 edition) then attempt the questions under examination conditions. All scripts returned to me by the closing date will be marked and returned, together with brief model answers, approximately two weeks later. Questions will be marked to the same standard as they would be for finals and no correspondence will be entered into. Those not yet at the relevant level are welcome to use the scheme as an additional aid to their studies.

Please ensure that scripts are clearly marked with your name and return address.

Post to: **Mrs J. Parker**
Chemical Pathology Laboratory
Dunedin Hospital

Certificate candidates: Section A
: Syllabus Sections 2.0 — 6.0
: Closing date March 14th

Q1 Outline the precautions to be taken when handling
a) Cyanide
b) Compressed gases
c) O-tolidine
d) HTLV3 positive sera

Q2 a) Briefly describe the principle of reverse osmosis and comment on the purity of the water obtained.

b) A stock Biuret reagent uses 15 g of cupric sulphate pentahydrate per litre. The laboratory has only anhydrous cupric sulphate. How many grams of the anhydrous salt

will be required to prepare 2 litres of the stock Biuret. (MW Cu = 63.5, H = 1, 0 = 16, S =32.)

c) What is the molarity of concentrated HCl that has a specific gravity of 1.19 g/mL and a 38% assay? (MW H = 1, Cl = 35.5.)

Q3 a) Discuss the factors to be considered when purchasing quality control material.

b) Outline one non-parametric method of determining a reference range.

Certificate candidates: Section B
: Syllabus Sections 7.0 — 12.0
: Closing date April 4th

Q1 a) Outline the basic principle of bichromatic analysis with particular reference to one methodology.

b) Outline a method for concentrating urine for electrophoresis and comment on the indications for carrying out urine electrophoresis.

Q2 a) Briefly compare discrete and continuous flow analysis and comment on the place of each in the analytical laboratory.

b) i) Define osmometry and list the principle solutes contributing to serum osmolality.

ii) The following results are obtained on a patient:—

Osmolality 330 mOsm/kg, Na 140 mmol/L, Glucose 5 mmol/L, Urea 5 mmol/L.

Given the formula Osmolality = 1.86 Na + Glucose + Urea calculate the Osmolality and comment on the two results.

Q3 Write short notes on
a) Nephelometry
b) Interference filters
c) Sodium Ion selective electrode
d) Imprecision

Specialist candidates : Section A
: Syllabus Sections 2.0 — 6.0
: Closing date March 14th

Q1 Either

Discuss a system for the maintenance and adequate supply and storage of consumables.

Or

Outline a feasibility study to determine the need for a new instrument.

Specialist candidates : Section B
: Syllabus Sections 7.0 — 10.0
: Closing date April 4th

Q1 Write short notes on the following
a) Workload units
b) Youden plots
c) Patient means
d) Student test

Q2 Outline the principle of fluorescence polarization and compare its use for drug analysis to conventional gas chromatography techniques.

Q3 Calculate the weights of Acetic acid (MW = 60, pK = 4.76) and sodium acetate (MW = 82) required to prepare an acetate buffer pH 5.0 and conc. 0.2 M.

NZIMLT LIBRARY

The following Journals are available for loan from the NZIMLT Librarian, Haematology Dept, Dunedin Hospital.

Canad. J. Med. Tech. Vol 47. 2.

1) Assay for the measurement of the multimeric structure of the Factor VIII von Willebrand protein.
2) Comparison of the *Avantage* and disc-agar diffusion for detecting Methicillin resistant coagulase-negative staphylococci.
3) The causes and frequencies of haemolytic transfusion reactions in a university hospital 1958-1977.

Laboratory Medicine Vol. 16. 6.

1) Special stains for endoscopic gastrointestinal biopsies.
2) A kit for spectrophotometric determination of bile acids.
3) Congo red/sirius red technique for amyloid.

Laboratory Medicine Vol. 16. 7.

1) Handling open lung biopsies.
2) Seeking diseases confused with dementia: "Treatable" dementia.
3) Capillary blood glucose measured by the laboratory phlebotomy team.
4) Noboviocin susceptibility as a test for presumptive identification of *Staph. saprophyticus.*

Laboratory Medicine Vol. 16. 8.

1) Achieving technical excellence in lymph node specimens: an update.
2) Monitoring total parenteral nutrition.
3) Flow cytometry in the clinical laboratory.
4) A donor population classified for viral exposure and infection: CMV and Hepatitis B with an addendum on HTLV-III test results.
5) AIDS and the HTLV-III test: current considerations.

Med. Lab. Sciences Vol. 42. 3.

1) Ion selective electrodes — a new technology?
2) Thionin: spectrometry and thin-layer chromatography in relation to biological staining.
3) Free triiodothyronine in serum in relation to thyroid function.
4) The significance of marrow hypoplasia.
5) An automated assay for serum ferritin.
6) Stability of folic acid activity in serum.
7) Acquired Immune Deficiency Syndrome (AIDS).
8) Haemoglobinometry: a historical review.
9) Sodium and potassium ion selective electrodes: a review of theory and calibration.
10) Platelet function tests: a critical review of methods.
11) Prevention of human cytomegalovirus infection.
12) Histological demonstration of spirochaetes: a method of preparing control sections.
13) Improved assessment of haemoglobin and red cell indices in blood samples with high white cell counts.
14) Biotyping of *Escherichia coli* by a multiple inoculation agar technique.
15) Storage of bacteria at −76°C.
16) Rapid detection of group A streptococci on throat swabs.

Med. Lab. Sciences Vol. 42. 4.

1) Molecular cloning of genes for blood coagulation factors.
2) Bioluminescence in the continuous flow analysis of creatinine using immobilised creatinine amidohydrolase.
3) Effect of beta-propiolactone on routine biochemical investigations.
4) Rapid identification of *Clostrium perfringens* by counter-immunoelectrophoresis.
5) Diagnosis of inherited metabolic disorders by DNA analysis.
6) Biosensors in clinical biochemistry.
7) The Interferons.
8) DNA probes for microbial diagnosis.
9) Monoclonal antibodies in blood group serology.
10) Physiological effects of perfluorocarbon blood substitutes.
11) The potential of synthetic peptides for vaccines.

Canad. J. Med. Tech. Vol 47. 1.

1) The immunocytochemical identification of lymphocytes in tissue sections.

2) Comparison of four rapid methods of identifying Group B streptococci.

Aust. J. Med. Lab. Sci. Vol. 6. 3.

1) Essential Elements of Modern Laboratory Management.
2) Ultrastructural Myeloperoxidase localisation: Applied to routine characterisation of undifferentiated haemopoictic malignancies.
3) Evaluation of Quantum II rapid bacterial identification system: Comparison with API20E and Repliscan.
4) Enzymatic paracetamol measurement by a modified kit method.
5) Massive transfusion and direct blood transfusion: a study in peripheral hospital.

Aust. J. Med. Lab. Sci. Vol. 6. 7.

