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CONTENTS

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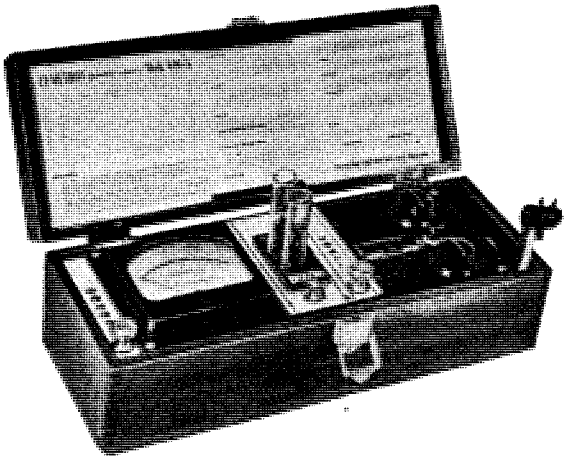

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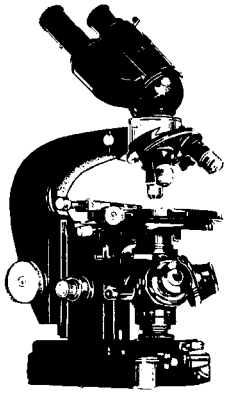

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LIVER FUNCTION TESTS

J. B. BROWN

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

GENERAL DISCUSSION

Tests for liver function are of value to the physician and surgeon chiefly in two directions: (1) A patient has obstructive jaundice—Is this due to interference with the excretion of bile within the liver (intrahepatic obstructive or parenchymatous jaundice) or to a block in the bile passages outside? (extra hepatic obstruction). (2) A patient without jaundice has symptoms suggesting liver disease—Can the tests confirm this or not? Liver disease in a non-jaundice patient is for practical purposes always cirrhosis. Causes of intra-hepatic biliary obstruction are infective hepatitis, acute yellow atrophy and metastatic carcinoma. The common extra-hepatic causes are carcinoma of the head of the pancreas or the stomach and the presence of a gallstone in the common bile duct.

It will be seen that the differentiation between the two types of jaundice is of real importance especially to the surgeon, as extra-hepatic obstructive jaundice is becoming more and more amenable to treatment. It is, nevertheless, a sad fact that this distinction is not always easy. This is largely because secondary liver damage is liable to occur in cases of extra-hepatic jaundice if the obstruction lasts for a long enough time.

Since jaundice is one of the most common indications of hepatic insufficiency a knowledge of the bile cycle is essential for an adequate understanding of liver function. Briefly it is as follows:—Haemoglobin is broken down in the cells of the reticuloendothelial system into haemobilirubin. Haemobilirubin on passage through the liver cells is converted into sodium bilirubinate or cholebilirubin. It then passes via the bile canaliculi and bile ducts into the gall bladder, where it is concentrated. Excretion occurs intermittently into the small intestine. Reducing bacteria here convert the bilirubin into stercobilinogen, most of which is oxidised to stercobilin and excreted as such as the normal colouring matter of the faeces. The rest is reabsorbed from the gut and carried by the portal blood stream directly back to the liver, where it is

mainly absorbed to be re-excreted in the bile. A small amount escapes into the general circulation and is excreted in the urine as urobilinogen. The bile picture in progressing liver damage is as follows:—The first function of the liver to be depressed is the absorption of the stercobilinogen from the portal blood stream so that increased amounts of urobilinogen appear in the urine. This can be tested for either as urobilinogen by Ehrlich's aldehyde reagent or as its oxidation product urobilin by spectroscopic examination. Further, liver damage causes abnormalities in bilirubin excretion. The bile, after it has passed through the liver cells, regurgitates back into the blood, producing a raised blood bilirubin, and bile appears in the urine. Clinical jaundice appears when the blood bilirubin reaches about 2 mgms %. At these lower levels of jaundice sufficient bile is excreted through the normal channels to produce normal coloured faeces and a raised urine urobilinogen content. Increasing severity of liver damage leads to increased amounts of bile in blood and urine, and to decreased amounts of bile escaping into the gut. The stools thus become pale and in cases of complete obstruction such as we find in acute yellow atrophy they are completely devoid of stercobilin. This absence of faecal stercobilinogen leads to a complete disappearance of urobilinogen from the urine. The reverse changes occur if clinical recovery takes place. The progress of jaundice in uncomplicated extra-hepatic obstruction is similar, except that due to the absence of actual liver damage, excessive amounts of urobilinogen are not excreted in the urine. The degree of jaundice can be similar in the two types of obstructive jaundice, so that blood bilirubin estimations are useful only in following the severity of the condition.

