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CONTENTS

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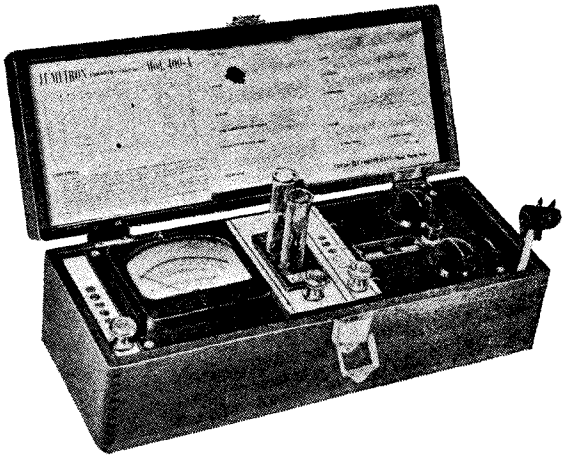

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NEW ZEALAND ASSOCIATION OF BACTERIOLOGISTS

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Vol. 4 - No. 1. January, 1949

MASSIVE EXCHANGE TRANSFUSION IN A PREDICTED CASE OF HAEMOLYTIC DISEASE OF THE NEWBORN

P. H. Curtis

(From the Pathology Department, Cornwall Hospital, Auckland)

The following is a brief report on a case of Rh incompatibility encountered in this Hospital, where Wiener's technique for massive exchange transfusion was successfully applied.

It is felt to be of some interest, as transfusions using this technique are not very frequently performed in this country, and as the Laboratory has an important part, not only prior to and after, but also during the exchange transfusion itself.

It also serves to illustrate the importance of routine Rh typing in the ante-natal clinic in order that a full and early investigation may be made on all cases of suspected Rh involvement.

Case History.

Genotypes of Parents:

Mrs. W., Group A, cde/cde.

Mr. W., Group A, probably cDe/cde, but could be cDe/cDe.

The first pregnancy terminated in a normal full-term male, who is still living. This was followed by a miscarriage at 6½ months, then two full-term stillbirths (no details available), and a further miscarriage at 3 months.

Present Case: Mrs. W. was referred to this Laboratory for Rh investigation as she had a history suggestive of Rh incompatibility. She was found to be Rh negative and from then attended the ante-natal clinic at this Hospital. Further investigation showed Mr. W. to be Rh positive, and in view of the above history was likely to be homozygous—no A-B-O incompatibility existed.

In the thirty-first week of gestation a plasma conglutination test for Rh antibodies showed a titre of 128. The titre steadily rose to 512 | a week prior to delivery.

Exchange Transfusion.

Owing to the increasing titre of Rh antibodies and blocking antibodies (the latter formed by far the greater proportion), it was planned to terminate the pregnancy some four weeks before full term and carry out an immediate exchange transfusion, as it seemed extremely unlikely that the foetus was Rh negative, but the membranes ruptured spontaneously in the thirty-third week.

It was later thought that a stillbirth would result as no foetal movements or heart beat were evident for the next two days. However, a spontaneous, normal, rapid delivery at 4.30 a.m. on the third day resulted in a live female child, which, although some six weeks premature, appeared in good condition—weight, 4lb. 11oz. No evidence of hydrops could be seen and the liver and spleen were not palpable (see laboratory findings).

Immediately approximately 700cc. of Group O Rh negative (D negative) blood was bled from an orderly living in the Hospital, into a minimum quantity of glucose citrate anticoagulant (120cc.), and the transfusion was commenced at 6.15 a.m.

The left saphenous vein was exposed and a small canula introduced. Using a 20cc. all-glass syringe and two-way tap, 100cc. of blood and 0.1cc. of heparin were run in. The left radial artery, which had by then been exposed, was partly severed and the blood allowed to run directly into a small bowl, from which it was poured into a graduated litre cylinder. Some difficulty was experienced at the start in getting the arterial blood to flow freely, but this was soon overcome when the heparin took effect. Calcium gluconate was injected in four doses (5cc. 10%) at equal intervals throughout the transfusion to offset hypocalcaemia due to the infusion of sodium citrate in the blood (1).