1) Immunodiagnosis of zoonotic parasitic infection. A review with particular reference to Australian studies.
2) Ferritin mico-ELISA technique with computerized data reduction.
3) Selective absorption of ABH cell antibodies using autoclaved calcium phosphate co-sedimented stroma.
4) Semen analysis — An Australian survey.

Journal of Med. Tech. Vol. 2. 5.

1) Monoclonal antibodies in clinical immunodiagnostics.
2) Application of monoclonal antibodies to clinical diagnostic assays.
3) Diagnostic applications for unique tumour-associated antigens defined by monoclonal antibodies.
4) Radioimmunoscientography using ^{111}In-labelled monoclonal antibodies and the case for immune therapeutics.

Journal of Med. Tech. Vol. 2. 6.

1) Use of instruments to obtain red cell profiles.
2) Screening for haemoglobinopathies and Thalassemia.
3) Clinical application of erythroid colony assays.

Journal of Med. Tech. Vol. 2. 7.

1) Clinical utility of routine enzyme measurements.
2) Application of enzymes: tumour markers, new enzymes and atypical iso-enzymes.
3) Enzymes as clinical laboratory tools.

Journal of Med. Tech. Vol. 2. 8.

1) Diagnostic virology and related services.
2) Rapid laboratory diagnosis of *Herpes simplex* virus.
3) Practical aspects of viral laboratory diagnosis of *Chlamydia trachomatis* and genital mycoplasmas.

Laboratory Medicine Vol. 16. 3.

1) Neonatal transfusion therapy.
2) Preleukaemia/Dysmyelopoietic syndrome.
3) Microassay to monitor bacterial phagocytosis.
4) Quality assurance system for gynaecologic cytology.

Laboratory Medicine Vol. 16. 5.

1) Biological markers — an overview.
2) Biological markers for breast and lung cancer.
3) Steroid hormone receptors and human breast cancer.
4) Clinical application of CEA in colorectal cancer.
5) Utility of tumour markers in testicular tumours and prostate cancer.
6) Marker utility in the diagnosis and management of leukaemia.
7) Monoclonal antibodies in cancer therapy.
8) Monitoring epithelial ovarian cancer.

Membership Sub-Committee Report — November 1985

Membership

Since our August meeting there have been the following changes:

	12 Nov '85	8 Aug '85	31 May '85
Membership	1495	1409	1373
less resignations	8	24	6
less G.N.A.	7	12	5
less deletions (unfinancial)	4	2	30
	1476	1371	1332
plus applications	47	121	74
plus reinstatements	4	3	3
	1527	1495	1409

Membership Composition:

1. Life Member (Fellow)	13	13	13
2. Life Member (Associate)	2	2	2
3. Life Member	—	—	—
4. Fellow	42	42	43
5. Associate	705	700	683
6. Member	573	557	524
7. Complimentary Member	149	139	110
8. Non-practising Member	29	28	19
9. Honorary Member	14	14	15
	1527	1495	1409

Applications for Membership

Miss Denise Jean BARNFATHER, Wellington; Miss Phillippa SARCICH, New Plymouth; Mrs Alana Kim HALL, Dargaville; Miss Lisa Maree WOODS, Auckland; Miss Fiona Jane LEGG, Auckland; Miss Lee Ann GASELTINE, Auckland; Miss Lisa Stephanie BROWN, Hamilton; Miss Meow Keng CHOE, Wellington; Miss Helen COATS, Wellington; Miss Leonie Ellen RUTENE, Wellington; Mrs Lynley Grace HALL, Wellington; Mr Peter SIMPSON, Wanganui; Mrs Barbara Joy CORNWALL, Te Kuiti; Miss Lisa Maree SUTHERLAND, Dannevirke; Miss Kirsten Julie CALEY, Invercargill; Miss Lisa Ann CASSELS, Invercargill; Mr Kerrian Nicholas BURGESS, Invercargill; Miss Diane Beverley SHERMAN, Invercargill; Mr Mark Addison HORRIDGE, Invercargill; Miss Wendy Margaret GUY, Whangarei; Mrs Sandra Marie SOWMAN, Wellington; Mr Chester David Ingman ROWLAND, Hastings; Ms Jocelyn LANSDOWN, Tauranga; Miss Alexandra MARTIN, Hamilton; Miss Teresa Margaret SMITH, Blenheim; Miss Julie Clare WARREN, Blenheim; Miss Susan Judith BAIRD, Invercargill; Miss Susan Caroline JOHNSON, Rotorua; Mr Anthony James SEYMOUR, Christchurch; Mr Darren Paul WOOD, Christchurch; Mrs Barbara Mary SHEARER, Christchurch; Mr Edward Leonard MOORE, Dunedin; Ms Susan BILLINGTON, Dunedin; Mr Sum-Wah LAM, Hong Kong.

Applications for Associateship

Miss Christine Charlotte LEAVER, Christchurch; Mr Leonard MARGOLIN, Rotorua; Mrs A.R. MAYSON, Auckland; Mr William Anthony CROASDALE, Wellington; Mrs Jan Maree McPHERSON, Tauranga; Mrs Donna Ruth ADAMS, Invercargill; Ms Susan Dorothy PAVIOUR, Auckland; Mrs Dinah PARR, Auckland; Mrs Kim Nicola ALLAN, Wellington; Mrs Anne HUNTER, Rotorua; Mr Euan Andrew MILLER, Auckland; Mr David ELLAMES, Wellington; Mrs Jean HENRY, Wellington.

Resignations

Miss P. BISHOP, Hamilton; Mrs S. NEAL, Mosgiel; Mrs H. YOUNG, Wellington; Mrs P. CROSBIE, Auckland; Mrs P. HOLLIS, Auckland; Mrs K. PRICE, Napier; Mrs S. WOOD, Hamilton; Mr J. DAVIES, Auckland.

Gone No Address

Miss H.L. ANGOVE, Waipukurau; Mr B.R. DAY, Thames; Mr A.J. BURT, Hamilton; Miss J.D. MAIN, Whangarei; Miss J.A. COUZINS, Whangarei; Mrs L.M. CUMMING, Auckland; Miss T.F. GUTTERIDGE, Dunedin.

The First 40 Years

As the Institute begins its second 40 years, we can look back over the first four decades. It would be sad if we were to let the occasion pass without publicly recording our very sincere thanks to those who have served our profession so well over the past forty years.

(I am indebted to Syd Shepherd for the following information — The Editor.)

