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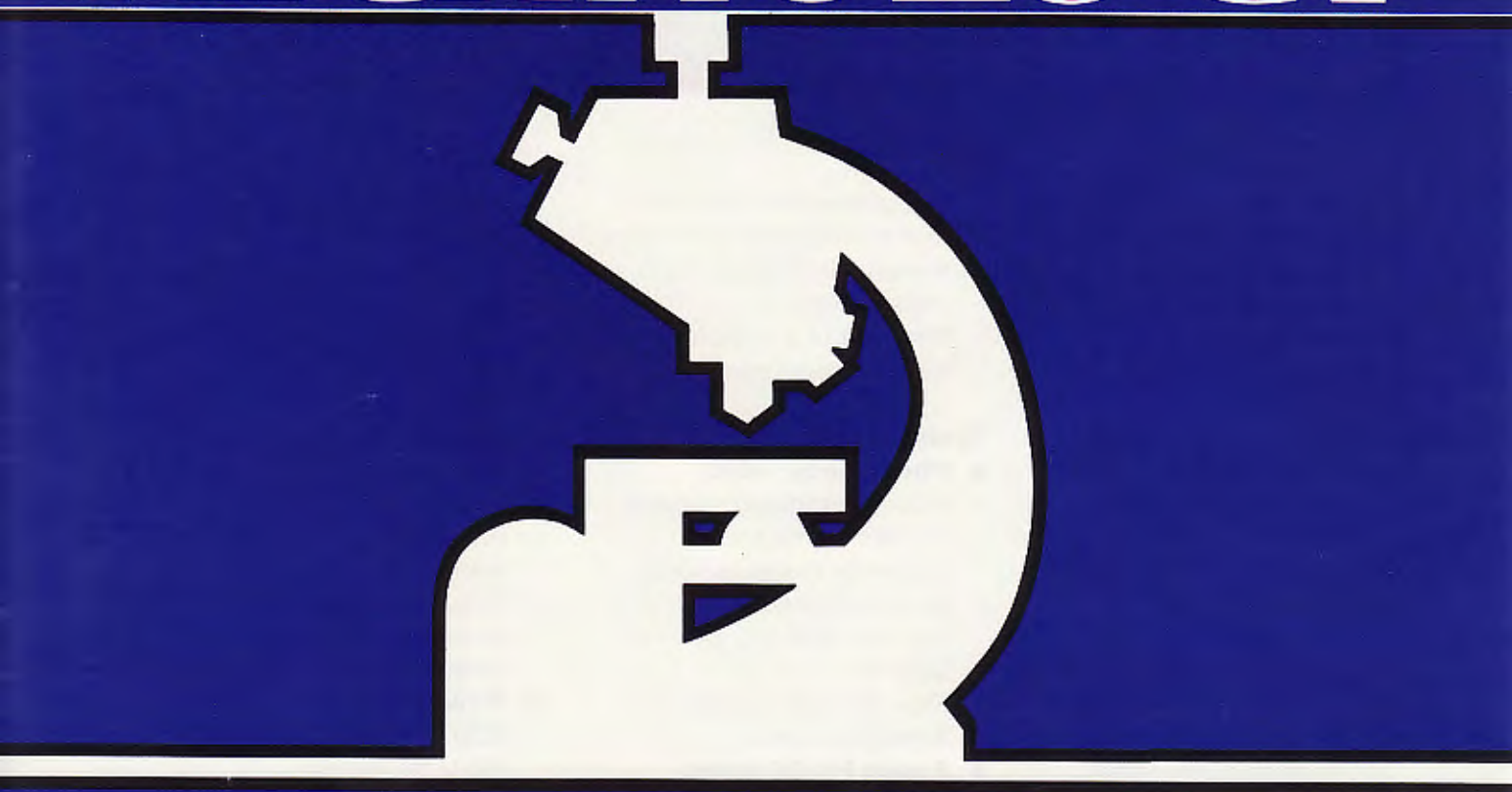

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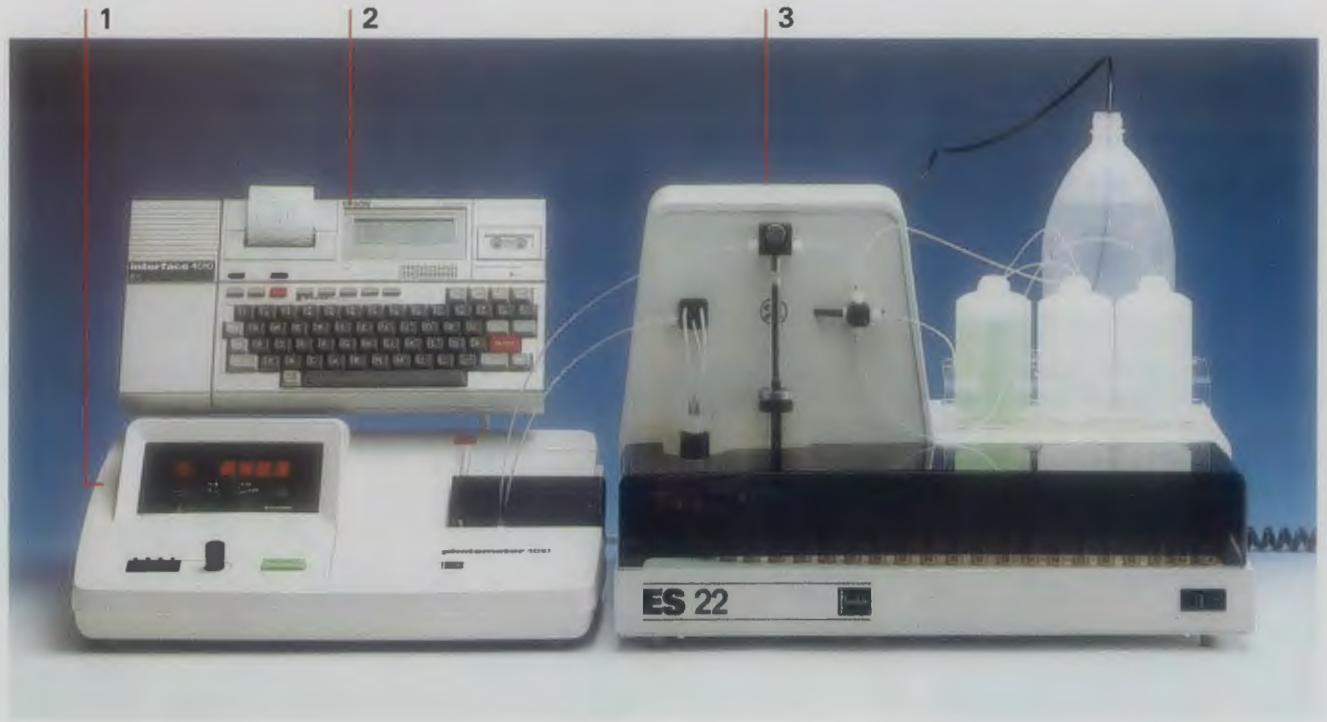

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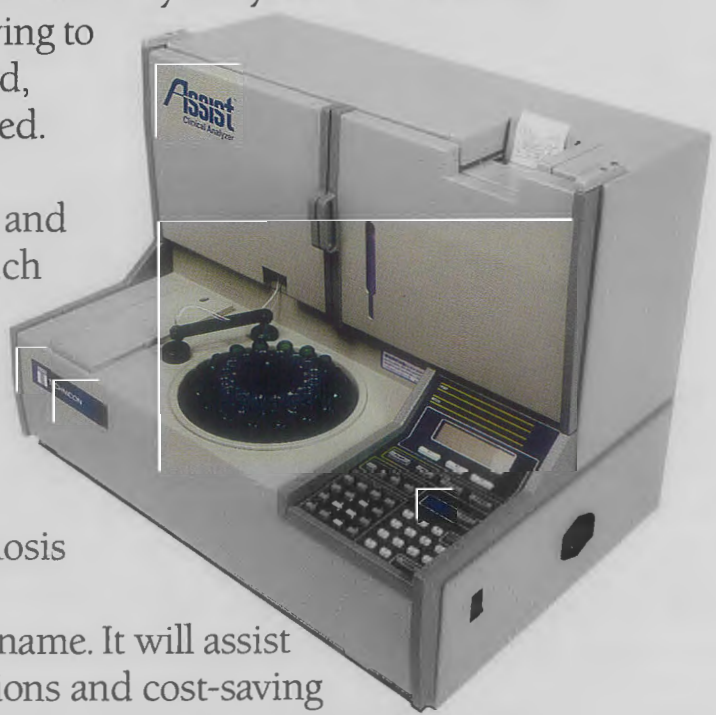

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Improved Detection of Acid-Fast Bacilli in Clinical Specimens using the Phenol Auramine Stain

Jeremy L. Brett, C. Biol., MIBiol.
Mycobacteriology Laboratory, Wellington Public Hospital, Wellington, New Zealand

Abstract

Microscopy for acid-fast bacilli (AFB) is an essential aid to the diagnosis of mycobacterial infection. Two methods are commonly employed, bright field microscopy using the Ziehl-Neelsen (ZN) stain and fluorescence microscopy using the phenol auramine(PA) stain. In this paper microscopy and culture results are presented to compare our first complete years experience with the PA stain (1986) with our last complete years use of the ZN stain. The sensitivity of microscopy, as determined by culture result, increased from 61% for 1984 using the ZN stain to 88% for 1986. This improved sensitivity was not due to an increase in specimens heavily positive by culture, since it was seen throughout the whole range of culture results with the greatest increase when less than 20 colonies were isolated.

Introduction

Fluorescence microscopy for AFB using auromine O (PA) was introduced by Hageman[1]. The major advantage of fluorescence microscopy for the detection of AFB is speed. Fluorescing bacilli appear larger and are easily seen at a magnifcation of 250X, while smears stained by ZN must be observed under oil immersion at a magnification of 1000X. Using the lower power magnification to read PA stained smears in each field. Consequently, fewer fields need to be examined. The recommended minimum number of fields to be examined before reporting an acid fast stained smear as negative for AFB is 30 for PA at 250X and 300 for ZN at 1000X[2].

Fluorescence microscopy has been shown to compare favourably with the ZN stain[3,4,5,6], and now largely supersedes the ZN stain in regional and reference laboratories where there is a need for improved efficiency. Mitchison[7] suggests that fluorescence microscopy replace the ZN stain in all but small laboratories in developing countries because it is more efficient and economical, particularly where labour costs are high. In some laboratories, however, resistance to its use is still encountered, especially where experience of acid-fast microscopy is limited to the ZN stain and where perhaps, the suggestion of its lack of specificity[8] is still remembered.

During 1985 we decided to change from the ZN stain to the PA stain. We made this decision on the basis of three considerations:

1. The good sensitivity and specificity of fluorescence microscopy reported by the above authors.
2. Personal experience with PA stain.
3. The low sensitivity observed with the use of the ZN stain at this hospital in previous years.

This report compares our microscopy and culture results for the years 1984 and 1986.

Method

Clinical specimens, including sputum, urine, tissue and body fluids, were processed and cultured as described by Kent and Kubica (1985). 10μL of centrifuged deposit was spread over an area of 2cm x 1cm on a clean glass slide and allowed to dry before heat fixing in the flame of a safety gas burner. (Denley Instruments, Deux Road, Billingshurst, Sussex, R14 9SJ, England).

Phenol Auramine Stain

Smears were stained with phenol auramine for 10 minutes (2.5g auramine 0 dissolved in 300mL of absolute ethanol and mixed with 350mL of a 5% aqueous solution of phenol). The smears were then washed with tap water, decolourised with 1% acid alcohol for 4 minutes, washed again with tap water and counter stained with 0.1% aqueous potassium permanganate.

Ziehl-Neelsen Stain

Smears were stained with carbol fuchsin (1.5% basic fuchsin in an aqueous solution of 4.5% phenol) for 10 minutes during which time the slide was heated 3 times. The slides were then washed with deionised water, decolourised with 3% acid alcohol for 5 minutes, washed again with deionised water and counter stained with 0.3% aqueous methylene blue chloride for 30 seconds.

Examination of Stained Smears

Phenol auramine stained smears were examined using a Zeiss binolcular microscope fitted for reflected light fluorescence microscopy with a 50W mercury vapour lamp and a BG12 filter. A magnification of 250X was used and 40 fields were observed in each smear. A positive report was made if 3 or more bacili were seen[2]. Ziehl Neelsen stained smears were examined using bright-field illumination at a magnification of 1000X under oil immersion for 10 minutes each. The presence of any number of acid-fast bacilli was considered positive.

Culture Grading

20 μL of all centrifuged specimen deposits were plated onto the following media: Lowenstein Jensen (LJ) with glycerol (2 slopes); LJ with pyruvate (1 slope) and one half plate each of Middlebrook's 7H11 selective and non-selective media. In addition, tissue specimens were innoculated into selective and non-selective Kirchner's medium[9]. Cultures were read at weekly intervals and the number of colonies which grew on each medium was recorded. The number of colonies growing on the first medium to become positive was used for the grading in this report. The culture grades used were <20 colonies, 20-50 colonies fand >50 colonies. Where more than one became positive at the same time an average was taken, and where the Kirchner broth was the only medium to become positive the culture was graded as <20 colonies.

Results

Our smear and culture results for 1984 (ZN) and 1986 (PA) are shown in Table 1. In 1984 we received 2,568 specimens, 103 of which were smear positive for acid-fast bacilli. Mycobacteria were grown from 96 specimens positive by microscopy and a further 61 specimens which were smear negative. 7 specimens which were smear positive, were negative by culture and 6 of these were obtained from patients on anti-mycobacterial chemotherapy. The clinical details of the remaining culture negative smear positive patient are unknown and this result was considered a false positive for the purpose of this study.

In 1986 we received 2,189 specimens, 204 of which were smear positive. Positive cultures were obtained from 174 of the smear positive specimens. There were 30 smear positive specimens that were culture negative and 27 of these were from patients on treatment. The remaining three false positive smears, one sputum, one gastric washing and one axillary node, had small numbers of acid-fast bacilli only and the clinical details in each case are unknown.

The sensitivity of microscopy increased from 61% in 1984 to 88% in 1986, while the specificity decreased from 99.96% to 99.85%

Table One
Comparison of Smear and Culture Results for the Years 1984 and 1986

	Positive Cultures			Negative Cultures			
					Smear Positive		
	Total	Smear Positive	Sensitivity (percent)	Total	On Chemotherapy	Clinical Details Unknown	Specificity (percent)
1984	157	96	61	2,411	6	1	99.96
1986	198	174	88	1,991	27	3	99.85

Table Two

Comparison of the Sensitivity, as Judged by Culture, of the Smear Results Obtained in 1984 and 1986 for each of Three Culture Gradings

	1984			1986		
Culture Result (Colonies Isolated)	Positive Cultures	Positive Smears	Sensitivity	Positive Cultures	Positive Smears	dSensitivity
<20	73	27	37.0%	70	49	70.0%
20-50	37	24	64.9%	47	44	93.6%
>50	47	45	95.7%	81	81	100%

respectively.

