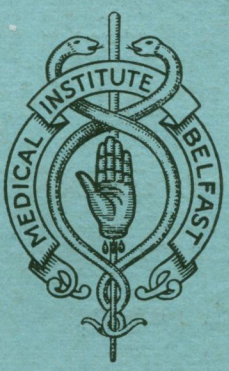
APRIL, 1933

THE ULSTER MEDICAL JOURNAL



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CONTENTS

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FORTHCOMING MEDICAL MEETINGS

May	10	British Medical Association, Belfast Division - -	4.15 p.m.
,,	17	British Medical Association, Ulster Branch - -	4.15 p.m.
,,	24	Ulster Medical Society - - - - -	4.15 p.m.

POST-GRADUATE COURSE AT THE ROYAL VICTORIA HOSPITAL, BELFAST

THE post-graduate course for general practitioners will be continued on Wednesday afternoons as follows :—

April	5	Professor R. J. Johnstone—"Sacral Pain."
,,	12	Professor C. G. Lowry—"Modern Methods of Analgesia and Amnesia in Labour."
,,	26	Mr. G. R. B. Purce—"Some Affections of the Anus and Anal Canal."
May	3	Dr. S. B. Boyd Campbell—"The Electro-Cardiograph as an Aid to Diagnosis and Prognosis."
,,	10	Dr. R. Maitland Beath—"The Indications for X-ray Therapy."
,,	17	Mr. H. P. Malcolm—"Some Hip-Joint Conditions."
,,	24	Dr. Fred. Jefferson—"Why We See."
,,	31	Mr. H. L. Hardy Greer—"Albuminuria of Pregnancy."
June	7	Dr. J. A. Smyth—"The Diagnosis and Treatment of Toxic Goitre." Demonstration of Cases.
,,	14	Dr. Robert Marshall—"Prognosis and Treatment in Cardiac Disease."
,,	21	Dr. S. I. Turkington—Demonstration of Chest Cases.

APPOINTMENTS

J. T. Lewis, M.D., B.Sc., M.R.C.P.Lond., has been appointed Lecturer in Materia Medica, Queen's University, Belfast.

Henry Lowry, M.B., F.R.C.S.Edin., has been appointed Honorary Gynæcological Surgeon to the Ulster Hospital, Belfast.

H. I. McClure, M.B., F.R.C.S.Edin., has been appointed Honorary Assistant Gynæcological Surgeon to the Ulster Hospital, Belfast.

SPECIAL PÆDIATRIC NUMBER

THE Editorial Board has decided to issue a special Pædiatric Number of this Journal in October. The importance of this subject to the general practitioner cannot be over-estimated, and it is hoped that those members of the Ulster Medical Society who have special knowledge of the subject will contribute to its pages. Manuscripts for this number should be sent to the editor not later than 30th June, 1933.

THE ULSTER MEDICAL SOCIETY

THE MEDICAL INSTITUTE,
COLLEGE SQUARE NORTH,
BELFAST.

Dear Sir (or Madam),

If you are not a member of the Ulster Medical Society, we would appeal to you to give the question of joining your consideration. The Society has been in existence since 1862, and has always been active in keeping its members interested in the advances in medical science as well as in current professional affairs. The Medical Institute, situated in College Square North, belongs to the Society (through the generosity of Sir William Whitla), and is ideally adapted for meetings, committee meetings, and recreaton. There is a library with current medical periodicals, and facilities for reference to medical literature are available in conjunction with the library at the Queen's University. There is also a billiards-room available to members, and lighter periodicals are also provided. An annual dinner is held each year in December, and a golf competition in June. Meetings are held at intervals of a fortnight during the winter months, and papers are contributed by members. Distinguished visitors are occasionally asked to contribute papers on subjects upon which they are specially qualified to speak. THE ULSTER MEDICAL JOURNAL, the official organ of the Society, is issued to all Fellows and Members free of charge.

The subscription to the Society is one guinea for Fellows and Members living in the country; two guineas for Fellows living in Belfast; and one guinea for Members living in Belfast who are not qualified more than seven years. The payment of a sum of twenty guineas entitles one to election to Life Membership.

May we, therefore, appeal to you to join the Ulster Medical Society, and so enable us to widen its influence and sphere of usefulness still further? For your convenience a proposal form is attached, which, if filled in and sent to the Honorary Secretary, will ensure your name being put forward for election to membership of the Society.

If you do not wish to become a member of the Society, will you consider entering your name as a subscriber to THE ULSTER MEDICAL JOURNAL? The subscription is five shillings per annum, payable in advance to the Honorary Treasurer, for which a banker's order form is attached for your convenience.

We remain,

Yours faithfully,

C. G. LOWRY, *President.*

J. A. SMYTH, *Hon. Secretary.*

F. M. B. ALLEN, *Hon. Treasurer.*

.....19.....

To DR. J. A. SMYTH,
23 UNIVERSITY SQUARE,
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.....

Year of Qualification.....

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THE
ULSTER MEDICAL JOURNAL

PUBLISHED QUARTERLY ON BEHALF OF THE ULSTER MEDICAL SOCIETY

VOL. II 1st APRIL, 1933 No. 2

EDITORIAL

THE report of the Royal Medical Benevolent Society of Ireland has just been issued for the year ended April, 1932. It shows an increase in the returns from investments, donations, and subscriptions. This happy state of affairs is a noteworthy one, and a special effort must have been made by the central and branch honorary treasurers during this last difficult financial year to help the Society's beneficiaries. But further efforts are surely possible to increase the income of this, the only medical charity operating in Ireland. Its work is the beneficent one of granting help to our broken brethren, aid to their widows, and assistance to their orphans. It is worthy of the most generous support of the profession. The number of grants awarded during the year was ninety-five, as compared with eighty-seven in 1931, and the total amount distributed was £2,426. 10s., an increase of £272. 10s. on the previous year. The average amount of the grants has risen to £25. 10s., an increase of 15s. 8d. There were eight medical men among the beneficiaries, who including dependants, totalled 228. The relatively small sum of money involved does not reflect great credit on the generosity of the medical profession in Ireland. Some whole counties give no support to it at all, while others, not always the poorest, do little. The need for support is great, and we would appeal to our readers to remember this charity when disbursing of their bounty to the poor. The honorary treasurers for Northern Ireland are: Co. Antrim, Dr. V. G. L. Fielden; Co. Armagh, Dr. W. J. Dawson, Newtownhamilton, and Dr. Dougan, Portadown; Co. Down, Dr. Nolan, Downpatrick; Co. Londonderry, Dr. J. W. Killen, Londonderry; Co. Tyrone, Dr. R. H. C. Lyons, Dungannon; Co. Fermanagh, Dr. Leonard Kidd, Enniskillen. Any of these gentlemen would acknowledge subscriptions, which would be gratefully received.

The Experimental Study of Cancer

By JOHN S. YOUNG, M.D., M.A., B.SC.

from the Department of Pathology, Queen's University, Belfast

NOWADAYS cancer research has many ramifications. These may be summarized as clinical and radiological, pathological, statistical, biochemical, and experimental. This short paper is concerned only with the more important aspects of the experimental study of the disease.

The essential nature of cancer is so obscure that it is not possible to estimate the several parts which intrinsic and extrinsic factors play in its origin. Probably both these factors are involved to some degree in every case. Generally speaking, the extrinsic factors are more amenable to experimental investigation, and considerable progress has been made in their elucidation during the last twenty years. Nevertheless, opinion is still divided with regard to certain fundamental aspects of the cancer problem, and it would seem to be impossible to reconcile the two prevailing theories affecting the genesis of the disease. These two theories are conveniently described as the "chronic irritation" theory and the "virus" theory respectively.

The "chronic irritation" theory dates from 1770, when Potts recognized and described chimney-sweeps' cancer and pointed out the etiology of the lesion. It was reasserted by Billroth, who declared that "cancer does not exist without previous chronic inflammation." During the last twenty years, a large number of agencies capable of producing cancer under natural and experimental conditions have been identified, and their variety is extraordinary. To mention only a few of them, there are X-rays, tar, pitch and certain mineral oils, arsenic, carbon-dioxide snow, and burns, all capable of setting up cancer in the skin, while cancer in the urinary bladder can be initiated either by chemical substances derived from the aniline dyes or by the ova of Bilharzia. Fibiger was able to produce cancer of the stomach in a large proportion of rats by feeding them with the larvæ of a nematode; Bullock and Curtis have produced sarcoma of the liver in rats by feeding them with the common tape-worm of the cat. So far as is known, there is no property, either chemical or physical, common to all the carcinogenic agencies which have been identified as such. Thus it is assumed that these agencies produce cancer in the long run by determining identical biological changes in the affected cells, which culminate in the progressive growth of these cells. Nothing is known about the biological changes which are alleged to occur in the cells, and the process whereby they are brought about is described as "chronic irritation," for lack of a better understanding. And yet, none of the particular agencies which have been mentioned is known to play any part in the etiology of tumours of the breast, gastro-intestinal tract, lung, brain, uterus, and so forth. Therefore, it would appear that the number of carcinogenic agencies occurring in nature must be multiplied indefinitely. The knowledge gained by clinical and experimental observation, that certain "chronic irritants" are capable of producing malignant disease either directly or indirectly, has been invaluable because it has found ways and means to reduce the incidence of

industrial cancer. But, although the causal agent is known, the method of production of a tar cancer in the skin of a mouse remains as mysterious as that of a spontaneous mammary cancer in the same animal. About the end of the third month of tarring, one or several warts appear on the tarred area of skin, and then at some later date, even if tarring is stopped in the meantime, the epithelial cells invade the subcutaneous tissues and a cancerous growth is established. Berenblum has shown recently that an actively carcinogenic tar can be inhibited by a small addition of mustard gas. The initial overgrowth or hyperplasia of the skin epithelium proceeds in the usual way, but so long as local treatment with mustard gas is maintained cancer does not develop. In this instance, the carcinogenic property of a "chronic irritant" is suspended by a more acute "irritant." The significance of this strange antagonism is not known, but it reveals a sad limitation of the "chronic irritation" theory of cancer. As a matter of fact, little or nothing is known about the "irritation" of cells—less, perhaps, than is known about cancer itself.

The evolution of a cancerous process in man is slow, often separated by many years from the time of exposure to any of the agencies which are known to be associated with the disease, and it is frequently preceded by papillomatous formations which look benign under the microscope. Leitch showed that cancer can be produced in the skin of a large proportion of mice by tar, even if tarring is stopped after a few applications before there is any evidence of tumour formation. Apparently some essential change is brought about in the growth capacity of the affected cells by the tar, and this change slowly gathers momentum during the succeeding weeks and terminates in malignant disease. A similar phenomenon is exemplified by X-ray and arsenic dermatitis in man, and also, perhaps, by a variety of pre-cancerous lesions occurring under natural conditions such as cystiphorous epithelial hyperplasia of the breast (Cheatle), cirrhosis of the liver, and leukoplakia of the tongue. Accordingly, it is widely believed that various agents, of which some are known and some unknown, initiate cellular changes which may be expressed many years after by malignant growth. But this is contrary to our general knowledge of the behaviour of cells. An inflammatory reaction, for example, is sustained so long as the inflammatory reagent persists in the tissues, but it subsides when that agent is removed and the tissue cells resume their normal quiet activities. Persistent or progressive tissue changes are commonly associated in pathological experience with a persisting extrinsic cause. Hence many workers have adopted the view that the progressive growth of cancer cells is the effect of a persisting cause which has been variously interpreted as a virus, as a ferment, and as a hormone.

From 1910 onwards, Peyton Rous and his collaborators described a series of malignant tumours occurring in the domestic fowl which could be transmitted to other fowls by a cell-free filtrate of an extract of the growth. These tumours each have a counterpart in man, namely, the myxosarcoma, the spindle-cell sarcoma, and the osteo-chrondo sarcoma. They are further remarkable in the respect that a minute quantity of filtrate—for example, one cubic millimetre—will often suffice to

set up a new growth along the needle-track of injection. The new growth always resembles precisely the tumour from which the filtrate has been derived, and it often appears within a week. More recently, Fujinami has described a myxosarcoma, transmissible by cell-free filtrates, which will grow equally well in the fowl and in the duck, but this impartiality is unique. Gye and Purdy have carried out an intensive study over several years of five filterable tumours in the fowl, including the Rous sarcoma No. 1, Fujinami's myxosarcoma, an endothelioma, and two other sarcomas. In their view, these tumours are caused by an infective complex consisting of (*a*) an non-specific factor (virus), and (*b*) a specific factor comprising a viral element and a cell element. The Rous sarcoma No. 1 and the endothelioma, tumours of a different histological type, are caused by one and the same virus, whereas the Fujinami sarcoma, which is indistinguishable microscopically from the Rous sarcoma, is caused by an antigenically different virus. They attribute the specificity of an active tumour filtrate not to the virus, but to a soluble cellular aggressin derived from the affected cells. According to their interpretation, it is this cellular aggressin which ensures that an injection of filtrate will initate a tumour process in a connective tissue cell and not in a endothelial cell, or vice versa. They are impatient with the "chronic irritation" theory of the origin of cancer or with any other cellular conception of the disease, and they are persuaded that "cancer is a cell reaction to a living intracellular virus, the reaction manifesting itself in cell growth and proliferation." On the other hand, it may be highly significant that these filterable tumours of the fowl form a comparatively limited group of tumours, since they all originate in mesoblastic elements. Spontaneous epithelial tumours are not uncommon in the fowl, particularly in the ovaries of old hens. Hitherto it has not been possible to transmit any of these epithelial tumours from one fowl to another by means of a cell-free filtrate of an extract of the growth, and in the mammal no tumour of any kind, either sarcoma or carcinoma, has been transmitted in this way. These tumours can be passed from one animal to another animal of the same species only by means of grafts of living tumour-cells, and apparently the tumour which develops is derived exclusively from these implanted tumour-cells and not from the tissues of the new host, which merely provide blood-vessels and stroma for the support of the growing tumour. Consequently, if a virus is the responsible agent of all these tumours, it must live in such intimate association with the tumour-cells that it cannot survive independently of them, while its biological properties become inseparable from those of the cells. At the same time the viability of the affected cells is enhanced in three important respects. They are able to proliferate regardless of the needs of the organism as a whole: unlike normal cells, they can be grafted successfully in other animals of the same species; and, under favourable experimental conditions, they can be passed through many generations for an indefinitely long period greatly in excess of the natural span of the animal from which the tumour was originally obtained. Thus a virus theory of cancer presupposes something more than a reaction on the part of the malignant cell. It introduces a new pathological conception, namely, that there is a symbiosis of cell and parasite which is expressed by excessive growth of the cells according to the degree of their malignancy, while every other healthy functional activity of

the cells is subdued or completely suppressed. A new conception of this fundamental nature cannot be accepted on the evidence that is presently available.

Whether the cause or causes of cancer are intrinsic, arising from some biological change within the cells and affecting the growth capacity of the cells, or extrinsic, of the nature of a virus or a ferment or something else, the fact remains that abnormal growth of cells is the cardinal characteristic of the disease. The interpretation of this abnormality must proceed in the logical course of events from a better knowledge of the processes of normal growth. Countless efforts have been made to solve the problem of the causal genesis of cancer by the direct method. The remarkable success which attended the pioneer experiments of Fibiger and of Yamagiwa and Ichikawa, removed a mighty obstacle from the path of the cancer research worker by showing that cancer can be produced under experimental conditions. Twenty years later, the experimental production of cancer in mice and other animals has become a routine procedure in many laboratories. A steadily increasing number of carcinogenic agencies has been recognized, but our knowledge of the essential facts of the disease cannot be said to have increased in proportion. The number of "chronic irritants" has been multiplied, whereas our knowledge of "chronic irritation" has not advanced in any significant degree.

It seems to be a fair conclusion that this direct method of investigation of the nature and cause of cancer has failed to solve these problems for lack of fundamental information concerning the biological activities of cells. Therefore I would venture to advocate a more deliberate investigation of the behaviour of normal cells. Some progress can be made in this direction by the employment of very simple physical and chemical reagents. With such reagents, it is possible to analyse at least some of the factors which are concerned in the proliferation of normal cells. When the operation of these factors is better understood, then, perhaps, we shall be enabled to approach the problem of the proliferation of cancer-cells with a greater hope of success.

References.