LIVER FUNCTION TESTS

The basis of liver function tests is the estimation of the capacity of the organ to perform some of its varied functions. The liver is concerned with the synthesis of some of the plasma proteins and prothrombin, conjugation and detoxication of certain foreign substances preliminary to elimination, carbohydrate metabolism and bile secretion. All these functions can be tested for by liver function tests. The reserve capacity of the liver is considerable, so that impaired function can usually be demonstrated only when 85% or more of the liver cells are out of action. The functions vary also in the ease with which they are affected. For instance, urea is formed exclusively in the liver, its formation being one of the last functions of the liver to be affected by disease, whereas the absorption of urobilinogen from the portal blood stream is one of the first.

Mention has already been made of the value of bile pigment study as a guide to the diagnosis of liver disease. It is often erroneously believed that the qualitative Van den Bergh reaction

can help in the elucidation of the cause of obstructive jaundice. The qualitative Van den Bergh differentiates haemobilirubin (indirect reacting bilirubin) from sodium bilirubinate (direct acting bilirubin). A mixture of the two is said to constitute the so-called direct biphasic reaction. It has been shown that the direct and direct biphasic reactions occur as frequently in intra hepatic as in extra hepatic jaundice. It is only in the demonstration of haemobilirubin found in haemolytic jaundice that the qualitative Van den Bergh is of value.

Many of the most useful liver function tests depend upon the detection of some abnormality in protein synthesis. These are grouped as follows:—

(1) Hippuric acid test: This depends on the fact that benzoic acid is conjugated by both liver and kidnevs with glycine synthesised in the liver, to hippuric acid which is excreted in the urine. The rate of excretion of hippuric acid after the ingestion or injection of a given amount of sodium benzoate is an index of the capacity of the liver to synthesise glycine and forms a sensitive test for liver function. It must be remembered that kidney damage will also cause a low excretion. This is excluded by performing a Van Slyke urea Clearance test at the same time as the hippuric acid test. The intravenous test has the advantage of being independent of rates of absorption of sodium benzoate and is claimed by some to be a more sensitive test. It is doubtful, however, whether the extra trouble involved is worth while. The hippuric acid test is one of the most sensitive tests of liver function yet devised and is useful in the detection of liver damage in non-jaundiced patients. Because of its sensitivity the test is invariablv positive in cases of obstructive jaundice and is therefore of limited value in the investigation of jaundice of unknown origin. However, it is a useful test for assessing the severity of the liver damage and can thus be used in a prognostic sense.

(2) Empirical tests: Abnormal serum proteins, notably the globulin fraction, are produced in liver disease and a number of empirical tests such as the Takata Ara reaction, Cephalin-cholesterol flocculation and Thymol turbidity tests are based on this phenomenon. These tests are a measure of liver function and have about the same sensitivity as the hippuric acid excretion test. Strongly positive reactions in cases of jaundice of unknown origin are usually an indication that the jaundice is of parenchymatous origin.

(3) Serum Protein estimation: There is reason to believe that the liver synthesises the plasma proteins albumin and fibrinogen. Disease depresses this function, the albumin fraction being most affected. In severe liver damage we find lowered plasma albumin with usually a normal or even raised plasma globulin. A very low serum albumin (2% or less) indicates a grave prognosis

(4) Prothrombin time: The liver synthesises prothrombin in the presence of adequate supplies of vitamin K. A prolonged prothrombin time in the presence of jaundice may be due to two causes, namely, failure to absorb vitamin K from the intestine due to lack of bile salts there or to inability of the liver to carry out the synthesis due to gross liver damage. Therefore, a prolonged prothrombin time which responds rapidly to parental administration of vitamin K is simply due to obstruction to the normal flow of bile, while one which does not respond is due to liver damage. This test is of value in non-jaundiced cases, also, i.e., cirrhosis.