An analysis of the positive smear results is presented in Table 2. Culture results have been split into 3 groups according to the number of colonies isolated, and the per cent of positive cultures that were smear positive in each group is shown. In 1986 a considerable increase in sensitivity was seen in all 3 groups.

Discussion

Our results have demonstrated good specificity and sensitivity for fluorescence microscopy using the phenol auramine stain and, although a strict comparison of ZN with PA was not made by ensuring that an equivalent volume of specimen was observed in each case, we feel that a significant improvement has been achieved and that this warrants the continued use of PA in this laboratory. Our results are presented in greater detail in Table 2 where the sensitivity for each method is given against the number of colonies isolated. The results are presented in this way to enable a better comparison to be made. The improved sensitivity that is shown in Table 1 might have been a function of the number of heavily positive specimens received in 1986, however, Table 2 shows that the largest increase in sensitivity is seen in the <20 colony group, and improved sensitivity is seen throughout the entire range of culture results. Good sensitivity and specificity with fluorescent microscopy has been reported previously. Holst and co-workers[3] reported a sensitivity of 67.3% and a specificity of 97.94% and Strumpf and co-workers[10] reported 78.3% and 99.7% respectively. These reports, and others[4,5,6] corroborate our results, emphasising the value of fluorescence microscopy for the detection of AFB in clinical specimens. In addition to the improved sensitivity observed, the use of the PA stain has resulted in a saving of about 8 hours for every 50 smears read, and it is felt that this may be a contributory factor to this increased sensitivity by allowing a more thorough examination of the smears.

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Evaluation of the Minolta Transcutaneous Bilirubin Meter as a Screening Device in a Mixed Race Population

Dennis N.M. Dixon-McIver, ANZIMLT and Russell S.G. Sargon, ANZIMLT

Department of Biochemistry, National Women's Hospital, Auckland, New Zealand.

Abstract

A total of 503 transcutaneous bilirubin measurements was performed, on a mixed race population, from both forehead and sternum and compared with the serum bilirubin level. Patients under phototherapy gave unreliable results. From the remaining 453 we found the sternum (r=0.83, Sy.x=1.54) correlated better than the forehead (r=0.76, Sy.x=1.76). Race (Europeans, Maoris, Pacific Islanders, Asians and Indians) had no significant effect on the results; neither did patient age nor gestational age greater than 36 weeks. The Minolta Transcutaneous Bilirubinometer was found to be a useful screening device although ones own screening limits need to be established.

Key Words

Minolta Transcutaneous Bilirubinometer; transcutaneous bilirubin; neonate; jaundice.

Introduction

In the neonatal period, the most frequent laboratory request is for the investigation of jaundice; the level of which is monitored by the determination of bilirubin in serum. With the development of transcutaneous bilirubin measurement[1,2], a non-invasive means of screening neonates for jaundice has become available. Authors have previously investigated the correlation between transcutaneous readings and serum bilirubins in various single racial groups (American Negroes and Caucasians[3], Japanese[1], Saudi[4], Mexican[5], Indian[6], Chinese[7], Malay[7], and Australian[8] infants).

Because of the diversity of racial groups in Auckland, we investigated the usefulness of the Minolta transcutaneous bilirubin meter as a screening device for neonatal jaundice in a multiracial population. We also investigated the effect of gestational age, infant age, and phototherapy treatment on results, and the suitability of the sternum and forehead as sites for measurement.

Method

Between 17 June and 21 July 1986, during normal working hours (Monday to Friday, 0830-1700), we received 503 requests for serum bilirubin estimations from the general postnatal wards. On these patients a capillary blood sample was collected and transcutaneous readings were taken. The transcutaneous readings were obtained using the Minolta/Air-Shields Jaundice Meter 101 (Minolta Camera Co. Ltd. Japan., supplied by Watson Victor Ltd, Auckland) and were taken from the forehead and sternum as recommended by the manufacturer[9]. The fibre optic probe of the jaundice meter was cleaned with alcohol and placed on the subjects forehead and then sternum, ensuring that it was in full contact with the skin. Care was taken to protect the patient's eyes from the high intensity flash of the meter. Two transcutaneous readings were taken from each site, and averaged (where necessary the average was rounded to the nearest even number). This data was recorded along with the patients' race, gestation, age and phototherapy status.

Capillary samples were collected independently by heelprick within 15 minutes of the readings being taken. Three heparinised micro haematocrit tubes were collected, centrifuged, cleaned with 50% alcohol and dried. All tubes were visually checked for haemolysis and turbidity and any haemolysed or turbid tubes discarded. The serum bilirubin level was measured using a Mochida LUKETRON Bilmeter-D model MEB-332 (Mochida Pharmaceutical Ltd., Tokyo, Japan supplied by New Zealand Medical and Scientific Ltd, Auckland). Two capillary tubes were read for each patient. If the values for these two tubes differed by more than 5% (for readings up to 200 μmol/L) or 10 μmol/L (for readings greater than 200 μmol/L), the third tube was read and any discrepant reading discarded. The readings were then averaged and recorded.

Statistical analysis of the results was then performed.

Results

It has been stated previously that phototherapy effects adversely the correlation between transcutaneous results and serum bilirubin estimations[10,11,12,13]; our data support this. The 50 comparisons from patients under phototherapy gave the following regression data-forehead, y=0.0273x +8.15, r=0.52 and Sy.x=2.27; sternum, y=0.0403x +5.13, r=0.68 and Sy.x=2.20.

For the remaining 453 comparisons, the regression line was y=0.0389x +6.20, r=0.76, Sy.x=1.76 for the forehead and y=0.0442x +5.50, r=0.83, Sy.x=1.54 for the sternum. The data was further analysed according to race (table one), gestational age (table two) and patient age (table three).

Table One

Regression Analysis Data According to Race for Non-Phototherapy Patients

Race	n	Mean SBR (μmol/L)	Site	Slope	Intercept	Sy.x	r
European	238	212	Forehead	0.0391	5.96	1.54	0.80
			Sternum	0.0420	5.54	1.36	0.85
Pacific Is.	93	224	Forehead	0.0366	6.81	1.90	0.71
			Sternum	0.0459	5.47	1.56	0.84
Maori	74	224	Forehead	0.0329	7.44	1.96	0.68
			Sternum	0.0382	6.78	1.37	0.84
Asian	37	240	Forehead	0.0364	7.87	1.75	0.64
			Sternum	0.0390	7.93	1.49	0.72
Indian	11	260	Forehead	0.0421	6.89	1.91	0.67
			Sternum	0.0367	9.56	1.65	0.67
	453						

Table Two

Regression Analysis Data According to Gestation for Non-Phototherapy Patients

Gestation	n	Mean SBR (μmol/L)	Site	Slope	Intercept	Sy.x	r
< 36 w	23	194	Forehead	0.0225	10.03	1.25	0.46
			Sternum	0.0281	9.04	1.35	0.51
36-37 w	77	226	Forehead	0.0401	6.24	1.53	0.75
			Sternum	0.0465	5.05	1.54	0.80
38-40 w	276	223	Forehead	0.0384	6.33	1.85	0.75
			Sternum	0.0436	5.64	1.56	0.84
< 40 w	77	208	Forehead	0.0404	5.42	1.68	0.78
			Sternum	0.0462	4 77	1.48	0.85
	453						

Table Three

Regression Analysis Data According to Age for Non-Phototherapy Patients

Age	n	Mean SBR (μmol/L)	Site	Slope	Intercept	Sy.x	r
< 1 d	21	136	Forehead	0.0478	3.45	1.66	0.83
			Sternum	0.0551	3.26	1.30	0.91
2 d	52	191	Forehead	0.0196	9.73	1.75	0.44
			Sternum	0.0417	5.77	1.40	0.80
3 d	100	220	Forehead	0.0354	6.70	1.96	0.71
			Sternum	0.0421	5.94	1.59	0.83
4 d	92	235	Forehead	0.0342	7.34	1.80	0.66
			Sternum	0.0443	5.51	1.67	0.77
> 4 d	188	229	Forehead	0.0382	6.74	1.44	0.76
			Sternum	0.0402	6.51	1.48	0.77
	453						

Figure One
Accuracy of Minolta Transcutaneous Bilirubinometer Readings from the Sternum in Predicting Infants with Serum Bilirubin Concentrations > 200 μmol/L

	Serum Bilirubin (μmol/L)	
	⩾200	<200
⩾14	275 Results (61% of total) True Positive	31 Results (7% of total) False Positive
<14	15 Results (3% of total) False Negative	132 Results (29% of total) True Negative

Positive predictive value = 90%
Negative predictive value = 90%
Sensitivity = 95%
Specificity = 81%

The accuracy of transcutaneous bilirubin measurements (sternum) in predicting infants with serum bilirubin concentrations greater than 200 μmol/L was also investigated. From our regression data, this level of bilirubin would have given a Minolta reading of 14 (fig 1). We found that 90% of readings equal to or greater than 14 were true positives and 90% of readings less than 14 were true negatives.

Discussion

The correlation coefficient(r) is influenced by the slope(b) of the regression line y=a+bx and the closeness of the data points to the regression line, the standard error of estimate(Sy.x), but, being a single value, r gives no indication of the relative influence of these two components[14]. The slope(b) is dependent on the scale of the two axes. In our case, the scale for the y axis (Minolta reading) was 0-25 and the x axis (serum bilirubin) was 0-350. Other published work has been in traditional units (mg/dl) and has allowed similar scales for the x and y axes. This has resulted in our slope being a lot less and r being lower than those previously published[1, 3, 15, 16]. In evaluating this instrument we have taken into account the effect on r of Sy.x and b.

The operator's manual states that the forehead and sternum were both suitable sites for measurement[3], however, we obtained better results from the sternum. Although the reason for our observation is not clear, there was a significant number of neonates with fine dark hair on their foreheads. We consider that this may have contributed to the difference. We found no particular difficulties in using either site whilst protecting the patients' eyes from the effects of the xenon flash. We will discuss only those results from the sternum, being our site of choice.

When sorting the data according to race we found that Europeans, Pacific Islanders and Maoris had a similar r (0.84-0.85) whilst Asians (0.72) and Indians (0.67) were lower. Europeans and Maoris had the lowest Sy.x with the other groups slightly higher (Range 1.36-1.65). The slope (b) in all groups was not significantly different from the overall slope. We believe that r in the Indian and Asian groups is influenced by the fact that the mean serum bilirubin level was significantly higher (Asians 240 μmol/L, Indians 260 μmol/L) than the other groups and that the number of patients was small (Asians n=37, Indians n=11). It has been previously reported that transcutaneous bilirubinometry loses accuracy at high serum bilirubin levels [13].

Although the number of patients in this group was small, we found that transcutaneous bilirubin readings were unreliable in neonates of pre-36 week gestation (n=21), as others have previously reported [9, 17]. We found a reasonably good correlation in neonates of greater than 36 weeks gestation. When looking at the data grouped according to actual age, we found no significant variation although the group, one day or less, had the best correlation coefficient probably due to the lower mean serum bilirubin value (136 μmol/L).

We found the Minolta transcutaneous bilirubin meter to be a useful screening device in a mixed race population (greater than 36 weeks gestation, not undergoing phototherapy) with a sensitivity of 95% and a specificity of 81%. It was simple to use, the readings duplicated well, and we believe that there is little, if any, variability between operators. The one disadvantage we see is the cost of the instrument being in excess of $5000.

The cut off Minolta reading of 14 we obtained in our study using a serum bilirubin of 200 μmol/L is significantly different from that obtained by others [3, 15, 17, 18]. For this reason we agree with others [9, 13, 15, 18] who recommend establishing ones own screening limits.

Acknowledgements

We wish to thank Watson Victor Ltd for the loan of the Minolta transcutaneous bilirubinometer and Mr C. Garlick for assistance with the statistical analysis.

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A Report on the TELARC Survey of QC Programmes for Medical Laboratories

Kevin F. Cooper, Programme Manager, Medical Testing, TELARC.

Introduction

Some time ago TELARC distributed a survey on external QC programmes to the NZ medical testing community. The survey was divided into three parts. Firstly, laboratories were asked in which programmes they participated and then to rate the usefulness of these programmes. They were also invited to make comments on the strengths and weaknesses of these programmes. The idea was to gauge "customer satisfaction" with the programmes that were currently available, to provide some anonymous feedback to programme organisers on how their efforts were perceived and to compile a list of pitfalls to be avoided should any NZ programmes be initiated

The second part of the survey suggested possibilities for NZ-based interlaboratory programmes and asked laboratories both to comment on the suggestions and to assign a priority for their implementation, a desirable frequency and an acceptable price. Space was provided for additional suggestions for QC programmes from the survey participants. The aim was to identify areas where a need for an interlaboratory programme was perceived by NZ medical laboratories. These needs would then be communicated to both organisers of existing programmes as areas for possible future development and to potential organisers of QC programmes within NZ.

The third section of the survey related to other services, that perhaps TELARC could provide, which would be useful to medical testing laboratories. Again some possible services were offered for comment and additional suggestions were sought.

Results

Of the 73 surveys distributed, 43 replies were completed and returned. The volume of data generated by the survey is too great to reproduce in total but a summary of the significant points is given below.

Existing Programmes

It would appear that on a local, national and international level, NZ medical laboratories are involved with at least 45 external quality control programmes from different sources. The most popular programmes are the overseas ones organised by Wellcome and the Royal College of Pathologists of Australasia, although NZ programmes such as NIPS, SCAP and the NHI Microbiology survey were well represented

Inevitably there is duplication in the range of work covered by the various programmes and, understandably, cost of participation appeared to be the deciding factor in most laboratories' choice of the programmes to which they subscribed Indeed this was evident in the high number of participants in one NZ programme which was variously described as infrequent, irregular, inconsistent, of limited scope and not helpful in the area of interpretation of results, but which was free. Of more concern, however, is the number of laboratories that apparently do not participate in any programmes at all

It is unlikely that anyone would deny the benefits of participation in an appropriate and relevant interlaboratory comparison programme. Too many laboratories in NZ work in technical isolation and the QC surveys do at least give some measure of comparability with the rest of the medical testing community. The results of the TELARC survey would indicate however, that pathology laboratories in NZ have some needs which are currently not being met by existing programmes.

Perceived Needs

For administrative purposes the survey questionnaire was divided into nine sectors: microbiology, virology, immunohaematology, haematology, immunology, cytology, histology, biochemistry and cytogenetics. Under each of these headings laboratories were invited to suggest topics which they felt either were not covered or were insufficiently covered. A full list of these perceived needs is given in Appendix 1 but the most common suggestions are detailed below. It is accepted that some of these points may already be included in existing programmes and their inclusion in the list would indicate either a lack of awareness of programmes already available (poor advertising on the part of the organisers?), or a cost which the laboratories find to be prohibitive.

(i) MICROBIOLOGY

(a) Antibiotic Sensitivity

A survey in this area was seen as useful to illustrate the need for care in technique and to demonstrate organisms of unusual sensitivity, especially those not seen often in small laboratories. It was suggested that a survey should test sensitivity by both disc and replica plating methods and MIC results should be given regardless of method. A frequency of 3-4 organisms per quarter plus MIC and MBC was suggested. Organisms of known MIC would be an useful addition.