Berenblum, I., 1931, *Journ. Path. and Bact.*, vol. 34, p. 731.

Fibiger, J., 1913, *Ztschr. f. Krebsforschung,* vol. 13, p. 217.

Gye, W. E., and Purdy, W. J., 1931, "The Cause of Cancer." Cassell & Co., Ltd.

Leitch, A., 1928, *Report of Internat. Conference on Cancer,* p. 20.

Rous, P., 1911, *Journ. Exper. Med.*, vol. 13, p. 397.

Yamagiwa, K., and Ichikawa, K., 1918, *Journ. Cancer Research,* vol. 3, p. 1.

The Treatment of Puerperal Streptococcal Sepsis

By H. F. S. LINDSAY, M.B., B.CH.

from the Belfast Union Infirmary

DURING my residence at Belfast Infirmary I was entrusted with the immediate charge of the isolation department for the reception and treatment of patients suffering from puerperal septic infection. This privilege enabled me to investigate the identity of the causative organism in each case admitted. In the great majority I found this organism to be the streptococcus hæmolyticus, isolated from the body of the uterus. Whilst at hospital I embraced the opportunity of estimating the relative values of several forms of treatment, and this paper is in the nature of a report of the results obtained. In addition to general measures, I shall endeavour to discuss these treatments under the headings of "Local Treatment," "Drugs," "Vaccine Therapy," and "Serum Therapy" respectively.

General measures include absolute rest in bed, the cleanliness and comfort of the patient (including the provision of air-cushions), regularity in the movements of the bowels, a generous fluid intake, and plenty of fresh air. Hydrotherapeutic measures are very valuable in the control of fever. The diet should be richly nutritive and easily digestible. Lastly, the patient should be kept as cheerful as possible.

LOCAL TREATMENT.

INTRA-UTERINE INJECTIONS OF STERILE GLYCERINE.

(*a*) PROPHYLAXIS.—I have found the above method of particular value as a prophylactic measure in suspicious cases. The healing properties of glycerine are widely appreciated; and, when following labour, the raw inner surface of the uterus is treated with sterile glycerine, it recovers its normal healthy condition much more readily.

(*b*) CURATIVE.—Here the glycerine treatment, in order to be of real value, must be employed very early in the disease. Glycerine, as a local method of treatment, is applicable to local infections. By promoting a free flow of lymph from the uterine wall into the uterine cavity, it produces a "lavage à retro," by which infecting bacteria are washed away; and the lymph possesses bactericidal properties. In a virulent infection, such as that associated with the streptococcus hæmolyticus, the local defence may well be overcome before local measures can be afforded a proper chance, and hence the glycerine treatment would not be advised in such cases as an exclusive method of treatment.

TREATMENT BY DRUGS.

Drugs having reputed bactericidal action are numerous, but experience does not, even when the chemical agent is exploited generously and by the intravenous route, justify any degree of confidence in them.

(*a*) QUININE.—The use of quinine has been recommended in septicæmia, largely from a belief in its antiseptic action in the blood. In this connection it has to be remarked that the microbes of septic fever are much more resistant to the action of quinine outside the body than are the protozoa, and the question therefore arises whether the blood and tissues are not liable to be seriously injured by the quantity of quinine required to act upon the parasites they contain. Sir William Whitla says of quinine that "one grain in four ounces will destroy the white corpuscles of fresh human blood." Dr. Cushny points out that in many cases of septicæmia, where successful results have been claimed from quinine, the dose was far too small to be capable of acting either on the temperature or on the microbe. He also mentions that the reputed action of quinine in retarding tissue waste has now been proved to be erroneous.

At Belfast Infirmary we gave quinine an extensive trial as a bactericide in early cases of puerperal streptococcal septicæmia. The results were disappointing, and did not at all encourage us to advocate quinine as an exclusive method of treatment in this disease. We formed the opinion that this drug, even when administered in large therapeutic doses and regularly repeated during the twenty-four hours, is not a sufficiently strong therapeutic agent to overcome virulent hæmolytic streptococci in the blood-stream, where, it should be added, their powers of speedy multiplication and toxin elaboration are only too well known. Since we have already seen that massive doses cannot be recommended because of the serious risks involved, there is little use in persevering with this remedy as a curative measure in puerperal streptococcal septicæmia.

As a prophylactic in suspicious cases, some authorities recommend quinine grs. 7½ with anti-streptococcal serum (20 c.c.).

(*b*) COLLOIDAL SILVER.—The employment of this drug is based upon its antiseptic properties. It is administered by the intramuscular route, and it represents one of the modern methods of treatment in puerperal streptococcal infection. Sir Thomas Horder states that it has yielded "some apparent good results," but he considers it as still on probation.

We have used this drug at Belfast Infirmary, but the results we obtained were not sufficiently convincing to justify my advocating it here as a general method of treatment. At the same time, there are some cases in which it seems to do good.

(*c*) SALTS OF MERCURY.—The perchloride and salicylate and mercurochrome have been recommended, but the published results did not encourage us to give them a trial. For the same reason we did not use Flavine, Eusol, or arsenical compounds.

VACCINE THERAPY.

Vaccines are spoken of as belonging to either the "stock" or the "autogenous" variety. Of the former variety Sir Thomas Horder writes: "There are certain circumstances in which the use of stock vaccines is not only justified, but obligatory, e.g., in most instances where the vaccine is used for *prophylactic purposes.*

(*a*) PROPHYLAXIS.—At Belfast Infirmary we found the use of an appropriate stock vaccine of great assistance in reducing the incidence of puerperal strepto-

coccal infection during an epidemic. The strength of the vaccine we used for this purpose was 5,000,000 cocci to 1 c.c., and the initial dose was one minim, followed, after five days, by a final dose of two minims. Of fifty-two patients treated in this way *only one* subsequently developed puerperal pyrexia.

(*b*) CURATIVE.—If it is decided to employ a vaccine in puerperal streptococcal sepsis, an autogenous one is to be preferred to a stock. This, of course, involves the disadvantage of having to wait until it is made. Thus, assuming that the nature of the infection is definitely established, it may be advisable to employ a vaccine of a kind known to correspond with the infection but made from another source, pending the arrival of the autogenous vaccine.

At Belfast Infirmary we gave autogenous vaccines an extensive trial in the treatment of puerperal streptococcal septic infection, but the results were very disappointing. Considering that the toxin with which we are dealing here belongs to the exogenous variety, and comparing the results which I have seen from early antitoxic serum administration, with those from early vaccine therapy, I have been led to the conclusion that the latter method is much less uniformly successful in the treatment of this disease.

Dr. Bigger, in his "Handbook of Bacteriology," writes: "Vaccines are of less utility in the treatment of acute streptococcal diseases than are sera. Many authorities are of opinion, however, that in certain conditions, particularly in puerperal sepsis, vaccine therapy occasionally produces remarkably good results.

I may add that I have found vaccines of undoubted value in puerperal staphylococcal infection. In this connection Sir Thomas Horder and Dr. John Matthews write: "The immune treatment of staphylococcus infections is entirely by vaccine. This is due to two reasons: Vaccines have been more successful in these infections than in any others; and no staphylococcal serum of any potency in bactericidal substances has as yet been produced."

SERUM THERAPY.

There are two kinds of sera, namely, antibacterial and antitoxic.

(*a*) ANTIBACTERIAL SERA.—These are subdivided into two classes—polyvalent and univalent. In deciding as to the value of an appropriate antibacterial serum in the treatment of puerperal streptococcal septicæmia, we have not only to examine into the nature of the serum used, but also into that of the septicæmia. First of all, the toxins produced by hæmolytic streptococci are, as we have already seen, of the exogenous variety, and hence may be absorbed into the circulation apart from the streptococci which elaborate them, thus giving rise to the condition of exotoxæmia.

Now, in puerperal streptococcal infection, a dose of anti-streptococcal serum will only be accessible to the infecting streptococci when they succeed in entering the blood-stream. By the time this occurs, however, there will frequently be encountered a well-marked exotoxæmia. In this connection it is important to remember that exotoxins in the circulation are little affected by an antibacterial serum; and the only type of serum by which they can successfully be neutralized is a suitable antitoxic one, administered at the proper time. Hence, we can expect little from

an anti-streptococcal serum in the matter of neutralizing the exotoxins produced in puerperal streptococcal sepsis. The most we can expect from such an antibacterial serum is a destruction of the organisms against which it is prepared, this action depending upon two conditions, namely, its degree of potency as an appropriate bactericide, and the day of illness upon which the treatment commences. Assuming that the latter is sufficiently early to give the serum a fair chance, then the success of the treatment will depend upon its bactericidal power. That is to say, the potency of such a serum as a bactericide will then measure its value as a method of treatment. Actually, what is this value? Sir Thomas Horder and Dr. John Matthews, referring to antibacterial sera generally, write: "By none of the methods yet employed have these sera been produced with a sufficiently rich content of antibody to lead to any uniformly good results."

Polyvalent Sera. —Streptococci generally, as we know, exist in groups, and an anti-streptococcal serum prepared against one group is not by any means specific in respect of antibody for another group. It was therefore with the express object of overcoming this difficulty that a polyvalent anti-streptococcal serum was produced, the idea being that no matter to what group the infecting streptococci belonged—hæmolytic or otherwise—it would be met by the polyvalent serum. The attempt, however, as Sir Thomas Horder tells us, "has not proved successful."

At Belfast Infirmary we gave polyvalent anti-streptococcal serum a very fair and extensive trial, and I regret to say that the results obtained were very disappointing, the death-rate being little affected. It has to be remembered that only one group of streptococci is involved in the particular form of puerperal sepsis under consideration, namely, the hæmolytic group—the most virulent group of all. So, when we use a polyvalent serum in the treatment of this disease, we are using one of whose potency only a certain proportion is directed against the streptococcal group concerned. For this reason, in addition to those already given, I am not disposed to advocate the employment of such a serum as an effective method of treatment in puerperal streptococcal sepsis.

Univalent Sera.—In comparison with the last type, a univalent streptococcus hæmolyticus serum is much to be preferred, because it is concentrated against one particular group of streptococci, and that the one involved in puerperal streptococcal septicæmia. Sir Thomas Horder observes that in the case of streptococcal infections a univalent streptococcus pyogenes serum has been available for some years as the result of suggestions put forward by Andrewes and Horder. We have always to remember, however, that, at the best, a concentrated, univalent, streptococcus hæmolyticus serum is an antibacterial one, and as such is not prepared to neutralize exotoxins, the variety predominating in puerperal streptococcal sepsis.

(*b*) Antitoxin Sera.—I have found anti-scarlatinal serum an excellent antitoxin serum in the treatment of puerperal streptococcal sepsis. To a series of twenty-two cases at the Belfast Infirmary, whose intra-uterine swabs each demonstrated the presence of hæmolytic streptococci, we administered anti-scarlatinal serum with remarkably good results, which I tabulate at the end of this section.

And why, we ask, should anti-scarlatinal serum effect these results? Because the ætiological streptococcus in puerperal streptococcal septicæmia and scarlet fever

each belongs to the same group—the hæmolytic group—and each of them produces an identical toxin, the Dick toxin. Hence, a serum successful in neutralizing the toxin of scarlatina must necessarily have a similar effect upon the toxin produced in puerperal streptococcal sepsis.

How Prepared.—Based on the work of the Dicks relative to the ætiological relationship of a certain type of the streptcoccus hæmolyticus to scarlet fever, this antitoxin is prepared as follows: Horses are inoculated with gradually increasing doses of toxin obtained from cultures of streptococci recently isolated from patients suffering from scarlatina in a severe form, and in due time bled (1) (2) (3). The active serum protein, separated from the other serum constituents, possesses high antitoxic properties, its potency being determined by the hygienic laboratory, Washington, U.S.A.

Clinical Uses.—(*a*) Prophylactic in scarlatina.
(*b*) Curative—scarlatina.
(*c*) Prophylactic in puerperal sepsis (streptococcus hæmolyticus).
(*d*) Curative—early puerperal sepsis (streptococcus hæmolyticus).

Action.—Anti-scarlatinal serum, as an antitoxin, acts chiefly by neutralizing exotoxins formed by hæmolytic streptococci in the body.

Theories of Action.—In an article written by Sir Thomas Horder and Dr. J. Matthews we read: "Antitoxin sera produce their effects by simple combination with, and neutralization of, the toxins eliciting them, in which their action differs from that of opsonins and agglutinins, in both of which instances visible and measurable effects are observable. Much discussion has occurred as to the nature of their union. Ehrlich maintained there was firm chemical union; Arrhenius and Madsen considered the union similar to that of two substances in weak chemical union, a union to some extent reversible; while Bordat considered it a physical process, the smaller molecule of toxin becoming, as it were, entangled in the larger molecule of antitoxin. The union has a time factor, as shown by an experiment of Martin and Cherry, who forced toxin and antitoxin through filters under high pressure. At first all the toxin passed through, but after two hours no toxin passed, as it was held back by union with the antitoxin. A great deal of work has also been done in connection with the question of the composition of toxin, but it must suffice to say that toxin represents more than one poisonous substance and that the proportions vary in different samples. Similarly, the composition of antitoxin has been the subject of much discussion. That antitoxin is not merely altered toxin is certain in that antitoxin may be obtained in an amount many times greater than that of the toxin injected."

PROPHYLACTIC ADMINISTRATION.

1. *Indications.*—(*a*) Marked general debility.
(*b*) Septic focus or foci.
(*c*) After manipulative interference, e.g., bipolar podalic version.

2. *Dosage.*—5 c.c. In *some* cases, however, up to 10 c.c. may be considered necessary for safety.

3. *Anaphylactic Precautions.*—Before administering a dose of antitoxin, whether as a prophylactic or a curative measure, it is of the greatest importance to ascertain whether or not the patient requires to be desensitized, and to act accordingly. Thus, in patients giving a history of one or other of the specific fevers, or, apart from the latter, of having had a previous dose of serum at an interval of ten or more days, the following skin test should be carried out: "A small quantity, say 0.25 c.c., of normal horse serum (or antitoxin) is injected intradermally or rubbed into a scarified surface. There occurs, if anaphylaxis—or a toxic idiopathy to horse substance—exist, an urticurial patch sometimes progressing to a vesicular eruption with a surrounding area of erythema. This occurs usually within half an hour, but is occasionally delayed. If anaphylaxis be demonstrated, the patient should be desensitized."

4. *Mode of Administration.*—Intramuscularly and very slowly.

5. *Best Time to Administer.*—Immediately after third stage of labour. In the presence of a septic focus, for example, an immediate dose will assist in neutralizing toxins that are being absorbed therefrom, and will reinforce the system's defence at a time when the patient's resistance is frequently diminished.

6. *Prophylactic Cases.*—The following cases, with the addition of one other, represent all those with whom I have tried anti-scarlatinal serum as a prophylactic measure. They seemed to me to be candidates for puerperal sepsis, which, after serum administration, did not develop in any of them.

(*a*) Macerated hydrocephalic monster. Fœtus very foul-smelling, followed by decomposed placenta. Prophylactic dose of anti-scarlatinal serum was given immediately after third stage. Subsequently there occurred no elevation in temperature or other manifestation of septic infection.

(*b*) Case harbouring the following lesions:—Pyorrhœa alveolaris, glossitis, stomatitis, and tonsillitis. Confinement normal (L.O.A.). Prophylactic dose of anti-scarlatinal serum immediately after third stage. Subsequently there occurred no elevation in temperature or other manifestation of sepsis.

(*c*) Manipulative case. L.O.A. Delivery complicated by double twist of umbilical cord around the child's neck. Quick manipulation demanded to effect release. Third stage complicated by retention of a large portion of chorion, necessitating manual removal. Intra-uterine douche given. Prophylactic dose anti-scarlatinal serum immediately afterwards. No subsequent pyrexia or signs of sepsis.

(*d*) Manipulative case: placenta prævia. Os dilated two finger-breadths. Bipolar podalic version carried out and foot brought down. Fœtus subsequently delivered. Intra-uterine douche given. Prophylactic dose anti-scarlatinal serum administered immediately after third stage. Except for slight reactionary temperature of 99°F on first evening, nothing abnormal ensued.

(*e*) Manipulative case. (Transverse presentation with hand and foot presenting.) Considerable manipulation required to carry out a bipolar podalic version. Prophylactic dose of anti-scarlatinal serum given immediately after third stage. On the first three evenings following, the respective temperatures read: 100°F, 99.6°F, and 99°F. Subsequently there were no signs of any description appertaining to sepsis.

