JULY, 1937

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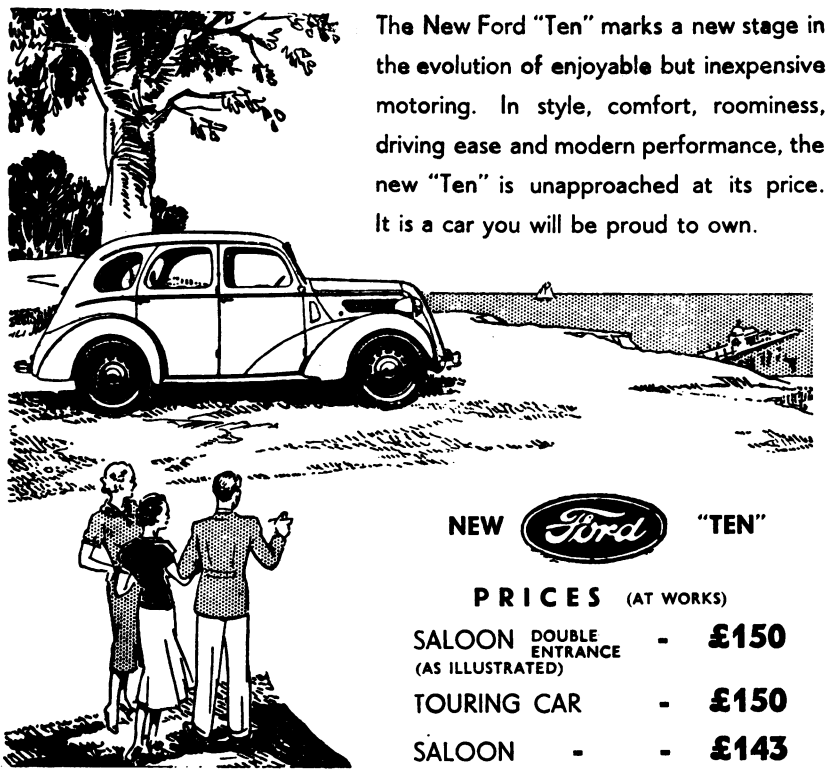

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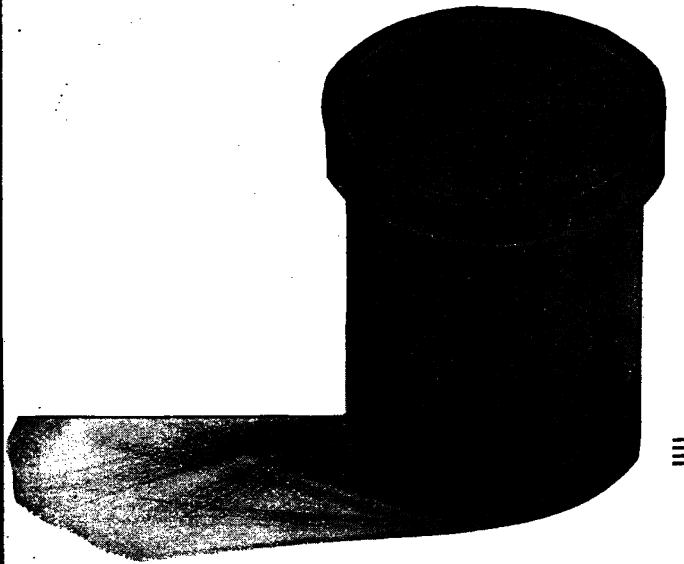

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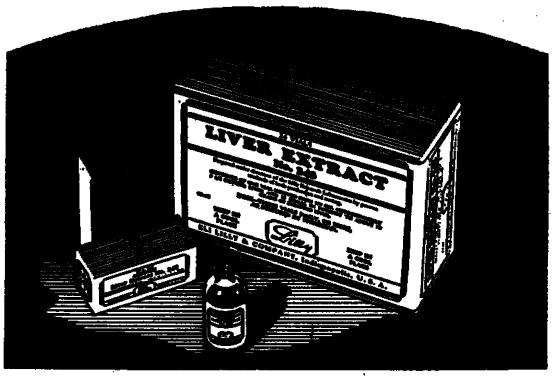

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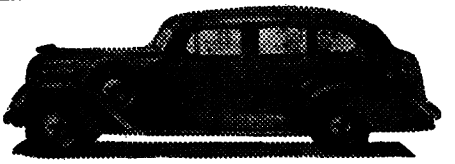

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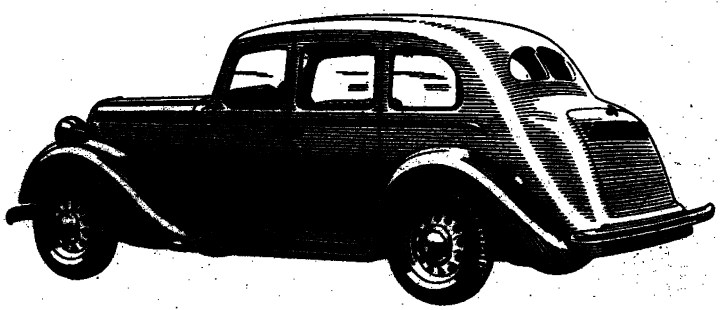

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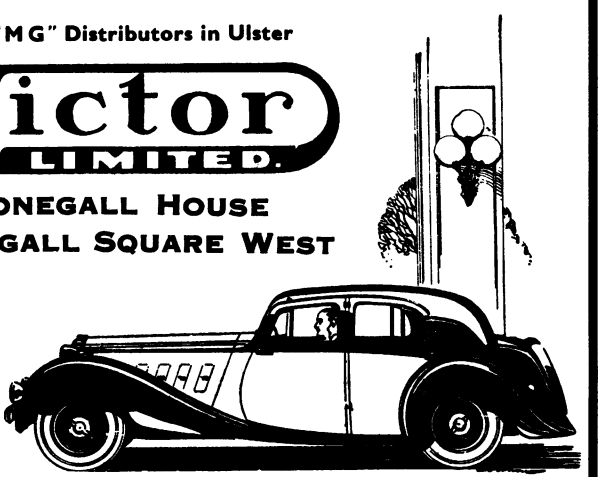