(b) Organism Identification

There was general agreement that such a programme would be useful to ensure standardisation around the country. It was also agreed that full descriptive notes were important. The content of the survey was not so obvious, however, with some laboratories wanting to include "exotic" organisms while others did not

It would seem that a general range of the organisms found normally, plus a good range of rarer organisms to allow laboratories to get "hands on" experience of unusual isolates, would meet most requirements. Other suggestions were that the survey should include anaerobic organisms and multiple isolates, (mixtures of normal flora and pathogens).

(c) Basic Serology

Few laboratories in New Zealand have a separate Immunology Department. It is common, therefore, for microbiology departments to carry out a greater or lesser range of bactoserological tests. The response from the survey indicated a need for a basic serology programme covering the following tests and within the price range of smaller laboratories.

Streptococcal serology	— A.S.O.T.
	— anti-DNase B
	— AHT
Brucella serology	— SAT
	— Coombs
CFT	— Total
	— C3
	— C4
HBsAg	
Rheumatoid	— R A Latex
	— Rose Waaler
Paul Bunnel	
Leptospira	
Toxoplasmosis	
Rubella	
Syphilis	
	— VDRL
	— RPR
	— TPHA
Chlamydia	

(d) Parasitology

The feeling from the survey was that most laboratories in New Zealand lack experience in parasite detection and that the methods used are often sub-optimum. It was suggested that frequent examples of ova, cysts and parasites, (including those other than faecal eg Pneumocystis and Toxoplasma), were needed to maintain staff experience and it would be useful to have both formalin fixed and PVA material/slides.

(e) Mycology

This aspect of microbiology appeared to be very poorly controlled, relying as it does on the extensive personal expertise of individual staff members. Any survey in this area would serve a useful purpose for teaching and reference purposes. It was suggested that the survey should also include contaminants and could be useful as a source of stock cultures.

(ii) VIROLOGY

The number of specialist virology laboratories in NZ is quite

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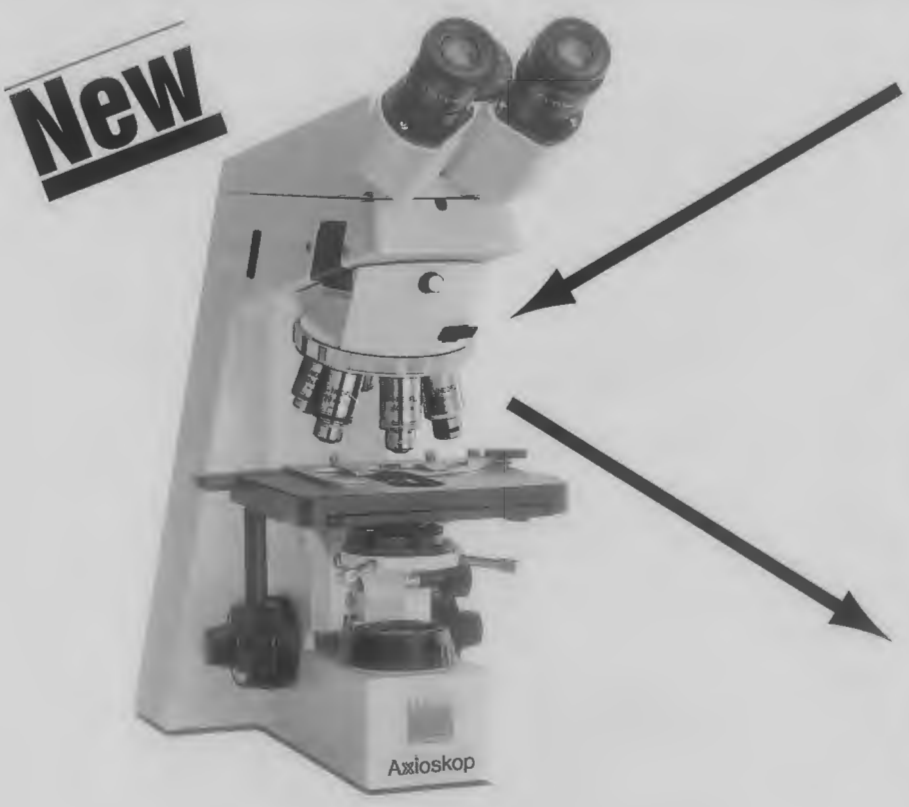

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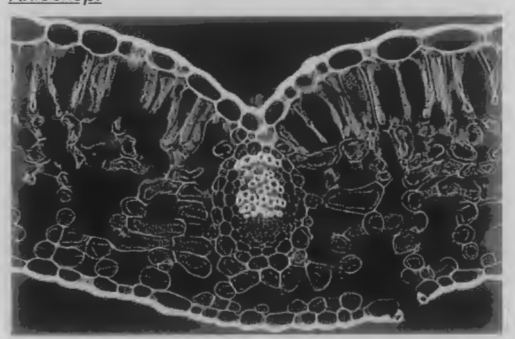

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small. The major concern expressed in all the questionnaires returned related to viral serology. It was felt that a wider range of organisms was needed, with perhaps weakly positive specimens for both Rubella and Hepatitis B, (and paired sera for Rubella). The tests specifically mentioned for inclusion in the survey were:

Rubella
Cytomegalovirus
Hepatitis B and hepatitis markers
HTLV III/LAV
Paul Bunnel titre
Herpes simplex
Varicella-zoster
Influenza A & B

Other suggestions for inclusion in a virology survey were in the areas of rapid viral diagnosis, (respiratory viruses, Herpes, mumps and measles), and the isolation of viruses to confirm that detection systems were operating satisfactorily

(iii) IMMUNOHAEMATOLOGY

There seemed to be general satisfaction with the frequency, complexity, etc of the NIPS programme. It was also felt that NIPS had the capacity to expand to cover more difficult antibodies or other marginal improvements.

A system for quality control of blood products was given low priority but this could reflect the respondents relatively small involvement with producing this material. Certainly, much reliance was put on the QC being already done by the base hospitals or regional transfusion centres. It was suggested that quality control of the Factor VIII or cryoprecipitate was essential and that it was also desirable to check platelets and FFP.

(iv) IMMUNOLOGY

(a) The needs which were expressed by the laboratories for the provision of a basic serology and viral serology programmes have already been outlined under "Microbiology" and "Virology" above.

(b) Specialist Immunology

It was felt by the majority of the respondents that the RCPA programme was excellent but that a few areas were not completely covered. Those tests which were identified as useful for inclusion in a programme were: proteins, such as alpha 1 anti trypsin, alpha 1 macroglobulin, transferrin, ceruloplasmin, C-reactive protein, haptoglobin; newer tests such as SSA, SSB, RNP and SM; and rheumatoid factor testing (particularly the gamma globulin titre).

(vi) CYTOLOGY

There were a number of needs identified in the survey by cytology laboratories, most of which related to standardisation of the interpretive aspects of cytology. A programme which contributed to a standardised grading system ie. a set of malignant and dysplastic criteria; assisted in staff training; improved information exchange; and enabled smaller cytology units to gain experience in cytological screening, (both general screening for malignancies and differential diagnosis), was seen as potentially useful.

Similarly, it was felt that the range of "acceptable" techniques for cell collection and preparation was too large, especially in the small laboratories. The survey indicated that a survey on the technical aspects of cytology could lead to standardisation throughout NZ, in particular: on the number of specimens per patient eg. cervical smears (one per year for two years); on the number of slides per specimen and the stains to be used, eg. pleural aspirate with Papanicolau, Giemsa and PAS. It has also been suggested that a "reference" laboratory acting in conjunction with the NZ Society of Cytology could promulgate "standard techniques".

(vii) HISTOPATHOLOGY

It appeared that the RCPA programme fulfilled most laboratories' needs in the area of the interpretation of slides. The technical aspects of histology, however, were not adequately covered by the RCPA. It was felt that as there is a wide variation in the methods and equipment used throughout New Zealand, it would be helpful to have an independent assessment of the results obtained in the quality of sections, routine H&E staining and special staining. From the responses to the survey it was also obvious that a number of laboratories would welcome more individual feedback and improved information exchange, particularly with regard to what expertise is available in other laboratories.

(viii) CLINICAL BIOCHEMISTRY

Understandably, most of the larger laboratories that responded to the survey were satisfied with their participation in the RCPA or Wellcome programmes. Concerns were expresed about NZ-based programmes because of the small data-base and because the huge mix of methods was not clinically comparable. It cannot be denied, however, that three areas were identified where the need for NZ-based programmes appeared to be supported.

(a) Basic Biochemistry

On the basis of cost, it was agreed that the most commonly used overseas programmes were beyond the finances of smaller laboratories. In addition it was agreed that a NZ-based programme for small laboratories could provide the common ground in performance and assessment which was required on a national and regional basis.

The content of a "basic" biochemistry programme appeared to be a controversial subject, however. Some laboratories wanted a programme as detailed as that from Wellcome but at a much reduced cost. Bearing in mind that the Wellcome programme is subsidised to a large extent by product sales, such expectations were obviously unrealistic. The analyses most commonly listed for inclusion in a basic programme were as follows:

Electrolytes (sodium, potassium, chloride, total bicarbonate, serum urea, creatinine)
LFT (albumin, total protein, bilirubin, alanine amino transferase, alkaline phosphatase)
Cardiac enzymes (creatine kinase, lactic dehydrogenase)
Calcium (Ca^{++})
Glucose
Phosphate
Amylase
Aspartate amino transferase
Gamma-glutamyl transferase
Uric acid

(b) Urinalysis

It was considered that this area had always been poorly covered and that there was a need for a frequent, low cost, basic survey. There was little indication, however, of what the content of such a programme should be. A suggested programme was as follows:

Electrolytes (sodium, potassium, creatinine, urea)
Total protein and/or albumin
Magnesium
Calcium
Phosphate
Uric acid
Amylase
Osmolality

(c) Drug Analysis

Again, the response to this survey indicated a need for a frequent, low cost, basic survey. The therapeutic drugs suggested for inclusion in the programme were; Digoxin, Salicylate, Theophylline, Dilantin, Tegretol, Acetaminophen and Aminoglycoside antibiotics. It was stressed in the responses, however, that for the programme to be useful a rapid accuracy/precision report should be returned within 10-12 days.

(ix) CYTOGENETICS

Although some form of quality control programme was seen as desirable, a number of difficulties in actually running one were foreseen. It was suggested that cytogenetic laboratories in New Zealand were badly equipped and understaffed. Certainly there appeared to be very few trained or qualified cytogeneticists available and as a result laboratories faced a heavy burden in training staff from scratch. It was argued that this burden combined with the routine workload faced by laboratories would leave no time for participation QC programmes.

Another argument was that QC assessments would be subjective in nature eg. on the quality of banded preparations and that the assessments, therefore, would need to be done by a suitable authority outside and independent of the hospital cytogenetics sphere.

While these arguments were accepted as valid concerns, they were not seen to be insurmountable. Indeed, in other fields survey material provided a valuable training resource and subjective assessments could be formalised through consensus evaluation or the use of reference laboratories.

One suggestion as to how QC assessment of cytogenetics laboratories could be done in NZ was as follows:

1. grading of quality of banded mitotic spreads (say four times per year);
2. laboratory analysis of karyograms (photographs of karyotypes) sent out by the survey organisers — suitable abnormal cases may be difficult to come by but it should be possible to produce skilful mock-ups, (say 2-4 times per year).

Discussion

This survey indicated that the large overseas programmes apparently satisfied the needs of the larger laboratories by covering most of the routine tests of the more common disciplines. The disadvantages of these programmes that were cited most frequently, (regardless of the department concerned), were: the high costs of participation; the long delays both in obtaining the survey material and receiving a response from the survey organisers; and the lack of follow-up and individual feedback. There was also a feeling that the range of tests covered by most of the overseas QC programmes was inappropriate to the services which smaller laboratories were called upon to provide.

A number of respondents were sceptical about New Zealand-based QC surveys citing the small statistical data-base, the multiplicity of equipment and methods in use and, in some areas, the problems associated with the subjective nature of the programmes. This may well be true in areas of specialised testing where laboratories perceived a need for external QC. The results of the TELARC survey clearly demonstrate, however, that needs exist in a number of different disciplines for a frequent, basic programme within the financial reach of the smaller laboratories in New Zealand. Wherever possible these basic programmes should also reduce the technical isolation in which laboratories work by improving the exchange of information, providing feedback and advice. The programmes should provide a rapid turn around of reports to laboratories so that any problems that were indicated by poor performance could be investigated. It was apparent from the responses in this survey that most laboratories believe that the expertise necessary to run QC programmes already exists in New Zealand, given sufficient encouragement and support were available.

Conclusion

The Health Department grant to TELARC provides the opportunity for financial support to initiate quality control programmes in areas of perceived need. The TELARC survey has identified several areas where laboratories feel the need for such programmes. TELARC would welcome applications, therefore, from laboratories that consider that they are able to provide the expertise and resources, given suitable financial support, to offer a QC programme in one of the areas, identified above. Submissions for programmes other than those identified by this survey will be considered if a need for such a programme can be demonstrated. Enquiries should be directed to:

The Director, TELARC, Private Bag, Remuera, Auckland 5.