ANTI-SCARLATINAL SERUM IN PUERPERAL STREPTOCOCCAL SEPTICÆMIA.

1. *Dosage.*—(*a*) Early cases, 10 c.c.

(*b*) Very severe early cases and more advanced cases, 20 c.c.

2. *Route of Administration.*—Intramuscularly and very slowly.

3. *Best Time to Administer.*—As soon as the temperature and pulse have either remained elevated at or above 99°F and 90 respectively for a period of twelve hours, or have recurred after an interval of twenty-fours hours from their initial rise. *Reason:* Because it is at this stage of the disease that anti-scarlatinal serum will be found most effective in neutralizing the toxins elaborated by the infecting streptococci. The consequences of such early neutralization are of very great importance to the patient concerned, and include the preservation from irreparable damage of the cardiac muscle and other tissues for which the streptococcus hæmolyticus has a special affinity. Hence the work of the leucocytes in augmenting the local resistance and ingesting streptococci which may be encountered in the circulation is not being undermined by an exogenous poisoning of the vital body tissues.

4. *When to Repeat.*—Twelve hours after the first injection, if the pulse and temperature have not shown an appreciable diminution.

5. *Anaphylactic Precautions.*—In my experience it is most decidedly the exception for a patient to require a dose of anti-scarlatinal serum at so great an interval as ten days from the date of the first injection, if the latter has been administered reasonably early in the disease. Such an exception would necessitate due observance of the anaphylactic precautions discussed under "prophylactic administration." It has been pointed out in the "British Medical Journal" that anaphylactic shock may occur with a third dose of serum, if administered after an interval of more than ten days from the date of the initial dose.

6. *When anti-scarlatinal serum is too late to yield satisfactory results:* When hæmolytic streptococci can be grown on culture from the patient's blood. It has already been pointed out that if the few cubic centimetres of blood required for culture demonstrate the presence of hæmolytic streptococci, how great must be the magnitude of the general septicæmia present. At this stage the streptococci multiply at an alarming pace in the circulation and elaborate their toxins freely. Consequently, the phagocytic value of the leucocytes, in which the polymorphs figure prominently, becomes negatived by the steadily increasing army of hæmolytic streptococci.

In short, the main reasons why the antitoxic agent fails at this late stage are two in number :—

(*a*) The blood-stream is being so drenched with toxins that neutralization of them is impracticable.

(*b*) Even if such neutralization were possible, the deadly toxic effects upon the tissues have already imprinted themselves upon the unfortunate patient.

7. *Arguments Concerning the Value of Anti-Scarlatinal Serum Treatment.*—I was once asked the following question : "In a case of puerperal infection by the streptococcus hæmolyticus, what evidence is available to show that the good

results attributed to an early dose of anti-scarlatinal serum are really due to the serum administered, and how may we know that such results would not have occurred apart from any treatment, since there are cases on record where recovery has taken place 'naturally'?" Now, in the foregoing question, there is implied the fact that in certain patients' blood there is present a sufficient quantity of streptococcal antitoxin to neutralize exotoxins produced by hæmolytic streptococci—an implication which indicates the great importance of such antitoxin as an antagonist to puerperal streptococcal sepsis. It is here that the importance of anti-scarlatinal serum comes in, for since it is a streptococcus hæmolyticus antitoxin itself, its administration will serve either to compensate for antitoxin deficiency in the patient concerned, or, should antitoxin be already present in any quantity, to augment it. The more antitoxin, the less toxæmia.

Now, to show that an early dose of anti-scarlatinal serum is responsibe for the good results attributed to it, one has only to compare the "pre-serum" condition of a patient who is injected early in the disease with the "post-serum" condition. To begin with, if the illness is at all severe, it is very improbable that the quantity of streptococcal antitoxin present in the blood is great, and if the condition of the patient twenty-four hours after serum administration shows a definite and generally progressive change for the better, I do not think it is claiming too much to say that the serum administered deserves the credit. This claim is further enhanced with a negative history of scarlatina.

Again, in my experience individual prognosis in puerperal streptococcal sepsis is often extremely difficult where anti-scarlatinal serum has not been administered reasonably early. Statistics form the most reliable guide, and from my own on next page it will be seen how greatly diminished was the death-rate, with anti-scarlatinal serum treatment, among patients suffering from puerperal septic infection (streptococcus hæmolyticus) at Belfast Infirmary during the year 1930, the first complete year in which we tried the antitoxin in question. Hence, in view of the beneficial action of this serum as a neutralizer of hæmolytic streptococcus exotoxins, and in view of the marked reduction that I have seen in the number of deaths from puerperal streptococcal sepsis with this serum, I can honestly recommend it as a most valuable method of treatment and well worthy of our perseverance.

One point remains to be emphasized. Anti-scarlatinal serum, to be really effective, *must* be administered *early* in the disease. It is lamentable to hear, as I have done, an indifferent opinion expressed upon its worth on the basis of results obtained from fourth- and fifth-day administrations. Failure in such instances is due to lateness and not incompetency. What would be the results with anti-diphtheritic serum if it were employed as late in diphtheria? The death-rate in that disease would certainly not remain at its present level. Hence, since diphtheria, where the toxin alone enters the blood-stream, merits due respect by early serum administration, should not puerperal (hæmolytic) streptococcal sepsis merit equal respect when we know that the infecting organisms are themselves very likely to invade the circulation in addition to their toxins, and rapidly multiply therein, if treatment is not commenced in time?

I should like to emphasize the fact that a negative blood-culture does not in itself exclude a diagnosis of septicæmia. Very frequently a positive result indicates an advanced stage of the disease, when little can be expected from any form of treatment.

In conclusion, I wish to make it clear that I do not claim that anti-scarlatinal serum constitutes a specific for the disease under consideration. What I do claim is that it represents by far the most effective method of treatment which we have at our disposal to-day.

STATISTICS.

During the year 1930, the total number of cases (intern and extern) admitted to the isolation department for puerperal septic cases was twenty-seven. Of these, twenty-two had hæmolytic streptococci present in the intra-uterine swab, plus the accompaniments of streptococcal infection. In some cases the latter were more marked than in others, but in all they were quite definite. The death-rate among these cases, all of which received the anti-scarlatinal serum treatment, was only 4.54 per cent., or 1 out of 22. Since one other streptococcal case, excessively virulent, admitted before the beginning of the year, died, the total death-rate among puerperal hæmolytic streptococcal cases for the year 1930 stands at the small percentage of 8.7 (to the nearest decimal point), or 2 out of 23. The large majority of the cases received the serum in good time, which is mainly responsible for the fact that only seven of them required a repeat dose.

Some Problems of the Panel Practitioner

By JAMES BOYD, M.A., M.D., B.SC., D.P.H.
Chief Medical Officer, Ministry of Labour, N. I.

MEDICAL benefit in Northern Ireland has now entered on its third year, and, in spite of the gloomy prophecies of some of the pessimists both in and out of the profession, there would now appear to be almost a consensus of opinion that the scheme represents a distinct advance in our medical services, both from the point of view of the patients and that of the practitioners.

SCOPE OF SERVICE.—Stated briefly, it is a general practitioner service, but insurance practitioners may, if they can show that they possess special skill and experience, carry out and charge for certain services usually undertaken only by specialists. In this connection it should be remembered that the following declaration has to be made: "I have so informed the insured person, who has agreed that I should render the service as a matter of special arrangement." It is hardly necessary to add that no part of the medical fund is available for specialist services.

If an operation is performed as an emergency, it does not follow that you are entitled to regard the service as being "outside the scope."

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DIAGNOSIS.—A criticism often made against the National Health Insurance system is that it encourages incomplete clinical examinations. What the patient wants is a certificate of incapacity and a prescription for a bottle of medicine; and if he obtains these from a medical man endowed with affability, calmness of countenance, self-assurance, a cheerful manner, and a smile at the proper moment, he may feel that the doctor has been sufficiently clever to "understand" him and to diagnose his ailment by quick inspection. It must be admitted that within the profession we occasionally meet a man who is most successful from the business point of view, but whose methods are little better than those of quacks. Such men are unlikely to practise honest medicine either under the National Health Insurance system or in private practice.

Let us turn our attention now to the bulk of the profession, namely, those who take a scientific interest in their work, and despise what has scathingly been referred to as "treatment without diagnosis." In spite of a high degree of professional skill, diagnosis at times may be incompletely or insufficiently established owing to lack of X-ray, biochemical, and bacteriological facilities. Although insured persons are encouraged to present themselves at an early stage of the illness, it too often happens that recent methods of investigation are not available, and valuable time is lost before an accurate diagnosis is reached. To my mind, this is the chief defect of our system, and one which I hope will be remedied when financial considerations are less important than at present.

TREATMENT AND PROPHYLAXIS.—The second defect of the scheme is that its scope is limited to general practitioner treatment, which means that dental treatment, specialist treatment (including physio-therapy and hospital treatment), have no definite place in it.

The system has the following advantages from the patients' point of view :—

1. Cases of illness should come under observation at an early stage, as there is no longer fear of a doctor's bill.
2. Advice may be sought not only on actual treatment, but on questions relating to prevention of disease, e.g., questions of hygiene. Further, vaccination against smallpox, prophylactic injections of T.A.B. or other vaccine of generally recognized efficacy may be administered in suitable cases.

At the last annual meeting of the B.M.A., Sir George Newman in his presidential address to the Section of Public Health, stated that in no previous age has there been such growth of the conception of preventive medicine as in the present era. He paid tribute to Bright, Addison, Hodgkin, Gull, Jenner, Osler, Allbutt, Barlow, and others. He referred to the constructive service that has been rendered in the great march of preventive medicine by medical practitioners. "They searched into the circumstances of disease and related it to environment; they introduced medical notification and hospital isolation; by their investigation of factory conditions they initiated industrial welfare; . . . their systematic support of vaccination instituted the practice of immunity; and their scientific observation was the beginning of British epidemiology."

All honour to such pioneers ! It is a source of great satisfaction to think that the foundations of public health have been well and truly laid chiefly by clinicians and bacteriologists, but, while rejoicing in such achievements, it is our duty to play our part in erecting an adequate superstructure on such foundations.

Sir George Newman has stated his belief that health insurance is one of the most effective instruments of preventive medicine we possess. It is our duty to inquire what can be done to make it a more effective instrument in the prevention of disease. I do not propose to attempt to give a complete answer to such a wide question, or to suggest how much extra remuneration should be added to the capitation fee for the additional work involved, but it is my opinion that insured persons should have an opportunity of visiting their doctor for a periodical overhaul, say once a year; further, that these overhauls should begin long before the age of sixteen years. In fact, our efforts at prevention of disease should begin while the baby is still *in utero*. This raises (1) the whole question of the proper care of the expectant mother; (2) the best type of maternity service; (3) the best type of welfare work; (4) the best type of school medical work; etc. In many districts these services have been largely taken from the general practitioner, and it is surely not too much to ask that some record of the services rendered under these headings should be available for the general practitioner. Perhaps at some future date, instead of a record card for each insured person, it will be a record book for each individual, beginning with such details as (*a*) whether full-term; (*b*) nature of presentation; (*c*) whether instruments were used; (*d*) weight at birth, etc. Later on details of vaccination, immunization against diphtheria, etc., would be recorded. Details of visits to welfare centres and of illnesses would be recorded too. If more attention were paid to the health of the fœtus, the infant, and the school child, we should ultimately have a healthier insured population.

The question of the bottle of medicine will now be considered. Most of us are agreed that an occasional placebo does good, but such a method of obtaining a good psychological result is scarcely scientific. Probably most of us will plead guilty to the charge of giving a prescription for some sort of medicine to practically every patient who consults us, although in at least fifty per cent. of these cases we might find it difficult to justify such a procedure. The only justification is that if the patient does not receive a prescription, he is likely to feel that he is not being treated properly and to ask for a transfer to another doctor. If we had a medical service which applied not only to the insured but to their dependants, at least four-fifths of the population would come within its scope, and the problem of educating the public to some extent in the abuse of drugs would be much simpler than at present, with only about one-third of the population in our scheme. It would appear that the large majority of our patients regard the bottle of medicine in almost every case as by far the most important part of the treatment, and that by our attitude we encourage this belief. An important question arises, namely, Does this attitude on the part of the profession not actually encourage resort to much advertised patent medicines, especially in cases of chronic illnesses such as osteo-arthritis, asthma, etc. ?

CERTIFICATION.—It is hardly necessary to state that a certificate must be correct in every detail. Requests for dates to be inserted which are not correct are made from time to time. The only remedy is to educate the patients, explaining to them that what they are asking for is in fact a false certificate.

It is often difficult to decide when a patient is "fit for work" after an illness, especially as a rigid interpretation may result in the patient and his friends transfering to another doctor. Many hold that it is unfair to ask a doctor to render ordinary medical services and at the same time to require him to act as an inspector on whose judgment payment of sickness benefit is made; that such a procedure "disturbs the relationship of faith and confidence between patient and physician which students of medical practice have from the beginning regarded as fundamental."

A common difficulty often arises in cases of pregnancy, namely, that you believe that the insured person is capable of work, but you feel it is undesirable that she should work.

Arrangements now exist by means of which certain difficult cases are dealt with by a medical officer of the Ministry on a request from a practitioner for an opinion on the question of incapacity for work.

Following the examination of a case referred by an approved society, one report is sent to the approved society and another to the practitioner. The latter may contain, in addition to a statement of opinion on the question of incapacity, suggestions as to the further management of the case. It is possible that the practitioner may not agree either with the opinion on the question of incapacity or with the suggestions made, and it should be clearly understood that he is expected to exercise his own professional judgment on such matters.

RECORD CARDS.—Not only are these essential for the best type of medical work, but they are also useful to other doctors under whose care the patient may subsequently come.

Further, if properly kept, they should, when taken collectively, give (1) most valuable information about early symptomatology; and (2) material for statistical investigations.

Example: In 1922, the "panels" of forty-nine selected doctors in Great Britain gave an aggregate of 91,000 patients—58,000 males and 33,000 females. Analysis showed that one-sixth of the total period for which sickness and disablement benefit was paid to men was due to rheumatic diseases, the corresponding fraction in the case of women being one-seventh. The disbursements made under the National Health Insurance scheme, together with the loss of wages due to incapacity by reason of rheumatism, was estimated at £17,000,000 in one year in respect of the insured population.

It was further estimated that in the case of an average panel of 1,000 males during an average year there will be treated four cases of acute and subacute rheumatism, twenty cases of non-articular rheumatism, and six cases of chronic arthritis; the corresponding figures for females being five, eleven, and six respectively. In the case of women, many cease to be insured at an early age, mainly owing to marriage,

and so these figures do not give accurate information on the actual frequency of rheumatism among females.

In the case of chronic arthritis, although the actual number of cases is relatively small, the duration of incapacity is so long that these cost the state about half the total cost of the rheumatic group of diseases.

When medical benefits were introduced in Northern Ireland, instructions for the keeping of medical records were issued in the form of a printed card (M.B.21), but up to the present no penalties have been imposed for failure to observe these instructions. It is now felt that initial difficulties associated with the introduction of the scheme have been overcome, and that it is reasonable to expect these instructions to be followed. In a few years we should have accumulated valuable data on the incidence of the commoner ailments, assuming, of course, that the notes are taken carefully. Such information should be most valuable from a public health point of view.

Four Cases of Congenital Diaphragmatic Hernia

By RICHARD H. HUNTER, M.D., M.CH., PH.D.

from the Department of Anatomy, Queen's University, Belfast

THE condition of congenital diaphragmatic hernia is almost certainly much more common than is generally supposed, for most of the cases are found in still-born infants, and they pass unrecognized unless post-mortem examinations are made. I have been able to collect from the literature, records of 164 cases; of these, eighty-seven were in still-born children, fifty-five lived from a few minutes to a few hours, and twenty lived for periods of a few days to a few weeks. Only two cases survived to adult life, one of whom lived to thirty-four years, and one to "old age." The condition is therefore of interest to the practitioner, for it may be the cause of death of a few still-born infants, especially in cases where a living child might reasonably have been expected after normal labour and a child externally healthy. Four cases of the condition have recently been brought to me, and a short description of them has been thought worthy of a place in this Journal.