NZIMLT PRESIDENTS

Length of Service in Council

Mr D.J. Philip	1959/60 - 1974/75	16 years
Mr M. McL. Donnell	1954/55 - 1968/69	15 years
Mr H.E. Hutchings	1958/59 - 1971/72	14 years
Mr A.F. Harper	1971/72 - 1983/84	13 years
Mr C.S. Shepherd	1968/69 - 1980/81	13 years
Mr H. Olive	1948/49 - 1962/63	12 years
(Had a break of four years in service)		
Mr G. McKinley	1945/46 - 1956/57	12 years
Mr H. Bloore	1954/55 - 1964/65	11 years
Mr B. Main	1968/69 - 1977/78	10 years
Mr D. Whillans	1945/46 - 1953/54	9 years
Mr E. Buxton	1945/46 - 1954/55	9 years
Mr L. Reynolds	1953/54 - 1958/59	8 years
Mr N. Ellison	1945/46 - 1955/56	7 years
Mr C.H. Campbell	1975/76 - still serving	10 years

Other Council Members with Long Service

Mr J.D. Morgan		13 years
Mr R.T. Kennedy		11 years
Mr B.T. Edwards	- 10 years as Secretary	13 years

NZIMLT Presidents: Some Interesting Facts

1. Our first President, Mr E. Buxton, served three years, then a further six as a Vice President.
2. Only one President since then, Mr N. Ellison, has served after his term as President. Five years after his term he returned as a Council member.
3. Only one President has had a break in Council service before serving as President. Mr H. Olive served for five years as a Council member, retired for four years, then returned as Vice President, then President.
4. Since Mr Buxton, only one President, Mr B. Main, had not previously served as a Vice President.
5. Since Mr Buxton, only one President, Mr D. Philip, has not previously served as an ordinary Council member.
6. Only one President, Mr C.S. Shepherd, has served his term of three years without any change to Council officers.
7. There has not yet been a woman President, but Miss J. Mattingly served two years as a Vice President in 1965/66.

NZIMLT Council: Some Interesting Facts

1. The office of Secretary/Treasurer was one office for the first three years of Council's existence.
2. Ordinary Council membership was three for the first three years, four for the next eighteen, and five since 1967/68.
3. Seventy-one members, including eleven women, have served at some time on the Council.
4. Only one woman, Miss J. Mattingley, who served as Vice President for two years, has served as other than an ordinary Council member.
5. 1983/84 election saw the first occasion in which there was more than one woman Council member.
6. The 1975/76 election was the most interesting —
   a. Mr B. Main was elected President, the first ever to have not previously served as a Vice President.
   b. There was a total new Council of five ordinary members.
7. The longest service in any one office is Mr B.T. Edwards, 10 years as Secretary.

40 YEARS OF SERVICE

Office-bearers of the Institute Since 1945

	President	*Vice-President*	*Secretary*	*Treasurer*	*Council*
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1947/48	E.L.F. Buxton	G.W. McKinley D. Whillans	D.H. Adamson	D.H. Adamson	N.J. Ellison S.O. Jarratt J.H.A. Ward
1948/49	N.J. Ellison	E.L.F. Buxton D. Whillans	S.O. Jarratt	D.H. Adamson	M.O. Ekdahl G.W. McKinley H.T.G. Olive J.A. Samuel
1949/50	N.J. Ellison	E.L.F. Buxton D. Whillans	G.W. McKinley	D.H. Adamson	H.T.G. Olive Miss J. Byres M.O. Ekdahl J.A. Samuel
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1952/53	D. Whillans	D.H. Adamson E.L.F. Buxton	G.W. McKinley	H.T.G. Olive	L. Reynolds F. Rush-Munro J.A. Samuel Miss P. Scott
1953/54	D. Whillans	D.H. Adamson E.L.F. Buxton	G.W. McKinley	R.J. Patterson	L. Reynolds F. Rush-Munro J.A. Samuel Miss P. Scott

	President	*Vice-President*	*Secretary*	*Treasurer*	*Council*
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1955/56	G.W. McKinley	D.H. Adamson N.J. Ellison	M. McL. Donnell	J.P. Walsh	H.G. Bloore A.M. Murphy L. Reynolds Miss P. Scott
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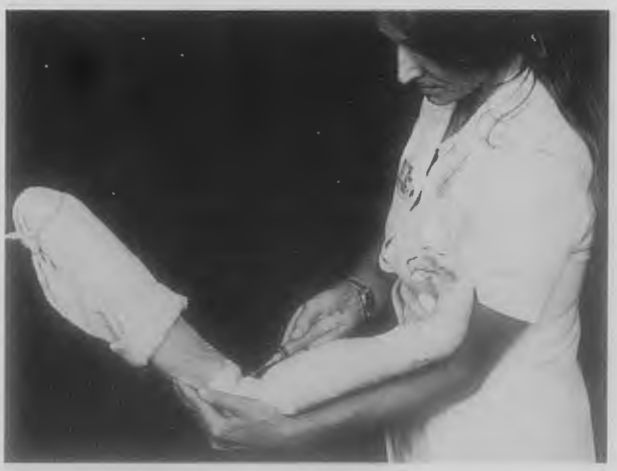
1959/60	L. Reynolds	H.G. Bloore H.T.G. Olive	H.E. Hutchings	D.J. Philip	G. Cameron Miss L. Evans M. McL. Donnell M. Lynch
1960/61	H.T.G. Olive	H.G. Bloore M. McL. Donnell	H.E. Hutchings	D.J. Philip	G. Cameron Miss J. Mattingley Miss P. Scarf J. Walker
1961/62	H.T.G. Olive	H.G. Bloore M. McL. Donnell	H.E. Hutchings	D.J. Philip	G. Cameron Miss J. Mattingley Miss J. O'Grady J. Walker
1962/63	H.T.G. Olive	M. McL. Donnell H.E. Hutchings	J.D.R. Morgan	D.J. Philip	H.G. Bloore G.R. George Miss J. Mattingley Miss J. O'Grady
1963/64	H.G. Bloore	M. McL. Donnell G.R. George	J.D.R. Morgan	D.J. Philip	Miss D. Bond H.E. Hutchings R.T. Kennedy Miss J. Mattingley
1964/65	H.G. Bloore	M. McL. Donnell Miss J. Mattingley	J.D.R. Morgan	D.J. Philip	C.W. Cameron E.K. Fletcher H.E. Hutchings R.T. Kennedy
1965/66	H.G. Bloore	M. McL. Donnell Miss J. Mattingley	J.D.R. Morgan	D.J. Philip	C.W. Cameron F.M. Hilder H.E. Hutchings R.T. Kennedy
1966/67	M. McL. Donnell	D.J. Philip H.E. Hutchings	J.D.R. Morgan	E.K. Fletcher	R.T. Kennedy Miss D. Hitchcock G.F. Lowry C.W. Cameron
1967/68	M. McL. Donnell	D.J. Philip H.E. Hutchings	J.D.R. Morgan	E.K. Fletcher	R.T. Kennedy L.R. Reynolds G.F. Lowry B.W. Main
1968/69	M. McL. Donnell	D.J. Philip H.E. Hutchings	J.D.R. Morgan	E.K. Fletcher	R.T. Kennedy A.L. Schwass G.F. Lowry C.S. Shepherd B.W. Main
1969/70	H.E. Hutchings	J.D.R. Morgan D.J. Philip	R.T. Kennedy	E.K. Fletcher	Miss M.M. Eales M.J. Lynch B.W. Main A.D. Nixon C.S. Shepherd
1970/71	H.E. Hutchings	J.D.R. Morgan D.J. Philip	R.T. Kennedy	E.K. Fletcher	Miss M.M. Eales M.J. Lynch B.W. Main A.D. Nixon C.S. Shepherd