APPENDIX 1. Perceived Needs

Survey Name	Number of Responses	Mean Importance Score	Overall Importance Score	Median Frequency (p.a.)	Median Cost (p.a.)
Biochemistry (Number of Returns = 36)					
Basic programme	23	2.43	1.56	12	300
Urinalysis	17	2.94	1.39	12	200
Drug analysis	14	3.50	1.36	12	250
Specialist Analysis	4	3.50	0.39	7	200
RIA/EIA	3	2.67	0.22	12	213
Blood Gases	2	3.00	0.17	8	210
Iron	2	3.00	0.17	26	
Acid phosphatase	1	2.00	0.06	6	50
CKMB	1	4.00	0.11	12	100
Fructosamine	1	2.00	0.06	12	100
Glycated proteins	1	3.00	0.08	12	100
Instrument checks	1	3.00	0.08	4	100
Oestriol	1	2.00	0.06	26	100
Overdose drug scene	1	4.00	0.11	4	200
Qualitative protein analysis	1	4.00	0.11	6	
Specialist Urine programme	1	3.00	0.08	6	300
Specific proteins	1	3.00	0.08	6	
Trace Elements	1	4.00	0.11	6	200
Cytogenetics (Number of Returns = 2)					
Karyotyping	2	3.00	3.00	3	
Fragile X Testing	1	2.00	1.00	2	
Prepared slides	1	4.00	2.00	3	
Technical aspects	1	1.00	0.50	1	
Cytology (Number of Returns = 16)					
Interpretive aspects	16	3.56	3.56	12	150
Technical aspects	15	2.80	2.63	4	50
Clinical aspects	2	4.00	0.50	1	
Workshop/seminars	1	4.00	0.25	1	350
Haematology (Number of Returns = 35)					
Routine Haematology	32	3.38	3.09	12	225
Bone Marrow programme	19	2.21	1.20	6	113
Routine Coagulation	6	3.17	0.54	12	250
Blood Films	2	3.50	0.20	8	
Vitamin B12 & Folate	2	3.50	0.20	6	100
Basic Haemolytics	1	2.00	0.06	4	100
Cell Typing	1	4.00	0.11	12	250
Cytochemical staining	1	4.00	0.11	12	120
Ferritin	1	3.00	0.09	6	100
Glandular fever/ Rheumatoid scr	1	3.00	0.09	6	
Haemoglobin	1	3.00	0.09	6	
Haptoglobin	1	0.00	0.00	4	100
Limited Immunology	1	2.00	0.06	12	300
Histology (Number of Returns = 17)					
Sectioning	16	3.19	3.00	6	100
Staining	16	3.38	3.18	6	125
QC Samples	1	3.00	0.18	4	
Immunohaematology (Number of Returns = 19)					
Antibody programme	14	2.93	2.16	6	200
Blood Products	11	3.18	1.84	4	125
Forensic proteins	1	3.00	0.16	3	100
Grouping and Antibody screen	1	4.00	0.21	6	200
Tissue Typing	1	4.00	0.21	4	
anti-HTLV III	1	4.00	0.21	4	100
Immunology (Number of Returns = 16)					
Basic serology	14	3.14	2.75	6	200
Viral serology	8	3.13	1.56	7	180
Specialist Immunology	3	4.00	0.75	16	200
Auto-antibody testing	1	3.00	0.19	12	
Microorganism serology	1	4.00	0.25	4	300
Specific Proteins	1	3.00	0.19	6	
Microbiology (Number of Returns = 34)					
Antibiotic Sensitivity	32	3.34	3.15	7	100
Organism Identification	32	3.16	2.97	6	135
Basic serology	19	2.89	1.62	6	100
Parasitology	9	3.67	0.97	6	120
Mycology	7	3.00	0.62	6	135
Mycobacteriology	2	4.00	0.24	8	120

Animal Microbiology	1	2.00	0.06	8	
Basic biochemistry	1	4.00	0.12	8	
QC strains	1	4.00	0.12	6	100
Staining	1	2.00	0.06	4	
Virology					
(Number of Returns = 9)					
Viral serology	9	3.56	3.56	6	160
IgM detection by IF	1	4.00	0.44	12	
Protein studies	1	2.00	0.22	4	
Rapid viral diagnosis (IF)	1	4.00	0.44	12	
Rotavirus detection	1	4.00	0.44	12	
Sensitivity of cell lines	1	4.00	0.44	12	
Viral isolation	1	2.00	0.22	3	

Mean Importance Score This is the average of the Importance Scores returned by respondents. Note that Low Importance was assigned a Score of 0 and High Importance a Score of 4.

Overall Importance Score This is the Mean Importance Score multiplied by the percent of returns that returned a value for the Importance of the perceived need (ie it assumes that those respondents not filling in the Importance section for a given need would have returned a Low Importance). This gives some indication of the overall importance of the perceived need to the medical testing community. It does however, unfairly treat those suggestions made by participants in addition to those that were printed on the survey form on the principle that, should these additional suggestions have been printed on the form, it is likely that more responses would have been received for that suggestion.

Median Frequency & Cost These columns give the median of the proposed frequency and cost that the respondents feel would be appropriate for the suggestions. The median was chosen in order to reduce the effect of outlying results.

The Pacific Way

Pacific Paramedical Training Centre (P.P.T.C.)

Eight students completed the Haematology/Blood Bank course held recently at the P.P.T.C. in Wellington. The Certificate Presentation to the trainees was held at Wellington Hospital on Friday 1st May. The Honourable Richard Prebble, Minister of Pacific Island Affairs, addressed the students and presented the certificates. Mata Nicholas (Cook Islands) thanked Mr Prebble on behalf of all the students for his attendance and encouraging remarks to the students.

Haematology/Blood Bank Technology Course, 9th February to 1st May, 1987.
Pacific Paramedical Training Centre, Wellington (P.P.T.C.)
Students from left to right back row: Karotu Babiano (Kiribati), Misi Nicholas (Nuie), Filipaina Anesone (W. Samoa), Binod Mirdha (Nepal), Stewart Dixon, Tutor (Blood Bank), Mike Lynch, Tutor (P.P.T.C.). Front row: Geoffrey Stephen (Solomon Islands), Mahlu Inocencio (Philippines), Mata Nicholas (Cook Islands), Ellen Palang (Papua New Guinea).

Here And There In The Pacific

Anyone for Research?

Jais Aben is a unique resort near Madang, Papua New Guinea. In the language of the Riwo people who live in a nearby village, it means "resting place". It is a hotel and research institute combined, where vacationers and scientists share facilities and the natural wonders of the Madang province. Jais Aben attracts scuba-diving tourists who are drawn to the famous warm, clear waters of the Bismarck Sea on Papua New Guinea's north coast. Its adjunct, the Christensen Research Institute, attracts scientists, particularly biologists, drawn by its facilities and fellowships.

The unlikely pairing of a pleasure resort and research station on a 22 acre coconut plantation, on a small peninsula in Astrolabe Bay, is the result of the foresight of an unusual man, Dr Allen Christensen. He founded the Christensen fund in California, 30 years ago to promote education, science and culture and the fund paid for Jais Aben.

It is also paying for the first five years of the research programme. Dr Christensen's daughter, Diane, is Director of the Institute and Managing Director of the Resort Company.

The mixing of tourism and science has not caused problems and in fact each has complimented the other. Scuba-divers help in the collection of marine specimens, this helps the scientist and gives the holidaying diver a sense of satisfaction.

The aims of the Christensen Research Institute (The C.R.I. Programme) are to further the knowledge of the land and marine plants and animals of P.N.G., in particular those of the Madang province. One of the first projects is to compile an index and map of all the plant and animal species and to make this information available to planners at the provincial and national government levels.

All scientists receiving fellowships to work at the Institute are required to contribute to the mapping and indexing project. Each of C.R.I.'s sponsoring institutions and universities, including the University of P.N.G., receives a grant to cover the costs of having research fellows at the Madang Laboratory. These grants include air fares, accommodation, meals and full use of the laboratory and other facilities.

The people of nearby Riwo village may be the first to benefit from Jais Aben research. One of the projects underway is a mariculture pilot scheme involving the spawning of giant clams and their possible cultivation as a food supply by the villagers.

"A Long Night With Lethal Guests"

The Australian Governments Film Unit, The P.N.G. Institute of Medical Research and several Australian Medical Research Centres have combined to produce this documentary film about malaria, its human cost and the chances of developing a vaccine to defeat it. The hour long film, "A Long Night With A Lethal Guest", studies the disease from three angles.

It begins with a small recently contacted Papua New Guinean group highly susceptible to malaria; it talks to scientists in the malaria ridden coastal regions of Madang province, who study the disease and its effects on village people; it also talks to scientists in Australian laboratories exploring the molecular properties of the parasite in the hope of discovering an agent to resist it.

In the developed world A.I.D.S. is the vogue epidemic of the eighties. Measured against the victims of malaria, the death toll from A.I.D.S. even at its worst in Central Africa, is miniscule. Malaria is also lethal. It also attacks the human immunity system so that the victim succumbs to a process of slow debilitation, eventually falling to other, often simple, ailments to which the body has lost its defences.

For malaria, again as for A.I.D.S., there is no sure cure. Certain drugs and repeated D.D.T. spraying programmes reduce its penetration, but the malarial parasite has survived, adjusted, adapted and returned more virulent than ever.

Malaria is still the major child killer in Papua New Guinea, for example. Recent developments in biogenetic knowledge have raised hopes that a cheap effective cure could be produced. A commercially available and safe vaccine is at least ten years away.

Assuming an effective vaccine can be found who will pay for it? If the mortality rate is drastically reduced, what will that mean for populations which currently live in balance with their resources. "A Long Night With Lethal Guests" explores the issues with intelligence and compassion.

Health Status Of Pacific Countries — Is It An Indication of "Development"?

Dr Richard Taylor, an epidemiologist with the South Pacific Commission says that the health status of the Pacific countries could be taken as an indicator of its "development". Papua New Guinea, the Soloman Islands, Vanuatu and Kiribati were characterised by infectious diseases and nutritional problems and the life expectancy was between 50 and 60. At the other end of the spectrum were American Samoa, Guam and the Cook Islands, with a predominant pattern of degenerative diseases, and in the middle, Fiji, Western Samoa and Tonga, with a combination of both.

Until the 1050s, infectious diseases, such as measles and influenza, and other diseases associated with inadequate water supplies and unhygienic waste disposal, were the leading causes of illness and premature death in the Pacific Islands. Since World War II the shift from rural, structured, homogenous, village based economies to more fluid, heterogenous cash-based economies has coincided with the emergence of non-communicable degenerative diseases such as diabetes, heart disease and cancers, normally associated with

NEGOTIATIONS COMMITTEE

Members of the Committee are: P. McLeod (Convener), B. Main (Chief Negotiator), C. Campbell, W. Wilson, J. Elliott and J. Holden (Legal Advisor).

One of the more interesting aspects about being involved in salary-negotiations is the uncertainty of what will be the final outcome. The 1986 wage round was no exception, and as it turned out, we never even got to the negotiation table! Many factors influenced this outcome and an explanation of how and why the Combined State Union became involved and effectively settled the 1986 wage round on our behalf is no doubt of interest to all.

The delay in getting the State Sector wage round under way meant that the wheels of change set firmly in motion by the government in State pay fixing were constantly turning and moving towards a conclusion. In other words, events were starting to overtake us in regard to negotiations and the mechanisms involved, simply by the delays being experienced.

The proposals for change in the State pay fixing systems for State Servants were well down the track by the time the State Services Commission was prepared to let the State wage round commence. In fact, it had become clear that there were going to be further delays as several groups such as ourselves, had indicated that we would probably end up at the tribunal court to settle our claim. With such delays in mind the government was keen to avoid trouble in the State sector with protracted negotiations in an election year and the C.S.U. could see an opportunity to bargain themselves into a better position with the proposed changes to the State pay fixing system.

The outcome of these negotiations is now well documented. It has since been revealed by the C.S.U. that they were in fact, in a very delicate position during their negotiations. The State Services Commission could have effectively argued that State Servants should have an approximate 2% salary drop! The C.S.U., being mindful of this situation negotiated certain parts of the upcoming legislation for pay fixing by agreeing not to oppose "enterprise bargaining" and "regional bargaining" in return for a 7% salary rise.

All affiliates to the C.S.U. were obliged to accept the negotiated deal as the S.S.C. would withdraw the offer if any group stood out. Not all affiliates were pleased with this outcome but each group realised the ramifications if they did not accept the deal.

The Negotiations Committee is presently pursuing a tribunal hearing over an interpretation dispute of H.S. 19 with the H.S.P.C. This issue relates to the application of the double increment clause for laboratory assistants who gain a Q.T.A. qualification. This dispute in fact relates back to the 1985 wage round and has been kept separate from the most recent round. An update on this dispute will be given at the A.G.M.

I would like to thank the members of the Negotiations Committee for their support during the last year. Equally, I would like to thank all those Charge Technologists who have responded to the various questionnaires and enquiries that have been put to them. I very much appreciate the time involvement required to answer these but I can assure you that the information we get is very important to the committee when putting together a salary and conditions claim.

SAFETY COMMITTEE

Members of the Committee are J. Parker (Convener) and B. Cornere.

Council is investigating the possibility of setting up a nationwide Laboratory Safety Register with a view to researching and collecting data on Laboratory Safety.

EDUCATION COMMITTEE

Members of the Committee are: J. Parker (Convener), B.T. Edwards, C. Campbell and J. Elliott.

The Board approved Council's request to amend the regulations to allow holders of a non-Paramedical NZCS to pursue a course of training for limited registration in the four main disciplines. This mode of qualification already operates in the other disciplines.

Currently Council is represented on a Working Party established by Otago University to investigate the feasibility of setting up a degree course in Medical Technology.

FELLOWSHIP COMMITTEE

Members of the Committee are K. McLoughlin (Convener) and H. Potter.

Being on the Fellowship Committee this year has been like covering the Telethon phones at 3 a.m. — quiet. Could it be that the changing health staffing and finance scene has cancelled out any spare time that technologists may have had for pet Fellowship projects or is it simply flagging interest from lack of incentive.

Again this year there were no applicants for the Fellowship examination and only one thesis is known to be in the preparation stage.

The changing educational needs for technologists have been followed closely by the Fellowship Committee. It seems clear that amendments will be required in the Fellowship Regulations soon. Although suggestions appropriate to future adjustments have been made to the Council, no action has been taken in the meantime.

MEMBERSHIP COMMITTEE

Members of the Committee are: D. Pees (Convener), W. Wilson and D. Dixon-McIver.

Total membership of the Institute has settled a little after the rather hectic previous year and remains higher than earlier years. It was pleasing to see an increase in the number of Complimentary Members — 113 of whom have gone on to swell our ranks as Members for the coming year. Also 48 members were successful in examinations last year in gaining their Diploma thus becoming eligible for Associate status.

With the expected changes in the health scene over the next one or two years it will be important for all health related groups to maintain levels of membership of their respective societies — ours being no exception. We therefore strongly urge all current members to encourage others in the workforce to join us now.

	1986/87	1985/86	1984/85	1983/84
Membership from previous year	1792	1352	1369	1366
Less deletions	454	58	190	234
	1338	1294	1179	1132
Plus applications	198	498	173	237
Membership as at 31st March	1536	1792	1352	1369
Membership Composition:				
Life Members	14	15	15	15
Fellows	39	42	40	51
Associates	785	732	610	668
Members	625	956	595	531
Non-practising members	55	32	77	90
Honorary Members	18	15	15	14

Sadly we record the deaths of Life Members D.H. Adamson of Christchurch and D. Whillans of Auckland.

TECHNICAL ASSISTANTS EXAMINATION COMMITTEE

Members of the Committee are: B.T. Edwards (Convener), K. McLoughlin, G. Paltridge and T. Rollinson.

The 1986 examinations were conducted on 13 and 14 May. There were 77 candidates for the examination with 69 gaining the Certificate of Qualified Assistant. The pass rate was 89% compared with 87% the previous year.

Breakdown of figures are:

	1986		1985	
	Sat	Passed	Sat	Passed
Clinical Biochemistry	10	8	10	9
General Certificate	6	6	7	5
Haematology	17	17	20	18
Histological Technique	6	4	3	2
Medical Cytology	2	2	7	7
Medical Microbiology	16	13	20	15
Mortuary Hygiene & Technique	2	2	0	0
Radioisotope & Radioassay Technique	0	0	1	1
Immunohaematology	8	7	9	9
Immunology (Microbiology)	3	3	5	5
Special Certificates	7	7	9	8
	77	69	91	79

AWARDS COMMITTEE

J. Parker (Convener).

With the end of the financial year the setting up of the Trust Fund has finally been completed and trustees have held their initial meeting.