CASE No. 1.—The body was that of a female newly-born infant of normal external appearance. On section, the left side of the thoracic cavity was seen to be occupied by coils of intestine (Fig. 1). The abdominal cavity was occupied by the large fœtal liver and dilated descending and pelvic colons. The heart, both lungs (the left of which was but poorly developed), and the thymus gland were crushed into a compact mass in the right side of the thorax, and in the right apex lay a well-developed vermiform appendix. After the coils of small intestine had been removed, the œsophagus was seen to pass downwards and slightly forward, and to perforate the diaphragm in the usual position. The stomach, together with the duodenum, pancreas, and spleen, had rotated upwards into the thorax through an abnormal

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opening in the left posterior quadrant of the diaphragm. The stomach lay between the vertebral column and the lower end of the œsophagus, so that it was constricted into a kind of transverse hour-glass formation (Fig. 2). The hernial opening in the diaphragm had sharp, well-defined margins, and there was no trace of a hernial sac over the coils of intestine. These were lying directly against the left side of the heart and the left lung. The thorax was so tightly packed with coils of small intestine, cæcum, ascending and transverse colons, as well as stomach and duodenum, that it would have been almost impossible for respiration to occur.

CASES No. 2 and No. 3 were also still-born, and their appearances both externally and internally closely resembled those found in case No. 1. In neither case, however, did the duodenum or pancreas enter the thorax. In these cases two separate loops took part in the hernial mass, one smaller loop consisting of stomach and first part of duodenum, and one main loop consisting of jejunum, ileum, cæcum, and appendix, with ascending and transverse colons. The pressure of the intestine on the lungs was such that respiration could not easily have occurred.

CASE No. 4 was the body of a child who had lived for four and a half months. In this case the stomach and coils of small intestine were present in the hernia, but the duodenum was in the abdomen. The heart and lungs were in the right side of the thorax, forced over by the hernial mass. The hernial opening was in the left anterior quadrant of the diaphragm. The case differed from the other cases inasmuch that a thin dome of diaphragmatic tissue was spread over the hernial mass, and formed a true hernial sac for it. Respiration in this case, although possible, must have been embarrassed by the pressure of the hernial contents in the thoracic cavity.

The etiology of these two types of diaphragmatic hernia is different, and can be explained only on a developmental basis. At an early stage of development the cavity of the trunk is only partially subdivided into thorax and abdomen. The separating structure is known as the septum transversum, and from it, at a later date, the major portion of the diaphragm is developed. There is a deficiency on either side at the back part of the septum through which the abdominal cavity is continuous with the pericardial. As a result of a series of developmental changes, closely associated with the development of the heart, these openings, known as the pericardio-peritoneal openings, become smaller, and at one stage only the posterior part of the opening remains patent. The development of the lungs then occurs, and with it the pericardium becomes closed, and the posterior half of the opening of what is now the pleuro-peritoneal passage becomes closed by two layers of tissue, one being the parietal layer of pleura, and one being the parietal peritoneum. The margins of the original openings are thickened, and by a proliferation its cells gradually spread over the openings, and thus complete the separation of the thoracic from the abdominal cavity.

The first three cases of diaphragmatic hernia here described are due to a failure of closure of the left pericardio-peritoneal opening. The stomach and intestine simply passed through the opening into the thorax and formed what has been termed a *hernia diaphragmatica spuria* or false hernia. The fourth case is due to a

failure of differentiation of the muscular tissue in the pleuro-peritoneal membrane between the thorax and abdomen, and the pressure within the abdominal cavity must have forced the stomach and the intestine into the thorax, with the thin membranous part of the diaphragm as a sacular covering for it. A true hernial sac is therefore present, and the condition is known as a *hernia diaphragmatica vera* or true hernia (1).

The reason of the migration of the intestinal loops into the thorax has been ascribed to the respiratory efforts of the infant at birth. Keith (2), however, rejects such a view. He states: "The atelectatic and compressed condition of the left lung (when the hernia is situated on the left side) shows that the abdominal contents had entered the left thorax long before birth, probably owing to the spasmodic movements which are known to occur in the fœtus, in utero." The condition of the lungs and of the coils of intestine in the three cases of false diaphragmatic hernia here described, supports Keith in his view.

The most common site for diaphragmatic hernia is the left posterior quadrant. Keith analysed a series of thirty-four cases, and found it in this position seventeen times, four times in the right posterior quadrant, five times in the left anterior quadrant, twice in the left leaf of the central tendon of the diaphragm, three times through the central tendon into the pericardial sac, twice in the right leaf of the tendon, and once through the œsophageal opening.

References.

(1) Ballantine, J. W., 1904, *Ante-Natal Pathology,* Edinburgh, vol. 2, p. 479.
(2) Keith, Sir A., 1910, *Brit. Med. Journ.,* vol. 2, p. 1297.

REVIEW

DISEASES OF THE HEART. By Thomas Lewis, C.B.E., F.R.S., M.D., D.Sc., LL.D., F.R.C.P. London: Macmillan & Co., 1933. pp. 297 + x; figs. 45. Price 12s. 6d. net.

Such a title as the above would convey to the ordinary medical man a lengthy volume which only those interested in academic cardiology might tackle. Yet so far are the facts removed from the fancies that one finds, in under three hundred pages, the author has explained heart affections exactly as the modern clinician requires. Theories, elaborate classifications, and fine technical points have been dispensed with, and one is served with the two essentials of clinical medicine—pathology and clinical findings. There is scarcely a symptom or sign met in functional or organic heart disease that is not discussed, in a concise manner: Cardiac failure, breathlessness, cardiac œdema, coronary affections, cardiac irregularities, etc., and there are special chapters on syncope, thyro-toxic state, and heart disease in pregnancy. The futility of being guided by heart murmurs is stressed, although to the conservative mind it seems heroic to read of a patient, with a mitral murmur conducted to the axilla, being allowed to climb Mount Everest. Dr. Lewis's book can be stronghly recommended to student, practitioner, or specialist. It is easy to read, of handy size, and the print is excellent.

H. H. S.

FIGURE 1

Dissection of Case No. 1, to show the position of the coils of intestine, with the displacement of the heart and lungs.

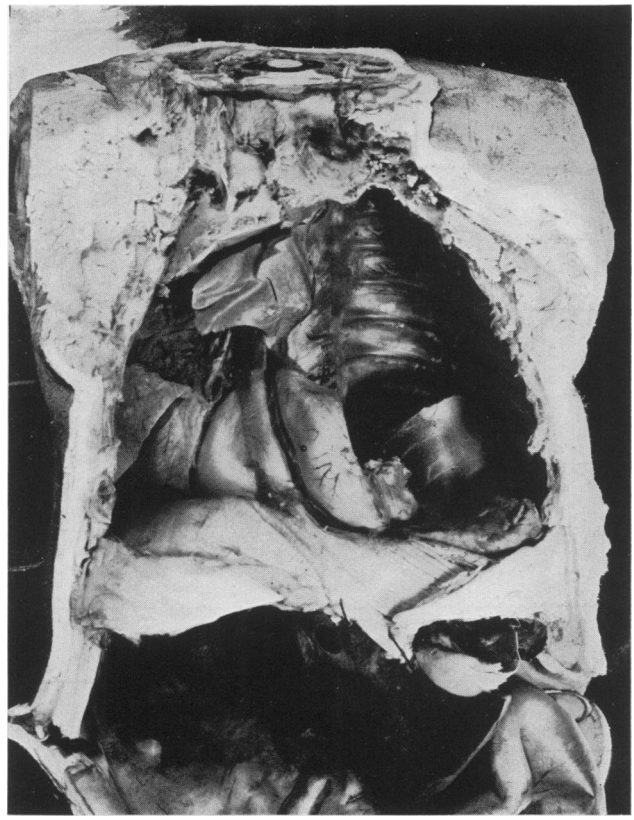

FIGURE 2

Further dissection of Case No. 1, to show the position of the stomach behind the œsophagus.

failure of differentiation of the muscular tissue in the pleuro-peritoneal membrane between the thorax and abdomen, and the pressure within the abdominal cavity must have forced the stomach and the intestine into the thorax, with the thin membranous part of the diaphragm as a sacular covering for it. A true hernial sac is therefore present, and the condition is known as a *hernia diaphragmatica vera* or true hernia (1).

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H. H. S.

Tuberculosis of Joints

By J. S. LOUGHRIDGE, M.D., F.R.C.S.(ENG).

INFECTION of a joint by tuberculosis is usually associated with a similar infection of the adjacent bone. Indeed, in most cases the disease commences in the bone and extends to the joint. In all cases the infection is blood-borne, and it may be taken as evidence of a tuberculous septicæmia, past or present. The disease is therefore always secondary to a focus elsewhere, most often in the bronchial or abdominal lymph-glands. Both the human and bovine strains of the bacillus tuberculosis are important in the production of the disease. Since Koch, about thirty years ago, made the dogmatic statement that the bovine type is harmless to man, much work has been done on the relative importance of these two strains in human pathology. In Great Britain, A. Stanley Griffith has determined the type of bacillus in some three thousand cases of tuberculosis. Of the three thousand, about seven hundred were infections of the bones and joints, and included cases from England and Scotland. He found that the bovine strain was responsible for eighteen per cent. of bone and joint tuberculosis in England, and for forty-two per cent. in Scotland. These percentages are both higher than those in any of the Continental countries or in the United States of America. Griffith also points out that, though the bovine type is found in only a fraction of the cases investigated, this strain is the cause of much trouble in other parts of the body, that it produces a pathology indistinguishable from that of the human type, and that it equals the latter in virulence.

The reaction of the bones and joints to infection by the bacillus tuberculosis is similar to that seen in the other tissues of the body, namely, the formation of the tubercle and tuberculous granulation tissue. The disease is a low-grade infection in which the bone is rarefied and destroyed; new bone formation being slight or absent. Fluid, serous or purulent, collects in the synovial cavity of the affected joint. The capsule of the joint is thickened, infiltrated, and softened by the tuberculous process, and is at the same time stretched by the contained fluid. Protrusions of the synovial membrane occur through the weaker parts of the capsule. These herniations may grow to a considerable size before rupturing.

Tuberculous arthritis is a serious disease with a considerable mortality rate. It is the cause of much suffering, deformity, loss of function, and, in those patients who recover, a long and tedious convalescence. An early and positive diagnosis is therefore desirable. In forming an opinion, the patient's general condition, as well as the state of the affected joint, its surroundings, and the X-ray appearances, should be considered. The general health is often impaired. The temperature is often subnormal in the morning, and may rise to 99° or higher in the evening. The earliest local sign is usually limitation of movement. Swelling is present almost from the first. Pain is slight or variable in the first stages. Later, marked diffuse swelling of the joint, local heat, deformity, and night starts make the diagnosis more obvious. X-ray examination is helpful in those cases where the disease starts primarily in the bone, but otherwise its evidence is inconclusive in early cases. Of the special tests, the best and most logical is the bacteriological; the finding of the

bacillus tuberculosis in the joint fluid is conclusive. A negative result is of little value. The most important of the pathological tests are :—

1. The presence of an excessive number of lymphocytes in the synovial fluid.
2. Histological examination of a piece of excised synovial membrane.
3. Animal inoculation of joint fluid.
4. The tuberculous complement fixation test.
5. The red-cell sedimentation rate.

The exclusion of other joint conditions which mimic tuberculosis is important. For example, arthritis produced by the pyogenic micro-organisms, particularly the staphylococcus and the streptococcus, may be of a chronic nature and be clinically indistinguishable from a tuberculous infection. This applies to psoas abscess as well as to joints (Behrman). If traumatic synovitis does not clear up in a few weeks, the joint should be suspected of being the seat of tuberculosis. Syphilitic infection must also be kept in mind. In congenital syphilis the articular lesion may be very similar to the tuberculous white swelling, but may be distinguished from the latter by the fact that the congenital disease is usually bilateral. It is also less painful than tuberculosis, and is often associated with the other stigmata of congenital syphilis. Cantonnet considers this arthropathy as important in the diagnosis of this disease as the classical signs of Hutchinson's triad.

In a recent paper, Ghormley and Bradley point out the value of radiograms in the prognosis of spinal caries. They base their opinion not only on observations of the bony lesion itself, but also of the surrounding abscess. The response to treatment of the patient is estimated by the changes seen in a series of X-ray photographs taken at intervals of several weeks. The changes on which stress is laid are : (1) Changes in the calcification; this is due to an increase or decrease in the calcium content of the broken-down material, and appears in the X-ray as a dense white shadow, either spotty or uniform. It is of little value as a guide to healing. (2) The re-establishment of the bony trabeculæ; this is shown by an improvement in detail of the X-ray picture, and is therefore a reliable sign of repair. (3) Increasing destruction of the bony tissue; if shown over a series of radiograms is a bad omen; it is, however, shown at first by most cases until they begin to respond to treatment. (4) The establishment of bony fusion between vertebræ; this is considered to be the most favourable sign from a prognostic point of view. These authors point out a peculiar erosion of the anterior border of the centrum in those cases with abscesses; the erosion is seen in the lateral view, in which it forms an oval cup-shaped depression. The condition is not unlike that found in the vertebral body due to aneurism. The antero-posterior radiograms of these cases show the presence of an abscess which is fusiform or globular in shape, according to the number of vertebræ involved. It is thought that the abscess spreads from the original lesion by dissecting up the anterior common ligament, more or less surrounding the bodies by pus, and that the erosion is due to pulsation transmitted through the abscess cavity from a normal aorta.

The figures given below are based on the results obtained by Mr. H. P. Malcolm

at the Municipal Hospital at Graymount. During the decade ending 1931, he has discharged from this hospital 145 patients, the reason for discharge being—

Disease arrested - - -	124	= 85.5	per cent.
Improved - - - -	2	= 1.4	per cent.
Unimproved - - - -	3	= 2.1	per cent.
Died in hospital - - -	9	= 6.2	per cent.
Died after discharge - -	7	= 4.8	per cent.

The number of relapses after discharge (eight) reduced the total percentage of cures to eighty. The total mortality for ten years is eleven per cent. This figure is reduced to eight per cent. if we include fifty-seven cases remaining in hospital at the end of the period. On account of limited accommodation, this institution is reserved mainly for patients unable to walk.

Of the 145 admissions, thirty-five were cases of spinal caries. The average time in hospital was three years and eight months, but varied from just over one year to ten years. There were five deaths in hospital, a mortality rate of fourteen per cent.; two deaths after discharge raise this figure to twenty per cent. The outlook in three cases was hopeless on admission. This gives a mortality rate of twelve per cent. in treated patients. Three of the five children who died were three years of age or under, the other two were both six years old. The youngest child on admission was one year and ten months, and the oldest fifteen years. Nineteen of the thirty-five patients were five years of age or under when admitted. The patient whose treatment lasted ten years was admitted at five years of age, and when seen two years after discharge was strong and well and without deformity. Recurrence of deformity took place in five patients, two of whom are well in spite of deformity. Of the remaining twenty-three, two cannot be traced, and twenty-one are well and have little or no deformity. This may be taken as sixty per cent. known cure.

Hip-joint cases numbered thirty-eight. The average stay in hospital was two years and eight months. The age on admission varied from four years to fourteen years. Hospital treatment lasted from 128 days to six years. In this form of the disease no deaths occurred in hospital, but two patients died after discharge, a mortality of 5.2 per cent. Of the rest, thirty-three were discharged with the disease arrested, one improved, and two unimproved.

In twenty-three cases of tuberculosis of the knee-joint, the average duration of treatment in hospital was three years and one month, the extremes being 485 days and seven years 132 days. There was one death, a mortality of four per cent. Relapse occurred in three. The cures numbered eighteen. Amputation was necessary in two.

Multiple lesions were present in twenty-two patients, necessitating an average stay in hospital of two years and seven months. The deaths were three in hospital and three after discharge, making a total mortality rate of twenty-seven per cent. Fifteen are well.

There was no mortality in the remaining twenty-seven cases. The disease was arrested in all with the exception of two, in which amputation was performed for incurable disease of the tarsus.

SUMMARY OF RESULTS.