From the start of the transfusion the haemoglobin fell from 16.5gms./100cc. to 10.5gms. half-way through. It then rose again steadily to 13.0gms. at the end. This was probably due to two main factors, first, at one point the outflow exceeded the intake owing to repeated gumming-up of the syringe plunger, and, secondly, the haemoglobin content of the infused blood was slightly lower than that of the baby's. The former was overcome by applying a trace of sterile liquid paraffin to the plunger and by repeatedly changing the syringe.

When 700cc. of blood had been bled from the baby, the artery was ligated and a further 100cc. of blood infused. In all, 700cc. of blood was withdrawn and 829cc. in glucose citrate replaced.

A Coomb's test performed before the transfusion showed the baby's cells to be strongly sensitised and gave a negative result at the conclusion. It was still negative 36 hours later.

The baby showed what appeared to be a trace of jaundice at the commencement but this faded early in the transfusion. From laboratory findings the jaundice was probably deeper than observed

as the latter was recorded under artificial lighting conditions. Twitching of the face muscles was twice noted but stopped immediately after an injection (I.V.) of 5cc. of 10% calcium gluconate. Oxygen was given when the haemoglobin fell to 11.0gms.

The patient returned to the ward in good condition in spite of the operation having taken $3\frac{3}{4}$ hours. By evening it had become deeply jaundiced, but this faded completely within 48 hours.

Discussion.

It is generally agreed that the time of the transfusion could be considerably reduced mainly by experience in technique, early heparinisation (0.2cc. of heparin 15 mins. before performing the arteriotomy) and by maintaining a faster rate of infusion of blood.

Possible fatal effects from haemorrhage caused by the use of heparin must not be overlooked, but to date no fatal cases have been reported where this technique was used for transfusion.

Laboratory Findings.

Mrs. W. Antibodies (using plasma conglutination technique):

When first tested for complete and blocking antibodies (31st week of gestation) a plasma conglutination test gave a titre of 128. The titre steadily rose to 512+ a week prior to delivery.

5 days postpartum the titre was 8060.

12 days postpartum the titre was 10,240 (complete antibodies, titre 320). Patient discharged.

From a study of the genotypes it would appear that Mrs. W.'s serum contained anti-D antibodies (complete and blocking) of high titre.

Breast milk which was found to contain antibodies, titre 2048, was fed to the baby twice on the third day but was then discontinued.

Cord Blood:

Haemoglobin 8.5gms./100cc.
Icterus index 40 units.

Baby W.:

At Delivery, 4.30 a.m.—Rh positive (D+ve), Coomb's test positive. Haemoglobin, 16.5gms./100ccs. R.B.C., 3.4 million/cmm.

After Exchange Transfusion, 10 a.m. same day—Coomb's test negative. Haemoglobin, 15.0gms./100ccs. R.B.C., 6.4 million/cmm. 5 p.m.: Haemoglobin, 21.5gms./100ccs. R.B.C., 7.1 million/cmm.

Tenth Day After Delivery had settled to: Haemoglobin varied between 16-17gms./100cc. R.B.C. varied between 5-6 million/cm.

At no time did the normoblast count rise above 10 per 100 leucocytes.

It was hoped that tests for the sensitisation of the baby's cells could have been carried out during the transfusion as a matter of interest in order to assess the actual exchange, but this proved impossible at the time. It is not essential but is undoubtedly of interest.

Wiener considers that such a technique gives up to 98% exchange of blood, but other workers think this figure is too high.

Commentary.

It is essential that all necessary apparatus be ready well in advance to assist in the smooth running of the operation.

Fresh Rh negative blood should be used so that as little as possible degeneration of red cells occurs prior to infusion.

The anticoagulant for the donor's blood should contain a minimum of sodium citrate as hypocalcaemia may result. Prophylactic doses of 10% calcium gluconate (5cc.) will prevent this.

There was a marked discrepancy between the haemoglobin and red cell count taken at 4.30 a.m., prior to the transfusion, due to icterus, but as a spectrophotometer was not available it was impossible to estimate the haemoglobin accurately.

Although 100cc. of blood replaced over and above that removed is 50cc. more than advocated, the arterial blood loss into the sterile guards could only be assessed, and this amount extra was considered to be safe on that account.

Summary.

1. An operation for massive exchange transfusion on a newborn premature infant has been briefly described, and the part played by the laboratory outlined.

2. From the clinical and laboratory aspects the massive exchange therapy in predicted haemolytic disease of the newborn by the above technique was found to be simple technically and highly effective clinically.

Acknowledgments.