The Institute would like to again extend its thanks to the sponsors of the various awards and its congratulations to the winners. The donors were:

MTB Certificate Level Examinations

Roche Products (NZ) Ltd
Kempthorne Medical Supplies Ltd
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Hoechst NZ Ltd
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Medic Corp
Hoechst NZ Ltd

Special Awards

Wellcome NZ Ltd International Travel Award
Eli Lilly Microbiology Scholarship
McGaw Dade Haematology Award
Roche Products NZ Ltd Microbiology Award
N.Z. Blood Foundation Prize for QTA

PUBLICATIONS COMMITTEE

Members of the Committee are: D. Dixon-McIver (Convener), D. Reilly, W. Wilson and P. Reilly (Advertising Manager).

There has been a dramatic decrease in the number of papers proffered for publication — 13 (3 Auckland; 4 Dunedin; 3 Wellington; 2 National Health Institute; 1 Hamilton) of which 12 have been accepted for publication and published. This compares with 26 in 1984 and 28 in 1985.

This drop is most disappointing but it is hoped that it is only temporary. However the drop does demonstrate the dependence that the Journal has on Dunedin and Auckland for material. Any reduction from these centres means a shortage of material; of the 26 articles in 1984 15 were from these two centres and in 1985, 17 of 28.

During the year, the changeover from manually packaging, labelling and posting to an automated procedure has been completed thus removing much of the burden from the Editor.

The Editor would like to record his thanks to Trish Reilly for her tremendous efforts to obtain advertising, the staff of National Women's laboratory for their support and assistance, Maurice Sheppard and the staff of Institute Press for their help throughout the year, the Royal New Zealand Foundation for the Blind for their help during the transition to the automated postal procedure and lastly to all those who sent material for publication without whose efforts the Journal would have been only a news sheet.

NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INC. STATEMENT OF FINANCIAL POSITION AT AT 31 MARCH 1987

	1987 $	1986 $
ACCUMULATED FUNDS		
Balance 1 April 1986	61,856	46,597
Surplus (deficit) for the year	(26,434)	15,259
Balance at 31 March 1987	35,422	61,856
Clinical Laboratory Special Fund	641	641
TOTAL FUNDS AS AT 31 MARCH 1987	$36,063	$62,497
Represented by:		
CURRENT ASSETS		
Cash at bank	2,300	10,667
Stock on hand	1,658	6,593
Air New Zealand Bulkair Deposit Account	—	1,470
Sundry debtors	10,850	11,132
Subscriptions outstanding	276	3,859
TOTAL CURRENT ASSETS	15,084	33,721
LESS CURRENT LIABILITIES		
Sundry creditors	12,747	19,737
Subscriptions in advance	1,296	—
Examination fees in advance	1,750	2,690
GST	638	—
TOTAL CURRENT LIABILITIES	16,431	22,427
NET CURRENT ASSETS (LIABILITIES)	(1,347)	11,294
INVESTMENTS (Note 2)	35,000	50,000
FIXED ASSETS (at cost less depreciation)		
Typewriters (2)	2,410	1,203
	$36,063	$62,497

Treasurer — D.M. Reilly

President — C.H. Campbell

The attached notes form part of this statement.

NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INC. STATEMENT OF INCOME AND EXPENDITURE FOR THE YEAR ENDED 31 MARCH 1987

	1987 $	1986 $
INCOME FOR THE YEAR WAS DERIVED FROM:		
Conference surplus (as per statement)	—	8,096
Examination surplus	382	331
Interest received	5,621	9,061
Miscellaneous income	5,234	2,940
Subscriptions and levy	41,632	57,495
TOTAL INCOME	52,869	77,923
FROM THIS INCOME THE FOLLOWING EXPENDITURE WAS MET:		
Accommodation, etc.	7,985	7,966
Accountancy and audit fee	1,510	1,009
Computer services	13,661	4,399
Fees — C.S.U., LAMLT and NCCLS	4,170	2,908
Honoraria, gratuities and prizes	2,008	3,450
Journal cost (as per statement)	13,431	4,428
Legal expenses	1,439	10,318
Post Graduate Education and Pacific Training	2,394	1,573
Postage and tolls	5,643	4,416
Printing, stationery and typing	3,959	2,281
Sundry expenses	1,900	307
Travelling expenses	20,515	19,111
	78,615	62,166
Depreciation of typewriters	688	498
TOTAL EXPENDITURE FOR YEAR	79,303	62,664
Which leaves an excess of income over expenditure (expenditure over income) for the year	$(26,434)	$15,259

The attached notes form part of this Statement.

NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INC. CONFERENCE ACCOUNT FOR THE YEAR ENDED 31 MARCH 1987

	1987 $	1986 $
INCOME FOR THE YEAR WAS DERIVED FROM:		
Registration		5,935
Trade rentals and advertising		14,268
Donations		11,105
Social functions		4,268
Workshops		1,400
Bank interest and other income		873
TOTAL INCOME	—	37,849
FROM THIS INCOME THE FOLLOWING EXPENDITURE WAS MET:		
Accommodation, meals and travel costs		17,041
Social function costs		7,224
Rentals		1,490
Postage, stationery and administration		3,498
Other expenditure		500
TOTAL EXPENDITURE	—	29,753
Which leaves an excess of income over expenditure transferred to the Statement of Income and Expenditure	$ —	$ 8,096

JOURNAL ACCOUNT FOR THE YEAR ENDED 31 MARCH 1987

INCOME FOR THE YEAR WAS DERIVED FROM:		
Advertising revenue	30,832	29,149
Subscriptions	2,208	2,087
TOTAL INCOME	33,040	31,236
FROM THIS INCOME THE FOLLOWING EXPENDITURE WAS MET:		
Printing — journal and newsletter	44,506	29,335
Postage and stationery	1,314	5,740
Sundry expenses	651	589
TOTAL EXPENDITURE	46,471	35,664
Which leaves an excess of expenditure over income transferred to the Statement of Income and Expenditure	$13,431	$ 4,428

The attached notes form part of this Statement.

NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INC. NOTES TO THE 1987 FINANCIAL STATEMENTS

1. STATEMENT OF ACCOUNTING POLICIES

The historical cost basis of accounting has been used in the preparation of the financial statements. Reliance is placed on the fact that the Institute is a going concern. Accrual accounting is used to match expenses and revenues.

(a) Fixed assets and depreciation
Depreciation is calculated on a straight line basis to write off the typewriters over their estimated useful lives of 5 years.

(b) Stock is valued at actual cost.

There have been no changes in accounting policies. All policies have been applied on bases consistent with those used in previous years.

2. INVESTMENTS

(a) Debenture stock
General Finance Ltd $20,000 @ 19.0% matures on 21/8/87
BNZ Finance Ltd $ 5,000 @ 15.0% matures on 14/9/87

(b) Term deposit
Bank of New Zealand $10,000 @ 14.5%

3. STOCK

	1987 $	1986 $
Examination stationery	50	50
Journal paper	—	4,650
Ties/badges, etc.	1,608	1,893
	$1,658	$6,593

AUDITORS' REPORT TO THE MEMBERS OF THE NEW ZEALAND INSTITUTE OF MEDICAL LABORATORY TECHNOLOGY INC.

We have audited the financial statements on pages 1 to 4 in accordance with accepted auditing standards and have carried out such procedures as we considered necessary.

In common with other organisations of a similar nature, control over income prior to its being recorded is limited, and there are no practical audit procedures to determine the effect of this limited control.

Subject to the possible effect of the limited control over income referred to in the preceding paragraph, in our opinion the financial statements give, using the historical cost method, a true and fair view of the financial position of the Institute as at 31 March 1987 and the results of its activities for the year ended on that date.

26 June 1987
MANUKAU CITY, NZ

DELOITTE HASKINS & SELLS
CHARTERED ACCOUNTANTS

The 1986/87 Financial Year has ended with a deficit of $26,434. This is due to substantial expenses on Computer Services, Journal and Legal Fees.

The computer software has been enhanced significantly to assist the Membership Convenor and the Journal Editor. The $13,661 reflects the hourly rates of programmers and key punch operators who enter the members payment details.

Members would have noticed the journal packaging which is done for us by the Royal Foundation of the Blind. Advertising income is similar to last year, however rates have been increased for the current financial year.

The legal expenses are not so obvious because of an amount which was accrued from last year, but council has used legal advice on a number of matters.

This deficit reflects the involvement of outside people employed to assist council in carrying out Institute affairs. This is to be an ongoing practice and is the main reason for an increase in subscriptions.

Dennis M. Reilly
HONORARY TREASURER

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AVL 939 Blood Gas Analyzer

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economical, easy to operate.

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affluent, industrialised countries.

A recent review entitled "Health and Nutrition Problems and Policy Issues in the Pacific" by Ms Abby Bloom of the University of Sydney, School of Public Health and Tropical Medicine, notes that prevalence rates of diabetes in the Pacific Islands are now among the highest in the world, although as recently as 15 years ago the disease did not constitute a significant problem in the region.

Increasingly, the South Pacific is also falling victim to those other ills of modern society — alcoholism, domestic violence, accidents, and suicide. According to the report, recent evidence points to a startling increase in the rate of accidental and intentional death due to drinking paraquat, a commonly available and especially toxic herbicide. A move away from traditional food habits — particularly in urban areas — to a diet heavily reliant on imported and processed foods — underlies the regions principle health problems.

The paper notes that the contemporary diet contains excessive animal fat, salt, and calories, and that traditional high fibre root vegetables such as taro, sweet potatoes and yams, are being replaced with less beneficial bread, rice, tinned meats and fish.

A decline in the length of time babies are breast fed and bottle feeding have contributed to malnourishment of young children. Studies show a correlation between early weaning and malnourishment among children in Western Samoa and the Soloman Islands, while malnutrition occurs more frequently among bottle-fed Fijian children. Bottle fed children are more likely to succumb to gastroenteritis.

The crucial factors believed to contribute to the deterioration of health are:

1. A more sedentary lifestyle.
2. Inadequate housing.
3. Poor employment opportunities.
4. Expenditure of low incomes on goods and services other than food.
5. Emulation of elite cosmopolitan lifestyles.

Report on the Use of Fab Anti-IgG in Immunohaematology

S.M. Henry, Auckland Regional Blood Centre, Park Ave, Auckland 1

Project funded in part by the 1985 N.Z.I.M.L.T. Scholarship

A method for using the reagent Fab anti-IgG was developed, specifically for use in Enzyme Linked Immunosorbent Assays (ELISA). Fab anti-IgG was found to be effective in neutralising unwanted red cell bound IgG, and the initial line of development was to neutralise the IgG on IgG sensitised red cells and allow their subsequent phenotyping. Fab anti-IgG was either manufactured [1] or purchased from a commercial source. After development of the method and successful phenotyping of IgG sensitised red cells, a paper was submitted and accepted by Vox Sanguinis in February 1987[2].

In brief Fab anti-IgG is a fragment of anti-human IgG which binds with the same antigen sites on the IgG molecule as does anti-human IgG (AHG). Pretreatment of sensitised cells with Fab anti-IgG removes the AHG binding sites thereby preventing agglutination with AHG or the binding of labelled anti-human globulin in the ELISA assays. As the unwanted sensitising IgG has been neutralised by the Fab anti- IgG, the red cells can then be phenotyped with antiglobulin reactive antiserum, or tested in ELISA assays.

The current area of development with Fab anti-IgG is to use it to neutralise the small amounts of IgG on normal red cells and platelets. The reduction in background optical density in these ELISA assays causes a net increase in the sensitivity.

The initial work with an ELISA red cell antibody quantitation assay has shown an increase in the endpoint of at least two doubling dilutions. Due to this significant increase in sensitivity, an ELISA anti-D quantitation assay using cells pretreated with Fab anti-IgG is under development.

Fab anti-IgG may be of use in other biological assays where IgG requires neutralisation.

I wish to thank the N.Z.I.M.L.T. for the contribution of $500 (N.Z.I.M.L.T. Scholarship) towards costs.

References

1. Benny A.J., Wilkie R., Henry S.M. A Simple Standardised Method for the Preparation of Fab fragments of Immunoglobulin G. *NZ J Med Lab Tech* 1987 (In press).
2. Henry S.M., Baird S.J., Woodfield D.G. The Use of Fab Anti-IgG in Phenotyping IgG Sensitised Red Cells. *Vox Sang* 1987 (In press).

The 17th IAMLT Congress — A Personal View

Kevin McLoughlin

Winner 1985 Wellcome/NZIMLT International Travel Award

For me, the first sight of Stockholm was like that of a child seeing its first bicycle for the very first time. Like the child, I had known for ages that it would all happen eventually but even the intense and prolonged anticipation was no match for the magic of that moment. As Marianne and I stood on the harbour side early on that August morning, the Swedish summer sun sparkled from the still waters and glistened on the three gold crowns above the City Hall. This was the tantalising view I had seen in a wrinkled poster for almost a year — now no longer the subject of daydreams

But I'm beginning the story half way through. I should at least tell you of some of the things that happened on the way. After all, don't they say that getting there is half the fun? Of course it is impossible to go into details so, of necessity, these will be brief glimpses of many unforgettable moments.

The first leg of our journey was the long haul across the Pacific to Los Angeles. It is this kind of flight that makes me draw parallels between airline passengers and battery hens. Both are crammed into a confined space and fed continuously. The chickens yield a slightly more useful end product. You have probably guessed from this that, like the hens, I'm not much of a flyer. That is not exactly true but I am sceptical about the joys of air travel and it still amazes me, not so much that a huge piece of machinery can actually leave the ground but that having done so, can stay in the air for 10 hours or more at a time, travelling at 800 kph. If only laboratory equipment could be that reliable. If only we in New Zealand could have the same service support to ensure that kind of reliability.

After a couple of days in Los Angeles adjusting to the time difference, I made "business calls" in San Francisco and Portland before carrying on to New York via Louisville. An odd detour you might think, but this was made on Marianne's insistence to meet an old pen pal of 25 years. It was in Louisville that we were officially initiated into the American baseball culture. Yes, I did the whole thing; Budweiser, popcorn, hotdogs and peaked cap — can you imagine? The pen pal's closest friend was a lady of generous proportions whose continuous chuckles bubbled from her nudges during the ball game and nearly knocked me from my seat. Later, after the inevitable hamburger, we sat on the front porch in a swinging seat, watching the fireflies flash in the warm night air and reflecting on the open-hearted generosity of Southern hospitality. Kentuckians may not be the richest Americans but everything they have is yours to share.

The two day working stop-over in New York came at the end of two weeks flitting through the noise and bustle of American cities. At this stage of the trip our prime objective was to be in London in time for the Trooping the Colour. Soothed by the gentle accents and unaccustomed courtesy of our British Airways hostesses, we arrived sufficiently rested to join the crowds standing five deep in The Mall (in defiance of a friend's offer to watch the ceremony live on TV). It was an unusually warm day for London and I suffered a malady peculiar to the ageing male — sunburn on the top of the head. But for all the heat and discomfort, just being there was an experience that brought a lump to the throat and a tear to the eye. A French girl sitting on the shoulders of a companion beside us summed up the spectacle when she first spied the Queen. In a hoarse whisper she simply said, "Elle arrive!" and the awe and wonder in her voice gained tacit approval from all nationalities around her. We understood even more than she had said.

