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EDITED, PRINTED AND PUBLISHED FOR THE ASSOCIATION

BY

DOUGLAS WHILLANS

CONTENTS.

Communications regarding this JOURNAL should be sent to the Editor at the Department of Pathology, Public Hospital, Auckland, C.3.

Communications primarily affecting the Association should be addressed to the Secretary, Mr. G. W. McKinley, Bacteriology Department, District Hospital, Waipukurau.

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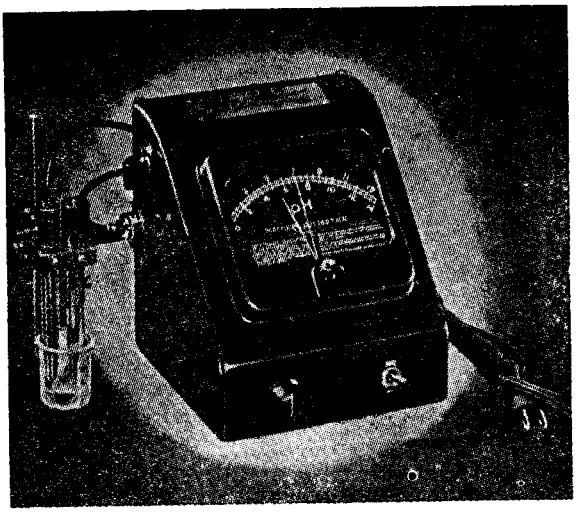

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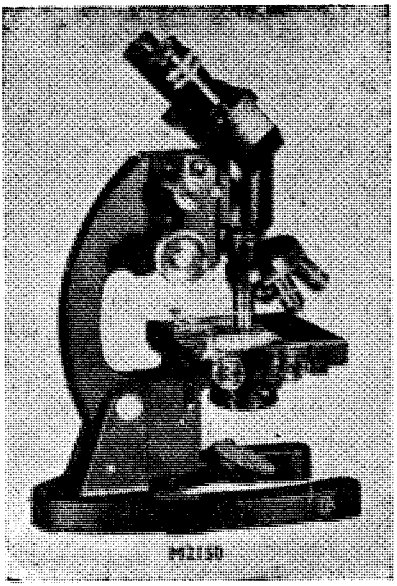

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JOURNAL

of the

NEW ZEALAND ASSOCIATION OF BACTERIOLOGISTS

Editors: D. Whillans, Auckland,
H. T. G. Olive, Wellington and M. O. Ekdahl, New Plymouth.

Vol. 4 - No. 4. **OCTOBER, 1949.**

EDITORIAL.

Not for the first time does it become necessary to remind members of the Association that a Journal requires more than an Editor, a Printer and a Publisher. There must be Contributors, without whom the Editor, be he ever so resourceful, must finally give up in despair.

Your Editor, by giving up his own hobby and devoting his spare time to all offices in the production of the Journal, has managed to struggle as far as the end of Volume 4, but if more help in the way of contributions is not forthcoming, must inevitably consider the game not worth the candle.

At each Conference he is heartened by the flattering references to his ability and overwhelmed by offers of assistance; unfortunately, these are mere words and are rarely followed by articles.

Writing a clear concise article requires much time and the elimination of much muddled thinking. In your Editor's experience at least five re-writes are necessary before an article is ready for publication. Recently it cost him eleven re-writes before an article was deemed ready for submission to a certain Journal.

Ask yourself why YOU have not yet written an article, and set out forthwith to remedy the deficiency.

THE PROTHROMBIN TIME IN DICOUMAROL THERAPY.

Ian M. Cole.

(*From the Department of Pathology, Auckland Hospital.*)

Daily estimations of the prothrombin time are necessary to control dicoumarol therapy. There has been much confusion because more than one method exists for the estimation of the concentration of prothrombin. While it is agreed that the two stage method of Warner, Brinkhous and Smith (1936) gives the most precise measurement of prothrombin, it is one which is too complicated for routine laboratory use. Of the other methods available, Quick's one-stage estimation (Quick, 1942) or modifications of it have been found to give results that fit in well with clinical findings. Methods using Russell's Viper venom as a source of thromboplastin are unsatisfactory in dicoumarol therapy as they appear to be insensitive to the low levels of prothrombin required during treatment. (Biggs and McFarlane, 1949), (James, 1949).