The case quoted is by kind permission of Dr. J. A. Oddie, Medical Superintendent, Cornwall Hospital. I wish to thank Dr. R. H. T. Holmden for permission to describe the operation and Dr. Lindsay Brown, pathologist, for his valuable suggestions. The genotyping was performed by the Commonwealth Serum Laboratories of Australia.

Reference.

(1) Wiener, A. S., Wexler, I. B., and Shulman, A.—Am. J. Clin. Path., 18:2, 141, 1948.

A NOTE ON THE USE OF HYDROQUINONE ENRICHMENT MEDIA FOR THE ISOLATION OF SALMONELLA

S. W. Josland

(Animal Research Station, Wallaceville)

A number of methods for the isolation of Salmonella from heavily-contaminated material, such as faeces, are available and have been applied with varying success. The principle of all such methods lies in the ability of these media to support the growth of salmonella while suppressing organisms of the E coli group. The purpose of this note is to draw the attention of workers to the use of Quinone compounds for the suppression of Proteus and coliform organisms as advanced by Jones and Handley (1945). These workers have shown that in the examination of heavily contaminated material for the presence of salmonella, primary cultivation in a liquid or semi-solid medium containing hydroquinone or cacotheline with brilliant green has proved valuable in checking the excessive growth of Proteus. They prefer cacotheline (nitrobruciquinone hydrate) to hydroquinone, as the former does not exert an inhibitory effect on hydroquinone sensitive strains of S cholerae suis, but yet is equally inhibitory for Proteus strains and other concomitants.

In a recent outbreak of salmonellosis in cattle due to S typhi murium, it was necessary to examine faecal samples from convalescing animals for the presence of this organism. Cacotheline was not available in sufficient amounts, so use was made of hydroquinone. The technique used was enrichment into hydroquinone brilliant green broth for 24 hours at 37°C, and subsequent plating on to Slavin's (1943) medium. The composition of these media is as follows:—

Hydroquinone brilliant green broth:

A 1/80 solution of hydroquinone in distilled water is heated to boiling in a water bath.

To 96 ml. of sterile broth 2 ml. of the hydroquinone solution and 2 ml. of a sterile 1/1000 solution of brilliant green is added. A soft agar medium can be prepared by substituting 15 ml. of a 2 per cent. nutrient agar for a similar quantity of broth. It is desirable to renew the stock solution of hydroquinone every two weeks.

Slavin's medium: To 190 ml. of melted agar at 60°C. 10 ml. of a sterile 20 per cent. sterile lactose solution and 2 ml. of 1 per cent. neutral red and 2 ml. of 1 per cent. brilliant green are added. Thorough mixing follows and plates are poured.

In the examination of eleven faecal samples at this station direct plating on Slavin's medium and SS agar resulted in S. typhi murium being isolated from one sample. After enrichment in hydroquinone-brilliant green broth and replating on Slavin's

medium S. typhi murium was obtained in almost pure culture from eight samples.

Jones and Handley found that some strains of S cholerae suis are sensitive to hydroquinone. To date we have not met with any strains of S cholerae suis isolated from New Zealand sources that have shown this characteristic. We have been successful in demonstrating this organism using hydroquinone enrichment when direct plating methods have failed.

It is pointed out that Jones and Handley claim that both S typhi and dysentery bacilli fail to develop in the concentration of hydroquinone recommended, but this disadvantage is offset by the relative high degree of specificity for salmonella types.

At this station we have not had experience with these organisms, but for other salmonella the use of hydroquinone enrichment has proved superior to enrichment in tetrathionate broth.

References.

Jones, R. E., and Handley, W. R. C. (1945), Monthly Bull., Min. Health, Vol. 4, 107.

Slavin, G. (1943), J. Comp. Path., 53, 315.

HISTOLOGICAL METHODS—Part 2.

J. S. Cole

(From the Department of Pathology, Auckland Hospital)

Elastic Fibre Staining.

As is well known by many laboratory workers, elastic fibres are somewhat capricious to stain and many attempts, during the past few years, have been made to produce a reliable technique.

Of the original methods, Weigert's Resorcin Fuchsin stain gave the most consistent results. Carleton (1) improved the original Weigert method by substituting phenol for resorcin, which increased the selectivity of the stain, then Sheridan (2) further improved the method by substituting crystal violet, which is a dye of more stable composition, for basic fuchsin.