London holds a surprise around every corner. For anyone with a remotely British heritage, there it all is, encapsulated in a few square miles, the historical background and folklore of the Commonwealth. Building, monuments, scenes instantly recognisable though never seen before. Through all this history Londoners go nonchalantly about their business as I was expected to do when visiting the blood transfusion services there. The lab staff at St. Thomas' Hospital were not at all fazed by their view of the Houses of Parliament across the Thames. Luckily, not all the laboratories I visited were so well sited. The Blood Group Reference Laboratory has no view at all and it was there, free of famous distractions, that I was able to learn most from a purely scientific point of view.

What follows here is not intended to incite jealousy but merely to add another glimpse in the overall picture. For two years I had accumulated annual leave and at last allowed myself the luxury of a week of pure holiday cruising in the Greek Islands. Our boat was a strange, rounded and uncomfortable craft, not at all the luxury yacht you might imagine, but the Aegean Sea and the Cyclades were only a little short of heaven. While on the subject of Greece I'd like to insert a little cautionary tale here for any prospective travellers. Greek mothers tell terrifying stories about the Athenian taxi drivers to scare their kids into eating their vegetables — and they are all true. At about 6:30 on the morning we left Athens, our taxi was rocketing through the streets at 90kph. We could see the accident developing but had that sinking, dreamlike feeling of being able to do absolutely nothing about it. BLAM! Hit by another speeding taxi. Two wrecked vehicles. Fortunately no injuries to anyone (thank goodness for Mercedes) but a few qualms about the substitute taxi called for the continuation of our trip to the airport. We left the two drivers still arguing in the middle of the road and as the accident scene grew smaller behind use we could still make out their arms flailing in the air.

It would take me the rest of this Journal to tell you of our other pre-Congress travels and by now you are probably eager, as I was then, finally to get to Stockholm. Let me just say though that our travels continued by Eurorail starting in Dublin with royal treatment by the McLoughlin cousins and from there through Europe mixing business with pleasure in such cities as Paris, Dijon, Vienna, Munich, Heidelberg, Kassel, Hamelyn and (on a later side trip) Leningrad I'd be delighted to chat about this section of the trip with anyone who is willing to listen.

Marianne and I arrived in Stockholm on the overnight train from Hamburg which clanked and clanged on and off ferries all night long. The morning air was as clear as Swedish crystal and the sun reflected brightly from the many waterways, burning into our sleep-starved eyes. Water and verdigris-stained copper roofs are the first striking features of the city that is sometimes called the Venice of the north. This first brief call to Stockholm was a short mail stop because I had already arranged to spend a week each in the blood transfusion services in Uppsala and Helsinki before the start of the Congress. Only two letters awaited our arrival at the Hotel Jerum — which was to be our forthcoming conference accommodation — both were to tell me that I had been deposed from the NZIMLT Council. The feeling of bitter disappointment on learning this news was to follow me for some weeks. Even thoughts of drowning my sorrows were quickly put aside when we discovered that our initial consoling beer had cost 35 Kroner (about NZ$10) for a ten ounce glass! This was to be our introductory practical lesson on the high cost of living and we guessed then that this might account for the apparent outward melancholy of the Swedes.

During the week which followed, I was to discover by working with Prof Claes Hogman and his staff in Uppsala that this first impression was very misleading The majority of Swedish people are apartment dwellers and their reserve is a necessary screen common to all whose homes lack the Kiwi 'quarter-acre' spaciousness. Thankfully their screen is a light mesh curtain that is easily drawn aside by friendship to reveal their delightful, open, fun-loving and ingenuous personalities which are so characteristically Swedish Working in the blood transfusion service gave me a great boost in knowledge especially about blood components and the most likely future trends. I was also able to gain an insight into the Swedish conscientious attitude to work and to life in general.

The IAMLT Congress

More than 900 delegates from Australia to Zimbabwe attended the 17th IAMLT Congress in Stockholm. The huge international conference centre, Massan, was the venue at Alvsjo, 9 minutes by train from central Stockholm. Most delegates were housed in city hotels (some like me in student hotel accommodation) and the pre-paid train fares made it easy to travel to and fro without fuss.

The Conference centre covered many hectares with the Congress occupying only one corner that had two restaurants and a plethora of meeting rooms. The modern main auditorium came equipped with all the latest features; noticeable amongst these was a spotlight for the speaker who was then more than just a disembodied voice during slide presentations.

The Opening Session in the main hall was first addressed by the President of one of the Swedish host societies who welcomed guests and very soon made a mention of South Africa (whose delegates were apparently unable to obtain Swedish visas). This was the first hint of much more to follow. The Swedish Minister of Health in opening the Congress spoke of extending health care professions into the community and again made mention of South Africa. The speeches

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Completely automatic,
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plasma display, built-in printer.

AVL 947 Blood Gas Analyzer

Completely automatic, video display,
unique alphanumeric keyboard,
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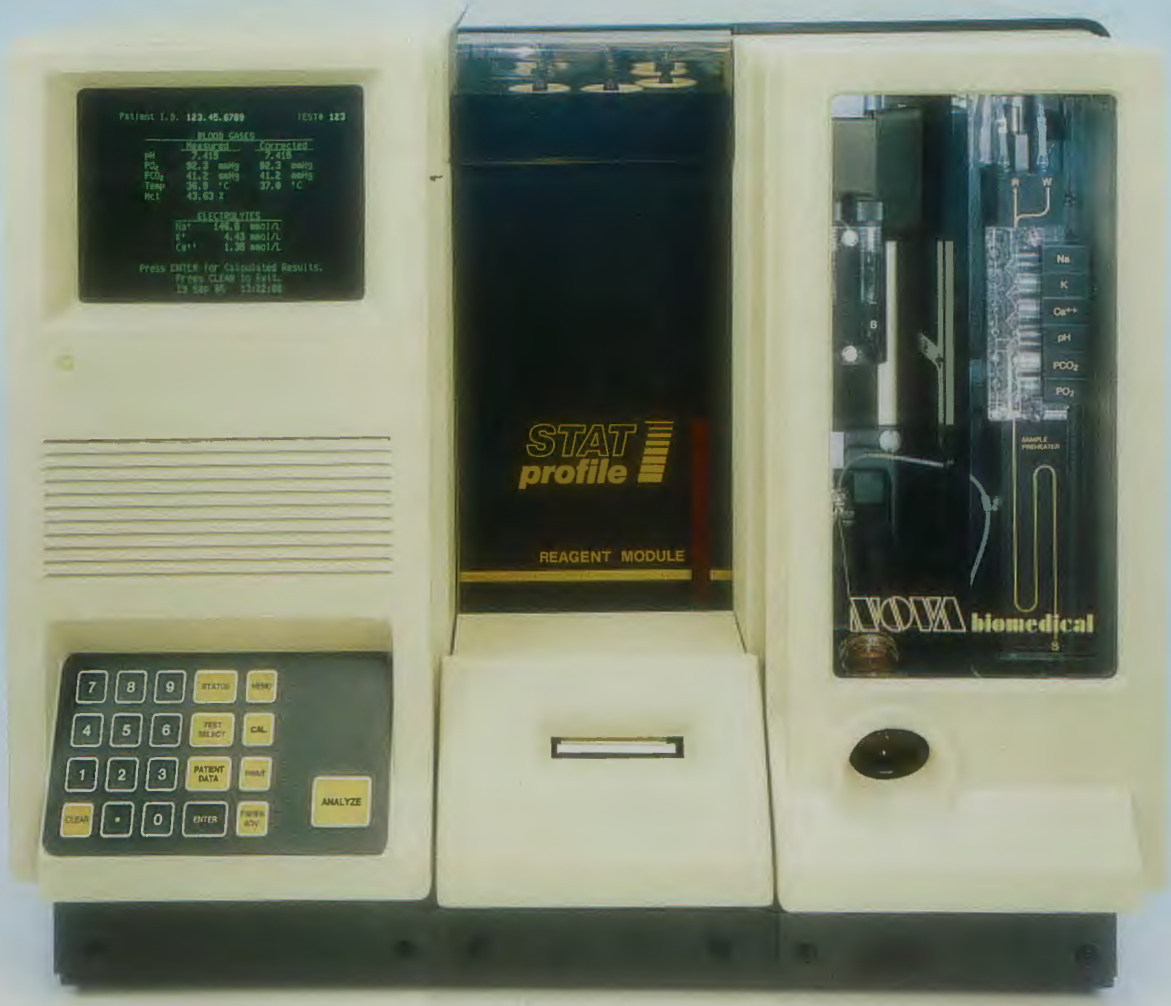

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NOVA's series of three Stat Profile analyzers introduce the most fundamental technical advances in blood gas instrumentation in thirty years. These advances include:

- Test menus that include pH, PCO_2, PO_2, Na^+, K^+, Ca^{++}, and Hct measurements.
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were interspersed with Scandinavian music and a dance ensemble accompanied by renaissance recorder music (not my favourite). The session was followed by the President's reception where the food was arranged in typical sandwich-table style.

The scientific sessions followed the themes — "Medical Technology in Modern Age" and "Laboratory in Health Care in Developing Countries". I attended the sole Immunohaematology session for the week to gain some interesting information on platelet antibodies and monoclonal antibodies used in plated for blood grouping. A speaker from the USA told those present how surprising it was to find all Tongans to be Rh positive. Kiwis could have told her that 20 years ago.

From that session onwards I chose to attend papers on education and management mainly delivered by American speakers who unfortunately failed to light any fires of enthusiasm. By far the most exciting news to me was the success of the various degree based courses either running or being developed in the UK. I am now certain that this is the way we should be heading in New Zealand. It was in these sessions that I came upon the phenomenon of the speaker who chose to remain seated throughout his/her presentation thus adding to the boredom of overhead projections. For relief I attended some of the developing country sessions and was gratified to discover that Des Philip's paper on evaluating and choosing appropriate equipment was regarded as one of the highlights.

In general, the papers presented were quite lightweight and this emphasises one of the major drawbacks of such a meeting. This type of general Congress can no longer expect to compete scientifically with the specialist international meetings which draw off some potential attendance. For instance, at exactly the same time as the Stockholm meeting there was a major histocompatibility meeting in Helsinki. This clash explained the dearth of transplant information at the IAMLT meeting. I think there is a lesson to be learned from this. Perhaps the NZIMLT should consider some way of attracting back splinter groups which are already forming here (such as Biochemistry and Microbiology).

Unfortunately for the trades people, their exhibition area was in a part of the conference centre distinctly separate from the scientific sessions and refreshment rooms. At any time during the week I could have fired a shotgun down the aisles of the trades displays without fear of hitting a soul. Only on the last day of the Congress week did coffee become available close to the trades.

Goran Anderrson of Wellcome with the IAMLT President, Shirley Pohl and Kevin McLoughlin during the Congress.

The Pre-GAD Meeting

This is traditionally a meeting held before the General Assembly of Delegates. The 1986 pre-GAD was very informal with no enforcement of recognised rules of debate and in retrospect it is very hard to pin down any rules at all that were applied at any meeting. The general idea of the informality is presumably to allow all present to have their say on proposals without feeling inhibited. It was at this meeting that the South African proposal from Norway, Denmark and Iceland made its first appearance. The wording of this proposal would have had the effect of immediately ousting the South African organisation from the IAMLT and remember that no delegates from that country were able to attend the Congress to speak in their own defence. It is my guess that the late introduction of such an important constitutional item would never have been allowed at a New Zealand meeting.

In earlier correspondence, the acting President of the IAMLT had initially turned down the proposal because it called for the expulsion of the South African Society on purely political grounds and therefore was clearly against Article 2-6 of the Statutes. He had offered alternative wording for a proposal that he thought could have been discussed but this was never followed up. After short discussion of the other matters which were to be raised, the pre-GAD ended with attendees hoping that the Council would come up with some satisfactory solution to the South African proposal impasse.

General Assembly of Delegates

All those present at the GAD were given a Swiss Army pocket knife (mine I suppose should be NZIMLT property) promoting the meeting in Geneva in 1990 — a very nice touch I thought.

At the start of this meeting, a South African proposal worded by the IAMLT Council was distributed. The President announced that the Council had decided that this matter would be admitted for discussion and because it was considered so important it was moved up the agenda to be the first item of business. Almost immediately, an amendment was moved by the UK delegation which entirely changed the Council's wording of the proposal but in essence would have allowed the South Africans at least to be present for future discussions. The UK amendment was put to the meeting and after a vote, the motion was declared carried. At this stage, the past President spoke for the first time on the subject and pointed out that, since it was against WHO guidelines for a Non-Governmental Organisation to accept South African membership, the decision would inevitably lead to the demise of the IAMLT. This comment caused uproar and an adjournment was called for immediately. During this break, frenzied activity took place with small pockets of intense discussion occurring all over the auditorium.

At the resumption of the meeting, the chief delegate for Ireland asked for a recount of the previous vote on the question of accuracy. The recount was agreed to and as a result the UK motion was declared lost — a shock reversal of the previous decision.

The Council proposal therefore became the main motion once again. This was put to the meeting and was declared carried. The effect of this decision is that the South African organisation has been asked to resign from the IAMLT unless it can show evidence that it is not acting in contravention of the IAMLT Statute concerning admission of members regardless of race, colour, or creed.

Other business items discussed were far less heated and much more matters of "machinery". The only other contentious issue was that of subscriptions for which the Council has been directed to investigate a sliding scale system.

On the social side and being comparatively impecunious "Kiwis" we steered clear of many of the social arrangements which were enormously expensive. Luckily, we had invitations from a local delegate and two companies which led to the most memorable evenings of the whole trip. The first of these was an evening of home hospitality hosted by Marthe and her flatmates in an apartment right in the middle of the Gamla Stan (the original city centre) famous for its narrow streets dating back to the 13th century. There we talked of the Wasa which if you like is the Swedish equivalent of the Mary Rose but in a much better state of preservation. We were later to see this vessel which had sunk with the loss of all hands on its maiden voyage in Stockholm harbour in 1628. A really remarkable relic, deserving of much more acclaim than the remark overheard from an American tourist who passed it by saying " . it's only some old boat anyway."

While other delegates wined and dined at the famous Nobel Prize banquet hall we spent the evening on a boat cruising around the Swedish archipelago — an event not to be missed. But the social highlight was the night arranged by the local Wellcome division especially for Marianne and me at the home of Gunnela and Karle Ameln on an island called Waxsholm (produced with a V). There is a traditional feast held annually to celebrate the opening of the season for fresh-water crayfish and although it was about a month too soon, this was brought forward just for us. The meal consisted of stacks of small delicacies washed down by liberal quantities of Swedish schnapps called skane (pronounced skoaner) and interspersed by singing "Helan go" amongst much hilarity. Our efforts at correct slurping etiquette were appreciated by our hosts but I'm afraid we must have been only average students as our stacks of emptied crustaceans were much smaller than everyone else's. What fond memories we have of that night and of the people.