Tests depending on other functions of the liver:—

Serum alkaline phosphatase estimation: A useful test in the investigation of the nature of jaundice is the determination of the serum alkaline phosphatase. This is excreted by the liver and is usually high (over 35 King Armstrong units) in the presence of extra hepatic obstruction. Cases of hepatogenous jaundice often do not show such raised values. It must be remembered, however, that other conditions such as bone disease and infancy also give high alkaline phosphatase values.

The interpretation of any test or combination of tests must always depend to some extent upon clinical data because of the possibility of secondary hepatic damage in diseases not primarily involving the liver. The choice of tests depends upon the type of information required. These are summarised for the two typical groups:—

(1) Suspected liver disease without jaundice: Urine urobilinogen and the hippuric acid excretion test will indicate whether detectable liver disease is present. One of the empirical tests, such as the Takata Ara, may give significant results. The serum bilirubin will indicate the extent of subicteric regurgitation and the serum proteins may be altered in the cases of more severe liver damage. Prothrombin time estimation is often of value.

(2) Jaundice of unknown origin: Hepatogenous jaundice being primarily due to liver damage will show more or less strongly positive reactions to those tests listed under "suspected liver disease." The clinical history shows an increasing and then decreasing jaundice in cases which recover and a steadily worsening in those who die. Extra hepatic obstruction will usually show some abnormality in some or all of the tests for liver disease, depending upon the extent of the secondary involvment of the liver cells. The alkaline phosphatase will be decidedly raised. The clinical history will show an intense non-resolving jaundice if the obstruction is due to carcinoma or a jaundice of intermittent severity if due to stones.

ACKNOWLEDGMENT—The author wishes to thank Dr. J. L. Pinniger, Pathologist, Auckland Public Hospital, for his helpful criticism and suggestions in the preparation of this article.

AN ATYPICAL MEMBER OF THE SALMONELLA GROUP

J. CALLAGHAN

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

In view of the number of obscure gram negative bacilli which are discarded almost daily as of no importance it is considered to be of interest to report an atypical member of the *Salmonella* group which may easily have shared this fate.

A single, pale colony was picked off a McConkey plate and inoculated into lactose sugar medium. As this showed neither acid nor gas after 12 hours' incubation it was further subcultured into sucrose, glucose and mannite, sugar media, into peptone water and on to an agar slope. After 24 hours there was no acid or gas in lactose and sucrose, acid but no gas in glucose and both acid and gas in mannite. Suspensions from the agar slope were used for slide agglutinations and weak agglutination was noted against *S. typhi* (O) and *S. typhi* (H) antisera. Using the tube method the organism did not agglutinate to the full titre of either antiserum and the flocculation was not typical. Unfortunately tests were not carried out against polyvalent *Salmonella* antisera at this stage.

Two further subcultures into both glucose and mannite sugar from glucose and mannite gave the same sugar reactions as before, but on picking off a colony from an agar plate inoculated at the same time as the last set of sugars and passing this in turn through the sugars, glucose at last showed a small amount of gas. Using a suspension of the organism now, from an agar plate, tube agglutinations against polyvalent *Salmonella* (H specific and non-specific), *S. paratyphi* B (O) and *S. aertrycke* (O) were positive to full titre, but were negative against *S. typhi* (O) and (H) and *S. paratyphi* (H) antisera.

As a full range of *Salmonella* (H) antisera was not available it was not possible to identify positively which member of the *Salmonella* group this organism was. The agglutination of both *S. paratyphi* B (O) and *S. aertrycke* (O) antisera was explained by the fact that the two organisms have common (O) antigens, while the inability to agglutinate *S. paratyphi* (H) antiserum indicated that the organism was most probably *S. aertrycke*.

SUMMARY—An atypical member of the *Salmonella* group isolated from human faeces has been described. While on primary isolation acid but no gas was produced in glucose sugar medium, or on subculture into further sugar medium, on subculture on to agar and on picking off a colony and subculturing the typical sugar reaction was obtained and agglutination tests with the appropriate *Salmonella* antisera were positive to titre.

USE OF CHLORAL HYDRATE IN CULTURE MEDIA

IAN D. SCOTT

(From the Pathology Dept., Public Hospital, Christchurch.)

Chloral Hydrate, C.C13.CH(OH)2, the addition compound of Chloral and Water is a substance seldom used by the Bacteriologist. It has, however, a very definite value when incorporated in culture media in preventing Proteus vulgaris and Pseudomonas pyocyanea from "swarming" and inhibiting or obscuring the growth of other organisms which may be present with the "swarmers." The action of this compound apparently lies in the fact that it suppresses the development of the flagella normally giving these organisms their motility. The medium should contain Chloral Hydrate in a concentration of 1 in 500 in addition to the usual enrichments, i.e., blood or serum.