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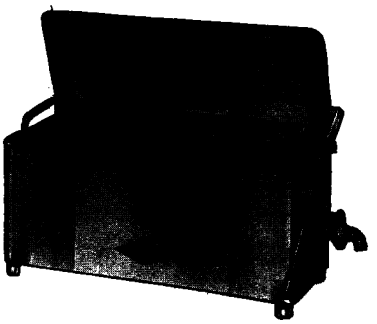

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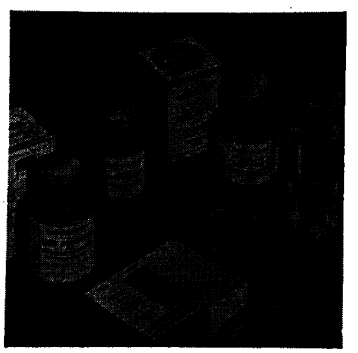

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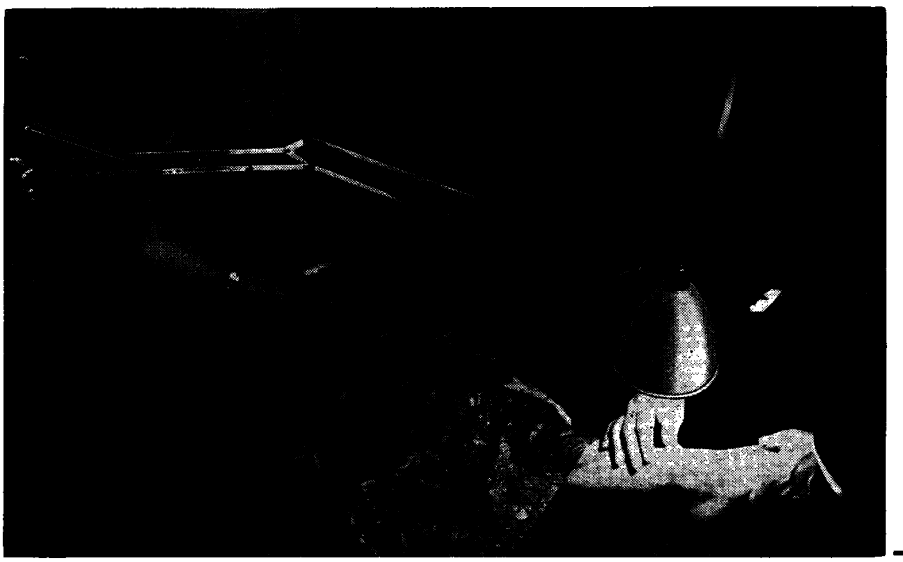

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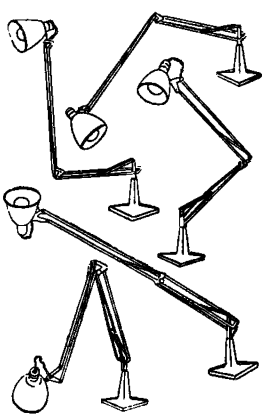

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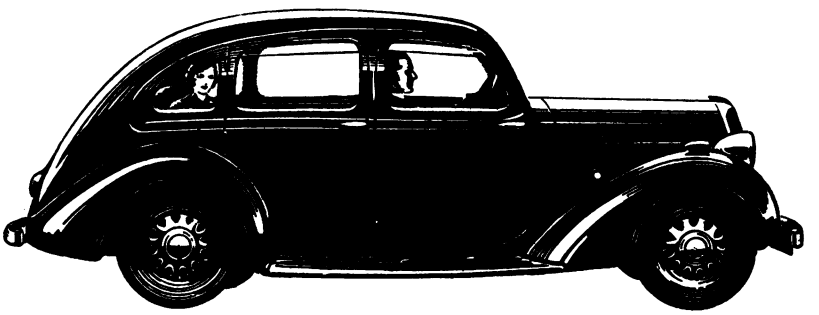

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CONTENTS

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THE ULSTER MEDICAL JOURNAL

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DATES OF PUBLICATION

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methods and institutions in the national life which have grown up with the nation, and whose efficiency has been thoroughly tried and tested in the past. The function of Government would be to facilitate the increased use of the motive power latent in these methods and institutions, but not to interfere with them.

Man is clever, but not clever enough to foretell where interference with old methods, or imposition of new ones, will eventually lead. Socialism, Communism, Nazism, Fascism, all demand that Government shall do new things, and make revolutionary experiments. If they succeed for a time, it is at the expense of freedom of development. Man does not know whither his development is tending. The same forces of evolution that formed man from very simple beginnings, have, out of men, formed nations, and individual men may have as little understanding of the destiny of nations as, say, a kidney-cell has of the destiny of the man it serves.

Potential in the single-celled ovum, whence each human being grows, are all the physical, mental, and spiritual capacities of the adult. With all our knowledge, we can add or subtract so little. We may give the same education, and provide a similar environment, but the results are always different. The experience of the child, the lesson it learns from our "controlled experiment," is influenced by, and is so small an addition to the experience of its ancestry since the world began.

Let us, then, respect the past experience of the nation. Let us use our cleverness to understand it a little, let us not hasten to alter or control; let us obey sometimes the high command, "Be still and know that I am God."

THE ULSTER MEDICAL SOCIETY

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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? Please make application to the Honorary Secretary, which 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.