Situation of Disease	Disease Arrested	Improved	Unimproved	Relapsed	Died	Total
Spine - -	22	—	1	5	7	35
Hip - -	33	1	2	—	2	38
Knee - -	18	1	—	3	1	23
Various - -	27	—	—	—	—	27
Multiple - -	16	—	—	—	6	22

TREATMENT.—In the absence of an efficient specific therapy, treatment is still a matter of opinion and perhaps of fashion. The routine treatment carried out at Graymount may be summarized as "fresh air, such sunshine as is available, abundant nourishment, and prolonged rest in bed." Local treatment has been entirely conservative. Spinal patients are given postural treatment without any severe fixation, and on discharge are usually provided with a poroplastic jacket as a precautionary measure. Hip-joints are treated by extension without splints, and, later, plaster is applied in those cases in which a stiff joint is expected. In disease of the knee, deformity is gradually reduced by extension in a Thomas's splint; after this a plaster splint is used, and finally a walking caliper. The end results of this treatment are tabulated above. They compare favourably with most published.

My best thanks are due to Mr. H. P. Malcolm, who has put at my disposal the data collected by him at Graymount Municipal Hospital during the past ten years.

REFERENCES.

BEHRMAN, S., 1930, *Lancet,* vol. 2, p. 297.
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REVIEW

THE MEDICINAL AND POISONOUS PLANTS OF SOUTHERN AFRICA.

By Professor John Mitchell Watt and Maria Gerdina Breyer-Brandwijk. Edinburgh: E. & S. Livingstone, 1932. pp. 314. Price 25s.

IT can be said of many books that they are interesting, that they are unique, or that they are valuable. In the case of this volume we can truly say that this book is interesting, and while being decidedly unique, it is also most valuable wherever one may turn its pages. It deals with much of the folklore of the native races of Africa, and with the vegetable flora of that prolific country. We read of racial ideas as to the virtues of various preparations of roots, barks, and leaves of plants, shrubs, trees, and flowers. There are accounts of various poisonous effects on animals as a result of eating obnoxious plants. There is much of interest and value in the pharmacological effects produced by various preparations. Throughout the book are beautiful illustrations, many in colour. The authors have provided four separate indices, so that plants can be traced through the English, African, or native equivalents.

This should prove indeed to be a valuable book of reference, and will long serve to preserve a record of the folk medicine of Southern Africa. The volume is very well produced, and both authors and publishers are to be congratulated upon it. —F. M. B. A.

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Toxic Polyneuritis: An Account of Ten Cases Presenting Some Unusual Features

By R. S. Allison, M.D., M.R.C.P.(Lond.), and W. H. Patterson, M.D.

Neuritis is a common complaint and a term often loosely used to describe indefinite sensory symptoms. Polyneuritis or peripheral neuritis is, however, a definite entity and much less common. Harris (1) classifies its causes into four main groups :—

(*a*) Caused by the absorption of poisons introduced into the body.

(*b*) Due to auto-toxæmia or to poisons developed primarily within the body.

(*c*) Due to infection of an organismal nature.

(*d*) Occurring in cachetic states.

It is unnecessary to detail the various well-known causes in these groups, such as lead, alcohol, diabetes, and diphtheria, but some recent additions are of note. A few years ago a form of polyneuritis occurred epidemically in America from the drinking of a patent preparation known as Jamaica Ginger or "Jake" (2). The neuritis was not caused by the alcohol content, as might be expected, but by a chemical adulterant tri-orthocresyl phosphate, which was found in some of the samples of the preparation examined. In Europe a similar type of polyneuritis has been observed in women. Carillo and Ter Braak (3) investigated an epidemic of this in Holland. They noticed that those affected had been taking apiol, an extract of parsley seed which has antipyretic properties. In their cases, however, the apiol had been clearly used to produce abortion. Furthermore, they were able to produce a polyneuritis in chickens by adding it to the food. They found that apiol also contained tri-orthocresyl phosphate, but state that the polyneuritis produced by this substance differs from that due to pure phosphorous poisoning. It deserves, therefore, to be added to the list as a separate condition.

Apart from the above well-defined causes of polyneuritis, there occur, from time to time, cases in which the disease appears spontaneously and unrelated to any obvious poison or infection. Osler(4) gave the name of 'acute febrile polyneuritis' to this type, and under the heading of etiology mentioned "cold, over-exertion, or spontaneous onset." Bradford, Bashford, and Wilson (5) described a series of 30 similar cases, and Gordon Holmes (6) reported cases in soldiers during the Great War. Harris (1) suggests that the title 'toxic polyneuritis' should be reserved only for those cases in which the infective agent or source of the poison is not clearly established.

In 1932 ten cases were seen in the North of Ireland which appeared to fall into this group—toxic polyneuritis. It is thought that this comparatively large number of cases is worthy of record, because of the infrequency of the disease, and because unusual features were present in many of the cases. It is proposed to describe first a typical case, and then discuss the mode of onset, clinical course, and etiology of the group considered as a whole.

Case of I. G., Female, aged 43.

History: Five months before admission to hospital the symptoms began with persistent vomiting, and a sensation of numbness and tingling in the hands and

feet. The sight seemed to be blurred. After three weeks the vomiting ceased and the menstrual periods were missed. One month before admission the legs became gradually weak, so that she was unable to walk without assistance. *On Examination:* Cranial nerves normal. Sensibility to pin-prick decreased over the lower limbs below knees. Bilateral foot-drop with weakness of calf-muscles. Walks with difficulty and readily tired. No gross muscular wasting. Knee and ankle jerks absent. *Investigations:* No pyrexia; urine, cerebro-spinal fluid, and blood-count normal. Pelvic organs normal. Wassermann reaction negative. Electrocardiograph : "T" wave flat in all leads. *Progress:* A month after admission the patient was much improved and walked without assistance. There was no foot-drop, but could not stand on tip-toe or dorsiflex right ankle against resistance. Knee and ankle jerks were still absent. Sensation was normal. Electrocardiograph : "T" wave coming above the isoelectric line. The outcome was complete recovery of power.

The Mode of Onset and Symptoms.

The onset was slow or insidious in eight of the ten cases, the history going back one to five months. In only two cases was it under a month. Subjective secondary symptoms were almost invariably mentioned, viz., numbness, "pins and needles," and pains in the extremities, accompanied by increasing muscular weakness chiefly in the lower limbs. In three cases there was a history of blurred vision, and in one diplopia.

These are symptoms which one might expect in a case of polyneuritis. Some unusual features presented themselves, however, before the true symptoms became noticeable, and thus obscured the early diagnosis. Among these the following were prominent :—

Dyspnœa was felt by five patients, and two of them also mentioned præcordial pain. Electrocardiograph tracings were taken in three cases by Dr. S. B. Boyd Campbell, who observed definite alterations in the "T" wave of a nature usually associated with myocardial involvement. During recovery the tracings became normal. These observations are of interest, because it has been stated by Aalsmeer and Wenckelbach (7) that diphtheria is the only disease in which polyneuritis and definite cardiac changes are found together. Here, there was no question of diphtheria. Also, it would have been reasonable to attribute the pain to neuritis of the intercostal nerves had not the evidence of cardiac involvement been present.

Swelling or œdema of the legs was an early symptom in three cases, and appeared before the onset of weakness. This feature has been observed in the neuritis of beri-beri. Mild cases in children have been reported from America, and the addition of brewer's yeast (vitamin B) to the diet is advised. It may be that some of these cases in the North of Ireland were due to a deficiency in the diet.

Persistent vomiting, lasting from ten days to three weeks, was a prodromal symptom in three cases, and this was the reason in one of them for admission to hospital. (The assumption here is that the vomiting was toxic in nature, as there were no other signs of bulbar involvement.)

Recurring urticarial rashes were noticed by two of the patients, and they appeared before the onset of paralysis. Itchy red patches would come and go on different

parts of the body, and one of these cases has already been described in detail elsewhere (8). Toxic polyneuritis has been known to follow the use of therapeutic sera. In practically all such cases the sequence has been serum sickness—urticarial rash, headache, vomiting, and the paralysis appearing a few days after the rash. Allen (9) believes that radiculitis, either from œdema or inflammation, at the exit of the nerve-roots from their dural sheath, is the most likely explanation of the polyneuritis. It is possible that in these two cases the polyneuritis and urticaria were alike of anaphylactic origin.

Amenorrhœa : Three of the ten cases were females. Amenorrhœa was a prodromal symptom in two cases. The combination of polyneuritis and amenorrhœa, with vomiting as an early symptom, led to the suspicion of pregnancy and the possible use of an abortifacient. This was, however, excluded.

Clinical Features.

The changes found were symmetrical and more or less equal. There was absence of tendon reflexes, the knee and ankle jerks being almost invariably lost. Peripheral muscular weakness of varying degree was always present. In some cases this consisted simply of weakness of the dorsiflexors of the ankles with stepping gait and inability to stand on tip-toe. In others there was severe flaccid paralysis of the lower limbs, the patient being unable to stand or walk unaided. In two cases there was, in addition, partial paralysis of the upper limbs, and a tendency to wrist-drop and weakness of the hand-grip. In two cases typical "stocking and glove" anæsthesia and analgesia were present. Sensory changes, though demonstrable in most of the cases, were mild compared with the motor weakness which was the main feature. In only one case was there involvement of cranial nerves. The facial diplegia mentioned by many authors was not observed in any of the cases of this series.

The Course and Treatment.

All the patients recovered except one (W. L.), who died about six weeks after the onset. The end was respiratory and bulbar paralysis. In this case the rapid march of paralysis, first in the legs, then in the arms, then affecting the ocular muscles, speech, and deglutition, resembled the course of a Landry's paralysis. The close relationship between Landry's paralysis, to acute toxic polyneuritis on the one hand, and to acute poliomyelitis on the other, has been discussed by Goldby (10). He believes that many of the cases described by Landry belong to the toxic polyneuritis group. Recovery in the remaining nine cases, though complete, was slow. Treatment consisted of rest in bed, massage, galvanism, and the use of splints to prevent deformity. A full diet rich in vitamins was given with radiostoleum and hypodermic injections of strychnine, grains one-sixtieth to one-thirtieth. The majority of patients regained full muscular power within a month from the date of admission to hospital. A few lagged to three and six months. Sensory disturbances were rarely present after the first month, but the knee and ankle jerks were slow in returning. In one case (W. R.) the knee jerks were present only on reinforcement, and the ankle jerks still absent ten months after the onset.

Etiology.

Various tests were made with the object of relating the polyneuritis to a known cause. Fever was absent in all but one case. This is not surprising, as in the majority the initial symptoms had long passed before admission to hospital. The cerebro-spinal fluid when examined was normal, likewise the blood-count, Widal and Wassermann reactions, and examination of throat swabs for diphtheria. In one case, search for an infective focus showed that the left antrum contained pus. In another the symptoms followed a peritonsillar abscess and general throat sepsis.

Particular mention should be made of the simultaneous and almost identical polyneuritis of the brothers A. (cases 2 and 3 of the appendix). They were two brothers who slept in the same room, and the initial acute illness which affected them both was probably of the same infective nature. Etiologically, therefore, there was no obvious causal factor. Reviewing the cases from all aspects, however, three groups of causes appeared to be likely : (*a*) infection, (*b*) deficiency in the diet, (*c*) anaphylaxis.

Summary.

Ten cases of toxic polyneuritis are described. The symptoms were muscular weakness and paræsthesiæ in the limbs. Other unusual symptoms were dyspnœa, swelling of the legs, urticarial rashes, persistent vomiting, and amenorrhœa. On examination there was absence of the tendon reflexes with symmetrical flaccid paralysis. Sensory loss, when present, was of the glove-and-stocking type, but the sensory symptoms were invariably mild compared with the paralysis. All of the patients recovered except one whose course resembled that of a Landry's paralysis. The etiology of the condition was obscure.

We are indebted to Dr. Malcolm Brice Smyth and Dr. F. M. B. Allen of the Belfast Hospital for Sick Children, and to Dr. S. B. Boyd Campbell of the Royal Victoria Hospital, under whose care these patients were, for permission to publish them and for much helpful advice and interest.

APPENDIX.

Case 1.—V. McK., aged 9 years, schoolgirl. One month's history of pains in the limbs and weakness of the ankles. Cranial nerves and sensation normal. Weakness of dorsiflexors of ankles with steppage gait. Absent knee and ankle jerks. No pyrexia. Urine normal. Result : recovery.

Case 2.—T. A., aged 10 years, schoolboy. Six weeks before admission, giddiness, dyspnœa, and vomiting for ten days. Later the legs became weak, and "pins and needles" were felt in feet and legs. Cranial nerves and sensation normal. Great weakness of legs, with staggering, high-stepping gait. Flaccidity and wasting of calves. Tendon reflexes in arms and legs absent. No pyrexia. Urine normal. Throat swab negative for K.L.B. Result : recovery.

Case 3.—W. A., aged 12 years, schoolboy. History and time-relation almost identical with that of his brother T. A. above. Cranial nerves normal. Decreased sensibility to pin-prick and light touch over legs up to knees. Weakness of lower

limbs, but not so great as T. A. Steppage gait. All tendon reflexes absent. No pyrexia. Urine normal. Throat swab negative for K.L.B. Result: recovery.

CASE 4.—M. J., aged 17 years, female, cook. Three weeks ago vision blurred and unable to read print. A week later legs became so weak that she was unable to walk. Five months amenorrhœa. Cranial nerves normal, except for some bilateral facial weakness. Sensation normal. Flaccid paralysis of legs with wasting of calves and anterior tibial muscles. Unable to stand. Knee and ankle jerks absent. No pyrexia. Urine and cerebro-spinal fluid normal. Tonsils + and fauces injected. Thin anæmic type. Pelvic organs normal. Result: recovery.

CASE 5.—H. H., aged 18 years, male, tailor. Two months ago swelling (œdema) of legs, and weakness. Three weeks ago weakness increased, and was unable to walk unaided; also noticed dyspnœa on exertion. Cranial nerves normal. Loss of sensation to pin-prick from knees down. Weakness of dorsiflexors of ankles with shuffling gait. No wasting. Knee jerks, slight response to reinforcement; ankle jerks absent. No pyrexia. Urine normal. Electrocardiograph: "T" wave rounded and inverted in lead 1, flat in leads 2 and 3. Result: recovery.

CASE 6.—J. McF., aged 23 years, male, plater. Five months ago darting pains in calves, with "itchy blisters" over trunk. Later, swelling of legs after walking or standing. Three months ago feverish illness, with pains and swelling of elbow-joints and weakness of legs first noticed. Cranial nerves normal. Sensation to pin-prick decreased over shins, with great tenderness on pressing calves. No loss of power or wasting. Knee and ankle jerks absent. No pyrexia. Urine and cerebro-spinal fluid normal. Blood-count normal. Wassermann reaction negative. Electrocardiograph showed "T" wave rounded and inverted in leads 2 and 3. Result: recovery.

CASE 7.—W. R., aged 21 years, male, joiner. One month ago noticed red itchy patches on skin in recurring crops. Shortly after legs felt weak and swollen. There was also numbness and a dead feeling in hands and feet. Cranial nerves normal. Sensation to pin-prick and cotton-wool lost over stocking area, lower limbs. Temp. sense normal. Tendon jerks absent, save supinators. Tendency to wrist-drop, and hand-grips weak. Gait stamping with foot-drop. Wasting slight. Temperature 99.8°F. Ring-like urticarial wheals on skin. Urine contained albumin (later clear). Result: recovery.

CASE 8.—W. L., aged 32 years, male, draper. Peritonsillar abscess three weeks ago. Since then numbness and tingling in feet and hands. Legs weak. Intermittent low fever. Diplopia, vision defective. Persistent vomiting in last two or three days. Pupils react to light, but not to accommodation. Diplopia on looking to left, with internal strabismus. Glove-and-stocking anæsthesia and analgesia. Unable to stand or walk. No wasting. All tendon reflexes absent, save supinator-jerks in upper limbs. Temperature 99-101°F. Urine normal. Throat swab negative for K.L.B. Result: died.

CASE 9.—H. L., aged 35 years, male, farm labourer. Nine weeks ago the eyes felt "gritty" and were reddened. Tenderness and pains were noticed in the calves, and the legs were weak. Since then has noticed dyspnœa on exertion and a crushing sensation over the chest, with increasing muscular weakness. Cranial

nerves normal. Tender calves with loss of sensation to pin-prick over stocking area. Stepping gait, with weakness at ankle and knee. No wasting. Knee and ankle jerks absent. No pyrexia. Urine and cerebro-spinal fluid normal. Wassermann reaction negative. Left antrum contained pus +, and drained. Result: recovery.