In the Quick technique the major difficulty has been in the preparation of a stable thromboplastin. Aggeler et al (1946) used an acetone dried human brain as a source of this substance. By this means a large amount can be prepared at any one time and it has been found that the preparation was highly potent. Their technique has been followed in this laboratory and has been found to be highly satisfactory both from the clinical and from the laboratory points of view.

The preparation of material and method for the carrying out of the test are as follows:—

Materials for the Test.

1. *Preparation of stock thromboplastin.*

One complete, normal, cerebral hemisphere from a cadaver, up to 24 hours after death, has been found to be a suitable source.

Strip the Pia arachnoid and the large blood vessels from the brain, wash in normal saline and mince finely. Place this in a large mortar, cover completely with reagent grade acetone, and grind thoroughly. After about fifteen minutes, draw off the acetone, using a Buchner funnel and Whatman No. 1 filter paper

and repeat the acetone extraction. After three extractions in about an hour a fine grey-white power should remain, but further extraction may sometimes be necessary to achieve this. The powder is spread thinly on a sheet of blotting paper overnight at room temperature to allow the last traces of acetone to evaporate. It is then ground in a clean, dry mortar, sieved to remove any coarse particles and stored in a calcium chloride desiccator in the refrigerator.

The thromboplastin may be ampouled in 0.3gm. lots. We have found clean, dry, discarded penicillin bottles satisfactory for this purpose After the weighed amounts of thromboplastin are added, the bottles are evacuated through the stopper by a needle attached to a water pump. The rubber stoppers are sealed with wax, or better, with vinylite, an easily obtainable plastic compound and the bottle refrigerated at 6°C.

2. *Preparation of the thromboplastin suspension.*

Add the contents of one ampoule (0 3 gm.) to a chemically clean tube, add 5.0 ml. of normal saline which must be calcium free, and shake gently. Incubate at 50°C. in a water bath for fifteen minutes, stirring at short intervals with a clean glass rod. Allow to stand so that the heavier particles may sediment and draw off the supernatant for use in the test. Make the thromboplastin suspension each day and store in the refrigerator until required.

3. 0.38% calcium chloride solution (A.R.).

4. Three pipettes (0.1 ml.) and a suitable rack

5. A water bath at 37°C.

6. A supply of chemically clean 3in. x 3/8in. test tubes.

7. A stop watch.

8. Wintrobe's oxalate tubes.

Method.

5 ml. of blood is collected in a dry Wintrobe's oxalate tube (6 mg. ammonium oxalate, 4 mg. potassium oxalate) and the plasma separated. The calcium chloride is kept warmed in the bath at 37°C. Each test is done in triplicate.

0.1 ml. of the patient's plasma is placed into each of three test tubes, at room temperature, and 0.1 ml. of thromboplastin added. One of these tubes is then placed in the rack in the water bath and allowed to warm to temperature for not more than 60 seconds. Add quickly 0.1 ml. of 0.38% calcium chloride solution

and at the same time start the stop watch. Allow the tube to remain in the water bath until 2-3 seconds before the average normal time for the batch is reached, and then, removing it from the water bath run the contents along the tube, using a see-saw motion until the threads of a fibrin clot appear. At this point the watch is stopped and the time noted.

The prothrombin times of the second and third tube are determined in a similar manner, the tubes being removed from the water bath 3-4 seconds before the reaction time of the first tube. An average of the three times is taken as the prothrombin time of the patient.

As a control, the prothrombin time of a normal individual is estimated for each day's preparation of thromboplastin suspension, and the results are expressed thus:—

Prothrombin time (Quick) = X seconds.
Normal control = Y seconds.

We have found that the normal control is in the range of 11-14 seconds.

Remarks.

1. The brain should be extracted with a liberal amount of acetone.

2. The particle size of the dried brain should be small, as if large, the particles tend to settle quickly and little extraction takes place.