PREPARATION

The following apparatus will be required:—

1 Sterile 10 ml. pipette, graduated in 0.1 mls.

1 Sterile 5 ml. pipette, graduated in 0.1 mls.

Sterile Petri Dishes.

Also the following reagents:—

Nutrient Agar (pH7.5).

10% Solution Chloral Hydrate, freshly prepared and Seitz Filtered.

(Not more than 5 mls. are required for each batch of about 20 plates, 200 mls. of agar.)

Sterile defibrinated or citrated blood.

COMPOSITION AND PROCEDURE

The composition of the medium is as follows:—

Nutrient Agar	100 mls.
Sterile Blood	10 mls.
10% Chloral Hydrate	2 mls.

The Nutrient Agar is melted and cooled to 45°C. The 10% Chloral Hydrate solution and the blood are added separately to the melted agar by means of the sterile pipettes and the whole gently and thoroughly mixed.

About 12 mls. are added to each sterile Petri Dish and allowed

to cool. Store in the refrigerator at 4°C.

NOTE—It is important that 10% Chloral Hydrate solutions should not be allowed to stand for long periods of time, as reduction takes place. It has been observed, however, that this 10% solution kept in the refrigerator at 1.5-2°C. remains stable for a considerable time, at least one month. The substance, when incorported in culture media, also appears to remain stable for at least two weeks, probably longer. The Chloral Hydrate solution used in the second batch of the medium prepared in this laboratory was autoclaved for 10 minutes at 15 lbs. pressure and was allowed to stand at room temperature for ten days. This solution proved to be ineffective when incorporated in culture media, and a mixed culture of an enterococcus, Escherichia coli, Pseudomonas pyocyanea, and Proteus vulgaris grew as on ordinary media, without the addition of Chloral Hydrate. Subsequent subcultures from the original culture on a fresh batch of the medium, prepared with a Seitz filtered Chloral Hydrate solution proved to be entirely successful in preventing the Ps. pyocyanea and P. vulgaris from "swarming."

THE MEDIUM IN PRACTICE

Trials of the medium conducted in this laboratory and in the laboratory attached to the Plastic Surgery Unit, Burwood Hospital, have shown encouraging results. The medium completely prevented P. vulgaris and Ps. pyocyanea from "swarming," making possible identification in primary culture, without tedious subculturing on 8% blood agar, of other pathogens growing together with these organisms.

The first tests were carried out with pure cultures. Staphylococcus aureus, Streptococcus haemolyticus, Streptococcus viridans, Escherichia coli, Corynebacterium diphtheriae, Corynebacterium hofmannii, enterococci, Neisseria catarrhalis, Neisseria meningiditis and diphtheroid bacilli, all presented their usual colonial characteristics, although in the case of S. aureus particularly, and to a lesser extent in other organisms, the colonies were slightly smaller after 24 hours' incubation.

Pure cultures of P. vulgaris and Ps. pyocyanea showed minute, discrete translucent colonies resembling at first sight those of Haemophilus influenzae. On close examination the colonies of P. vulgaris formed after 24 hours' incubation were intermediate between the three types of Felix (1922). The P. vulgaris colonies were minute, circular convex, smooth colonies with an entire edge greyish and translucent by reflected light and were friable. These characteristics differentiate them from H. influenzae. (Both P. vulgaris and Ps. pyocyanea presented the above described type of colony and as was the case with strain variants, were indistinguishable from one another.)

In mixed cultures of streptococci, staphylococci and P. vulgaris, the Gram-positive organisms were isolated with ease and without obliteration of their colonies by the "swarmer." No further sub-culturing or the use of 8% blood agar was required. Isolation on the 8% blood agar plate seeded as a control was difficult owing to the large size of the P. vulgaris colonies. Similar difficulties were also encountered with spirit-washed and ether-vapour plates which have some degree of popularity. Sodium azide was not available for comparison.

Media containing Chloral Hydrate (1 in 500) inoculated from swabs of material for routine culture grew all organisms equally as well as the 2% blood agar plates used as controls. The colonies, although slighty smaller, showed their typical appearances after 24 hours' incubation, and in addition the trouble caused by P. vulgaris and Ps. pyocyanea (of which a great deal is encountered in Plastic Surgery Bacteriology) was entirely eliminated.