The use of the crystal violet greatly improved the selectivity and keeping powers of the stain. It was found, however, that different batches of the stain, although prepared in exactly the same manner, varied considerably in staining power and selectivity. This peculiarity was attributed by French (3) to the over purification of modern dyes. As many of them contained dextrin as an impurity, he tried the effect of its addition. Excellent results were obtained, the finished preparations showing elastic fibres as a yellowish green, a colour which was extremely selective for this tissue.

Picric acid and neutral red were effective counter stains.

In this laboratory, we employ the following method, in use at St. Thomas' Hospital, London. It involves an improved technique in the preparation and use of the Weigert-French elastic

fibre stain.

Improved Weigert-French Elastic Fibre Stain.

The following formula and method of preparation has been proved by far the most consistent, elastic fibres being stained a dark blue and very similar to the original Weigert:—

Crystal Violet (Gurr or Revector)	2.5gms.
Basic Fuchsin (Gurr or Revector)	2.5gms.
Dextrin	1.0gms.
Resorcin	10.0gms.
Distilled Water	500 ml.
30% aqueous sol. of Ferric Chloride (B.D.H. Anhydrous)	62 ml.

It is essential that the above be prepared in the following order:—

Place the distilled water in a large evaporating dish and heat till nearly boiling. Mix the dyes and the dextrin and then dissolve in the hot water. Add the resorcin and bring the whole to the boil. When boiling, add very slowly the freshly-prepared Ferric Chloride solution, stirring continually with a glass rod. It is important that the mixture be boiling continually, though not too vigorously. Boil and stir for a further two minutes or so, after all the ferric chloride has been added, to coarsen the precipitate. Cool and filter off the precipitate.

Wash the deposit with distilled water until the washings are colourless (8 to 10 litres will be required). Dry the deposit in an incubator overnight, then scrape it off the filter paper and dissolve it in 550 ml. of absolute alcohol by simmering gently on a hotplate for about 30 minutes.

Cool and filter, then add 20 ml. of hydrochloric acid. Allow to stand 24 to 48 hours before use.

Method of Staining:

1. Bring paraffin sections to water.
2. 0.25% aqueous potassium permanganate, 5 mins.
3. Wash in running water.
4. 5% oxalic acid, 2-3 mins.
5. Wash in running water.
6. Place in Weigert-French elastic stain at 37°C. for 1½ to 2 hrs.
7. Differentiate in absolute alcohol for a few minutes.
8. Wash in running water.
9. Jensen's neutral red, 5-10 mins.
10. Wash in water.
11. Differentiate in absolute alcohol.
12. Blot and dip in tap water.
13. Pour on 0.5% aqueous picric acid solution and wash off immediately in running tap water.
14. Blot and dehydrate in absolute alcohol.

15. Clear in xylol and mount in canada balsam.

Results:

Elastic fibres—blue.
Nuclei—red.
Red blood cells and muscle—yellow.

Notes:

1. It will be found that the Weigert-French stain will tend to stain diffusely for a few weeks, although not sufficiently to inhibit good counter-staining. It becomes perfectly selective in three to four weeks and remains so indefinitely.

2. To prevent evaporation from the made-up stain it is recommended that this be kept in Coplin jars.

3. The use of the bleach prior to staining tends to increase the intensity of the stain and to shorten the staining time.

4. The picric acid gives a beautiful contrast with the neutral red and enhances the appearance of the elastic fibres by causing them to stand out upon a yellow background. Care must be taken using the picric acid, as overstaining tends to turn the red of the nuclei to an unpleasant brown tinge. It is advisable, until the technique has been mastered, to use neutral red only, ensuring that it is properly differentiated in the absolute alcohol.

5. As we have no reference regarding the composition of Jensen's neutral red, we have used a 1% aqueous neutral red chloride and have found it satisfactory.

Reticulin Method.

In this laboratory the following slight modifications of Foot's silver carbonate method have been found to give consistently good results:—

Fixation:

Zenker's fluid, Bouin and 10% Formol Saline have given good results.

Method:

1. Embed in paraffin.
2. Bring paraffin sections to tap water.
3. Place in a 0.5% solution of iodine in 95% alcohol, 5 mins.
4. Rinse in tap water.
5. Place in a 5% aqueous solution of sodium thiosulphate, 5 mins.
6. Rinse in tap water.
7. Place in a 0.25% aqueous solution of potassium permanganate, 5 mins.
8. Rinse in tap water.
9. Place in a 5% aqueous solution of oxalic acid, 2 mins.