3. Over-incubation of the thromboplastin should be avoided; 15 minutes at 50°C. is sufficient. The activity of the thromboplastin tends to fall rapidly after this time, or above this temperature.

4. The thromboplastin emulsion should be prepared daily as it usually deteriorates after twenty-four hours.

5. Chemically clean glassware is essential and in particular must be free from calcium. Acid dichromate will be found particularly suitable for this purpose.

6. Wintrobe's oxalate mixture is a suitable anticoagulant for the test.

Discussion.

Using the stable thromboplastin as prepared above, we have carried out a series of dilutions of normal plasma in 0.85% saline and have been able to reproduce a curve similar to that

obtained by Aggeler et al.

It has been found, in our series of cases, that twice to three times the prothrombin time for the control for the day will correspond to 35%-10% prothrombin, the recommended therapeutic level.—(Annotations, *Lancet,* 1949).

If the prothrombin time of the patient under dicoumarol therapy is more than three times the normal control for the day it is recommended that no dicoumarol be given that day, and if less than twice the normal control then a further dose may be given.

Following this procedure very good results have so far been given clinically and the physicians of this hospital have expressed themselves as very satisfied with the method.

Summary.

1. A suitable technique for estimating the prothrombin time of plasma has been described and emphasis is placed on the necessity for obtaining an active, stable thromboplastin.

2. The dry oxalate mixture of Wintrobe is used as an anticoagulant.

3. By the observation of normal curves a simple plan of treatment has evolved which has proved effective clinically.

Acknowledgment.

I wish to thank Dr. J. L. Pinniger for his advice and assistance during the course of this work.

References.

Aggeler, P.M., Howard, J., Lucia, S.P., Clark, W. and Astaff, A. (1946), Blood. 1. 220.

Annotations, Lancet (1949) 1. 698.

Biggs, R. and McFarlane, R. G. (1949) J. Clin. Path. 2.33.

James, G. A. J. Clin. Path. (1949). 2, 45.

Quick, A. J. (1942), Haemorrhagic Diseases, Springfield, Ill.: Thomas.

Warner, E. D., Brinkhouse, K. M., and Smith, H. P. (1936). Am. J. Physiol. 114, 667.

THE QUANTITATIVE ESTIMATION OF DEPOSITS IN URINE.

F. M. Rush-Munro.

(From the Department of Pathology, Auckland Hospital.)

A quantitative microscopic urinalysis is of value only when standardized conditions are adhered to throughout the procedure. This becomes most important when daily progress reports are made on the urine of nephritic patients.

In this laboratory, the following method is used for the examination of the centrifuged deposit of all urine specimens:

10 ml. of a well mixed sample are centrifuged at 2,000 r p.m. for five minutes. The supernatant urine is decanted, leaving 0.5 ml. of liquid containing the deposit. One drop of the mixed deposit is transferred with a 3 mm. platinum loop to a microscope slide and mounted under a 7-8in. x 7-8in. coverslip. A loop of this size transfers 0.05 ml. of deposit, so that it can be seen that a drop of deposit will quantitatively contain the constitutents of 1 ml. of urine. As the area of the coverslip has been estimated to comprise 3,025 high power fields (1-6in. objective) it is within these fields that all the constituents of 1ml. of urine are contained.

An important factor to be recognised is that the three most significant structures in the deposit, viz., casts, leucocytes and red blood cells are present in variable numbers in the urine of normal persons. The investigations of Addis (1925) and Addis and Oliver (1931) have provided us with figures for the 12 hour period covering night urine in subjects who had abstained from liquid during the day. Thus 750 ml. of urine, the average output for these twelve hours, was found to contain:—

0-4,275 casts, exclusively hyaline, with an average of 1,040.
0-425,000 R.B.C.'s, with an average of 65,000.
30,000-2,000,000 leucocytes, with an average of 300,000.

With the above standardized procedures, a corresponding series of normals for centrifuged deposits can then be established. For example, taking the R.B.C.'s:—

65,000 in 12 hours is 65,000 in 750 ml. or 87 per ml.