There was very little increase in the size of the colonies of any organism on further incubation.

The medium has now been used as a routine in this laboratory and at Burwood for six months, for culturing material containing large numbers of Gram-negative bacilli, together with other organisms. The 8% blood agar formerly in use for the suppression of "swarmers" has been discarded.

Care must be taken to avoid confusion between the colonies of P. vulgaris and Ps. pyocyanea and those of H. influenzae in cultures from material where the last mentioned may be expected to be present, such as in cases of Otitis media, etc.

SUMMARY

A medium calculated to prevent P. vulgaris and Ps. pyocyanea from "swarming" is described. Its preparation and practical uses are given.

1 *Advantages*—

(a) Simple preparation.

(b) Economy.

(c) Efficiency and reliability if carefully prepared.

(d) Characteristic colonial appearances.

(e) Superiority to spirit-washed, ether-vapour and 8% blood agar methods for inhibition of P. vulgaris and Ps. pyocyanea.

2 *Disadvantages*—

(a) Possible deterioration of Chloral hydrate media on keeping and on prolonged incubation.

(b) Possible confusion of colonies of P. vulgaris and Ps. pyocyanea with those of H. influenzae.

(c) Topley and Wilson mention that many strains are relatively insensitive to the drug, but so far we have not encountered any.

COMMENT

Mr. D. H. Adamson has asked me to include a comment. He says: "It is strange that none of us here has noticed this reference earlier, as it appeared in Topley and Wilson, 2nd edition, 1936."

ACKNOWLEDGMENT

I should like to thank Dr. A. B. Pearson for permission to publish this article and for the interest he took in the described media while it was being tried and tested. I should also like to express my thanks to all those who assisted in the trials of this medium, and especially to Mr. Adamson for his valuable suggestions and criticisms in the preparation of this paper.

REFERENCE

Topley and Wilson: "Principles of Bacteriology and Immunity" (3rd Edition, 1946), Volume 1, Page 644.

SOME PRACTICAL NOTES OF INTEREST

D. F. CREED

(*From the Mater Misericordiae Hospital, Auckland.*)

1 THE PRESERVATION OF STOCK CULTURES IN THE DRY STATE—

This is an excellent and simple means of preserving stock cultures, which obviates the tiresome and time-consuming monthly transfer to retain viability.

The method was originally applied to Gono cultures, but we have found that a large variety of organisms respond well to the same treatment. After nearly two months' storage we have subcultured the following organisms:—N. gonorrhoeae, Strep. viridans, haemolytic strep., S. typhi (2 strains), Staph. aureus (2 strains), Schmitz and Flexner dysenteries, Proteus 0 x 19, Proteus 0 x 2, and B. coli communis. We expect to be able to sub-

culture with equal success in 18 months to two years' time. (Since the writing of this article, a copy of J. Lab. Clin. Med. 32, 1008, 1947, has been received which bears out this expectation, although the method used is slightly different in the choice of sand rather than filter paper.)

The method itself is that given in Rec. Adv. Clin. Path 1947, and is performed as follows:—Cut small strips of filter paper about 2in. long and sufficiently narrow to slip into a WR. tube. Plug the tubes with cotton wool and sterilise. Grow the organism on slopes of blood agar, or other suitable medium, then wash off with citrated blood (animal or human)—two or three drops are sufficient. Dip papers, held in sterile forceps, into the washings, and return to tubes. Put the tubes in a jar with some Calcium Chloride, and exhaust this container, preferably with a vacuum pump. (We made use of the ordinary tap suction.) The papers dry almost immediately. Leave for 24 hours, then store in an evacuated bottle with some $CaCl_2$. Cultures thus treated remain alive for at least two years, while Gono will remain viable for at least seven years. When required, drop a paper into suitable broth, or cut off a small piece with sterile scissors and return remainder to bottle and re-evacuate.

2 ISOLATION OF PENICILLIN-SENSITIVE ORGANISMS FROM SPECS. CONTAINING PENICILLIN

in such quantities as to prevent culture (e.g., pus, fluids, blood culture).

Add a few drops of Penicillinase to broth or on one side of an agar plate.