We remain,

Yours faithfully,

P. T. CRYMBLE, *President.*
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.....19.....

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THE BOOK OF BELFAST*

DR. ROBERT MARSHALL is to be congratulated on the compilation of The Book of Belfast, published for the 105th Annual Meeting of the British Medical Association, not so much for the publication as such, but for the manner in which the story of Belfast, and its medical school, has been unfolded. Books of this kind are often so dull and uninteresting that the reader only too quickly places them on his book-shelves as "works of reference," a fate which certainly will not fall upon Dr. Marshall's book. From the first glance at the many interesting illustrations, and the diverting maps of Dr. R. W. M. Strain, to the delightful descriptions of Belfast, its hospitals, its history, and its industries, the reader is held in turn enthralled, amused, interested, and instructed. For it not only contains sharp flashes of native wit and humour, but a great deal of solid information and fact. Dr. Marshall, from his extensive knowledge of the history of the Belfast medical school, supplies the purely medical facts, and he has had as able contributors, Mr. F. E. Rebbeck of Harland & Wolff, to describe the shipbuilding industry; the Right Hon. J. Milne Barbour to describe the linen industry; Mr. J. G. Michaels of Gallaher's Ltd., to describe the tobacco industry; and Mr. D. Wilson Smyth of the Belfast Ropework Company, Ltd., the rope and twine manufactories. In addition, Professor Charlesworth of Queen's University has contributed an instructive chapter on the geology of Ulster, Mr. J. S. Loughridge a well-written chapter on the archæology of Ulster, and Rev. W. F. Marshall a delightful little essay on the speech of Ulster.

It seems rather a pity in a book of such excellence that a larger format was not used, to allow of a better and smarter page layout. The narrow margins give the impression of an attempt to crush too great an amount of type to each page, which rather mars the appearance of what is unquestionably one of the very best books ever published in connection with the annual meetings of the British Medical Association.

* The Book of Belfast, compiled by Robert Marshall, M.D., F.R.C.P.I., for the 105th Annual Meeting, in July, 1937, of the British Medical Association.

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THE
ULSTER MEDICAL JOURNAL

PUBLISHED QUARTERLY ON BEHALF OF THE ULSTER MEDICAL SOCIETY

VOL. VI 1st JULY, 1937 No. 3

BRITISH MEDICAL ASSOCIATION
105TH ANNUAL MEETING, BELFAST, JULY 1937

THE Ulster Medical Society gives the British Medical Association a hearty welcome to Belfast. The relations between the two societies have always been of the friendliest nature, the Ulster Medical Society confining its activities to purely clinical matters, wisely leaving to the British Medical Association all matters of a medico-political nature. This arrangement has worked to the advantage of members of the medical profession in Northern Ireland as a whole, and it is hoped that the holding of the one hundredth and fifth annual meeting of the British Medical Association in Belfast will still further unite the bonds of friendship between the two societies.

The general arrangements are now complete, and the year's hard work of preparation by the energetic secretary, Dr. F. M. B. Allen, and his assistant secretary, Dr. R. W. M. Strain, will result, it is certain, in the most successful meeting ever held in Belfast.

To Professor R. J. Johnstone, the President-elect, we offer our congratulations. No more worthy representative of Ulster medical men could be found to fill the post. He has consistently served his University and his professional brothers with a sense of rectitude rarely found in public life, and the honour now given him is only a recognition of the life's work which he has done so well.

The Belfast Medical School

By RICHARD H. HUNTER, M.D., M.CH., PH.D., M.R.I.A.

Queen's University, Belfast

THE Belfast Medical School had its origin, a little over one hundred years ago, in the establishment of a public dispensary in West Street (off Smithfield), Belfast. The aim of this dispensary was not to found a medical school, that idea developed at a later date, but to "supply free medicine and free medical attendance to the indigent poor, and also to visit them in their homes when occasion required." The chief spirit in opening the dispensary was James McDonnell, M.D., a native of the Antrim Glens, born in 1762. And this same man was destined to build, through this small dispensary, the foundations of the present Belfast Medical School, before his death on 5th April, 1845.

The success of the dispensary was so great, that Dr. McDonnell initiated a movement to enlarge its activities, and found a public hospital. On 14th April, 1797, this scheme was proposed at a public meeting, and a committee formed for its realisation. The result of the activities of the committee was the opening of the first fever hospital in Ireland. This hospital was situated in Berry Street, in a house taken at a rental of £20 per annum. Six beds were installed, a nurse was appointed, and on 27th April of that year, the physicians and surgeons of the old public dispensary were asked to attend the new institution.

Unfortunately, the finances of this small hospital were soon exhausted, and Dr. McDonnell and his colleagues developing typhus fever in the execution of their duty, the doors of the hospital were closed.

In 1799, through the activities of Dr. McDonnell and the Rev. William Bristow, a sum of £113 was raised with the object of re-opening the hospital. A committee was appointed, and three houses were rented in West Street, near Smithfield, and furnished as a hospital, with Dr. McDonnell and Mr. Fuller as physician and surgeon respectively. The charity thus renewed its activities.

This time there was no going backwards: the work of the hospital expanded, and in 1807 an Act of Parliament was passed which enabled the Irish counties to grant sums from public moneys for the maintenance of charities, and the hospital received from this source, in the year following, the sum of £193. 7s. 6d. The stability of the hospital was thus for the first time assured.

But it was not until 1810 that the first decisive step was taken towards the erection of a building specially designed for the special needs of a hospital. A plot of ground was selected as a site in Frederick Street, a lease for which was obtained from the Marquess of Donegall, and a Building Fund inaugurated.

The Building Fund rapidly grew in size, mainly from the collections made at special charity sermons, the popular method of raising funds in those days, and on 5th June, 1815, the foundation stone for the new hospital was laid by the

Marquess of Donegall. This stone had a long inscription engraved upon it, beginning with *Hoc nosocomium ægrotis et arti medicæ sacrum.*

In the centre of the stone were placed various articles emblematic of the civilization of the time. A piece of pottery "of exquisite workmanship, several silver and copper George III coins, a copper Jubilee medal, a Belfast almanac, a map of the town, a small quantity of linen yarn of one hundred hanks to the pound, impressions from the seal of the town and of the Royal Belfast Academical Institution, a small Bible about two inches square, a specimen of letterpress printing, a manuscript in Irish characters, and an inscription in Latin."