	President	*Vice-President*	*Secretary*	*Treasurer*	*Council*
1971/72	H.E. Hutchings	J.D.R. Morgan D.J. Philip	R.T. Kennedy	E.K. Fletcher	A. Harper G.F. Lowry B.W. Main A.D. Nixon C.S. Shepherd
1972/73	D.J. Philip	J.D.R. Morgan C.S. Shepherd	R.T. Kennedy	D.S. Ford	B. Edwards M. Flack A. Harper A.D. Nixon D. Tingle
1973/74	D.J. Philip	J.D.R. Morgan C.S. Shepherd	R.T. Kennedy	D.S. Ford	B. Edwards M. Flack A. Harper B.W. Main A.D. Nixon
1974/75	D.J. Philip	J.D.R. Morgan C.S. Shepherd	R.T. Kennedy	D.S. Ford	B. Edwards M. Flack A. Harper B.W. Main J. Powell
1975/76	B.W. Main	C.S. Shepherd A.F. Harper	B.T. Edwards	D.S. Ford	G.G. Broad C.H. Campbell N.D. Johnston K. McLoughlin R.W. Smail
1976/77	B.W. Main	C.S. Shepherd A.F. Harper	B.T. Edwards	D.S. Ford	G.G. Broad C.H. Campbell N.D. Johnston K. McLoughlin R.W. Smail
1977/78	B.W. Main	C.W. Shepherd A.F. Harper	B.T. Edwards	W.J. Wilson	G.G. Broad Miss R. Bluck C.H. Campbell K. McLoughlin R.W. Smail
1978/79	C.S. Shepherd	A.F. Harper C.H. Campbell	B.T. Edwards	W.J. Wilson	Miss R. Bluck C.S. Curtis J. Elliot J.E. Lucas K. McLoughlin
1979/80	C.S. Shepherd	A.F. Harper C.H. Campbell	B.T. Edwards	W.J. Wilson	Miss R. Bluck C.S. Curtis J. Elliot J.E. Lucas K. McLoughlin
1980/81	C.S. Shepherd	A.F. Harper C.H. Campbell	B.T. Edwards	W.J. Wilson	Miss R. Bluck C.S. Curtis J. Elliot J.E. Lucas K. McLoughlin
1981/82	A.F. Harper	C.H. Campbell K. McLoughlin	B.T. Edwards	W.J. Wilson	G. McLeay C.S. Curtis J. Elliot J.E. Lucas P. McLeod
1982/83	A.F. Harper	C.H. Campbell K. McLoughlin	B.T. Edwards	W.J. Wilson	Mrs M. Young D. Reilly J. Elliot J.E. Lucas P. McLeod
1983/84	A.F. Harper	C.H. Campbell K. McLoughlin	B.T. Edwards	W.J. Wilson	Mrs M. Young D. Reilly J. Elliot Mrs J. Parker P. McLeod
1984/85	C.H. Campbell	K. McLoughlin W.J. Wilson	B.T. Edwards	D. Reilly	Mrs M. Young D. Pees J. Elliot Mrs J. Parker P. McLeod

POETS CORNER



Giving a Hand

A trainee we had in our lab long ago
Was a lad we called Robert the Brute.
(His friends called him Bob, but we thought to bestow
A name we found more to suit.)

He was big, he was strong, and I fear none too bright,
There are legends of errors he made.
His hair was too long and his shirts were too tight,
And his manners made patients afraid.

Our problems were major when we tried to teach
Him to take patients' blood in the ward;
At the sight of him, patients would cringe out of reach,
"Please take him away!" all implored.

Then, one awful day, when we sent him to see
A poor man down in Ward Twenty-four,
The effect was so bad that we had to agree
That we couldn't keep Bob any more.

It seems that the tourniquet was far too tight,
(Such things Bob could not understand),
Then he turned to take forms from the chair on his right —
And the whole arm came off in his hand!

The patient was saved, but was minus an arm,
Poor Robert was clapped into gaol.
(We tried to explain that the lad meant no harm,
And I think they released him on bail.)

To throw out the arm seemed a pitiful waste,
So we pickled the thing in some brine.
(This may seem an act in quite dubious taste,
But we're sure we've committed no crime.)

Though the arm is no longer a bright, healthy pink
It looks normal, I think you'll concede.
For years, we've been filling the veins with red ink,
So our trainees can learn how to bleed.

Robin Cooper.

PRAYER FOR CHARGE TECHNOLOGISTS

GRANT me, O Lord, the genius to explain to my people the policies and plans of this laboratory though no one has explained them to me. Give me the understanding that I may forgive the nurses their stats, that I may curb the overanxious trainee and accept the views of the pathologist who does nothing until I have done something, and then tells me what I should have done and how I should have done it.

O Lord, make me formidable in knowledge, logical in argument, fearless in confrontation. A lawyer, doctor, mathematician, sage, philosopher, sociologist and economist; pleasing, cajoling, threatening, belaboring, so that I may make the best of the day, and spare time from no time at all.

TEACH me, O Lord, to stand firmly on my own two feet, even when I haven't a leg to stand on.

LORD, I am the leader of a motley crew. In Your infinite wisdom see my need for all these things and in Your great mercy grant them to me.

AND when I have them, Lord, move over! amen

COMING EVENTS

The Combined meeting of the International Society of Haematology and the International Society of Immunohaematology.

The combined meeting of the above societies is being held in Sydney from the 12th to the 16th May, 1986. Group travel is available for those wishing to participate. The cost will be approximately $1500 based on Auckland return. The cost will include travel, accommodation and registration (meals are excluded)

For further information contact Walter Wilson, Blood Transfusion Centre, Park Ave, Auckland.

SOUTH PACIFIC CONGRESS ON MEDICAL LABORATORY SCIENCE

SYDNEY, AUSTRALIA
18th — 22nd August, 1986

CONGRESS VENUE:
Sydney Hilton International

CONGRESS SECRETARIAT:
All enquiries and correspondence should be addressed to:

The Secretariat, South Pacific Congress on Medical Laboratory Science, G.P.O. Box 2609, Sydney, NSW., Australia, 2001.
Telephone: (02) 241 1748; (02) 27 6940
Telex: AA74845 CONSEC
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• POSTERS • MAJOR EXHIBITION

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Asean Conference in Medical Laboratory Technology

Manila, Philippines

24-28 November, 1986

Conference Information

Call For Papers

Original research and other scientific papers on any of the topics scheduled for discussion will be accepted for presentation at the symposia-workshops, and free papers sessions. Audio-visual equipment will be provided for presentors.