Penicillinase is a relatively thermo-stable enzyme, specifically destructive to Penicillin, secreted by certain organisms, notably certain strains of B. coli, B. subtilis and some naturally insensitive strains of Staph. aureus (although it has been tentatively proved that the enzyme is not connected with penicillin-resistance).

Penicillinase is prepared as follows:—Grow B. subtilis in 20-25 cc of digest broth in a 100 cc container for 3 days at 37 C. The final potency may be enhanced by adding 500-1000 units of Penicillin on the second or third day. Adjust to pH 7.2 and Seitz filter.

The potency of the filtrate varies with different strains of subtilis, any may be tested with the knowledge that 1 ml. of a 1:250 dilution of a good filtrate will inhibit 50 units of Penicillin in 1-2 hours at 37 C. Our own preparation (following Rec. Adv. Clin. Path. 1947) was sufficiently potent for one small drop to destroy 2000 units in one hour.

3 AGGLUTINATION TEST ON MILK FOR BR. ABORTUS

Serological tests are a useful preliminary to investigation of Brucella-infected milk. A variable proportion of cows develop udder lesions associated with the excretion of the organisms in the milk and usually with the presence of agglutinins. The detection of these agglutinins is easy if clear whey is used.

Take 10 ml. milk, add 5 ml. chloroform to extract fat, and a few drops of rennet. Incubate 1 hour at 37 C., then centrifuge. The chloroform extract falls to the bottom, the central layer contains the casein and on top is the clear whey. This is pipetted off and tested for agglutinins in the usual way.

A whey titre of 1:80 or over is very suggestive of udder infection; titres of 1:640 have been recorded in heavily-infected herds, and these even in bulked samples.

We have been unable to test this method because of unavailability of material. Perhaps the animal research people would like to evaluate its usefulness?

4 ANAEROBIC BROTHS

(a) A simple, old, but most effective means of producing anaerobiosis, is the addition of sterile 3 x 25 mm. strips of iron sheeting (sheet iron about ga. 26) to ordinary liquid media immediately before use. This method will grow even the strictest anaerobes from very small inocula. Unfortunately cloudiness cannot be used as a criterion of growth, as this develops in the broth with the production of Iron hydroxide. We used this method with a strictly anaerobic Strep., and found that it provided a flourishing growth.

(b) The difficulty encountered lately in obtaining Thioglycollate medium—an excellent anaerobic broth—may be overcome as follows:—Nutrient broth plus 0.1% Sod. thioglycollate (thiolacetate) plus 0.05% agar. The Sod. thiogly. may be prepared from the commercial stable 90% thioglycollic acid, by exact neutralisation to pH 7.2 with Sod. hydroxide. About 11.0 ml. of N/1 NaOH to 0.9 ml. of the acid solution. This contains about 1 gm. of the Sod. salt and makes 1 litre of medium. Tube to 7 cm. depth and autoclave. Keeps one month at least at room temp. A stock concentrate of 0.5% agar and 1% Sod. thioglycollate in a screw-capped bottle will keep indefinitely. Add one part of conc. to nine parts of any liquid medium.

Dextrose 1% may be added as desired, and 0.0002% of 1:500,000 methylene Blue as an indicator of oxygen absorption

(Green-oxygen, yellow-anaerobic). Boiling for a short while will free the medium of oxygen if the indicator shows green. The strictly anaerobic strep. mentioned above was mixed with an aerobic coliform bacillus. Twelve hours' culture in this medium provided excellent growths of both organisms. (Rec. Adv. Clin. Path. 1947.)

5 THE BIOCHEMICAL DETERMINATION OF AMYLOSPERMIA

This condition is frequently encountered in impaired fertility. It is shown by an increased percentage of a substance known as "convertible carbohydrate" in the semen. (It is a separate entity from glucose, yet may be converted to glucose by diastase, its identity is unknown.)

1 0.3-0.5 ml. of semen is diluted with the same amount of 1% diastase solution and incubated at 37 C in a stoppered test tube for 2 hours; the glucose content is then determined.

2 The same amounts of semen and distilled water are mixed and the glucose determined by one of the usual micromethods (see J.N.Z. Ass. Bact. Vol. 2, No. 2.—Brown).

3 The difference between glucose of sample 1 and that of sample 2 shows the concentration of convertible carbohydrate.

Normal values for seminal glucose are 200-300 mgms%. For conv. carbohydrate 50-70 mgms%.