There is no way of expressing my gratitude adequately to the NZIMLT or to all the wonderful people from Wellcome. I still feel very humble about being the recipient of such a highly esteemed award. I know that the other applicants and in fact all Institute members must have been envious, and with good cause. I can only hope that my representation of the NZIMLT came close to your expectations. It was the experience of a lifetime and I thank you all most sincerely. Tack, Sverige. Tack sa mycket.

INSTITUTE BUSINESS

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Biochemistry Dept., National Women's Hospital, Auckland.
or the Editor, P.O. Box 35-276, Auckland, 10.

Membership Convenor
David Pees
P.O. Box 29-115, Greenwoods Cnr, Auckland.

Membership Fees and Enquiries

Membership fees for the year beginning April 1, 1987 are:

For Fellows — $60.50 GST inclusive

For Associates — $60.50 GST inclusive

For Members — $49.50 GST inclusive

For Non-practising Members — $33.00 GST inclusive

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

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

MEMBERSHIP SUB-COMMITTEE REPORT — MAY 1987

Since our March meeting there have been the following changes:

	27.5.87	11.3.87	12.11.86	17.8.86
MEMBERSHIP:	1536	1717	1724	1735
Less resignations	35	24	10	24
Less G.N.A.	23	9	13	2
Less deletions	—	251	—	—
Less deceased	—	1	—	—
	1478	1432	1701	1709
Plus applications	34	103	14	12
Plus reinstatementrs	2	1	2	3
	1514	1536	1717	1724

Applications for Membership

Ms Maree Faye BOOTH, Auckland; Miss Joanne Mae SEXTON, Auckland; Mrs Ewa Barbara SMIALOWSKA, Tauranga; Miss Caroline Paula HOPE, Wellington; Miss Donna Maree REYNISH, Stratford; Mrs Dianne Laree JACKSON, Auckland; Miss Julie Anne ASHWORTH, Ashburton; Miss Delwyn Sonja STOCKDILL, Ashburton; Miss Lisa Jane TWEEDIE, Christchurch; Mrs Anne Dennison DAVIES, Auckland; Miss Alison Linda MACKINNON, Auckland; Miss Michelle Frances WILLAN, Auckland; Mr Michael San Yan WAH, Auckland; Miss Lelia Roslyn ANDREWS, Auckland; Miss Fiona Louise CAMPBELL, Auckland; Miss Alison Maree DENT, Auckland; Mr Paul Michael AUSTIN, Auckland; Miss Rowena SHORT, Auckland; Mr Jason Adam DUNN, Auckland; Ms Iris A. GILES, Auckland; Miss Susan Rachel SEMISI, Auckland; Ms Megan Lois SMITH, Lower Hutt; Mrs Valerie Linda LE CLAIRE, Napier; Mrs Judith Anne CARTWRIGHT, Dunedin.

Applications for Associateship

Mrs Barbara Lois SIMMONS, Auckland; Mrs Lynnette Sheila HAPPY, Auckland; Mr Bruce James FORSYTH, Blenheim; Miss Marian Patricia NOUWENS, Auckland; Miss Janene MADGWICK, Auckland; Mrs Jillian Bakewell JONES, Whangarei; Mrs Sharon Ann HUMPHREY, Heretaunga; Mrs Heather L. RICHARDS, Auckland; Mr Raymond Bruce LANHAM, Auckland, Mr Ken A.G. WATTS, Auckland.

Reinstatements

Mr Ian J. TOMPSON, Wellington, Mr D.F. RILEY, Thames.

Resignations:

Mrs J.R. HALFORD, Lower Hutt; Miss K.A. INGLIS, Christchurch; Miss J.M. WACKROW, Christchurch; Mr C.A. ROBERTS, New Plymouth; Miss L.J. VERHOEVEN, Auckland; Mrs M.R. ALEXANDER, Hamilton; Dr. M.H. ANDERSON, Queenstown; Mrs W.M. BELL, Whangarei; Mrs N.R. DAVIES, Hamilton, Miss J. CHESHIRE, Dannevirke; Ms J.C. TORRIE, Auckland, Ms V. GRANT, Auckland; Miss D.E. EWENS, Auckland; Mrs D. THOMAS, Christchurch; Mrs J.C. COWAN, Dunedin; Sr M. McKEEVER, Auckland; Miss M.A. PATERSON, Auckland; Miss D. HORE, Dunedin; Mrs J. KARAKA, Auckland; Mr E.A. MILLER, Auckland; Mrs S C. DAVIES, Opotiki; Miss J.M. KELLY, Christchurch; Miss R. PAYNE, Auckland; Miss V. HANRAHAN, Whangarei; Mr R.J. SYKES, Auckland; Mrs C. CAMPBELL, Timaru; Mr P.A. JONES, Tauranga; Miss L.M. BETHUNE, Auckland; Mrs S.M. SOWMAN, Wellington; Mrs G.M. BRUCE, Lower Hutt; Mr C.E. FELMINGHAM, Greymouth; Mrs C.L. HOLDEN, Auckland; Ms C.A. OLIVER, Auckland; Miss C.M BRAAN, Auckland.

Gone No Address:

Mrs H.J. NABNEY, Auckland; Mr M.A. SALTER, Auckland; Mrs S.A. TROTMAN, Auckland; Miss K.V. STADE, Auckland; Miss L.R. WILTON, Auckland; Miss R.C. PORTER, Auckland; Mrs A.M. BRICKNELL, Auckland; Mr R.D. PETERSON, Auckland; Mrs M.J. BRETT, Auckland; Mrs C.S. LANHAM, Auckland; Miss L.M. KENSINGTON, Auckland; Mrs A. DOWSE, Auckland; Mrs A.F. MAHONEY, Auckland; Mrs R.L. COLCORD, Whangarei; Miss M.J. ODEA, Tauranga; Miss D.M. RENDELL, Tauranga; Miss C.A. YOUNG, Hamilton; Mrs D.L. FOX, New Plymouth; Miss S. RUTHERFORD, Masterton; Mrs D.G. WILLIAMS, Auckland; Miss M.E. FRYER, Auckland, Miss E. SHAW, Auckland.

CORRESPONDENCE

Re: TELARC Registration

Director General of Health,
P.O. Box 5013,
Wellington.

Dear Sir,

At a recent meeting of the National Council of this Institute there was considerable discussion regarding the registration of Medical Laboratories by the Testing Laboratory Registration Council of New Zealand (TELARC).

It is of concern to this Institute that at this stage only a limited number of laboratories have opted for registration and it would be appreciated if you could advise this Institute if the Department of Health is eventually going to make it obligatory for all Medical Laboratories to be TELARC registered.

Yours sincerely
B.T. Edwards
Secretary NZIMLT

Dear Mr Edwards,

Your letter of 16 April 1987 concerning the registration of Medical Laboratories has been referred to me for reply.

The Department of Health shares the concern of your Institute that only a limited number of laboratories have opted for TELARC registration. It is also a matter of concern that some registered laboratories are considering withdrawing from this scheme.

The department would still prefer voluntary participation in the accreditation system but accepts that compulsion may eventually be necessary if the Medical Laboratories are not prepared to co-operate. At the present time we have no plans to enforce registration.

Since taking up the post of Manager for the Hospital Specialist Services Programme I have been appointed to represent the Director General of Health on the Testing Laboratory Registration Council and the problems associated with registration have been discussed at recent meetings. The Council has approved the introduction of a more flexible surveyance programme for registered Medical Laboratories with the hope that this will encourage laboratories to join and stay with the registration scheme.

I shall let you know if there are any further developments in the matter of TELARC registration for Medical Laboratories.

Yours sincerely,

Dr John Holden
Acting Manager
Hospital Specialist Services

Retired
Sister Mary McKeever

Sister Mary McKeever has retired as Charge Technologist of the Mater Hospital Laboratory, Auckland.

Sister Mary has worked in the Laboratory since 1952, taking charge of the Biochemistry Department from 1968 and becoming Charge Technologist on the death of Sister Mary Paula, in 1971.

Sister Mary has enjoyed the close association, over the years, with the New Zealand Institute of Medical Laboratory Technology and has appreciated the input from conferences and seminars which has enabled the laboratory to keep abreast of new developments and technology.

Sister Mary is Mother Superior of the Mater Convent. She is a member of the General Council and Trust Board of the Mercy Order. In addition she will now assist in the Spiritual Development of the younger Sisters joining the Mercy Order.

Sister Mary welcomes the opportunity to take a new direction in a Spiritual field.

Obituary
Douglas Whillans

Principal Technologist, Auckland Hospital 1942-1968

The first Principal Technologist of Auckland Hospital, Douglas Whillans, died at age 76 in December 1986. Doug was educated at Napier, where he started his career as a Laboratory Technologist in 1928. He moved to Auckland in 1930, and completed a BSc degree. His specialist interests were serology, electronics, automation and computers and in earlier days medical photography and sterilisation (there was no medical photographic department nor a C.S.S.D. in those days). Doug Whillans set very high professional standards and demanded the same from his staff. He was involved as a founder member of the New Zealand Institue of Medical Laboratory Technology and held various offices rising to President in 1951 and was later elected a life member. He edited and published the journal for a number of years, and many Auckland Technologists will remember working in Doug's basement setting type and printing the journal.

Doug's hobbies and interests were many and varied and pursued with his characteristc thoroughness and attention to detail. He was an enthusiastic Ham radio operator, call sign ZL1AFW, and his voice and impeccably sent morse could often be heard on local and overseas bands.

Music was a very important part of Doug's life; he was early on the scene of high fidelity sound recording and was, himself, an accomplished flautist. His photographic skills were widely recognised and his services in this field equally widely sought. Such was his love of photography that he was married with his precious LEICA in his suit pocket!

Although a stickler for the rules a sense of humour seldom deserted him. In 1963 when the first multi-choice questions were used, a critic of Doug's examination brought the following response "lest I be accused of asking absurd or fatuous questions may I remark that a surprising number of students choose them as answers."

Doug Whillans was one of life's achievers, the sort of person around which history is written, not always lacking in critics, for that is the lot of the decision maker, not always agreed with, but certainly one whose opinion had always to be respected. Doug is survived by his wife Winsome, and three daughters.

NEW PRODUCTS AND SERVICES

NIKON MICROPHOT — THE ULTIMATE IN RESEARCH MICROSCOPY

There are two basic Microphot configurations. The first, Microphot FX, offers an advanced automatic exposure photomicrographic system built-in. The Microphot-FX can accommodate a T.V. camera, image analysis or microphotometry in combinations with its photographic system.

If photomicrography is a secondary requirement, then the Microphot is an ideal research microscope. All Microphot series accessories can be attached to this system in any desired combination. The Microphot is particularly suited to C.C.T.V. and quantitative microscopy and, when used with the Microflex-FX Series, becomes a superb photomicrographic system.

To compliment Nikon's renowned optics, the Microphot Series offers mechanical features designed with the researcher in mind.

- ★ Triaxial focus control providing stage movement ranging from 0.1mm with the fine control to 36.5mm with the coarse control, per stroke.
- ★ High-precision stage providing adjustable torque and height and rotatable through 250°.
- ★ T.V./photometer port with ENG-mount meets the micro-spectrophotometry and image analysis demands.
- ★ The main body design is highly ergonomic and sets new standards in stable, vibration free and durable performance.

Using the latest technology for optics, mechanics and electronics, these new microscopes offer the optimum in performance, regardless of the application. Both the Microphot-FX, with built-in photographic capabilities, and the Microphot, with add on type photo possibilities, offer unlimited versatility with the comprehensive range of Nicon's accessories.

For further information, contact Watson Victor Limited, P.O. Box 1180, Wellington or **circle 145 on readers reply card.**

KNA2 SODIUM-POTASSIUM ANALYZER

Featuring 45-second stat analysis and intervention-free operation, the KNA2 from Radiometer is designed for round-the-clock use in critical care departments.

Its microprocessor-controlled functions make it particularly useful in labs and wards dealing with acute cardiac, respiratory, hepatic, and renal failure, because fast and reliable stat analyses of sodium and potassium can be made by general staff. Optimum clinical utilisation of the KNA2 is obtained by interfacing it to one of the company's ABL pH/blood gas analyzers for common data presentation of patient acid-base/electrolyte status.

All functions from sample introduction to data presentation are fully automated. A 125 μl sample of undiluted whole blood, plasma, or serum may be introduced from syringe, capillary or test tube. Hard-copy presentation of the displayed results may be obtained by connecting the KNA2 to an optional PRS12 printer. The KNA2 also performs automatic analyses on diluted urine samples.

The analyzer has fully automated calibration, performance monitoring, and self-diagnostics. A new Potassium SELECTRODE ® (F2321K) has fail-safe, snap-on maintenance and long lifetime. In stand-by mode,the KNA2 is kept ready at minimum reagent consumption.

The new analyzer is an updated version of the company's model KNA1, offering faster results, easier maintenance, and lower costs of operation.

For further information, contact Watson Victor Limited, P.O. Box 1180, Wellington or **circle 146 on readers reply card.**

ICA2 IONIZED CALCIUM ANALYSER

The ICA1 from Radiometer features 45-second stat analysis of all three parameters required for determining patient calcium status: actual ionized calcium, pH, and Standard Ionized Calcium (i.e. Ionized Calcium at pH 7.40).

Its microprocessor-controlled functions make the ICA2 particularly useful in satellite labs and other labs serving critical care departments, because fast and reliable stat analyses can be made round the clock by general staff.

All functions from sample introduction to data presentation are fully automated. A 125 μl sample of undiluted whole blood, plasma, or serum may be introduced from syringe, test tube or capillary. The ICA2 has built-in performance monitoring and self-diagnostics.

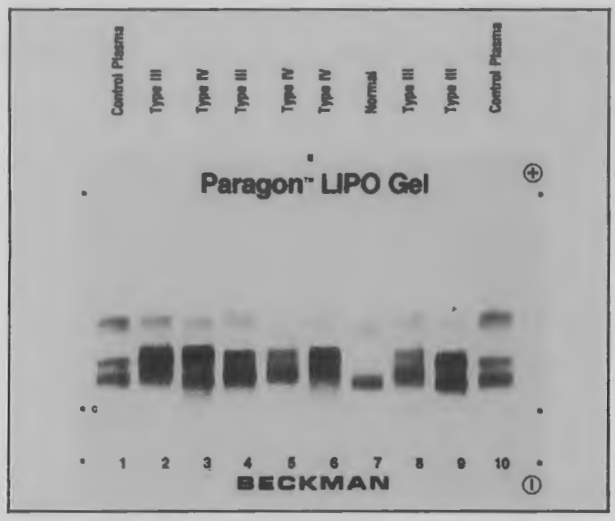
Calibration of the calcium channel is performed automatically at preset intervals; the pH channel only requires a *weekly* 2-point calibration. Daily maintenance is reduced to a quick check of the reagents and the waste container.

A new Calcium SELECTRODE (F2121Ca) has fail-safe, snap-on membraning and protection against protein contamination, ensuring easy maintenance and long lifetime. In stand-by mode, the analyser is kept ready at minimum reagent consumption.

Hard-copy data presentation may be obtained by connecting the ICA2 to an optional PRS12 printer or to the company's blood gas analyzers (ABL4/300/330).