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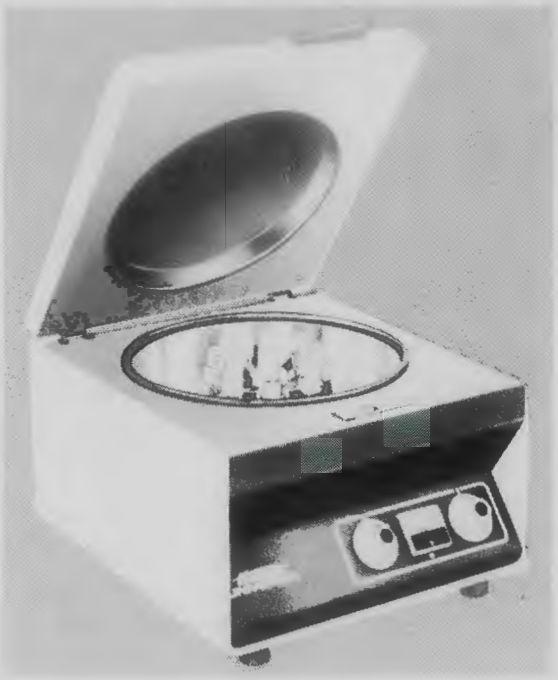

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Forma Scientific's New Slimline Blood Refrigerator

Ideal for small blood banks or for storage of blood adjacent to operating theatres or emergency rooms.

CAPACITY:	40 Whole Blood Units
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WN50

Abstract forms for the use of authors are available upon request and must be sent to the Chairman, Scientific Committee on or before July 1, 1986. Presentors will be allowed twelve (12) minutes for their presentations and three (3) minutes for discussions.

Technical Exhibits

Displays of the latest equipment, devices, materials and supplies will be featured in the technical exhibits. Producers, manufacturers and dealers are all invited to show their newest, state-of-the-art technology and products to participants.

Scientific Exhibits

Scientific exhibits and posters will also be displayed during the conference, and authors are invited to submit their summaries, descriptions and specifications to the Chairman. Scientific Committee on or before July 1, 1986.

Official Language

English is the official language for all discussions, proceedings, publications and other activities.

Accompanying Persons' Program

An exciting and colourful social program has been scheduled for accompanying persons. These include sightseeing trips, shopping tours and other entertainment activities. They are also invited to all receptions for participants and can enjoy a variety of optional tours to different tourist spots in the country through the official travel/tour agency.

Registration Fees

The fees are: (US Dollars)	Before Dec. 31/85	Before Jan. 30/86	After Sept. 30/86
Participants	$90	$120	$130
Accompanying Persons	65	75	90

These fees include: one cocktail, one dinner, six snacks, one city tour, conference bag, and admission to exhibits and all sessions.

Travel Documents

A valid passport is a basic requirement for entry. Visitors with valid tickets for return or onward journeys may stay for 21 days without a visa, except those from countries without diplomatic relations with the Philippines, stateless persons and those from certain restricted countries. Visas are extendable up to 59 days.

International health certificates for smallpox and cholera are required. Yellow fever vaccination is needed for travellers coming from infected areas, except infants under one year of age.

Conference participants are accorded special courtesies of the port to facilitate entry. It is, therefore, important to provide advance notice of arrival to the Secretariat.

Secretariat
2nd ASEAN Conference in Medical Laboratory Technology
Room 303-304, NFWC Building,
Escoda cor. San Marcelino Sts.
Ermita, Manila, Philippines • Tel. No. 50-73-91

NEW PRODUCTS & SERVICES

SEALED BUCKETS OR SEALED ROTORS?

Hepatitis B is not going away, and has actually been joined now by a far more dangerous, if less infectious hazard. In the light of this, many medical laboratory directors are reviewing centrifuge working practices, and also looking at the rotors being used. Some form of sealing is definitely wanted, and the question arises, do you seal the whole rotor or just the buckets?

Smith-Biolab, Scientific Products Division are offering sealed buckets and sealed rotors for centrifuge use.

Sealed rotors give: easier loading and unloading, higher processing speeds, lower frictional temperatures and higher capacity per run.

Sealed buckets give: easier autoclaving in the event of tube breakage and less sample loss if autoclaving is needed.

Brochures on both systems are available on request. For further information, contact the Scientific Products Division of Smith Biolab Ltd.

or **Circle 10 on the Readers Reply Card.**

HEXIFOAM SKIN DISINFECTANT

Hexifoam is a complete system delivered from an aerosol can.

There is no need to rinse or towel-dry hands after application which saves time and reduces the risk of cross contamination.

Hexifoam is unique in the fact that it leaves hands soft and supple even after repeated use and in vitro tests conducted to date are available as 100% effective against the following organism

Candida Albicans
Salmonellae Typhimurium
Pseudomonas Aeruginosa
Clostridium Tetani (77.3%)
Escherichia Coli
Staphylococcus Aureus
Trichophyton Rubrum

Hexifoam is also active against some viruses, yeasts, fungi and spores. It has been tested for skin irritation and chronic sensitisation and the results prove that Hexifoam is clinically safe for long-term use and is non-allergenic.

When a case of 12 cans is purchased a free stand is provided which enables foam to be dispensed by the touch of an elbow.

Suggested uses in laboratories are:-

1. To be kept by all laboratory benches
2. All bleeding stations
3. All blood collection trays

For more information contact:
Scientific Products Division, Smith-Biolab, Private Bag, Northcote, Auckland.
or **Circle 11 on Readers Reply Card**

ONE ASSAY — TWO RESULTS

Introducing a New Simultrac FT4/TSH from Becton Dickinson Immunodiagnostics "One Assay — Two Results"

The reagent cost is therefore reduced as is the technologists time. The kits fill NZ customer needs in terms of high sensitivity and overall performance quality.

For more information contact:
Scientific Products Division, Smith-Biolab, Private Bag, Northcote, Auckland.
or **Circle 12 on Readers Reply Card**

NEW AGENCY

"New Zealand Diagnostics Ltd., P.O. Box 30683, Lower Hutt, have been appointed agents for Marion Laboratories products and have full information available on:-

The TOXILAB drug screening system, which will simultaneously screen for well over 100 specific drugs, with complete analysis within 1 hour. The system is sensitive to 1 μg of drug per millilitre of specimen for most drugs and is pre standardised with commonly used/abused drugs. Distinctive characteristics for each drug reduces confusion, even when multiple drugs are present. Everything you need is included in the system with no expensive capital items.

The Microbiology products, including the CULTURETTE brand of collection and transport swabs, No. 1 product in the U.S. for each of the past 10 years, and this well proven product of quality is now offered as the best value product of its type in New Zealand. A full range of Culturette swabs is offered including single, dual, mini tips anaerobic and viral presentations.