In amylospermia there is a significant rise in the latter (up to 50% of total glucose or more) and figures up to 600 mgms have been recorded.

Amylospermia indicates a disturbance of function of the accessory glands and as such is proof of disturbance of the genital apparatus.

The few seminal examinations performed in this lab. do not permit of a thorough examination of the method, and normal results have been obtained so far with its use. Would a large lab. care to make astudy of say 20 cases? (Amer. Ann. Surg. 1946.) (Rec. Adv. Clin. Path 1947.)

Here and There

AUCKLAND

Our congratulations to Dr. Walter Gilmour, C.B.E., on being the recipient of his New Year Honour. He left the service of the Auckland Hospital Board last year after 26 years' service to enter private practice with Dr. D. J. A. Doyle, formerly Pathologist at Napier and sometime Assistant Pathologist at the Auckland Hospital Pathological Department, and Dr. F. J. Cairns, formerly Pathologist in Charge of the Cornwall Hospital Laboratory.

The Editor is at last settled in his new home and hopes from now on to be able to pay a little more attention to the printing press which is in his basement. The press was dismantled to be carted to its new home and was cleaned and painted before reassembling. As this did not take place till a few days before Christmas the usual helpers were away on holiday, so that the Editor spent two weekends and a number of nights in the printing and publishing of the January Journal. While the Editor enjoys the job of being printer, he finds the lack of contributed articles a constant embarrassment, and begs members contribute lest the Journal becomes unofficially the Annals of the Department of Pathology of the Auckland Hospital Board.

Readers will have noticed that the January issue commenced Volume 3, thus making Volume 2 of three numbers only. This was done to make each volume commence in January, and the change will be taken into account in arranging the subscription to the Journal.

Members are reminded that the Auckland branch of the Association has the responsibility for the next Conference in July, is working to make it the best yet, and expects to have much of interest to show in each of the four laboratories under the control of the Auckland Hospital Board.

Since early July of last year the Department of Pathology, Auckland Hospital, has been open from 8.30 a.m. till 10 p.m. every day in the week, including Sunday. This has been achieved by a roster of seniors who commence duty at 4 p.m. on their duty day. Over the week-end two seniors and a junior maintain the service, which has proved of great use. The seniors who work the week-end are allowed a day and a half duty leave, while the junior who works a half-day is allowed the following Saturday morning off. A first-class hot meal is provided at the doctor's residence for those on duty and transport is provided in certain cases after 10 p.m.

CHRISTCHURCH

It is with deep regret that we record the death of Mr. Mawson Stewart, our Honorary Auditor, who had been so helpful in assisting the

new Secretary-Treasurer. We extend our sincerest sympathies to his wife and parents and to the firm of Stewart, Beckett and Co. in their tragic loss. Mr. Stewart and his uncle met their deaths in Ballantynes' fire when in their office on auditing business.

Dr. D. T. Stewart, who has been in England for the past year studying latest methods in pathology and general laboratory methods, returned by air to resume his duties here as from December.

Dr. M. G. Somerville, an Assistant Pathologist here for the past three years, has been appointed Pathologist to the Napier Hospital.

The emergency laboratory which was opened at Kaikoura Hospital on October 29th of last year for the control of the typhoid epidemic, was closed on 5th January, 1948. It is hoped to give some notes on this epidemic in a future Journal.

The Secretary received an interesting letter late in December from Mr. Reginald J. Bromfield, Honorary Editor of the "Bulletin of the Institute of Medical Laboratory Technology," our kindred Association in England. Inter alia, he says: "Through the courtesy of a doctor in Oxford and the assistance of one of our members I have just received some odd copies of your Journal, and hasten to send greetings from fellow workers in England. . . . Some 25 years ago a branch of the Pathological and Bacteriological Assistants' Association was formed in Sydney, Australia, but owing to the local conditions was soon absorbed into a trades union. . . . From what I can gather from your excellent Journal it appears that you are progressing along similar lines to ourselves, both in constitution and aims. The details of your examinations published in the Journal are of particular interest; they appear to be of higher standard than our intermediate and less specialised than our final examination. Please accept our warm congratulations on the formation of the New Zealand Association of Bacteriologists, coupled with best wishes for the future development and prosperity of the Association."

Remember the Conference in Auckland mid-July, 1948

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