As one drop contains the constitutents from 1 ml. this is 87 per 3,025 H.P. fields or 1 per 30 high power fields as an average or 1 per 5 H.P. Fields as a maximum.

Similarly it may be shown that for leucocytes, 1 per 8 H.P. fields is the average with 1 per H.P. field as the maximum and

for hyaline casts $1\frac{1}{2}$ per coverslip as the average or 1 per 500 H.P. fields as a maximum.

The work of Lyttle (1933) has shown that for children the average figures are slightly higher for casts and slightly lower for red blood cells and leucocytes.

Summary.

A standard procedure for quantitative microscopic urinalysis is described.

From the normal figures of Addis for casts, leucocytes and red blood cells in the urine, a corresponding series of normals for centrifuged deposits is presented.

References.

Addis, T. (1925), J. Amer. Med. Assn. 85, 163.

Addis, T. and Oliver, J. (1931). The Renal Lesion in Bright's Disease. P. B. Hoeber, New York.

Lyttle, J. D. (1933). J. Clin. Investigation, 12, 87.

FIFTH ANNUAL CONFERENCE.

The fifth Annual Conference of the New Zealand Association of Bacteriologists opened in the Tutorial Block of the Wellington Hospital on Friday, July 29th, 1949, at 10.30 a.m.

The delegates were as follows:—

Mr. G. C. Thompson, Invercargill; Mr. J. A. Samuel, Dunedin; Mr. K. B. Ronald, Oamaru; Miss F. H. MacDonald, Ashburton; Mrs. M. J. Withers, Miss B. V. S. McKenzie, and Messrs. H. Foster and F. L. N. Corey, Christchurch; Mr. D. J. Burt, Greymouth; Mr. H. G. Bloore, Blenheim; Mr. V. J. Hawke, Nelson; Mrs. R. E. Parker and Messrs. I. R. Buxton, N. J. Ellison, H. T. G. Olive and J. Pierard, Wellington; Mr. K. G. Clarkson, Upper Hutt; Mr. S. W. Josland and J. J. G. Peddie, Wallaceville; Misses K. Biggs and M. North and Messrs. H. Hutchings, S. O. Jarratt and W. Todd, Palmerston North; Miss S. Kirkland, Dannevirke; Mr. G. W. McKinley, Waipukurau; Miss N. B. Ellerm, Napier; Mrs. F. L. Isabeth, Gisborne; Miss E. M. Partridge and Mr. E. L. F. Buxton, Wanganui; Messrs. M. O. Ekdahl, G. B. E. Meads and I. R. Saunders, New Plymouth; Mr. G. R. George, Rotorua; Miss B. E. Tracey and Mr. J. Smith, Hamilton; Misses M. J. Byres, W. C. Corsbie, M. M. Dick, J. M. Winter, and Messrs. J. Callaghan, I. M. Cole, J. S. Cole, A. Fischmau, A. M. Murphy, E. Robinson, W. J. Sloan and D. Whillans, Auckland.

Mr. W. J. Gaudin, Chairman of the Wellington Hospital Board, in welcoming delegates, stressed the importance of such Conferences as a means of advancing this phase of Medical Science, especially as it was in the nature of a refresher course, and offered delegates the services of the Hospital during the Conference.

Mr. N. J. Ellison, Chairman of the meeting, thanked Mr. Gaudin on behalf of the delegates and introduced Dr. J. C. Cairney, Medical Superin-

tendent, Wellington Hospital. In a brief speech he declared the Conference open, and Mr. Ellison then called on Dr. P. P. Lynch, pathologist, for his address.