* NEW IMPORTANT PRODUCT * * NEW CONCEPT *

A 20 minute Culturette Brand CDT Latex test for CLOSTRIDIUM difficile Toxin A detection from Marion Laboratories available from NEW ZEALAND DIAGNOSTICS."

For further information contact N.Z. Diagnostics P.O. Box 30-683, Wellington or **Circle 17 on Readers Reply Card.**

NEW COMPANY

Intermed Scientific and Medical Sales Ltd has been restructured to form two new companies; Intermed Medical Ltd and Intermed Scientific Ltd.

This change has been made to place greater emphasis on the scientific laboratory market.

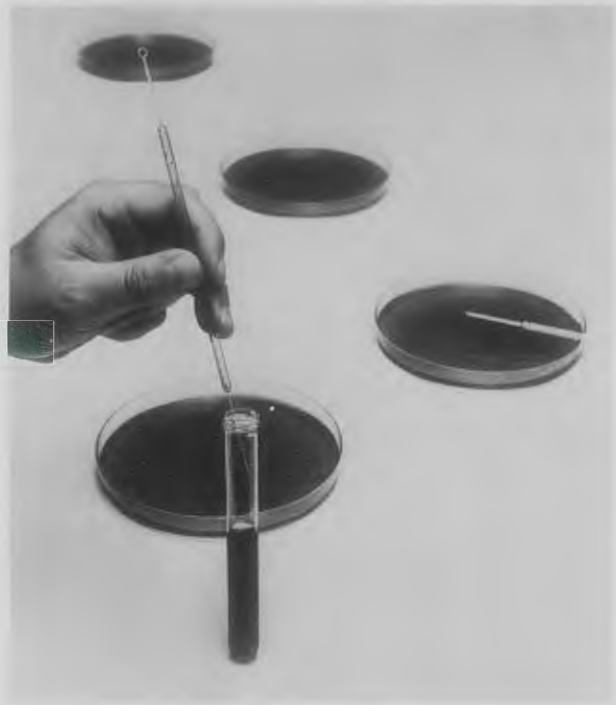
Mr Paul Balchin, former Scientific Marketing Manager of

Kempthorne Medical Supplies Ltd, heads up the new company while co-directors Donn de Silva and Geddes Weston still retain the majority interest in Intermed Medical Ltd. Intermed Scientific Ltd will continue to operate from the same facilities as the previously combined companies.

The new company is pleased to advise that in the near future it will assume exclusive distribution rights for Bio Merieux Diagnostic Products. Other key agencies being retained are:

Disposable Products Pty Ltd
Alpha Biologicals Ltd
Diagnostic Technology Inc.
Bendon Minigrip
Mallinckrodt Pty Ltd.

The new company operates as from 1 April.



DISPOSABLE INOCULATING LOOP IS SAFER, COST SAVING AND CONVENIENT

Elkay has introduced a new line of media inoculating disposables known as the ELKAY^{R} BIOLOOP^{TM} series. Designed and precision molded by Elkay, BIOLOOPS offer technologists significant advances in safety, cost savings and convenience.

BIOLOOPS are pre-sterilized in individual wrap or 10 piece packs which can be opened at either end. Unlike conventional metal inoculating loops, they do not have to be sterilized by flaming before use. This eliminates the risk of spreading pathogenic aerosols during flaming and saves time.

There are three different types of BIOLOOP. Two have a needle at one end and a 10 uL. or 1 uL. calibrated loop at the other end. The third type combines 10 uL. and 1 uL. calibrated loops. Each type is colour coded to simplify identification. Combining loops and needles saves costs by reducing the need to stock different sizes of loops and needles.

In addition to the advantages of sterile disposable BIOLOOPS for routine inoculating in the laboratory, they are ideally suited for use in environments where sterilizing metal loops is impractical such as fieldwork, under hoods and in anaerobic chambers.

Elkay Products, Inc. is an original manufacturer of sterile and non-sterile disposables for microbiology and industrial research including centrifuge tubes, liquid transfer pipets, test tubes and pipet tips.

For further information contact Medic Corp
or **Circle 13 on Readers Reply Card**

AUSTRALIAN MADE HPLC EQUIPMENT

ETP Kortec Pty Ltd, have appointed Advanced Electronics Limited as New Zealand distributors for their range of High Performance Liquid Chromatography equipment.

The product range includes:

— Single and Dual Piston Pumps, Binary Gradient controller, Variable UV and Fluorescence detectors, and a 45 Tube Automatic sampler.

A major advantage of their K35M Dual Piston Pump is the achievement of virtually pulseless operation without the need for a pulse damper. The pump will produce less than 1% pump-induced noise with a UV detector at maximum sensitivity (0.005 AUFS).

With an electrochemical detector at 0.5 nanoamps FSD, a one picamole of noradrenolive injected on column produces a signal to noise ratio better than 10:1. It will also run with a high sensitivity RI detector set at 1×10^{-5} RIUFS.

The computer controlling the K45M Binary Gradient system is an Australian made microprocessor which drives the pumps using a multi-linear programme. It can generate up to 10 linear ramps or steps within one gradient. Furthermore, the system can also store 10 different programmes, and be initiated by an external device such as an injector or autosampler. It is therefore suitable for use with a continuously operating HPLC system.

The K95 Variable wavelength UV detector has a dual beam optical system covering the range 190-380 nm (380-700 nm by option), time constants of 0.2 and 0.8 seconds (selectable) and absorbance range down to 0.0025 AUFS.

The K85 Fluorescence detector has excitation of 300-400 nm using a wide band filter and a high pass filter for emission over 320-620 nm. Sensitivity is 0.1ppb quinine sulphate.

The Kortec K65M Autosampler is a "no frills" 45 tube unit which simply automates injection using a standard Rheodyne valve, and eliminates carryover by complete flushing between samples. It can, of course, be added to all available commercial instruments, as well as to Kortec pump or gradient systems.

For further information, please contact Advanced Electronics Limited.
or **Circle 14 on Readers Reply Card**

OHAUS TOPLOADING BALANCES IN NEW GALAXY^{TM} BALANCE SERIES

Northrop Instruments — Systems Limited announce the introduction of six new electronic toploading balances as part of the new Ohaus Galaxy^{TM} balance series. Included in the six toploading balances are four single range and two Auto Range balances. The company also introduced a new full range analytical balance as part of this new series.

Ohaus Galaxy toploading balances have a new sleek and sophisticated design and offer easy to read large digital displays with digits that are more than one half inch high. Weight can be displayed in grams, pounds, troy, avoirdupois ounces, carats, or pennyweight, all of which are defeatable, and are adjusted with the touch of a button.

All of the toploading balances have full range automatic taring capability, push button calibration, and variable integration which allows for precise readings and ensures steady results in spite of vibrations or currents. The versatile RS232 bidirectional interface is standard. This is a convenient feature for interfacing with printers, computers and recording equipment. The built-in parts counting capability is ideal for a variety of applications including use in the jewelry, electronic and pharmaceutical industries.