It is unfortunate that none of these articles was recovered during the demolition of the building in 1935, but a copy of the Latin inscription is known. A free translation is as follows:

"This hospital, dedicated to the sick and to the Art of Medicine, for the public health, for the cure of diseases, for the solace of the suffering, and for the practice of Medicine and Surgery, the citizens of Belfast here have erected under favourable auspices, amid the great goodwill and approval of the people and of the medical profession, the first stone of the building having been laid by the most noble George Augustus Marquess of Donegall, on the 5th June, in the Year of our Lord, 1815, and in the 55th year of the reign of King George the Third."

The building was completed at a cost of £5,000, with accommodation available for one hundred patients, and its doors opened as a hospital on 1st August, 1817.

During the first year of the hospital's existence a sub-committee of the Board of Management made the following interesting report:

"The Physicians and Surgeons of Belfast should be invited to place their pupils there to acquire experience by observing its practice, and in the course of a few years it might become a School of Physic and Surgery of no trifling importance to the young Medical Students of this neighbourhood and the Province of Ulster."

It was not, however, until three years later that the admission of pupils was authorised . . . each physician or surgeon to the hospital "to be allowed to introduce one pupil to assist in the care of his own patients, and each to be responsible for the conduct of his pupil."

In 1820 Mr. W. Bingham, afterwards a medical practitioner in Downpatrick, was admitted to the practice of the hospital as its first pupil. As time passed other pupils were admitted, but it was not until 3rd June, 1827, that the first formal clinical lecture was delivered. This lecture was delivered by the man who was the real founder of the hospital, Dr. James McDonnell, and he thus became not only the founder of the hospital but the founder of the Belfast Medical School.

A definite Faculty of Medicine, however, did not exist, and two more years passed before steps were taken to "erect" such a Faculty in connection with the Royal Belfast Academical Institution. A good deal of obscurity hides the

unofficial discussions that led to this move, but it is known that on 29th October, 1829, "the Joint Boards made a request to the Board of Faculty (of R.B.A.I.) for a report upon the advisability of the establishment of a Faculty of Medicine." The Board of Faculty immediately reported in its favour, pointing out that such a development had been contemplated at the original foundation of the Institution.*

This report when made stated that three hundred medical students went from Ulster annually to other Colleges, and that many, if not most, would take advantage of an opportunity of home education. The Faculty stated as its view on the report that such an increase of Chairs would greatly improve the status of the Institution, and that the teaching of medicine would be useful to the hospital in the town, and raise the standard of medical education in the province.

The members of the medical and surgical staff of the General Hospital, who had been instrumental in the movement, forwarded to the Joint Boards of the Institution an official resolution supporting the new Faculty. This was followed by a deputation from the hospital in October, 1830, to the Joint Boards to bring proposals of a scheme for the establishment of Chairs within the Faculty, and suggesting the names of those medical men whom they thought worthy to be first holders of the Professorships.

Agreement was not reached on the terms of appointment, as the Joint Board wished to keep the nominations in their own hands. The hospital staff, on its side, holding that as they were the prime movers in the scheme, and as the Professors could not give clinical instruction unless they had access to their hospital, held to the view that it must have the deciding vote on any such appointment.

But in spite of this disagreement, the foundation of a Faculty of Medicine was agreed upon, the Court of Proprietors of the Institution met on 3rd March, 1831, and it was unanimously agreed to establish the Faculty. A scheme was prepared by Mr. James Tennant for the new Faculty, and these, after being printed and circulated "among eminent medical men throughout the United Kingdom" for their criticism, this scheme, with minor modifications, was adopted. A site was chosen for the erection of a Medical Building, plans were prepared by a Belfast architect, Mr. James Millar, under the superintendence of Dr. Drummond. A committee was appointed to collect subscriptions to defray the cost of the new building, and a sum of £2,000 was raised. A similar sum was granted by the Government, and with this sum of £4,000, the work was commenced.

Appointments to the staff of the new Faculty were made. Dr. James L. Drummond was appointed Professor of the combined subjects of Botany, Anatomy, and Physiology; Dr. John McDonnell, Professor of Surgery; Dr.

* The R.B.A.I. was founded at a meeting held in Belfast on 28th May, 1806. It was opened in November, 1815, with two departments: (1) A School Department and (2) a College Department. King William IV authorised it to be called "Royal" by deed dated November, 1831.

Thomas Andrews, Professor of Chemistry; Dr. James Drummond Marshall, Professor of Materia Medica and Pharmacy; and Dr. Robert Little, Professor of Midwifery and Diseases of Women and Children.*

Classes in the newly founded Faculty of Medicine were opened in autumn, 1835, with Dr. Drummond as its first President.

The Faculty as thus founded was handicapped in its work because of the absence of facilities for giving clinical instruction at the bedside, as it was unconnected with the hospital. It seems unfortunate that this difficulty should have arisen, but it apparently was inevitable. The foundation of a Medical School had been laid by the staff of the hospital, and naturally they would not agree to resign in favour of a new staff elected by the Institution, in whose choice they had no voice. The members of the Joint Boards of the Institution on their side would accept no other terms but complete control of all appointments, with the result they opened their Faculty of Medicine without any means of imparting clinical instruction to its students.

The Joint Boards of the Institution soon found that it was quite impossible to conduct a Faculty of Medicine under such conditions, as the examining bodies would not accept students for examination until they had presented certificates showing that they had received an adequate hospital training. The question of establishing a hospital in connection with the Faculty then arose, and after some discussion it was agreed to establish such a hospital.

A building, known as the Old Barrack, came on the market in 1836, and the Institution purchased it from the Board of Works for £1,750. The Government agreed to make a grant of half this sum, on condition that an equal sum would be raised by private subscription. This condition was fulfilled, and the purchase was completed in 1837.

The purchase of this building used up all the available money in the hands of the Joint Boards of the Institution, and no funds were available either for equipment or for running the hospital. The fate of the proposed hospital hung in the balance. But just at this time an epidemic of typhus fever was taxing the resources of the Belfast Fever Hospital† to such an extent that its committee was glad to come to an arrangement with the Institution to furnish and maintain the new hospital to relieve the congestion in the Fever Hospital, on condition that the Professors of the Institution would supply the medical attendance. In this way a teaching hospital was opened to the students in the Faculty of Medicine of the Royal Belfast Academical Institution, and the first fully equipped Medical School in Belfast organised.