The new analyzer is an updated version of the company's model ICA1, offering faster results, easier maintenance, and lower costs of operation.

For further information, contact Watson Victor Limited, P.O. Box 1180, Wellington or **Circle 147 on readers reply card.**



BECKMAN OFFERS NEW LIPOPROTEIN ELECTROPHORESIS TEST KIT

The Paragon™ LIPO Kit is a new re-formulated liproprotein electrophoresis gel from Beckman for increased resolution of the beta and prebeta fractions. The formulation provides a sharper alpha band and increased stability of the working stain. The combination of two beta bands and alpha band identification offers a better marker for patients at risk for coronary vascular disease.

The kit simplifies routine clinical tests using electrophoresis as a screening procedure with the gels ready for use and requiring no special treatment prior to testing. Prepared stains are stable for up to seven days, a significant improvement over existing stain stability. Each LIPO kit contains prepared agarose gels, buffer, Sudan Black stain, application templates, blotters and complete instructions to perform 100 determinations. The Beckman kit conforms to the simple procedure and template methodology of all Beckman electrophoresis reagent kits.

Other available kits in the Paragon line include Serum Protein, Lactate Dehydrogenase Isoenzyme (LD), Creatine Kinase Isoenzyme (CK) and Haemoglobin.

For further information contact Sonatec, phone 764-533, Auckland or **circle 148 on readers reply card.**

TEST TUBE HEATERS WITH INTERCHANGEABLE BLOCKS

For different size tubes a new and improved line of Multi-Block Heaters. The Blocks are designed to fit all standard size test tubes.

The compact units require a minimum of bench space and the modular design permits a large number of test tubes to be heated simultaneously. The Blocks are machined from aluminium alloy which has excellent temperature uniformity. LAB LINE's improved Multi-Block Heaters feature

- ★ Dual 'Lo and 'Hi' thermostats that control temperature from slightly above ambient to 60°C and 50°C to 130°C with uniformity of plus/minus 5°C.

★ 5 new models — 11 Blocks.

★ Three way power switch and pilot light indicates heating cycle.

★ Optional covers to fit all models.

LAB LINE's Multi-Block Heaters save you money and time. As all Blocks are interchangeable, different size test tubes can be heated without purchasing additional heat units. Convenient controls are highly visible and easily adjusted.

For further information contact KMS, phone 775-289 or **circle 149 on readers reply card.**

MICROPLATE WASHER

The new Microplate Washer S8/12 represents the ultimate flexibility, accuracy and efficiency in an automatic microplate washer for enzyme immunoassay. The microprocessor controlled S8/12 uses programmable operations or "modes" to wash strips (single or multiples) and 96 well plates quickly and effectively The S8/12 Washer combines the convenience and economy of an instrument capable of washing single assay strips, with the flexibility of using 8 or 12 well configuration by simply changing the washing head.

Unlike other microplate washers the Titertek S8/12 has an extensive range of programmable functions including unique operations to ensure that each well is left residue-free, and that the possibility of well-to-well cross-contamination is eliminated. These essential features are achieved in the S8/12 by 'bidirectional aspiration' and a novel washing cycle.

The Titertek S8/12 Washer overcomes the problems associated with incomplete aspiration of wash fluid from wells. Side to side movement of the plate carriage ensures that the aspirator tube moves to the edge of the wells, removing the residual wash fluid without risking reagent stripping through the use of powerful vacuum pumps.

The S8/12 features a unique washing cycle designed specifically to overcome potential difficulties associated with well-to-well cross-contamination during washing steps. This is achieved by an automatic, microprocessor controlled co-ordination of aspiration, filling and washing head height. Wash fluid is aspirated from the wells during a downward movement of the aspiration probe. This ensures that the outside of the probe does not come into contact with the assay fluid, and therefore cannot contaminate the next well to be washed. The 'Superwash' mode may be selected when thorough washing is critical. In this mode, the wells are slightly overfilled in order to ensure that the mouth of the well, where contamination from pipetting may occur, is thoroughly washed. Aspiration and dispensing proceed simultaneously in this mode to ensure an efficiency of operation not available on many other machines. The Titertek S8/12 Microplate Washer has a number of programmable functions, all easily controlled by a splash-proof panel of membrane switches. During the washing cycle the operating conditions are clearly presented on LED displays.

During the wash cycle the multichannel dispensing head is raised and lowered automatically Pre-programmed movement of the microplate carriage ensures that the pre-selected rows to be washed are correctly positioned beneath the wash head.

Once the wash head is in position wash fluid from a conveniently located reservoir is pumped into the dispensing tubes. Restrictor valves in the dispensing head ensure that the pre-set volume of wash fluid is accurately dispensed into each well.

At the end of the wash cycle, wells are emptied through the aspiration tubes. Wash fluid is drawn into the receiving vacuum reservoir evacuated by a suitable vacuum pump.

For further information contact KMS or **circle 150 on readers reply card.**

ROTAVIRUS DETECTION IN LESS THAN 10 MINUTES

RotaScreen, the latex rotavirus slide test from Mercia Diagnostics, now has a new test procedure that allows the kit to be used away from a laboratory and enables results to be obtained in less than 10 minutes.

Instead of using a lengthy centrifugation step to produce a supernatant from an extracted specimen, the new procedure employs a novel filtration device which quickly and easily clarifies the sample prior to performing the slide test.

Apart from making the test even quicker and more simple to use, the new procedure also means that RotaScreen can be used independently of any laboratory.

The filter devices are available in an ancillary pack for use with the RotaScreen kit.

Further information can be obtained from Med-Bio Enterprises or **circle 151 on readers reply card.**

HIV ANTIBODY TEST KITS

Med-Bio Enterprises can supply the Genetic Systems kit for the detection of antibodies against the Human Immunodeficiency Virus, (HIV) implicated as the causative organism of the Acquired Immunodeficiency Syndrome (AIDS).

The Genetic Systems kit uses a strip microtitre plate, enzyme immunoassay (EIA) method. Extensive studies have shown that this kit has a very high degree of specificity and sensitivity. This means that this kit is suitable for use in screening low risk population groups such as blood donors, as well as high risk population groups. It has also found acceptance as a confirmatory test, for other test systems which have a lower specificity.

For further information about this produce, either contact Med-Bio Enterprises or **circle 152 on readers reply card.**

NEW BIOCHEMISTRY REAGENTS

Wako of Japan have just released the first four kits of a new range of Biochemistry reagents designated the AUTOKIT series. These reagents for AST, ALT, Alkaline Phosphatase and LD all have similar properties of long stability and optimised methods.

Wako have also prepared instrument application sheets for use with these reagents, which means that most laboratories can use them, without having the worry of ensuring that their analyser is programmed correctly for the reagent.

Further information can be obtained from Med-Bio Enterprises **or circle 153 on readers reply card.**

NEW EIA FOR ROTAVIRUS DETECTION

Med-Bio Enterprises is pleased to be able to offer a new Enzyme Immunoassay (EIA) for the detection of Rotavirus. This kit is manufactured by Mercia Diagnostics, who have proven their ability in utilising EIA methodology with their revolutionary capture assays for IgM antibodies to Toxoplasma and Syphilus. Their knowledge of rotavirus detection systems has been well demonstrated with their extremely successful latex rotavirus detection kit.

The RotaScreen EIA kit is a 96 test microwell strip method. The wells are coated with rabbit antibodies raised against pooled Rotavirus serotypes representing Subgroups I and II. The tracer system used is a horseradish peroxidase (HRP) biotin-Streptavidin system. This means that it is possible to read the results by eye if a platereader is unavailable.

This kit has been evaluated against both electron microscopy and reference EIA systems. In all studies the kit has performed very well against these reference systems with results for sensitivity, specificity, predictive positive value and predictive negative value all being 98% or higher.

Further information can be obtained from Med-Bio Enterprises or **circle 154 on readers reply card.**

NEW API PROFILE INDEX'S

API have recently released new editions of the profile index's for the API 10 S, API 20 E and API 20 STREP kits. These index's contain many additional profiles that were not in earlier editions These index's have also been updated to show changes in taxonomy and they include new taxa not previously shown in earlier index's. The API 20 E index database is now made up of 109 different taxa, compared to 93 in the previous edition.

Further information can be obtained from Med-Bio Enterprises or **circle 155 on readers reply card.**

PROGESTERONE ASSAY

The Diagnostic Products Corporation (DPC) Progesterone assay has recently been validated for use in test profiling both human In-Vitro Fertilisation (UVF) Programmes as well as for IVF programmes involving cows, dogs, horses, pigs, sheep, baboons and rats. The assay has also been used extensively in studies involving other mammals.

The kit utilises an antibody coated tube and [$^{125}I^-$] tracer system. The samples don't require any pretreatment and are pipetted directly into the coated tubes, isotope is added, and incubation is carried out at room temperature, prior to decanting and counting of the antibody bound fraction.

The antiserum used to coat the tubes is highly specific for progesterone, with a very low crossreactivity to other steroids which may normally be present in samples.

Further information can be obtained from Med-Bio Enterprises or **circle 156 on readers reply card.**

VARIAN'S CYCLOSPORINE APPLICATIONS PACKAGE SPEEDS PROCESS, REDUCES COSTS FOR WHOLE BLOOD ANALYSIS IN ORGAN TRANSPLANT CENTERS

Automated HPLC System cuts sample preparation and analysis time in half.

Varian Associates Inc, announces a fully automated analytical instrumentation and methodology package for measuring cyclosporine in whole blood. The Cyclosporine Applications Package, for use in hospital transplant centers and clinical testing laboratories, reduces sample preparation and analysis time by half, and cuts operating costs dramatically.

"Many time-consuming extraction procedures and manual operations are eliminated with the automated HPLC Cyclosporine System," says Ron Majors, Varian's LC Product Manager. "The new system relies on Varian's Advanced Automated Sample Processor (AASP) sample preparation technology to process up to 100 samples automatically. With this system, recovery is high, routinely greater than 80 percent."

Cyclosporine, the principal drug used for immunosuppression following an organ transplant, can produce serious toxic effects unless the exact dosage is carefully monitored by the centers performing transplants. The AASP Cyclosporine HPLC replaces manual HPLC methods as well as radioimmunoassy, which cannot distinguish cyclosporine A from its metabolites.

Much of the time savings associated with the new system results from the Prepstation, which reduces sample preparation time by as much as 80 percent, and the AASP itself, which injects the prepared sample on-line into the HPLC system.

The AASP Cyclosporine system features a Model 5020 HPLC pump, either a 2010 or a 2510 pump, a block heater, integrator, and a UV detector, the AASP, and AASP Prepstation.

For further information contact Wiltons, phone 667-099 Lower Hutt or **circle 157 on readers reply card.**

VARIAN INCREASES MODEL 9090 AUTOSAMPLER AUTOMIX ROUTINES AND UNATTENDED FMOC DERIVATIZATIONS

Varian Associates Inc, is introducing an upgraded version of its Model 9090 Autosampler that increases Automix routines from nine to 26 and enables chemists to process up to 100 samples in unattended operation. The enhanced Autosampler should be particularly useful for biotechnology research, especially when amino acid derivatization is required. A number of applications are also possible for therapeutic drug monitoring and in the food and pharmaceutical industries.

"With the Model 9090, we have facilitated full automation of the sample handling process," states Jack Bell, LC product manager for Varian.

The Autosampler is used to automate a variety of precolumn amino acid derivatization procedures, such as the OPA and AminoTag (FMOC) procedures. Automix routines can dilute, mix, extract, and derivatize up to 100 samples prior to injection

The 9090 can inject as little as one microliter reproducibly from a total of ten microliters of sample. This means the 9090's low loss capability requires a smaller sampling amount, which is particularly beneficial in the microsequencing of genetically engineered proteins.

When the AminoTag double extraction procedure is used, the Model 9090 can process 24 samples in unattended operation. Operator error is eliminated and assay variables are precisely controlled while laboratory personnel are free for other duties.

All parameters, from sample preparation through injection, are fully programmable for methods development and multi-batch processing.

For further information contact Wiltons, phone 697-099 Lower Hutt **or circle 158 on readers reply card.**

WELLCOME DIAGNOSTICS RECEIVES QUEEN'S AWARD FOR AIDS TEST

Wellcome Diagnostics Limited, a wholly-owned subsidiary of The Wellcome Foundation Limited, has received the 1987 Queen's Award for technological achievement. This is the third year in succession that one of Wellcome's Divisions has received the prize. It brings to eight the total of Queen's Awards won by the Group.

The 1987 Queen's Award has been given for the development of the WELLCOZYME Anti-HTLV III (AIDS) test kit. Based on competitive immunoassay techniques, the AIDS test kit, which was developed and brought into use in as little as eight months, achieved new standards of convenience, speed, safety and reliability of blood testing for the AIDS virus. The test, which was introduced into New Zealand some eight months ago, gained rapid acceptance in hospitals and the Blood Transfusion Service.

The WELLCOZYME test was developed in close association with the Middlesex Hospital Medical School and the Institute of Cancer Research, U.K. The antigens used in its manufacture were supplied by The Centre for Applied Microbiological Research in Porton Down. The test was designed specifically to overcome the problem of false positive results, a drawback of several other tests.

Since launching the WELLCOZYME AIDS test kit, Wellcome Diagnostics has continued its R & D effort in this area and is currently at an advanced stage of development of a second-generation AIDS test.

Wellcome's R & D effort in the fight against AIDS is not just confined to Diagnostics. Recently, worldwide attention has been focused on Wellcome's RETROVIR, the first significant break-through in treating AIDS related conditions. Eleven countries now have registration including New Zealand

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60801 IMAGEN™ Chlamydia Test 50 tests

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"Being almost human is quite a touching experience for an instrument."

The RA-XT's control panel is a 'user friendly touch screen' which makes it so easy to use by operators on all three shifts. A mere touch of the finger guides you through system operations from the day's first sample to the day's last report.

The RA-XT is the only random access chemistry instrument which can offer you all the acumen of the RA1000 but it is quicker, more convenient and even more flexible and so human, that it even thinks for itself.

The RA-XT's ability to think for itself means that no matter how many varying tests you have on a sample, simply feed them into the RA-XT and it will automatically organise them and place them into an order that will enable them all to be processed in the shortest possible time. Yes, even tests requiring 5 minutes or more incubation time won't slow down the RA-XT's capabilities, which makes the new, almost human Technicon RA-XT system versatile, comprehensive easy to use and economical.

And, because the RA-XT can think, it can store up to 127 methods in its memory and can use 26 of them at any one time. This means you can perform virtually any combination of tests, including profiles, organ panels and single tests – be they routine analytes, TDM's, drugs of abuse or serum proteins. All from a mere 2ul to 30ul per test.

The new Data Management system provides a fast and easy way to organise your laboratory work flow. Up to 6000 patient files complete with patient's name, identification number, patient location and doctor's name and remarks are entered into the computer by a few simple key strokes.

All in all, the new Technicon RA-XT is quite brilliant – it has a fine future and will quickly gain the highest respect from its colleagues within the medical profession.

For additional information about the RA-XT and how its specialist qualities can enhance your laboratory testing, contact Technicon on any of the following numbers.

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