Ohaus Scale Corporation has been manufacturing precision mechanical balances since 1907, and are now distributing a full line of both mechanical and electronic precision laboratory balances worldwide for laboratories, research and design, production, quality control and inventory control.

For further information contact Wayne Sprosen, Northrop Instruments and Systems Ltd., Telephone Wellington 856 658.
or **Circle 15 on Readers Reply Card**

NEW TGD TEST FOR AIDS PROVES POSITIVE

A new diagnostic test for detecting antibody to HTLV-III, the virus identified as the cause of acquired immune deficiency syndrome (AIDS) will shortly be brought to New Zealand to permit a full evaluation of the test by local blood transfusion centres.

Developed by Travenol-Genentech Diagnostics (TGD) a joint venture between Travenol Laboratories, Inc. and Genentech, Inc., the test has been approved for marketing by the US Food and Drug Administration. The test will be used primarily to screen

donated blood that might transmit the AIDS virus.

The new TGD test has proved to be highly accurate both in 'sensitivity' (the probability that the test result will be positive when infection is present) and 'specificity' (the probability that the test result will be negative when infection is not present).

Clinical trials in the United States confirmed a sensitivity of 100 percent in patients with AIDS, and a specificity of 99.2 percent in random blood and plasma donors.

"Of the tests now on the market, the TGD test has been shown in extensive clinical trials to offer the highest sensitivity in detecting antibodies in AIDS patients," says Robert A. Patterson, managing director, chairman of TGD and senior vice-president — scientific affairs, Baxter Travenol Laboratories, Inc.

A positive result means that a donor had been exposed to the HTLB-III virus and has developed antibody (an immune substance in the blood) to it. The test cannot tell when the exposure took place or if the virus is still present. A positive result does not mean that a donor has AIDS or will develop it.

Mr Ned Lipes, general manager, Travenol Laboratories NZ Ltd, says that the company hopes New Zealand's local blood transfusion centres will have their evaluations of the TGD test completed before the next tender for AIDS diagnostic tests is called.

"The extensive clinical trials carried out in the United States confirm that the TGD test is by far the most effective test available on the market. We believe it will be positively received by local blood transfusion centres and will greatly assist in the prevention of contracting the AIDS virus through blood transfusions."

For further information contact Mr Ned Lipes, Travenol Laboratories NZ Ltd, P.O. Box 18-062, Glen Innes.

or **Circle 16 on Readers Reply Card**

SITUATIONS VACANT

RED CROSS BLOOD BANK

MEDICAL SCIENTIST — GRADE 3 — IMMUNOHAEMATOLOGY

A Senior Scientist with experience in immunohaematology is required as deputy to the serologist in charge of the department.

The department has 25 scientific staff and tests 250,000 blood donor samples annually using automated equipment. It also has a reference laboratory for the identification of red cell antibodies and performs leucocyte and platelet serology.

Applicants should preferably have had experience in:-

1. A red cell reference laboratory.
2. Laboratory computerisation.
3. Preparation of method and procedure manuals.
4. Allocation of staff and duties.

There is opportunity for associated research and development projects.

Qualifications:- Science Degree or Diploma of Medical Laboratory Technology. A higher qualification in immunohaematology and at least 10 years experience is desirable.

Salary $A 33,789 to $A 38,178.

Apply in writing to:-

The Head of Serology Department
Red Cross Blood Bank
P.O. Box 354
South Melbourne 3205
Australia.

Applications close on 7 April 1986.

SALES REPRESENTATIVE — LABORATORY DIAGNOSTICS

Boehringer Mannheim is a market leader in the field of diagnostics, laboratory analysers and biochemicals. The company is an international researched based organisation currently establishing its own New Zealand organisation. The company enjoys an existing business base in New Zealand and an excellent reputation as a supplier of the highest quality diagnostics and biochemicals.

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It is envisaged that the successful applicant will have qualifications relevant to laboratory diagnostics, probably a medical laboratory technologist wishing to begin a sales career.

Applications will be handled in the strictest confidence and should be directed to:-

Mr R. Hewett
Boehringer Mannheim NZ Ltd.,
P.O. Box 62-089, Sylvia Park, Auckland.

VIROLOGIST MEDICAL SCIENTIST GRADE III

A Senior Medical Scientist is required to take charge of the Virology Laboratory which is responsible for the routine testing of donor bloods for Hepatitis B, HTLV-III, and CMV markers. The laboratory has 12 scientific staff and performs 500,000 tests per year.

There will be opportunity for associated research and development projects and participation in the study of viral diseases transmitted by Blood Transfusions.

Qualifications — B.Sc. or Bachelor of Applied Science — a higher qualification is desirable. Expertise in virological techniques including RIA and EIA and some administrative experience is essential.

Salary $A 33,789 to $A 38,178 Apply in writing to:-

Head of Biochemistry Department
Red Cross Blood Bank
P.O. Box 354 South Melbourne 3205 Australia.

Applications close on 7 April 1986.

MEDICAL LABORATORY TECHNOLOGIST

Medical Laboratory Technologist required to take charge of the Microbiology and Serological Departments of the Tauranga Medical Laboratory.

This position will involve bench work as well as general administrative responsibilities. Included in the latter will be a responsibility for the organisation of the Cytology and Histology service.

The successful applicant can be assured of excellent working conditions including working in a brand new building.

Salary will be by negotiation and would be related to the successful applicant's experience. We are primarily interested in an enthusiastic young person, preferably with an "A" level qualification in Microbiology, some experience in Histology would be an advantage, though not essential. We are looking for someone with innovative ideas. Applications close 20th April. In writing with