REFERENCES.

(1) HARRIS, 1922, *Brain,* vol. 45, p. 415.
(2) GOODALE and HUMPHREYS, 1931, *Journ. Amer. Med. Assn.,* vol. 96, pp. 1, 14.
(3) CARILLO and TER BRAAK, 1932, *La Semana Med.,* vol. 20.
(4) OSLER and MACRAE, 1925, "Principles and Practice of Medicine."
(5) BRADFORD, BASHFORD, and WILSON, 1918-9, *Quart. Journ. Med.,* vol. 12.
(6) HOLMES, GORDON, 1917, *Brit. Med. Journ.,* vol. 2, p. 37.
(7) AALSMEER and WENCKELBACH, *Wien. Arch. f. Inn. Med.,* vol. 16, p. 193.
(8) BOYD CAMPBELL and ALLISON, 1932, *Lancet,* 2.
(9) ALLEN, 1931, *Lancet,* 2.
(10) GOLDBY, 1930, *Journ. Neur. and Psychopath,* vol. 11.

End-Results of Intensive Alkaline Treatment of Gastric and Duodenal Ulcer

By ROBERT MARSHALL, M.D., F.R.C.P.I.

from the Royal Victoria Hospital, Belfast

THIS brief communication is an attempt to answer the question: "What happens to people who leave hospital after a course of intensive alkaline treatment for the relief or cure of gastric or duodenal ulcer?"

On consulting the hospital records, I found that in the five years 1927-31, ninety-one persons had been so treated in wards 5 and 6. I was surprised to find that in only seventeen of these had a diagnosis of gastric ulcer been made, while duodenal ulcer had been the diagnosis in seventy-four. The age and sex distribution was—Gastric ulcer: males twelve (average age 43.6), females five (average age 38.9). I had expected a much higher proportion of cases diagnosed gastric ulcer, and that more of these would be female; and also I was surprised to find ten cases of duodenal ulcer in women. In four of the ten cases the diagnosis was confirmed at operation. The gastric cases had an average stay in hospital of five and four-fifths weeks, and the duodenal cases six weeks, representing a cost to the hospital of about £1,330. Fourteen per cent. had a family history of disease of the stomach; in four per cent. this disease was cancer of the stomach. Inquiry into occupation revealed nothing.

The diagnosis of gastric conditions may be said to rest on a tripod—(1) clinical examination, (2) X-ray appearances, and (3) analysis of gastric contents. In clinical examination one frequently finds the symptoms more informative than the physical signs. The outstanding symptom was pain. In one-third of the gastric cases, pain

nerves normal. Tender calves with loss of sensation to pin-prick over stocking area. Stepping gait, with weakness at ankle and knee. No wasting. Knee and ankle jerks absent. No pyrexia. Urine and cerebro-spinal fluid normal. Wassermann reaction negative. Left antrum contained pus +, and drained. Result: recovery.

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(3) CARILLO and TER BRAAK, 1932, *La Semana Med.,* vol. 20.
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(5) BRADFORD, BASHFORD, and WILSON, 1918-9, *Quart. Journ. Med.,* vol. 12.
(6) HOLMES, GORDON, 1917, *Brit. Med. Journ.,* vol. 2, p. 37.
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occurred as long as from one and a half to two hours after food; and in four duodenal cases it occurred soon after food, so that apparently there are frequent exceptions to the time-honoured rule. In only nine of the duodenal histories did I find the classical story of *night* pain relieved by food.

One patient had a definite anorexia: he had duodenal ulcer, with a marked hyperchlorhydria, and reports some five years later that he is very well, except for occasional flatulence.

Hæmatemesis of some degree is mentioned in the histories in forty-seven per cent. of gastric and twenty per cent. of duodenal cases. In cannot quote exact figures for the finding of positive occult blood in stools, but I feel that I should have made more extensive use of this test.

The average duration of symptoms before admission to hospital was three and a half years in the gastric cases and six years in the duodenal cases. Remissions occurred in forty-seven per cent. of the gastric cases and ninety per cent. of the duodenal; in both groups these remissions varied from a few days to more than a year.

The physical signs in many cases were very indefinite: almost all had bad teeth, but a few had good teeth and some had dentures. Almost all had some degree of epigastric tenderness. The presence of splashing on palpation of the stomach is of greatest value when four hours have elapsed since the last meal.

X-ray examination was regarded as a most important part of each patient's investigation, but in certain cases radiology merely adds to our difficulties.

In this series, HCl was found to be present in excess in every case: the average highest figure was forty-one in the gastric cases, and 53.4 in the duodenal cases. Amelioration of symptoms as a result of alkaline treatment is certainly not invariably followed by diminution of the HCl in the gastric juice; the reverse may be the case, as in a recent private patient, whose first F.T.M. showed an apparent absence of the HCl and the presence of much thick, greenish mucus, while after three weeks of intensive alkaline treatment the mucus had disappeared and the curve of HCl was typical of duodenal ulcer.

Of the relative value of these three criteria it is difficult to be dogmatic. While it is highly improbable that everyone who experiences hunger pain has a duodenal ulcer, it is equally probable that a definite history of persistently recurrent pain of this type may justify the diagnosis even when X-ray and other findings are doubtful; in such cases Hurst lays increasing stress on the value of tests for occult blood in stools.

As I have said, X-ray may be uncertain, but on the other hand may be most valuable: the presence of a definite niche in the stomach outline, of a filling defect, or of an hour-glass stomach, constitutes incontrovertible evidence. The significance of six-hour retention is less certain: when I was an out-patient physician I referred all patients with gross six-hour retention to surgical wards; but the real problem is the patient with slight six-hour retention, and I think that every such case must be decided on its merits.

Apart from its value as a method of treatment, I think that the intensive alkaline treatment is an extremely valuable diagnostic method in this respect, that when a

patient with a supposed duodenal ulcer has been under this treatment for seven days without marked improvement, it is very likely that the diagnosis is wrong, and at least it is certain that the whole matter should be carefully reconsidered. In my experience, the likeliest sources of trouble in such cases are the appendix and the gall-bladder, but neurological conditions both functional and organic must be remembered, for the stomach is an emotional organ in some people, and gastric crises of tabes turn up with unfailing regularity.

Apart from gastric crisis, syphilis may be an unexpected factor, as in the following case: A nurse aged 38 was admitted with a history of ten years of stomach trouble, for which she had received in-patient treatment in the Royal Victoria Hospital some eight years before; she had severe pain, worst about two hours after food, and had been vomiting almost incessantly for a week. X-ray examination showed evidence of a large penetrating ulcer of the lesser curvature. She was seen by a surgeon, who advised gastrectomy. My house physician, Dr. S. Anderson, noticed that evening that her pupils were unequal, and had a Wassermann done; it was positive, and active specific treatment was commenced. No other symptoms of nervous syphilis were found, and the inequality of the pupils was not again noticed, but her symptoms disappeared rapidly, and a subsequent radiogram showed a normal gastric outline at six hours. This was in 1928, and she remains well.

About two months ago I was going round my ward and found a patient with his urinary bladder painlessly distended up to his epigastrium; he had been admitted with a history of hæmatemesis. Careful examination revealed sluggish pupils and an abdominal zone of impaired sensation, together with pains of lightning type. His Wassermann of blood and C.S.F. was positive. He responded quickly to specific treatment.

Another group of cases where the patient's failure to respond to treatment will be of importance, is the group where there is a complicating factor, notably local peritonitis due to chronic perforation, or adhesion to a neighbouring viscus, or, more important still, where the lesion is malignant.

Of these ninety-one people who underwent at least four weeks alkaline treatment, sixty-eight gained in weight during treatment, an average gain of four and a half pounds in the duodenal group, and three and a half in the gastric; the highest recorded gain was twenty pounds in five weeks. Fourteen lost weight, and I think this was frequently due to worry either about their health or more frequently about their domestic affairs. Broadly speaking, those who gained weight did better than those who did not, but some of those who lost weight in hospital gained it quite satisfactorily after discharge.

No patient developed alkalosis: I have frequently had blood urea estimations done to try to detect early alkalosis, but have never done so. My ward sister is asked to report distaste for food as a possible warning symptom.

In thirteen cases, or 17.5 per cent. of the whole group, medical treatment was considered to have failed after four-weeks course of treatment. (This does not include the many cases, not here reviewed, who were admitted in the first instance to the ward and referred almost at once to surgical colleagues). Of these thirteen,

eight were operated on before leaving hospital: in three of the eight evidence of a *healed* ulcer was found, and one wonders why their symptoms had persisted; the remaining five found their way to the surgeons at a later date, one because of acute perforation, and two of the five report no improvement as a result of their surgical adventure.

Of the remainder, the results may be briefly tabulated as follows :—

Gastric Cases.		Duodenal Cases.	
Cured - -	5 = 29.4 per cent.	Cured - -	18 = 24.3 per cent.
Improved -	5 = 29.4 per cent.	Improved -	19 = 25.6 per cent.
Not traced -	7 = 41 per cent.	Not traced -	13 = 17.5 per cent.
		No improvement	7 = 9.5 per cent.
		Died (various causes) -	4 = 5.4 per cent.

It will be seen at once that the value—if there is any—of this relatively limited inquiry is considerably minimized by the large number of cases which could not be traced, and this in spite of the fact that I enlisted the help of Dr. Barron and the Public Health nurses. One reason may be that when work is scarce the class from which such patients are drawn becomes more migratory in search of employment, or certain individuals may give up their own houses and go to live with relatives. I recently suggested—and the medical staff acted on my suggestion—that a definite space be made on the hospital charts to record the name of the patient's own doctor; and I think that it would also be justifiable to give each patient leaving hospital a printed card requesting him to reply in person or by letter to any subsequent hospital inquiry as to his progress. On the one hand it may be argued that if a patient is well he does not want to be bothered reporting to hospital and re-examined; on the other hand the patient who is no better may think "What's the use of going back when they didn't cure me before?"

Another difficulty is that of assessing standards of cure, and in this series I have deliberately set a very high standard, only being content with complete absence of symptoms over a considerable period. Many of the twenty-four patients whom I have classified as improved, are very much better, and, with attention to their diet and the routine use of an alkaline powder, are fit for ordinary life.

This question of attention to diet is of course more difficult in the hospital class than in those more fortunately placed. Many wives are bad cooks, and even the good ones are too fond of the frying-pan.

I remember the late Professor Lindsay quoting Hippocrates to the effect that not only should the physician do his best, but the patient and the patient's relations should co-operate to promote a cure. Certainly some of these patients have *not* co-operated in their own after-care.

There is no need to repeat here the familiar details of the intensive alkaline treatment. We follow the lines laid down by Hurst, but give ten-ounce feeds instead of his five- to seven-ounce. As well as milk the following variants are used: Benger's and Allenbury's Foods, oat-flour, cream of wheat, custard, junket, milk jelly, and egg-flip. Gastric lavage is only employed where there is reason to suspect gross mucous gastritis.

The alkalis used in wards 5 and 6 are known as No. 1 and No. 2. No. 1 consists of bismuth carbonate and No. 2 of bismuth carb. three parts and cret. preparat one part. The practice seems to differ in the four medical units in the hospital: one gives magnesium tri-basic phosphate, which Hurst suggested as unlikely to give rise to alkalosis; he has since, however, contradicted this impression. Another unit uses a bism. carb. powder as No. 1 and a bismuth and sodii bicarb. powder as No. 2. The remaining unit uses McLean's powder of sodii bicarb., mag. carb., pond calcis carb., and bism. carb. I have no particular argument to offer for the bismuth and chalk choice, except perhaps that it avoids the use of sodii bicarb., described by Hurst as the greatest stimulant of acid in existence, and that bismuth should have an antiseptic effect or at least an inhibitory effect on certain organisms.

After three weeks a modified diet is given. This includes a lightly boiled or poached egg at breakfast, and steamed fish or minced chicken at dinner.

When the patient leaves hospital he is given written instructions about his diet. The difficulty of obtaining food during his working hours is met by advising him to take a clean bottle of milk and an air-tight biscuit tin containing four plain "water" biscuits, two to be taken with half a pint of milk at 11 a.m. and at 4 p.m.

It may be of interest to mention our routine treatment of hæmatemesis: On admission, morphia gr. $\frac{1}{4}$ hypodermically; hæmostatic serum 2 c.c.; small fragments of ice by mouth. If the condition is not obviously grave, a soap and water enema is given. If it is, steps are taken for early blood transfusion. For the first forty-eight hours glucose saline is given per rectum four-hourly; on the third day feeds of albumin water, two ounces two-hourly; on the fourth day three-ounce feeds of albumin water and citrated milk alternately, two-hourly; on the fifth day five-ounce feeds, two-hourly. On the third, fourth, and fifth days a saline is given rectally night and morning. From the sixth day the routine treatment of gastric ulcer is commenced.

Changes in General Practice During Forty Years

By S. J. Bolton, L.R.C.P., L.R.C.S.ED.
Aghadowey

I have seen it stated quite recently by a layman of some importance that there was no improvement in medical treatment, that it was "senna and salts" when he was a boy and it was "senna and salts" to-day. I think very few will agree with this statement.

In the course of this paper I shall endeavour to show that both medical and surgical treatment have impoved enormously during the past forty years, and that the lot of the general practitioner has been made much easier in almost every way.

In the old days the only means of locomotion was the horse and trap, and in some cases the bicycle. The bicycle was too much like hard work to appeal to most people, and the horse was in many cases little affected by the modern craze for

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speed, so that a great deal of time was wasted on the road, and the doctor was a target for every wind that blew. Now he can travel in comfort in his motor-car, and to a great extent defy the elements, besides doing two or three times as much work in the same space of time.

Forty years ago the country doctor felt somewhat isolated; he was left pretty much on his own resources, he had little to help him but his eyes, ears, and hands, yet it is wonderful how much he could do with this limited equipment. He had no cottage hospital, no sanatoria, no local surgeon, no specialist as we know him to-day, no X-rays, and no biochemist; bacteriology was in its infancy, trained nurses were few and far between—he had not even the assistance of a trained midwife. If he wanted an operation performed, the patient was obliged to undertake the train-journey to Belfast or some other large centre, and so great was the dread of hospitals in those days that some who might have been saved preferred to die at home rather than risk the journey and brave an operation. Now a happier era has dawned, the fear of hospitals has disappeared, and the dread of operations has to a large extent vanished.

With regard to medicine, the advance has been wonderful, if not so spectacular as in surgery. Many of the infectious diseases which in previous centuries decimated the population of the world have been conquered. Typhus fever is almost a thing of the past. Typhoid has been all but wiped out, not only by hygienic measures, but by inoculation against it.

In the South African War the British had 200,000 men in the field, with 58,000 cases of typhoid, and 8,000 deaths from this disease alone. In the Great War they had over a million men on the western front, with 7,500 cases of typhoid and only 250 deaths. This was the first war in history in which the mortality from infectious diseases was less than that from battle causes.

One of the earliest and most successful discoveries of comparatively recent years was diphtheria antitoxin. Prior to its discovery diphtheria was the nightmare of every general practitioner. There was the difficulty of deciding, on clinical grounds, whether the case was one of diphtheria or not; sometimes this was impossible. The application of treatment to the throat was no easy matter, especially in the nervous child. Fatal results were common, and the doctor was liable to be blamed, either for the things he had done or the things he had left undone.

To-day he stands on a very different footing. In doubtful cases the bacteriologist can tell with certainty when diphtheria bacilli are present in a swab, and as the remedy is already at hand, diphtheria is now robbed of a great deal of its terrors. Anti-diphtheria serum is one of the most reliable we possess. By its use the death-rate has been reduced to ten per cent., and if it could be used on the first day the death-rate would be practically nil.

The treatment of diabetes mellitus was also the cause of great anxiety to the doctor, for he realized that, notwithstanding the best available treatment, the patient would sooner or later succumb to the disease. The discovery of insulin has changed this outlook, and given new hope to the patient. With the continued use of insulin the patient may be kept alive and comparatively well for many years.