10. Wash well in distilled water.
11. Place in the following silver bath for 15 mins. at 50-60°C.: To 10 ml. of a 10% aqueous solution of silver nitrate, add 10 ml. of a saturated solution of lithium carbonate. Pour off the supernatant fluid and wash the precipitate with distilled water, repeating three times.
    To the precipitate add 10 ml. distilled water, then ammonia (S.G. 0.880), drop by drop, till the precipitate is almost dissolved. Complete solution must be avoided. This is now made up to a total volume of 100 ml. with 95% alcohol, and ammonia added as before, till the cloudiness has disappeared. It is then heated on a hot-plate to 60°C. and filtered.
12. Rinse rapidly with absolute alcohol.
13. Reduce in 4% neutral formaldehyde, 1 min.
14. Rinse in distilled water.
15. Tone in 0.05% aqueous gold chloride, 1-5 mins., till the section is a violet grey colour.
16. Wash in distilled water.
17. Place in a 5% aqueous solution of sodium thiosulphate, 5 mins.
18. Rinse in distilled water.
19. Wash in running tap water, 10 mins.
20. Dehydrate, clear in xylol, mount in balsam.

Results:

Reticulin fibrils—black.

Notes:

1. The only difference between this modification and Foot's original technique is the employment of 95% alcohol instead of distilled water in the preparation of the silver bath. This obviates the risk of the sections coming off the slide.

2. All glassware must be chemically clean.

3. If desired the sections may be counter-stained with haematoxylin or neutral red after step 19.

Acknowledgment.

I should like to thank Dr. J. L. Pinniger, Pathologist, Auckland Hospital, for his advice and encouragement and also for permission to publish this article.

References:

(1) Carleton, H. W., Histological Technique, Oxford Univ. Press, 1926.
(2) Sheridan, W. F., Jour. Tech. Methods and Bull. Inter. Ass. Med. Museums, 1929.
(3) French, R. W., Stain Technology, IV., II., 1928.

AMOEBIASIS CONTRACTED IN NEW ZEALAND

Paper presented at the Annual Conference, 1948, by D. H. Adamson, Pathology Dept., Christchurch Hospital.

The purpose of this paper is to present a summary of the clinical history and laboratory picture of three cases in which *Entamoeba histolytica* (1) was found in the stools, two of the cases never having been out of New Zealand, the third having been in the country for the past 29 years.

As "contact" amoebiasis in this country has been diagnosed so rarely as to be almost unheard of prior to this post-war period, only reserved conclusions can be drawn.

Case No. 1:

Mrs. G. S., aged 26, who had never been out of New Zealand, was the wife of a returned soldier who had had amoebic dysentery in February, 1947.

When admitted to hospital on 25th June, 1947, as a possible gastro-enteritis case, she complained of abdominal pain for the past three days, nausea, one rigor and frequency. On examination, the patient was bright, her tongue coated, but no masses were felt and the T.P.R. were normal. Her blood count was 8400, and she was discharged on 1st July as probably an acute appendicitis case which had settled.

Seven weeks later, the patient was re-admitted as "? amoebiasis." Her symptoms were more pronounced, with the addition of flatulence, diarrhoea, lassitude and slightly foul breath. A barium enema showed the mid-portion of the transverse colon to be dependent, and a Graham's test was negative. Ten days after admission, purgative stools (2) were sent to the laboratory. The first three showed *Blastocystis hominis* only, the last three small unidentified (3) amoebae, as well as typical (1) trophozoites of *E. histolytica* in the sixth.

Five weeks later the patient was discharged after routine anti-amoebic treatment of intramuscular Emetine Hydrochloride, Quinoxyl retention enemata, and Carbarzone and Emetine Bismuth Iodide tablets. As a routine check, one month later, purgative stools (2) were examined, and no protozoa were found. The patient is at present particularly fit and well.

Case No. 2:

Mrs. S.C., aged 44, had three visitors from India staying in her house six weeks before the onset of the symptoms.

She was admitted to hospital on 24th April, 1947, with "query carcinoma of the rectum." She complained of diarrhoea, constipation and vomiting. She was in good health until three months previously. She had no abdominal pain, but at one time her motions were bloody. A barium enema and sigmoidoscopy had been negative.