Dr. Lynch reviewed the achievements and possible achievements of the Association and its activities. In his opinion the standard of Hospital Laboratory work was as high in this country as in any and that Dr. J. O. Mercer, then in Canada, had stated to him that we compared well with the standard in that country. Dr. Lynch felt that this high standard was due in no small measure to the work not only of the Hospital Bacteriologist but also to all others assisting the Pathologist. Small laboratories have grown into large ones and he recalled the great figures of the past and was gratified to see from what slender beginnings had grown the professional organisation of to-day. It was his recommendation to keep before us always the professional and technical standards rather than mere conditions of employment. While counselling a high professional standard, he felt that due regard should be paid to general training. While need for specialisation existed, he felt that it should be not be sacrificed to general efficiency. He announced that the first Intermediate examination would be held in Auckland in October, and felt that it should go quite a distance in bridging the gap present in training. The Intermediate Examination would be a preliminary examination to the Certificate examination which would be gradually tightened as time went on.

He commented favourably on the number of officers present as he felt strongly that the interchange of views required, and the discussions which ensued between delegates, made such Conferences most important and useful not only to the delegates themselves, but to the boards whom they serve.

Mr. Ellison, in reply, thanked Dr. Lynch on behalf of the Association for his personal help and advice in forwarding the interests of the Association, and added to the comments on outstanding bacteriologists whom he had known.

The Conference then proceeded to the business before it. It is hoped to give an account of this in the next Journal.

The office bearers for the year 1949-1950 were as follows: President, Mr. N. J. Ellison (Wellington); Vice-Presidents, Messrs. E. L. F. Buxton (Wanganui) and D. Whillans (Auckland). Council Members: Miss M. J. Byres (Auckland), Messrs. D. H. Adamson (Christchurch), M. O. Ekdahl (New Plymouth) and S. O. Jarratt (Palmerston North). Hon. Secretary, Mr. G. W. McKinley (Waipukurau); Hon. Treasurer, Mr. H. T. G. Olive (Wellington). Editor, Mr. D. Whillans (Auckland).

On Friday evening a visit was paid to the Dominion Physical Laboratory at Gracefield, Lower Hutt, where Dr. E. R. Cooper, Director, welcomed delegates, who spent a very profitable evening being personally conducted in groups over the premises. It is impossible to enumerate the many pieces of complicated equipment seen, but the physics section showed the testing materials, the electronic division made a feature of the electron microscope as well as many electrical devices, frequency meters, ultra-violet radiation, etc. A pulse and respiration recorder for patients under anaesthetic was shown in the course of construction. The precision grinding and cutting equipment delighted many with workshop proclivities.

On Saturday morning Messrs. Josland and Peddie conducted tours of Wallaceville Animal Research Station. Delegates were welcomed by the Director, Dr. David McFarlane, who outlined very clearly the work of

the Station. In the course of the tours delegates viewed the library, work on Clostridial infections, penicillin assays using B. mesentericus as the test organism in conjunction with the cup plate method, work on the green oats feeding of sheep, work on cobalt and copper deficiencies in swamp lands, problems of facial eczema, milk fever, staggers, and the work of the toxicologist, including that on arsenic, lead, nitrate-nitrite and zinc poisoning. A map room showed the progress in mapping soil deficiencies, and the complexities of blood antigens in cattle were well described. The Salmonelloses of animals were well dealt with and many examples of media shown. Animal Histology was well demonstrated as well as the routine Bacteriology section. Lastly, visits were made to the radio-active-tracer laboratory and to view the artificial insemination equipment for bees.

On Saturday afternoon Dr. T. H. Pullar talked on B.C.G. vaccination, Mr. A. Fischman on Recent Laboratory Aids in Rheumatoid Arthritis and Mr. J. A. Samuel on Fluorescent Microscopy.

The Conference closed in somewhat of a hurry as a number of the southern delegates were obliged to leave to catch the boat. It is hoped to reduce the business section of further Conference to more manageable proportions in future, and so allow more time for the scientific papers.

RECENT LITERATURE.

Bacteriology.

The control of the swarming of proteus vulgaris by Boric acid is described by Sykes and Reed in the Journal of General Microbiology, 1949, 3, 117. This medium, which is simple to prepare, is used routinely in this laboratory and in our hands has proved superior to any previously described method. The result of these comparisons will be the subject of an article in the Journal by a member of the staff of the A.P.H. Laboratory at a later date.