The treatment of tetanus was another anxious problem for the doctor in former days; now we are supplied with a fairly reliable serum for its prevention and cure. Not long ago rickets was regarded as a mysterious disease, for which no real remedy was known. With the discovery of vitamins and the sunlight treatment came the knowledge that rickets can be cured and its ravages stopped. There is also an antitoxin for scarlet fever and N.A.B. for syphilis. Pulmonary tuberculosis in my early days was looked upon as hopeless, and although it was regarded as more or less contagious, little effort was made to isolate the patient, and whole families sometimes died off from the disease.

I may also point out that in modern days a great deal more is being done with a view to preventing disease than was formerly the case. That prevention is better than cure, may stand for the motto of modern medicine. Much of the research work being done to-day is prophylactic in aim—the prevention of disease rather than the treating of existing disease. This aspect is evidenced in the present-day wide-spread chemical and bacteriological examinations of air, water, food, and drugs, also by infant-welfare activities, the medical inspection and care of school children, the hygienic control of habitations and occupations. In fact, the medical profession is constantly working to keep itself out of a job.

Surgery also has made amazing strides during recent years. The work of Pasteur completely revolutionized the whole outlook of surgery, and was one of the greatest boons ever bestowed upon humanity. Previous to this period surgical intervention was practically a last resort, to try to save a patient who would otherwise most certainly die. All this was changed as if by a magic wand when Lister, taking advantages of Pasteur's discoveries, introduced antiseptic surgery. He made use of chemical antiseptics to destroy the micro-organisms and prevent their admission to the wound, thus rendering surgery comparatively safe.

A further step was taken in 1897 when, under von Bergmann, the aseptic era dawned. Sepsis was now to be prevented, not by antiseptics alone, but by the complete exclusion of bacteria from the field of operation. To Lister's application of Pasteur's scientific discovery is primarily due the wonderful development of modern surgery.

A generation earlier, with the introduction of anæsthetics, the infliction of pain during the operation had been eliminated. What a change from the days not so far distant, when the unfortunate sailor, bleeding in the cockpit of his ship from a mangled and shattered limb, had it sawn off while fully conscious, and the bloody stump thrust into boiling tar in an effort to stop the flow of blood and in the hope that it might prevent the develop of inflammation.

During my time at college, we were told that to open the peritoneum was equivalent to committing murder; now, thanks to antiseptics and asepsis, it is opened every hour in the day with perfect safety and to the very great advantage of suffering humanity.

Many operations which were unheard of in my early days are quite common now; chief amongst these is the operation for appendicitis. I can well remember attending many young and otherwise healthy people for what we termed peritonitis, and

from which many died. I have no doubt whatever that most of the cases started with appendicitis, a disease about which nothing was known in those days.

Even more striking are the figures on the expectation of life. Fifty years ago the average expectation of life for a boy at birth was forty-one years and for a girl forty-four. Now it is fifty-six for a boy and sixty for a girl. That is to say, that in a period covered by fifty years, we have added fifteen years to the average life of the community. These are amazing facts, but that is not all; death is not only kept at bay fifteen years longer than formerly, but we have at the same time more abounding health, we live more enjoyable lives, we are physically fitter at 60 than our forefathers were at 40, so that medical science has not only lengthened our days, but has made them freer from pain and suffering of all kinds.

Some people give credit to legislation for many of these laudable results. They refer to public health acts, sanitary laws, national health insurance, and medical benefits. They seem to forget, however, that the success or failure of these acts depends in a large measure on the doctors who ultimately have to carry them out.

In conclusion, I cannot look back over the astounding achievements of medical science in the comparatively recent past, without pride in the profession that has done so much to enable their fellow-men to live not only longer but healthier and happier lives.

IRISH MASTERS OF MEDICINE

No. 4—THOMAS ANDREWS, M.D., F.R.S.

THOMAS ANDREWS was born in Belfast in 1813. He received his early education at the Royal Academical Institution, then after a short time in his father's office he studied chemistry in Glasgow University, where, we are told, "he distinguished himself with ability." In a letter dated 25th March, 1830, Dr. McDonnell, the founder of the Belfast Medical School, suggested to Andrews's father that his son "should enter Dublin College, and return home from that without pursuing the usual course of study there. He should at the same time be bound nominally to a surgeon—after which he should go to France and Italy, and remain there until he has satisfied his own mind; and, returning from thence, should attend as many terms in Dublin as would qualify him for taking the degree of Bachelor of Arts, and either or both the other degrees in Surgery and Physick."

This advice seems to have been acted upon, and Andrews travelled by sea to Bordeaux in 1830. He then journeyed overland to Paris, where he appears to have divided his time between study at the Hôpital de la Pitié and the chemical laboratories of the College de France. This visit was a short one, for he developed a severe attack of "fever," and he was obliged to return to Ireland. Thereupon he again took up his studies in Dublin, studying classics in Trinity College and medicine in the Meath Hospital and in the Richmond Surgical Hospital. Andrews next travelled to Edinburgh to complete his medical course, and graduated M.D. of

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Edinburgh University in 1835. His thesis was entitled "On the Circulation and the Properties of the Blood."

In a letter to his mother, while a student in Edinburgh, he wrote: "There is one great source of pleasure in the medical profession which few other pursuits afford in the same degree—the great and intense interest of the subject which affords one so much excitement; and although this is also too often a cause of great anxiety, yet I believe there are few medical men who would willingly exchange their pursuit for any other."

This enthusiasm for medicine appears to have waned, and although he spent some years in the practice of his profession, and as a visiting physician to the Belfast General Hospital, he early deserted the practice of medicine and was appointed Vice-President and Professor of Chemistry in the newly-constituted Queen's College, Belfast. But before doing so, he published a paper on the "Composition of the Blood of Cholera Patients." This paper marks an epoch in the history of medicine, for it is one of the first papers on biochemistry ever written. In it he shows that the blood of cholera patients differs from that of normal healthy individuals, only by having a smaller proportion of water. The treatment of cholera to-day is based on this discovery. His great reputation, and his subsequent election as a Fellow of the Royal Society of London, is based on purely physico-chemical problems. He discovered and showed the continuity of liquid and gaseous states; he discovered the critical point of their condensation, and he was the first chemist to liquefy the so-called "permanent gases." Much of the present theory and practice in refrigeration science and machinery is based on his work. These discoveries, together with his researches on the latent heat of vapours, on the heat of chemical combination, and on the qualities of ozone, have gained for him an imperishable name amongst the ranks of scientific discoverers. He died on the 26th November, 1885.

R. H. H.

No. 5—ANDREW GEORGE MALCOLM, M.D.

Dr. A. G. Malcolm wins his place amongst Irish Masters of Medicine by his advanced advocacy of public health reform. He was born in Newry, Co. Down, in 1818. He received the rudiments of his medical education in the Royal Academical Institution, Belfast, and completed his studies in Dublin, Glasgow, and Edinburgh. He graduated M.D. of Edinburgh University in 1842. His thesis on this occasion was entitled "Fever," and for it he obtained one of the three gold medals awarded. Dr. Malcolm then began the practice of medicine in Belfast, where he "attended for two years on the poor gratuitously," according to the custom of the time. He was appointed physician to the General Hospital in 1845, where he rapidly gained a great reputation as a clinical teacher, and he was soon surrounded by a class of eager students. But it is Malcolm's advanced outlook in matters of public health that keeps his memory green. He founded, with a certain Dr. Brown, the first sanitary committee of Belfast, and he was instrumental in opening Belfast's first public bath and wash-houses. He was one of the first to advocate the control of working conditions in factories and mills, and in 1885 read a paper before the

British Association in Glasgow entitled "An Inquiry into the Physical Influence of Mill Life." This paper was afterwards published in the London Statistical Journal. It is of particular interest, as it contains recommendations for the medical examination and supervision of mill-workers, on the lines embodied in the factories and workshops acts in force to-day.

But the medical profession of Northern Ireland owes Malcolm a further debt in his untiring work for the advancement of all that concerned its interests. He remodelled the Belfast Medical Society. But this Society was merely local in outlook, and Malcolm, visualizing a broader view, brought into existence in 1853 the Clinical and Pathological Society, in which provision was made for both town and country membership. Members of this Society had the privilege of receiving reports on any morbid specimens sent to its "chemical and microscopic committee," and in addition received a "lithographed abstract" of the weekly Proceedings and a copy of the Annual Transactions. Dr. Malcolm was the general secretary of the Society until his death, and during the session 1855-6 occupied its presidential chair. He published a history of the Belfast Medical School from its inception by Dr. James McDonnell in 1815, until 1851. He died on 19th September, 1856, from "a chest disease." His memory is perpetuated by a scholarship in clinical medicine held in the Royal Victoria Hospital, Belfast.

—R. H. H.

No. 6—ABRAHAM COLLES, M.D.

ABRAHAM COLLES was born in 1773 at Milmount, a village about two miles from Kilkenny. He received his primary education there, and then passed to Dublin, where, after serving an apprenticeship with Dr. Woodruffe, a surgeon in Stevens Hospital, he obtained the diploma of the Royal College of Surgeons in Ireland in 1795. He next travelled to Edinburgh, where he spent two sessions in the study of medicine, and having obtained his M.D. degree, set out on foot for London. Here he met the celebrated surgeon, Sir Astley Cooper, whose influence coloured his whole later life. Cooper, at this time, was investigating the anatomy of hernia, and Colles helped him in the preparation of the dissections which were afterwards used to illustrate this work. It is possible that it was just these studies that gave him the idea for his "Treatise on Surgical Anatomy," which, although never completed, forms a fragment of an important work, and one which marks an era in the teaching of anatomy. Although now surpassed by other publications of this nature, this work by Colles is of considerable interest, as it is the first textbook in English in which anatomy is discussed strictly in its relation to practice and surgery.

Colles returned to Dublin in 1797, and soon became attached to the Meath Street Dispensary; and two years later he was appointed resident surgeon in Stevens Hospital. In the year 1804 he was elected to the chair of anatomy and surgery in the Royal College of Surgeons in Ireland, a post which he occupied for thirty-two years. His success as a surgeon was assured, and the publication of books and papers began, any one of which would have entitled him to fame.

The first subject of his inquiries after his appointment to the College of Surgeons, was the subclavian artery, and the practicability of tying it in cases of aneurysm.

"The anatomy of the parts," he writes, "satisfied me of the feasibility of the operation; and Mr. John Bell's luminous statement and lively description of the anastomosing arteries situated about the joint encouraged me to hope for its final success." This belief Colles was enabled to put to the test, and on two occasions he succeeded in tying this artery for the relief of aneurysm, and he has the honour of being the first to tie it as it lies between the Scaleni muscles. He is also said to have been the first surgeon in Europe to tie the innominate artery successfully. But the greater part of his writings is devoted to the study of venereal disease. In his book, "Practical Observations on Venereal Disease," he states Colles' Law, which supposes the immunity which a healthy mother acquires in bearing a syphilitic child. In this book Colles advises the use of mercury in the treatment of syphilis, and points out the dangers of its indiscriminate use. He warns physicians that large doses of this drug excite ptyalism to a dangerous degree. He writes: "Not that gentle, manageable kind it is our wish to obtain, but rather a sudden, a violent, and an ungovernable action which overwhelms the system and threatens destruction to life." For accuracy of observation it would be difficult to find in any modern textbook a better description of this condition than that which he gives:

"The day preceding the appearance of this violent salivation, the patient announces its approach by informing us that he was feverish and restless the preceding night, that he has great headache, or dysenteric dejections from the bowels; on the following day his cheeks and lips are enormously swollen, there is a copious and incessant flow of saliva, and the tongue is protruded and swollen, the speech is impaired, and deglutition is so impeded that he cannot even drink without great difficulty. Hæmorrhage from the gums to a pretty large amount in many instances occurs repeatedly. . . . When awake he hangs his head over some vessel to receive the saliva, which flows copiously; and when, overcome by fatigue, he attempts to sleep, the saliva still flows, and bathes his pillow with a fœtid moisture."

With the better understanding of the use of mercury, such an advanced case of mercuric poisoning is never seen, and the description left by Colles should be preserved as being of historic interest.

But the work by which Colles is best remembered is undoubtedly that in which he describes the fracture which occurs about an inch and a half from the distal end of the radius, and which is known as Colles' fracture. Since the publication of this paper in 1814, few subjects of surgery have been more carefully studied, yet few more accurate accounts have been given of the symptoms and appearances by which the fracture may be recognized. After discussing these in detail, he proceeds:—

"The hard swelling which appears on the back of the hand is caused by the carpal surface of the radius being directed slightly backwards instead of looking directly downwards. The carpus and metacarpus, retaining their connections with this bone, must follow it in its derangements, and cause the convexity alluded to. This change of direction in the articulating surface of the radius is caused by the tendons of the extensor muscles of the thumb, which pass along the posterior surface of the radius in sheaths firmly connected with the inferior extremity of this bone. The broken

extremity of the radius being thus drawn backwards, cause the ulna to appear prominent toward the palmar surface, while it is possibly thrown more towards the inner or ulnar side of the limb by the upper end of the fragment of the radius pressing against it in that direction. The separation of these two bones from each other is facilitated by a previous rupture of their capsular ligament, an event which may readily be occasioned by the violence of the injury. An effusion into the sheaths of the flexor tendons will account for that swelling which occupies the limb anteriorly."

From this account it is seen that no important point is omitted, and if we recollect that X-ray photography had not been discovered, and that Colles had no opportunity of investigating post-mortem the nature of the accident, it must be admitted he conjectured its anatomical characters with considerable accuracy. He died in 1843.

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REVIEWS

GROWTH. By the late James Lorrain Smith, M.D., LL.D., D.Sc., F.R.S. Edited by J. S. Haldane, C.H., M.D., F.R.S. Edinburgh: Oliver & Boyd, 1932. pp. 135 and a portrait. Price 6s. net.

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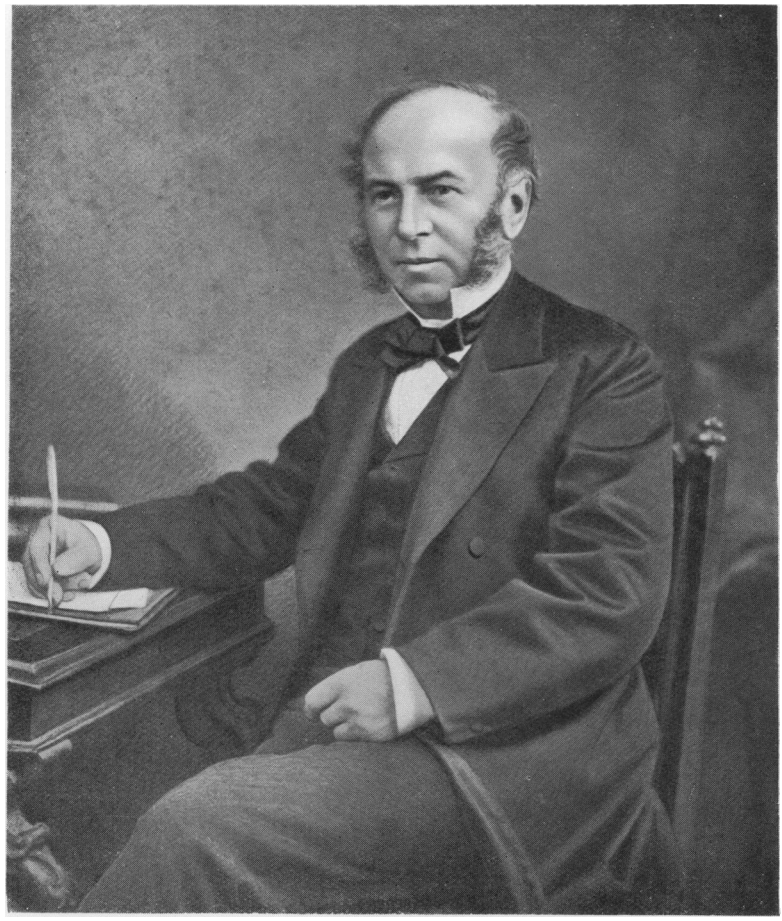
In 1894 Lorrain Smith became the first Lecturer on Pathology in Queen's College, and held this office till the Musgrave Chair was instituted, when he became the first Professor of Pathology. He taught in Belfast for ten years, and in 1904 was appointed to the Chair of Pathology in Manchester University. Later he was appointed to Edinburgh University. Our Medical School is proud of the fact that the last two Professors of Pathology in Edinburgh were selected from our teachers in this subject. It would be impossible here to review the life-work of Lorrain Smith, or even to mention his many valuable contributions to pathology. A brief account of his Belfast work may be of interest.