Examination showed no abnormalities and a repeat sigmoidoscopy was negative. A week later sigmoidoscopy was repeated and showed "crazy pavement" appearance at four inches in and she was discharged.

Three months later she was re-admitted with increased symptoms, also tiredness, but she was cheerful. Examination revealed nothing, and the white count, sedimentation rate and barium enema were all normal. A week later, a portion of the stool was sent for examination for occult blood and *Salmonella* organisms with negative results, but a routine microscopical examination showed motile amoeba. The next day purgative stools showed trophozoites of *E. histolytica* and the patient was given routine treatment, being discharged five weeks later. Six weeks after this, purgative stools for clearance of infection were normal.

About three and a-half months later, however, the patient was admitted again with diarrhoea, but purgative stools were still normal. A barium enema was suggestive of colitis, and she was discharged. She has not reported here since.

Case No. 3:

Mr. E.F.J., aged 58, is a soldier returned from France and Germany, where he had "dysentery" in 1917, and he has not left this country since. He has been treated for various complaints, including dyspepsia, and finally has been labelled "neurasthenia."

On 30th September, 1946, he was admitted to hospital complaining of recurrent pain in the back for thirty years, and lack of energy and indigestion for years. He had deteriorated over the past two years and had had many investigations, including test meals, blood counts and X-rays. His stools had never been examined for protozoa.

On examination he was nervous and preoccupied and tender in the epigastrium. Sigmoidoscopy was normal, as was a full blood count. Purgative stools showed trophozoites of *E. histolytica* and anti-amoebic treatment was given. Two and a-half months later six purgative stools were examined and showed a normal picture.

Eighteen months later, in June of this year, the patient was readmitted with lassitude and general diarrhoeic symptoms. Purgative stools showed *Giardia lamblia* (1, 2) but no amoebae. His mental condition has deteriorated since 1946.

Summary.

Three cases of intestinal amoebiasis are recorded. These are not labelled "dystentery," as true dysenteric (1) symptoms were not observed. So far, the routine treatment appears to have relieved the physical condition of two of the cases, though the third is still suffering from flagellate diarrhoea. Amoebae could not be demonstrated in purgative stools after treatment in any of these cases, no secondary contacts have appeared, the typical alternation of diarrhoea and constipation in amoebic dysentery was noted, and the development of mental symptoms in long-standing amoebiasis is a common feature of the disease.

Conclusions.

(1) Intestinal amoebiasis, which is relieved on the elimination of *E. histolytica* from the stools, can be contracted in this country, presumably from "contact" cases.

(2) From the small number of cases established, it would seem that, though this disease does not frequently manifest itself, the possibility of its occurring should not be overlooked, especially in the absence of any other positive finding.

References.

1. Manson-Bahr, 1943, Dysenteric Disorders, pp. 532-4.
2. Adamson, D. H., 1945, N.Z. Med. J., 44:323.
3. Hill, K. R., 1947, Lancet, 252:903.

Report of a Case of Kala azar.

J. Pierard

(From the Pathology Department, Wellington Hospital)

The patient, a Lascar seaman, was admitted to the Hospital on 13/3/47 with a history of elevated temperature, enlarged and tender spleen and palpable liver.

The provisional diagnosis was either Amoebic Abscess or Malaria. The next day the faeces were negative for occult blood, contained no excessive mucus and were free from cysts, parasites and ova. From blood sent to the laboratory the serum gave a long-delayed direct Van den Bergh reaction, had an icterus index of 4, gave a serum colloidal gold curve 5555550—a dilution of 1 in 1920, gave a Thymol Turbidity test of 15 Maclagan Units, gave a positive formol gel test in three minutes, and the

serum, when added drop by drop to distilled water, settled in milky clouds.

Although several blood films were made whilst the patient was under observation, no Leishman-Donovan bodies were detected in the peripheral circulation, and a peripheral blood count gave the following result:—R.B.C. 3,750,000/c.mm., W.B.C. 2300/c.mm., Hb. 85%, M.C.H. 23, Neutrophiles 59%, Lymphocytes 26%, Monocytes 15%. A differential count on the sternal marrow film the same day gave the following result:—Myeloblasts 3%, Myelocytes 27%, Polymorphonuclears 50%, Lymphocytes 20%. The report read: "The red cells vary in size, many macrocytes are present, and erythropoiesis is megaloblastic in type. The bone marrow shows marked activity. Fifty nucleated red cells are present per 100 white cells. Scattered throughout the film are large numbers of characteristic Leishman-Donovan bodies, many of which are within the cytoplasm of reticulo-endothelial cells. This is Kala Azar and the appearances of the sternal marrow films are similar to those seen in nutritional macrocytic anaemia." The sternal marrow film a month later showed no significant change in the cytology or in the number of parasites, and the patient was repatriated to India.