In this same Journal, p. 93, Bissett, when discussing the cytology of Corynebacterium and Mycobacterium, advances the theory that the characteristic morphology of C. diphtheriae appears to be an artefact, the barred appearance of this species and also that of the tubercle bacillus in dried heat fixed films being due to shrinkage of the cell contents, producing gaps between them. He also states that metachromatic granules are probably mere condensations of stainable material within the dried cell.

The July, 1949, issue of The Practitioner is recommended to those members interested in the subject of food poisoning. The issue is devoted almost entirely to food poisoning and embraces such subjects as epidemiology, hygiene, bacteriology, etc.

Evans, in the Journal of Hygiene, 1949, 46, 422, describes a simple method for the determination of bacterial sensitivity to sulphonamides by the use of blotting paper discs. This method may appeal to those laboratories with a readily available supply of horse blood.

The Journal of Pathology and Bacteriology, October, 1948, 533, includes an article by Maitland and Evans, who describe a selective medium for the isolation of Staphylococci based on the differential inhibiting effect of increased concentrations of sodium chloride. The medium recommended is Robertson's cooked meat medium to which has been added 10% sodium chloride.

Yet three further methods of determining the sensitivity of M. tuberculosis to streptomycin are:—

1. A slide method using Dubos-tween-albumin medium, described by Cummings and Drummond in the American Review of Tuberculosis, May, 1949, 599.

2. Holt and Cruickshank in the May issue of the Monthly Bulletin of the Ministry of Health, 8, 103, recommend the addition of Streptomycin either before or after sterilization to Loewenstein's medium.

3. Anderson, in the Medical Journol of Australia, July, 1949, 154, recommends the incorporation of Streptomycin in a potato egg yolk agar.

Public Health, 1949, 159, publishing a paper by W. H. Bradley entitled, "The control of Typhoid Fever," makes interesting reading and deals with the incidence of S. typhi in water supplies and describes the use of the Vi agglutination test and bacteriophage typing in tracing the source of pollution. Many interesting example are given.—J.C.

HERE AND THERE.

The following Junior Members were admitted to the Association at a Council Meeting held on July 28th, 1949, in Wellington.

Misses M. H. Burtt and E. J. Wilkinson (Wanganui); Messrs. D. C. Smith and A. A. Collins (Wellington); Misses J. Laws, M. Lamb, B. Rudd and D. Savage (Auckland); and Miss L. Williamson (Christchurch). Resignations were received with regret from Mr. L. S. Minifie (Auckland) and Miss S. McDonald (New Plymouth).

Mr. J. B. Brown, M.Sc., of the Auckland Hospital Laboratory, has left recently on two years' leave of absence to work on the Adrenal Hormones in the Research Unit attached to the Royal Infirmary, Edinburgh, under Professor Marion and Dr. C. B. Stewart. He will be working on a British Medical Research Council Scholarship, having resigned a Courtauld Scholarship which was previously offered to him.

He commenced work in the Auckland Hospital Laboratory in December, 1940, having worked on the Diterpenes for his degree of M.Sc., and after obtaining his Certificate in Bacteriology and Clinical Pathology, specialised in Biochemistry. In recent years his interests have been increasingly in Hormone work, as is seen by reference to his recent paper in this Journal. He expects to obtain his degree of Ph.D. during this time overseas.

Mr. and Mrs. Brown were farewelled at a bright informal function attended by members of all the Auckland Hospital Board's Laboratory staffs. The hostess was Sister D. J. Paterson. An uninhibited time was spent by all, numerous items and sketches being interspersed in the fun.

Members will be pleased to hear that Mr. D. H. Adamson, our former Hon. Treasurer, is now convalescing after his recent serious illness, and hopes to be back at work in some weeks' time. He has our best wishes for complete recovery.

Recently the appropriate technical council of the Whitley Councils for the national Health Services agreed to the following salaries for medical laboratory technicians, employed in the National Health Service

in England, Wales and Scotland.