Lorrain Smith's personality was a great asset to the early days of pathology in our Medical School, and his laboratory soon became a busy centre of research to which medical men were urged to come and work. He thus became the founder of pathology in Ulster. Much of his interesting research with Haldane was done in vacation time in the Pathological Laboratory here.

His now classical work on the absorption of oxygen showed that this process could not be explained by diffusion alone, but that it might involve a vital action of the alveolar cell. Experimentally he showed that when pigeons breathed oxygen at high pressure they died of pneumonia. This poisonous action of oxygen was a new discovery, and might occur when pure oxygen was breathed even at ordinary atmospheric pressure.

His Belfast studies on the absorption of carbon monoxide gas gave to physiology an original method of determining the blood volume, and the application of this method demonstrated for the first time that there is a marked variation in blood volumes in such diseases as chlorosis, pernicious anæmia, and plethora. These studies were interrupted by the Belfast epidemic of typhoid fever, which he investigated with great thoroughness. A full report of this work was published in the "Journal of Hygiene."

During his last year in Belfast he was interested in a scheme which eventuated in the foundation of the Pathological Society of Great Britain and Ireland. The first meeting of this society was held on 14th July, 1906, in his own department in Manchester University.



PROFESSOR THOMAS ANDREWS

REPRODUCED FROM THE
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We might fitly write his epitaph thus:

JAMES LORRAIN SMITH, 1862—1931,
Philosopher, Physiologist, Pathologist, and Friend.

—T. H.

ACIDOSIS AND ALKALOSIS. By Stanley Graham, M.D., F.R.F.P.S., and Noah Morris, M.D., B.Sc., D.P.H., F.R.F.P.S. Edinburgh: E. & S. Livingstone, 1933. pp. 203 + xii. Price 7s. 6d. net.

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THIS book is a review of the technical methods used for the prevention of conception. The work seems to be designed for laymen, and the purpose of the author lies in presenting such information as will permit the individual to select that contraceptive method which is best suited to his or her particular case. We feel, however, that in the case of the female, at least, this selection should always be made under medical supervision. Whether such detailed information about contraceptives is wholly desirable in a book intended for lay persons seems to us doubtful. We feel also that the chapter on abortion and abortifacients might have been omitted without detracting from the value of the book. We do not think medical men will find much in this volume that is not already accessible to them in the more scientific treatises on the subject. Possibly they may find the book useful for some of their patients.

THE CAMPBELL MEMORIAL ORATION

THE fifth Campbell Memorial Oration was delivered by Dr. J. S. Campbell in the Medical Institute, Belfast, on 19th January, 1933. The subject of the Oration was "The Problem of the Streptococcus." The president of the Ulster Medical Society, Professor C. G. Lowry, occupied the chair. In introducing the orator, Professor Lowry reminded his audience that Mr. Robert Campbell, whose memory the Oration honours, died in 1920 at the early age of 54. Four Orations had been delivered. The first orator was Professor Thomas Sinclair, the second Sir Thomas Houston, the third Sir John Campbell, and the fourth Professor Andrew Fullerton. In selecting these orators, the trustees of the Fund were influenced by the brilliant work each of these men had done in his own particular field, and also that each of them had been an intimate friend of Mr. Campbell himself. This year, in view of the excellent research work that is being done by some of the junior members of the Medical School, it was thought that it is time a representative of this side of the Belfast School of Medicine should have an opportunity of delivering the Memoral Oration. Dr. John S. Campbell had been chosen, on account of the outstanding merit of the work which he had accomplished in the domain of bacteriology.

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At the conclusion of the Oration, Dr. John Rankin proposed a vote of thanks to Dr. Campbell. He said previous orators had all known Robert Campbell, but this was the first time one who had not enjoyed his friendship had made his contribution. Robert Campbell was a scholar, and it was that happy blend of the scholarly and the scientific mind that made him such a dear and valuable friend. The vote of thanks was seconded by Dr. J. S. Morrow, who had been a colleague of the late Robert Campbell in the Belfast Hospital for Sick Children, and in the Royal Victoria Hospital. He said that the subject of the Oration was particularly appropriate to the occasion, inasmuch as the life of a surgeon was a constant conflict against the dire results of the streptococcus and kindred organisms. He added that Robert Campbell's memory is very fragrant. He had been a brilliant student, an accomplished surgeon, a man of widest culture, the soul of honour, and a great friend.

Sir Thomas Houston, in supporting the vote of thanks, paid a fitting tribute to the great value of Dr. J. S. Campbell's work of the past few years in the Royal Victoria Hospital. With characteristic modesty, Dr. Campbell had not mentioned his own work, but when his researches come to be written, they will surely establish many points of fundamental importance in the study of streptococci. We believe that in its broad lines, Sir Thomas continued, the work done in our laboratory and that of Dr. Campbell have established a definite classification of enterococci. The French have a proverb that what is not worth proving often cannot be logically proved. There is such a thing as cumulative evidence and moral certainty without complete logical proof. We may have to be content with this sort of evidence which, when it is sufficient, is irresistible.

Professor Lowry, in conveying the vote of thanks, said as he listened to the Oration he was reminded of an expression made by the late Robert Campbell in speaking of a young graduate of this school: "As long as the Belfast School of Medicine can train and produce graduates of this calibre, it can well claim to be a medical school of the first class." "If Mr. Campbell were here to-night," Professor Lowry said, "I think he would unhesitatingly and with great justification pronounce that eulogium on our young friend who has just addressed us." Professor Lowry then presented Dr. Campbell with the bronze medal of the Orator.

ULSTER MEDICAL SOCIETY

THE fourth meeting of the Society was held in the Medical Institute on Thursday, 5th January, at 6.30 p.m. The president, Professor Lowry, occupied the chair, and introduced the speaker of the evening, Dr. Duncan White of Edinburgh, who read a paper: "Radiological Diagnosis of Intra-thoracic Newgrowths." At the outset, Dr. White stressed the necessity for close and efficient co-operation between physician and radiologist, if earlier and more accurate diagnoses of intra-thoracic neo-

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plasms were to become possible. The speaker described the modern aids to thoracic radiology, laying especial emphasis upon the value of intratrachial instillation of lipiodol to outline the bronchial tree, and of radiograms taken after the induction of diagnostic artificial pneumothorax. A routine method of investigation could not, however, be laid down; each case had to be considered as an individual problem. Dr. White then classified tumours arising within the thoracic cage, recognizing mediastinal, pulmonary, and pleural growths which might be either benign or malignant. Using this classification, he illustrated his remarks with a series of extremely beautiful lantern slides of the radiological findings. Dr. Beath, Dr. Foster Coates, Dr. R. McCullough, and Professor Fullerton took part in the discussion of this paper. Dr. McCullough laid stress upon the pleural effusion which is found so often in cases of pulmonary carcinoma spreading to the pleura, and he mentioned how it obscures the diagnosis both by its presence and its tendency to rapid re-accumulation after aspiration. Mr. P. T. Crymble moved a vote of thanks to Dr. White for his extremely interesting paper, and this was seconded by Professor W. W. D. Thomson.

The fifth meeting of the Society was held on 2nd February at 8.30 p.m. The president, Professor Lowry, occupied the chair. Mr. G. D. F. McFadden read a paper entitled "The Early Symptoms of Acute Appendicitis." This paper attempted to correlate the symptoms of acute appendicitis with the anatomical variations of the position of the appendix. Many interesting points were raised, and an animated discussion followed. It is hoped to publish this paper in the next number of the Journal.

The sixth meeting of the Society was held on 9th February at 8.30 p.m. The president, Professor Lowry, occupied the chair. Papers were read by Dr. J. A. Smyth and Mr. P. T. Crymble on "Toxic Goitre and Its Surgical Treatment." These papers were really a combined effort in which the medical and surgical aspects of the disease were discussed. It is hoped to publish these papers in the next number of the Journal. Many interesting criticisms and questions were raised in the discussion which followed the papers. In reply to these questions, Dr. Smyth said that secondary exophthalmic goitre is the term now applied to cases of exophthalmic goitre which later develop hyperthyroidism and exophthalmos. Microscopically such glands were very difficult to distinguish from true primary Graves's disease. The therapeutic effect of digitalis on the post-operative thyroid crisis, Dr. Smyth said, is doubtful. A patient might show an increase in weight with a raised B.M.R., provided that there is an adequate intake and storage of food. Mr. Crymble said that in cases of exophthalmic goitre a small gland is very potent, and a complete removal is necessary. He did not think it safe to take away the whole thyroid gland, as there is the risk of tetany following the removal of para-thyroid tissue at the same time. Auricular fibrillation had not been found to contra-indicate operation.

The seventh meeting of the Society was held on 16th February at 8.30 p.m. The president, Professor Lowry, occupied the chair. Two papers were read. The first was by Mr. L. A. Bullwinkle, Registar-General and Statistician for Northern

Ireland. Mr. Bullwinkle drew attention to the memorandum of a Bill which it is proposed to place on the statute book of Northern Ireland. The object of this Bill, he said, is to give effect to the principal recommendations put forward in 1893 by the Select Committee on Death Certification (House of Commons Paper 373, of 1893), and intended to guard against (1) crime and (2) premature burial. This Committee reported that they were much impressed "with the serious possibilities implied in a system which permits death and burial to take place without the production of satisfactory medical evidence of the cause of death. It is a most important duty of society to guard its members against foul play, and it appears to your Committee that, as far as may be, it should be made impossible for any person to disappear from his place in the community without any satisfactory evidence being obtained of the cause of his disappearance. Your Committee, fortified with the weighty opinions of the witnesses who have appeared before them, have arrived at the conclusion that uncertified deaths should, as a class, cease to exist, and that means should be devised whereby a medical certificate should be obtained in every case not certified by a registered medical practitioner in attendance."

The lecturer then stated that in Northern Ireland there were 2.4 per cent. of uncertified deaths in urban areas during 1931, and 13.9 per cent in rural areas. He said also that doctors sometimes withheld the true cause of death on the certificate, lest it might give offence to the deceased person's friends. Cancer was a common example of this fault. The doctor knew quite well that the person had, for example, died of cancer of the thorax, yet he certified the death to be due to chronic bronchitis. An interesting discussion followed, mainly around the question of what constituted primary and secondary causes of death. Mr. Bullwinkle said that a book on the subject had been published by the Government, which contained the recommendations of an international committee on recognized causes of death. He said he would be glad to present a copy of this book to the Society's library.

A vote of thanks was proposed by Dr. Gillespie to Mr. Bullwinkle for his very instructive lecture. It was seconded by Dr. Trimble.

The second paper was by Dr. Robert Marshall. It was entitled "End-Results of Intensive Alkaline Treatment of Gastric and Duodenal Ulcer." It appears on another page of this number of the Journal.

The eighth meeting of the Society was held on 2nd March in the Pathological and Bacteriological Laboratories, Queen's University. This was the annual laboratory meeting, and members of the Society exhibited many interesting pathological and bacteriological specimens. There was a good attendance of members.

The president of the Ulster Medical Society and Mrs. Lowry invited the members of the Society to a reception and dance in the Grand Central Hotel, Belfast, on Tuesday, 14th March. The president and Mrs. Lowry received the guests, who numbered about three hundred, and a very pleasant evening was spent. The evenings at which papers are read and medical matters are discussed have their use, but social evenings do a great deal for the general welfare of the profession as a whole. The best thanks of the Society is therefore due to its president for affording them an opportunity to meet in this social manner.

BELFAST MEDICAL STUDENTS' ASSOCIATION

THE second meeting of the session was held in the McMordie Hall on 25th November, 1932. The president, Mr. Holmes, was in the chair. Colonel Langstaff read a paper entitled "The Functions of a Casualty Clearing Station." This paper was an account of the work done in a casualty clearing station, which, the lecturer said, was the Mecca of the surgeon. The wounded who were brought in from the front lines stayed only a few days in the casualty clearing station before being sent to the general hospital at the base. The work was in the hands of two or three surgeons, whose great resource and ability saved many a life. The president in a short speech remarked on the valuable experience and speed acquired by the casualty clearing station surgeons. Colonel Fullerton paid a tribute to the young surgeons produced by the Great War, many of whom made a name for themselves by their work in the casualty clearing stations. A vote of thanks to the speaker was proposed by Mr. Shaw, and seconded by Mr. Donnan.

The annual smoker took place on 16th December, 1932, and the annual dance on 27th January, 1933. Both functions were a great success.

On Friday, 3rd February, 1933, a paper was read by Professor Young on "The Allotted Span." He began by assuring us that it was a fallacy that our allotted span had increased by twenty years in the last century. The expectation of life had remained remarkably constant since time immemorial. To the great question, "What happens when we grow old?" the biologist, the chemist, and the physicist have all given us theories, but the old saying that "a man is as old as his arteries" is as good as any. The greatest factor is our original equipment or what our ancestors have handed on to us. The speaker concluded by saying that although we might not be able to make any appreciable increase to our threescore years and ten, we could at least make the time at our disposal happy and useful. A vote of thanks to the speaker was proposed by Miss Jackson and seconded by Mr. Shaw.

Students' night was held on Friday, 17th February, 1933. Papers were read by Mr. Loughridge on "Medical Evidence," Mr. Shaw on "Thomas Sydenham," Mr. Bingham on "Anæsthetics," and Mr. Galbraith on "X-rays."

S.U.S., Q.U.B. R. B. BOAL, *Hon. Secretary.*

BRITISH MEDICAL ASSOCIATION
PORTADOWN AND WEST DOWN DIVISION

A MEETING of the above Division was held on Wednesday, 8th March, 1933, in the Supera Café, Market Street, Lurgan. Dr. S. F. Floyd occupied the chair. Mr. F. A. MacLaughlin, F.R.C.S. (surgeon-in-charge, Eye, Ear, and Throat Department, Belfast Hospital for Sick Children), gave a paper entitled "Ophthalmological Problems in General Practice." This paper was more of a practical talk than a formal paper, and the members of the Division listened to it with great benefit and interest.

CHARLES BOUCHER, *Hon. Secretary.*

Donacloney, Co. Down.

THE LONDONDERRY MEDICAL SOCIETY

THE third meeting of the session 1932-3 was held in the City and County Infirmary at 8 p.m. on Friday, 16th December, 1932. In the absence of the president, Dr. S. H. B. Allison of Killaloo, Dr. J. McCormick of Buncrana took the chair.

The subject was a discussion on the management of the first stage of labour. Dr. A. H. M. Eaton of the Tyrone County Hospital led off with a very able, concise paper, which was replied to by Dr. Emily Baillie of Londonderry. It would not be fair to enlarge on the points brought out by the opening speakers, as they were deliberately biassed in order to stimulate discussion. This received its due reward, as the debate which followed was of an extremely lively character, every member present taking part.

During January and February the influenza epidemic was so severe in the district that two meetings had to be postponed.

The fourth meeting took place in the City and County Infirmary at 4.30 p.m. on Friday, 3rd March. Dr. Cooke, in the absence of the president, Dr. Allison, took the chair. Dr. W. G. McKinney opened the proceeding with a very able analysis of his cases during the recent influenza epidemic, and members followed giving observations of their own of the course of the disease, and the various complications arising out of it.

A. L. JOHNSTON, *Hon. Secretary.*

19 Clarendon Street, Londonderry.

BRITISH MEDICAL ASSOCIATION
NORTH-EAST ULSTER DIVISION

A MEETING was held on Friday, 30th December, 1932, in Coleraine. Professor Fullerton of Belfast gave a talk on "Renal Calculus: A Review of over Two Hundred Cases." The speaker gave an interesting account of modern methods of diagnosis and treatment, and described many interesting cases which he had met in his practice. His remarks were illustrated by a fine collection of slides and specimens. A hearty vote of thanks was passed to Professor Fullerton for travelling so far in bad weather to give a most instructive and fascinating talk.

A meeting was held on Friday, 27th January, 1933, in the Coleraine Cottage Hospital. The following medical films were shown: (1) Acute Appendicitis, (2) The Treatment of Fracture of the Proximal End of the Femur (Bohler), (3) The Treatment of Fracture of the Clavicle (Bohler).

J. M. HUNTER, *Hon. Secretary.*

1 Mervue, Portrush.