* The Chair of Medicine was not filled until 1837, when Dr. Henry MacCormac was appointed to the position.

† The Fever Hospital was erected in 1830 at the rear of the General Hospital in Frederick Street, for the treatment of cholera patients, when Asiatic cholera was sweeping across Europe. After the fear of the epidemic had passed, it was used for the reception of patients suffering from the general fevers. Purdysburn Fever Hospital was not opened until 2nd August, 1906.

The value of the work done in the Faculty and hospital met with the approval of the Irish Government, and almost before the doors of the hospital were opened for patients, it endowed the six chairs of the Faculty with a salary of £50 per annum each. Certificates of attendance upon lectures and demonstrations in the Faculty were accepted from its students presenting themselves for examinations for the Diplomas of the College of Surgeons, London; the Faculty of Physicians and Surgeons, Glasgow; the Apothecaries Hall, Dublin; the College of Surgeons in Ireland, and for the medical degrees of the University of London.

The number of students attending the classes within the Faculty was as follows :—

Anatomy and Physiology	19
Practical Anatomy	14
Chemistry	19
Midwifery	9
Practical Midwifery	9
Materia Medica and Pharmacy	9
Natural History	7
Surgery	13
Botany*	8

It will be noticed that this list, taken from the annual report of the R.B.A.I. for the year 1837, does not include Medicine. This subject was taught partly by the Professor of Surgery and partly by the Professors of Midwifery and of Materia Medica, until the end of session 1836-7, when Dr. Henry MacCormac was appointed to the newly created Chair of Medicine.

This phase in the effort to conduct a teaching hospital did not last for any great length of time. Difficulties were experienced in the dual authority, and the Fever Hospital finding expenses so heavy, the Barrack Hospital was soon closed.

In spite of the loss of a hospital for clinical teaching, the numbers of students attending the classes within the Faculty appear to have increased, and at one time the numbers reached no less a figure than seventy. This was probably due to the fact that students were able at this time to obtain clinical instruction separately in the General Hospital, Frederick Street.

At this period the status of Belfast as a town and centre of culture rapidly rose, due partly to the activities of a small but earnest band of business men with ideals beyond the mere task of accumulating wealth, and partly to the activities of the teaching staff of the R.B.A.I., which at that time was the centre of culture in the northern Ireland area. Influence was brought to bear on the Irish Government, as to the needs for higher education not only in Belfast but throughout Ireland as a whole, with the result that Queen Victoria on 31st July, 1845, gave her royal assent to the founding of a number of colleges for higher education in

* Botany was taught by the Professor of Anatomy and Physiology.

Ireland. Letters patent were issued by Her Majesty on 30th December of the same year, in which, among other things, it was ordained :—

" That in or near the town of Belfast, in the province of Ulster, in Ireland, there shall and may be erected and established a perpetual College for students in Arts, Law, Physics, and other useful learning, which College shall be called by the name of ' Queen's College, Belfast '."

The site of the College was selected on the Malone Road, on a piece of ground containing about eleven acres statute measure. At the time of its erection the College was situated at a distance from the city, " with fields, gardens, and hedgerows between the two. This was rather unfortunate for the Medical Faculty, as the General Hospital, where students could obtain clinical instruction, was situated in Frederick Street, at the other limit of the town.

The question of clinical instruction early engaged the attention of the authorities, and by a wise arrangement, an " understanding " was come to, whereby the College professors and lecturers were elected from amongst the members of the staff of the General Hospital, so that continuity in teaching was established. This principle of electing the Faculty professors of clinical subjects in medicine, surgery, and midwifery from the staff of the General Hospital, persists to this day.

The professorial staff of the new Faculty consisted of professors of Natural History, Chemistry, Anatomy and Physiology, Surgery, Medicine, Materia Medica and Midwifery.

The first Professor of Natural History was George Dickie, M.A. This gentleman came to Belfast from Aberdeen, where he had been lecturer in Zoology and Botany. He held his lectures at 7 a.m., an hour not very popular with his students.

The first Professor of Chemistry was Thomas Andrews, M.D., LL.D., F.R.S., who had been not only Professor of Chemistry in the R.B.A.I. since 1835, but had also been a pupil of the Institution. He was born in Belfast in 1813. In later years Andrews became, possibly, the most distinguished chemist of his time, and his discoveries on the latent heat of vapours, and the heat of chemical combination, have gained for him an imperishable name amongst the ranks of really great scientific investigators.

The first Professor of Anatomy and Physiology is generally believed to have been Hugh Carlisle, M.D. This gentleman was the first *acting* professor. Alexander Carte, M.D., was really appointed as the first occupant of the Chair in Belfast, and Carlisle was appointed to Cork. But by a private arrrangement between them, Carlisle came to Belfast and Carte went to Cork. Professor Carlisle was a nephew of Professor McCartney of Trinity College, Dublin, with whom he had been a demonstrator of Anatomy for nineteen years; he came to Belfast from the Park Street School of Medicine in Dublin, where he had been Professor of Anatomy. He brought with him to Belfast a valuable collection of

specimens illustrative of comparative anatomy, which is still preserved in the Anatomical Museum of Queen's University, Belfast.

The first Professor of Surgery was Alexander Gordon, M.D., who joined the staff of Queen's College, after acting for two years as Professor of Surgery in the Faculty of Medicine of the R.B.A.I. He was a skilful surgeon, and his splint for treating fractures of the lower end of the radius was used almost universally until new methods were developed during the world war of 1914-1919.

The first Professor of Medicine was John Creery Ferguson, M.D., who came to Belfast from Dublin, where he had been Professor of Medicine in the College of Physicians.

The first Professor of Materia Medica is generally said to have been Horatio Stewart, M.D., but this gentleman resigned from his position so soon after his appointment that he really never occupied the Chair. Thomas O'Meara, M.D., was really the first Professor of this subject. He came from University College, London.