The Pathologists,
Tauranga Medical Laboratory, P.O. Box 130, Tauranga

THE NEW ZEALAND JOURNAL OF
MEDICAL LABORATORY TECHNOLOGY

Index to Volume 39, 1985

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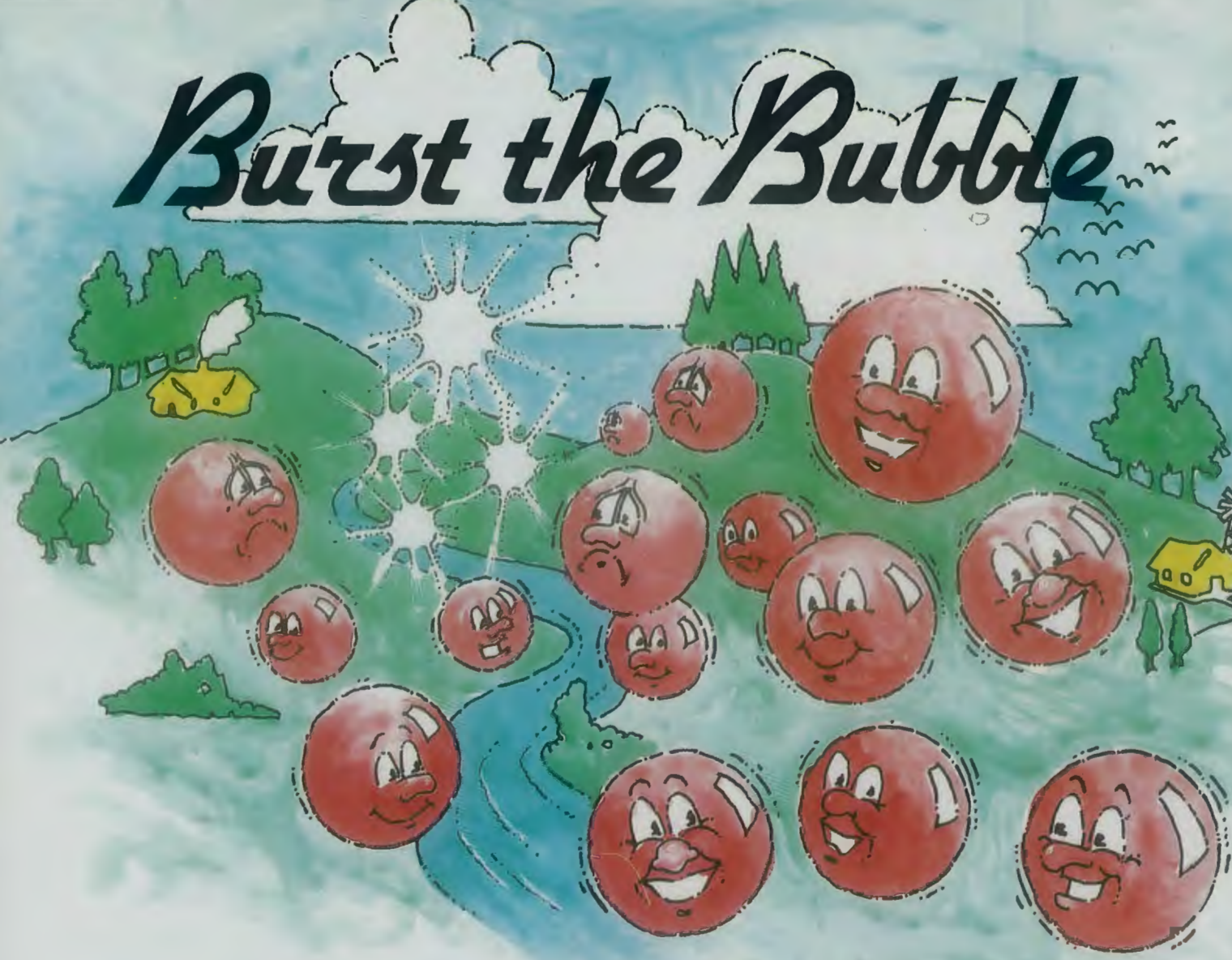

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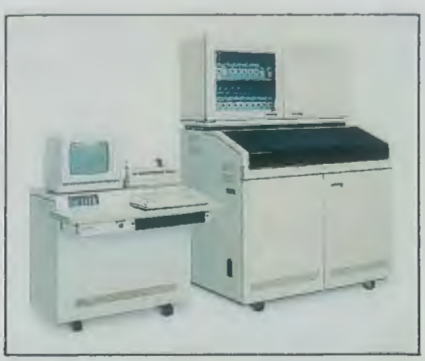

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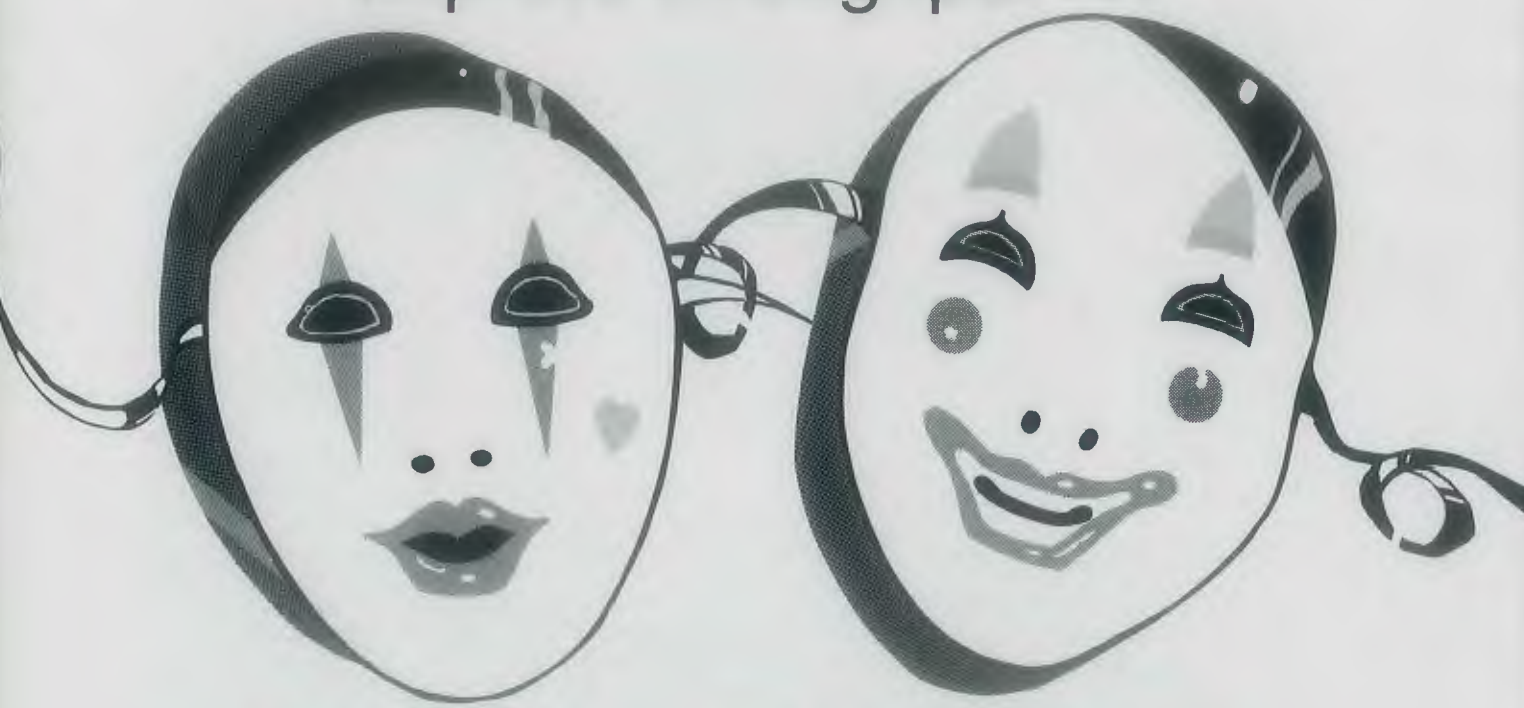

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