Student and Junior Technicians: From £110 at 16 years of age to £299 at 25 years and over. On passing the intermediate examination of the Institute of Medical Laboratory Technology (or Equivalent) or the Inter. B.Sc. salary to be increased by £13 p.a. at any point of the scale. If no examination passed, salary to be increased to £312 at age 30.

Technicians (who must hold Asso. I.M.L.T. or equivalent): £370-15-435. On gaining F.I.M.L.T. salary to be increased by £15 at any point. Senior technician (who must hold F.I.M.L.T. or equivalent and be in charge of Laboratory or separate department): £450-£20-£530.

Chief Technician (who must be in full charge of laboratory of unusual size and importance or a central reference or research laboratory): £530-£20-£650.

In the Metropolitan Police area all scales will be subject to London weighting on the following basis: 16-20, £10; 21-25, £20. 26 and over, £30. ocer £30.

The Plant Diseases Research Division of the Department of Scientific and Industrial Research has just announced that, for the last season, culture for the bacterial treatment of nearly 300,000 lbs. of lucerne seed to enable it to grow in soils deficient in nitrogen has been prepared. The seed has been supplied to 2,550 farmers, nearly a third being sown in South Canterbury.

It is proposed to hold a Special General Meeting of the Association in Wellington on Saturday, November 26th, 1949, to coincide with a Council Meeting on that day to consider the following amendments to the Rules of the Association:—

1. That Clause 14 (d) be deleted.
2. That Clause 14 (d) be inserted to read as follows:

14 (d) (i) Nomination forms for the election of Officers shall be sent to all financial members of the Association not later than sixty (60) days prior to the Annual General Meeting, and shall be returned to the Honorary Secretary not less than forty (40) days prior to such meeting. Forms received after this date shall be declared void.

14 (d) (ii) The Officers of the Association shall be elected by postal ballot. The ballot papers shall contain the names of all nominated candidates with clear and precise instructions as to the method of voting.

The ballot papers shall be sent by post to all financial members of the Association not later than twenty-one (21) days prior to the date of the Annual General Meeting and shall be returned to the Honorary Secretary not less than seven (7) days prior to such meeting. Ballot papers received after this date shall be declared void.

TO THE EDITOR.

Apathy.

Kelvin Chambers,
Wellington,
14th September, 1949.

Sir,—As a foundation member who has played a small part in building up our Association, I view its future with some concern. The structure of our organisation is being weakened by the apathy of its members.

The Association comprises approximately one hundred and fifty members, but how many are active? Ten per cent? Perhaps. Twenty per cent? I doubt it.

Prizes are available to Junior members annually for the best technical study and essay submitted. How many Junior members competed last year? One, and one only. To him our hearty congratulations for a fine piece of work.

Each Conference brings firm promises of contributions to the JOURNAL, but are they fulfilled? Ask the Editor! For all his undoubted ability, he is not a magician, able to produce articles out of the air. And remember, he not only edits the JOURNAL, but also prints and publishes it.

Let us not forget that the standard of the Association is determined largely by the quality of its JOURNAL. To have quality there must be some measure of quantity.

I implore all members, therefore, to shake off this apathy and contribute something, be it ever so small and apparently unimportant. The Editor will do the rest.

I am, etc.,
N. J. ELLISON.

Pathology Department,
Public Hospital,
Wellington.
September 12th, 1949.

Dear Sir,—Some phases of the last Conference stand out as meriting some improvement.

As with all our Conferences, we were indeed pressed for time, and, particularly in view of the travelling arrangements required, it appears that the Conference in Dunedin next year will be no exception.

It has struck me, sir, that two or three hours should be adequate for the business portion of our Annual Meeting; we are now a flourishing body, well established, even with a credit balance, and it appears to me that the business could well be just a resume of the year's activities.

The Annual Report and Balance Sheet are circularised and far too much time is spent over the election of officers. I feel that to overcome this latter difficulty some means of altering our Constitution to provide for a Postal Ballot should be found, including, if possible, a clause that nominees should, by signing the nomination slip, indicate their willingness to accept office.

You might be glad to hear the opinions of other members of the Association on this matter, I know that I shall.

Yours faithfully,
H. T. G. OLIVE.

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