The first Professor of Midwifery was William Burden, M.D., who had occupied a similar position in the Faculty of the R.B.A.I. since 1840.

The two first scholars of the Faculty of Medicine in Queen's College were James Cuming, who was afterwards appointed to the Chair of Medicine in 1865, and Robert Dick, whose after-history appears to have been lost.

The newly founded College progressed, and with it the Faculty of Medicine expanded. Students increased in numbers, and with the increase in numbers, difficulties in details of administration arose. A Royal Commission was appointed to " inquire into the Progress and Condition " of the College in 1858, and it was shown there that the two great difficulties were the arrangements for teaching anatomy, and for giving clinical instruction.

In building Queen's College, it appears that no provision had been made for " a special department," and neither lecture-room nor dissecting-room had been built. To overcome this difficulty, the old dissecting-room in the R.B.A.I. was rented for twenty-five pounds per annum, and the use of a lecture-room in the College was granted, wherein lectures in the systematic part of the course were given. This plan, however, had the disadvantage of having the dissecting-room and the lecture-theatre about a mile apart, and involved a loss of an hour each day to students walking between the two rooms.

Professor Carlisle, giving evidence before the Commission, stated: " If the dissecting-room was placed close to the College, one can well understand the student coming to his lecture, and being able to return to his dissections, and having dissected half an hour, come back to another lecture, and then go back to the dissecting-room.

" When he comes to a lecture now, he has to walk a mile, return again, dissect half an hour, and then go back again.

" What we want is a suitable set of apartments in the neighbourhood of the College, with a dissecting-room of proper size, properly lighted from the top."

This desirable addition to the buildings in the College was not begun until 1862, and even then, only after considerable agitation had been raised. The President's report to Her Majesty on the condition of the College year after year contains references to the " want of proper apartments at the College for the purposes of Practical Anatomy." In his report for the session 1861-2, he states :

" This serious evil impairs the efficiency of the Medical Faculty, and constitutes the chief hindrance to the full development in Belfast of a very large and prosperous Medical School."

The medical building was ready for occupation in 1866, and had accommodation for a dissecting-room, lecture-room, and a medical museum. But the building did not include the complete plans which had been drawn up by the Board of Works of the Irish Government, and no provision was made for a physiological laboratory. This deficiency was not made good until 1897.

Another difficulty reviewed at the Commission of 1858 was the small number of hospital beds available for clinical teaching. The General Hospital contained " about two hundred beds, with an average of eighty to ninety patients during the winter session." As there were at this time an average of seventy students, this number of patients was nothing like sufficient for their proper training in clinical observation. It was, therefore, suggested that the Workhouse Hospital, which contained " some hundreds of beds and generally pretty-well filled," should be made accessible to students.*

Permission for students to enter the Workhouse Hospital had been obtained only after considerable trouble. But in spite of this permission, students were unable to gain an entrance into the wards. This was shown by Dr. McGee, a Poor Law Guardian, in his evidence before the 1858 Commission, to be due to the following facts :

" During 1857 the Government introduced a Bill into the House of Commons, which was subsequently withdrawn, to make entrance of students to the Workhouse Wards legal. The Guardians opposed this Bill, as they believed that it gave the Council of the Queen's College power to appoint or direct the appointment of physicians to attend on the treatment of patients in the Workhouse Hospital, and these Physicians or Medical Attendants might be Professors in the Queen's College.

At a later date (1858) the students presented a memorial to the Board of Guardians, praying admission to witness the practice in the Lock Wards. A resolution was passed by the Board of Guardians admitting them there as well as to their Fever Hospital. The Poor Law Commissioners came to the conclusion that such a proceeding did not come within the scope of the Poor Law ; and would not sanction the arrangement. In spite of this fact, the Board of Guardians

* At this time the question of entrance of students to the Workhouse was acute, as the various licensing bodies held one hundred patients to be the lowest average number which a hospital should contain in order to entitle it to recognition.

resolved to carry out the arrangement, and in 1858 Dr. James Seaton Reid (afterwards Professor of Materia Medica in Queen's College) gave clinical instruction to students in the hospital, and to these classes 28 students enrolled."

Dr. McGee also stated: "It would be a great advantage if the students were allowed admission to the Lunatic Asylum."

The question of admission of students to the Wards of the Workhouse Hospital arose from time to time, and students obtained permission to go round the wards with the visiting physicians and surgeons of the general wards. This arrangement, however, was entirely a private one between the students and physicians and surgeons concerned, a most unsatisfactory arrangement, as certificates for attendance on the practice of these gentlemen were not recognised by any examining body. But in 1926 an advance was made in this arrangement, whereby residence of medical students was permitted by the Guardians, and certificates for such attendance, including the practice of midwifery, were recognised. Unfortunately, a disturbance occurred on a night when students and/or resident medical officers were celebrating not wisely but too well, and the Guardians withdrew this undoubted privilege.

Many of the earlier students of the Faculty did not enter for a University degree,* but were satisfied with the diplomas from licensing bodies. Alexander Gordon, M.D., Professor of Surgery in the Belfast Queen's College, giving evidence before the Commission of 1858, referred to this matter in the following words:

"In the medical department of the Army, candidates who have a degree of A.B. or A.M. as well as that of M.D., will be preferred, but the name of no candidate can be placed on the list who does not present the diploma of either the College of Surgeons of London, Edinburgh or Dublin. The regulations of the Navy Board state that no person can be admitted as an assistant surgeon in the Royal Navy who shall not produce a diploma or certificate from one of the Royal Colleges of Surgeons of England, Edinburgh, Dublin, or Glasgow."

Another point mitigating against students proceeding to University degrees was that by an Act of 1851, candidates for appointments as dispensary medical officers were ineligible unless they possessed diplomas of the Colleges, even if they possess the University degree of M.D.