Since this case we have had three further cases admitted, one of which was also infected with malaria. The patient with malaria recovered but the others died shortly after admission. It would appear that the marked precipitation of gold sol may be of diagnostic significance.

COUNCIL MEETING

This was held in Kelvin Chambers, The Terrace, Wellington, on Saturday, 30th October, 1948, at 10.45 a.m.

There were present Mr. N. J. Ellison (President, and Chairman of the meeting), Messrs. E. L. F. Buxton and D. Whillans (Vice-Presidents), Messrs. G. W. McKinley, H. T. G. Olive and M. O. Ekdahl (Ordinary Members of Council), Mr. D. H. Adamson (Hon. Treasurer), and Mr. S. O. Jarratt (Hon. Secretary).

Apologies were received from Mr. J. A. Samuel, who was preparing to leave for Samoa on a research expedition.

Greetings were received from the newly-formed Queensland Branch of the Society of Laboratory Technicians of Australia. Information and a request for exchange of Journals was sought.

The resignation of Helena A. Edward, Waikato Hospital, was accepted, and the following Junior members, all from the Laboratory, Public Hospital, New Plymouth, were accepted:—Misses Shirley Macdonald, Margaret Brown, Judith Bailey and Mr. Graham Meade.

A small balance was shown on the Conference, 1948, payments and expenses, and this was donated to the Publishing Fund.

The Salary Advisory Committee members were unable to give an official report on the salary scales, but the scale was said to be pending.

A considerable time was spent in discussing the future status of examinations, but it was stated that the first Intermediate Examinations would be held in Auckland in May, 1949. The Senior Syllabus has not yet been officially approved by the authorities.

Messrs. H. T. G. Olive and M. O. Ekdahl were appointed Assistant Editors, Mr. Olive to be also Advertising Manager.

The following donations to the Publishing Fund were received with acclaim: Dr. Pullar, £5/5/-; Mr. K. B. Ronald, £1/1/-.

The date of closing of the Junior Prize Competition was made July 1st, 1949.

The next Conference was suggested to be held in Wellington on a date to be arranged.

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The New Zealand Association of Bacteriologists (Inc.)

ALTERATION OF RULES

Rule 14 to read as follows:

14 (a) The officers of the Association shall consist of a President, two (2) Vice-Presidents, four (4) Ordinary Members, a Secretary and a Treasurer, who shall all be members of the Association. These shall constitute the Council. All members of the Council shall retire annually from office but shall be eligible for re-election.

14. (b) The President, Vice-Presidents, Secretary and Treasurer shall be Senior Members of the Association.

Rule 15 to read as follows:

15. (a) As constituted.

15. (b) The Secretary shall convene all meetings in accordance with instructions from time to time given by the Council and in accordance with the Rules and Constitution of the Association The Secretary shall attend all meetings and keep records of all proceedings. The Secretary shall issue all notices of meetings and shall attend to correspondence, and shall keep a roll of members and all Minute Books of the Association. The Secretary shall also prepare the Annual Report and shall present same at the Annual General Meeting of members.

15 (c) The Treasurer shall keep all necessary accounts and books to show the financial position of the Association from time to time. The Treasurer shall receive all monies on behalf of the Association. The Treasurer shall also prepare the Annual Balance Sheet and shall present same at the Annual General Meeting of Members.

Rule 25.—For "Secretary" read "Treasurer."

Rule 26.—For "Secretary" read "Treasurer."

Rule 27 to read as follows:

Rule 27. A prize fund shall be established and prizes shall be awarded annually at the discretion of the Council to such Junior members as shall be deemed fit to receive them. Candidates for such prizes shall forward to the Secretary, together with their application, either (a) an essay, or (b) a technical study relating to general laboratory procedure. In any year where a member is raised in status from that of a Junior to that of a Senior he shall be deemed to qualify if his entry be received while he is still a Junior member.

These alterations were registered with the Assistant Registrar of Incorporated Societies, Wellington, on October 6th, 1948.

Please paste the above alterations into your Rule Book.