* At this time students taking out their classes in the Belfast Queen's College sat for their University examinations in Dublin, and obtained their degrees from the Queen's University of Ireland. In 1882 a change in form was made, and students obtained their degrees from the Royal University of Ireland, which replaced the Old Queen's University of Ireland. In 1909 a further change was made, and Belfast Queen's College became Queen's University of Belfast, which has power to examine and grant degrees. The early students travelled to Dublin for their examinations. The report of the President of the old Queen's College in 1883 referred to the matter as follows: "Parents were naturally reluctant to permit their sons, at the most critical period of their lives, to go far from home, and to remain for eight to ten days exposed to the temptations of a large city without proper oversight, and in most cases without oversight whatever."

The reason for this act was that surgical and medical training were, in most cases, quite separate, and the diploma or degree only authorised its owner to practise surgery *or* medicine.

The medical curriculum of the Faculty in Queen's College, Belfast, in 1858 normally extended over a period of four years, divided into periods of at least two years each.

The first period comprised attendance on the following classes:

CHEMISTRY: Six months, at least three lectures per week.

BOTANY AND ZOOLOGY: Six months, three lectures per week, with herborizations for practical study.

ANATOMY AND PHYSIOLOGY: Six months, five lectures each week.

PRACTICAL ANATOMY: Six months.

MATERIA MEDICA: Six months, three lectures each week.

The second period comprised the following classes:

ANATOMY AND PHYSIOLOGY: Six months, five lectures each week.

PRACTICAL ANATOMY: Six months.

THEORY AND PRACTICE OF SURGERY: Six months, three lectures each week.

MIDWIFERY AND DISEASES OF WOMEN: Six months, three lectures each week.

MEDICAL JURISPRUDENCE: Three months, three lectures each week.

In addition to the above, candidates had to attend a three-months course of practical chemistry; a six-months course in a recognised "Medico-Chirurgical Hospital" of at least sixty beds; a three-months course in a recognised midwifery hospital of not less than thirty beds, or a six-months course in a hospital of not less than fifteen beds; a second course of eighteen months in a recognised "Medico-Chirurgical Hospital" of at least sixty beds, and a three-months course of practical pharmacy. Students were also required to attend a six-months course in Queen's College of a modern language, and a similar course of natural philosophy.

During the years which followed, the Medical Faculty continued to flourish. Able teachers were appointed to the professorial chairs, and students increased not only in total numbers, but their general education began to improve.

During the session of 1849-50, out of a total of 55 students on the rolls, 27 were non-matriculated students, and 28 matriculated; during session 1877-8 the total roll rose to 281 medical students, of whom 243 had matriculated, leaving only 38 non-matriculated students. To-day the total number of non-matriculated students out of a total roll of 649 (including 87 women) is only 13, and in addition to the University entrance examination, every student must pass a qualifying examination in physics and chemistry. In addition to these numbers

on the rolls of the classes for medical students, there are in addition 41 men and 7 women proceeding to the L.D.S.*

The steadily growing numbers of medical students within the Faculty caused the usual congestion, and in the President's report for 1885-6, it is stated that " the classes of practical anatomy which during the past two years has averaged more than 200 students, met in a room measuring 75 feet by 25 feet."

The President drew the Government's attention to the following points :

" We require a new room specially lighted and furnished for histological researches. . . . We require a fully equipped physiological and histological laboratory. At present the professors are obliged to labour in small rooms and attics, inconveniently situated and imperfectly lighted. The plans by Mr. Owen provide for the above wants, and I now again venture, very respectfully and very earnestly, to press for the immediate erection of the buildings we so much need."

The President of the College continued to " venture very respectfully to press " for these needed buildings, but many years passed before they were erected, from funds obtained from the Treasury, and a block of buildings built to house the department of physiology (and for many years also the department of pathology in addition†).

The new building for physiology was opened by the Lord Lieutenant of Ireland in 1897. These buildings were further enlarged by the private benefactions in 1907, by the opening of the Musgrave Laboratories of Pathology and Biochemistry, and the Jaffé Laboratories for Histology and Physiological Chemistry. The erection of these buildings left the department of anatomy room to expand, and by additions to this building, a well-lighted dissecting-room was constructed as well as a spacious lecture-theatre, and other rooms for demonstrators and for personal study and research.

This period is one of the most important in the history of the Belfast Medical School, for changes in the policy of the College were discussed. These changes resulted in the foundation of the Queen's University of Belfast, complete as a unit in itself, with power to organize its own courses of instruction, and to examine its own students, and to confer degrees in Arts, Science, Law, and Medicine.

The new University Charter was granted on 21st December, 1908, its first

* The numbers of students during the session 1889-90 were increased by the admittance of women into the Medical Faculty for the first time. In the President's report for that session, Dr. Hamilton wrote :

" It has been a matter of great satisfaction to me . . . that these young ladies have applied themselves to their work with the most laudable assiduity and success, and that their admission to the medical classes was attended with good results in every way."

There were five women students admitted that year, but apparently only two of them proceeded to a University degree. These women students were Miss Eliza Gould Bell and Miss Henrietta Rosetta Neill.

† A complete Institute of Pathology was erected in 1933 by Queen's University close to, and in direct communication with, the Royal Victoria Hospital, Belfast.

session opened 1st October, 1909, and its first graduation ceremony was performed in 1910.

Since that date the Medical Faculty has advanced steadily. To the Chairs established at the time, of Anatomy and Physiology, Medicine, Surgery, Materia Medica, Midwifery, have been added a separate Chair of Physiology (founded in 1893), and Chairs in Pathology (founded 1901), Gynæcology (founded in 1920), Public Health (founded 1921), Biochemistry (founded 1924), Pharmacology (founded in 1928), and many lectureships as well. A sub-division of the Faculty was opened as a Department of Dentistry in 1920 (in conjunction with the Royal Victoria Hospital), with a full staff of lecturers, and with power to examine students for degrees and diplomas in dentistry.

Facilities for clinical teaching have kept pace with the advances of the Faculty within the University, and in 1903 the old General Hospital in Frederick Street, which has passed through many vicissitudes, including a change in name to Victoria, and in 1899 to the Royal Victoria Hospital, was closed, and a new and modern hospital building opened on the Grosvenor Road, by His Majesty King Edward VII. This new Royal Victoria Hospital cost £120,000 to erect, and since then many thousands of pounds have been spent on extending it, until to-day it has developed into one of the most modern general hospitals in Europe. It had a total admission to its wards in 1935 of 6,453 patients, divided over medical, surgical, gynæcological, and ophthalmic departments, and a register in the out-patient department of 45,699 patients.

The other general hospital, recognised by the University for instruction of students, is the Mater Infirmorum Hospital. This hospital, like the Royal Victoria, had a small beginning in 1883 under the care of the Sisters of Mercy. But since that date the work of the hospital has extended in many directions, and in 1900 a new and modern building was erected, and since then many additions have been made. To-day it treats 3,698 patients within its wards annually and 34,488 in its out-patient department.

Many special hospitals are also available for clinical study: The Belfast Hospital for Sick Children, on the Falls Road; the Ulster Hospital for Children and Women, in Templemore Avenue; The Royal Maternity Hospital, close to the Royal Victoria Hospital; the Ulster Eye, Ear, and Throat Hospital, Clifton Street; the Ophthalmic Hospital, in Great Victoria Street; the Samaritan Hospital for Diseases of Women, on the Lisburn Road; the Hospital for Diseases of the Skin, in Glenravel Street, as well as the Belfast City Fever and Mental Hospitals at Purdysburn, and the Workhouse Infirmary, on the Lisburn Road.

Without the close co-operation of these hospitals the Faculty of Medicine of the University could not exist, but by their co-operation a large and flourishing school of medicine has been brought into existence, whose graduates yearly pass out to the ends of the earth, as civil surgeons and physicians, as well as medical officers of the Army and the Navy, and as teachers in Universities at home and abroad.

The Treatment of the Incomplete Pneumothorax

By G. MAURER, M.D.,

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STATISTICS of large series of pneumothorax cases show that the permanent cures are between thirty and sixty per cent. The success of this treatment is greatly dependent upon the care with which cases are selected, social conditions, and the completeness or incompleteness of the pneumothorax. It has been proved statistically that the effectiveness of artificial pneumothorax increases with the completeness of the collapse. Gravesen and Matson, independently, find that there are thirty-seven per cent. fewer permanent cures with the partial pneumothorax. The permanence of the results after partial pneumothorax should be very cautiously estimated, especially when cavities have been held open for a long time by adhesions. Veran examined a large series of cases which had relapsed after the pneumothorax had been let out, and found that in ninety-five per cent. the pneumothorax had been incomplete. It is worthy of note that in the great majority of these cases the reactivations in the lung were situated below adhesions which had not been dealt with during the pneumothorax treatment.

I have a classical example of the harmful action of adhesions. This patient had a system of cavities in one lung, for which we induced a pneumothorax. After two and a half years' collapse treatment, the patient died as a result of a perforation situated in the pulmonary base of an adhesion. At post-mortem examination, the lung was completely healed except in the bases of each of the five untreated adhesions, where small caseous masses were present.

We must realise that the adhesions are not always purely fibrotic. Histological examination of thirty-seven strands and membranes has convinced me that two-thirds of the operable adhesions contain lung-tissue. The majority of the adhesions being due to perifocal inflammation around superficial exudative or cavitary foci in the lung, the parenchyma has lost its tonus, and is drawn out into a cone or a pedicle when pneumothorax is induced. Between the two extremes, on the one hand, a purely fibrotic adhesion, and on the other hand, one which consists solely of parenchyma, there are all degrees of variation in the association of the two tissues. Further histological investigation has shown me that the pulling action of the adhesion and the weight of the lung can cause a tent-like projection of the parietal pleura. The greater part of the large adhesions therefore show the following structure: Firstly, the tent-like parietal pleura; secondly, the fibrotic bridge, that is to say, the symphysis between the two pleural layers; thirdly, the lung pedicle or cone.

The partial pneumothorax has, as a rule, not only the disadvantage that the number of permanent cures obtained is low, but renders its possessor liable to a whole series of dangerous complications. Large statistics give the average number of pneumothorax cases in which exudate occurs as forty per cent.

The presence of adhesions favours the formation of exudate. The thoracoscopic findings fully explain this fact. Groups of tubercles are situated in and upon such adhesions and extend out as far as the parietal pleura. We see small trickles of exudate and fibrin running down over the lung from these adhesions. Small caseous masses can be seen shining through the visceral pleura of the lung cone just described.

An empyema, a spontaneous pneumothorax, or even a cavity perforation, may occur at any time, especially if an attempt is made to stretch or rupture the adhesions by positive pressure refills.

The constant respiratory movements of the lung and diaphragm pull on the adhesions, which are fixed to the chest-wall, so that the collapsed lung is irritated by an unceasing traction. The foci in the lung bases of the adhesions are most harmed by this traction, and increase correspondingly in size. The traction irritation may give rise to a dissemination from a hanging cavity and so to intrapulmonary or even to extrapulmonary spread of the disease. In my opinion, such a hanging cavity may sometimes be a greater source of danger to its possessor than a similar, but untreated, cavity.

The favourable influence of adhesion cauterisation on the results of pneumothorax treatment has been proved. The statistics collected by Moore from the world literature from 1930 to 1934 show seventy-five per cent. of clinical success with the operation of Jacobæus in cases of incomplete pneumothorax.

The aim of intrathoracic cauterisation is the division of all such adhesions which are preventing complete retraction of the diseased lung, or of the diseased areas of that lung. If the result of operative intervention is merely a slight improvement in the degree of collapse, it means, all too frequently, that the fatal issue has only been postponed.

The broader an adhesion the shorter it is, and the nearer the lung-tissue, drawn out in the form of a cone, approaches the thoracic wall. The majority of thick adhesions are formed from caseous breaking down, and consequently soft, lung parenchyma. It is just in these cases, where healing preventive character of the adhesion complex is recognisable with the utmost clarity, that unfortunately the "division" operation has frequently to be abandoned, because of the risk of post-operative empyema or cavity perforation. In partial pneumothorax the possibility of attaining a total collapse, by means of the Jacobæus technique, is therefore limited.

By dividing the numerous forms of adhesion pneumothorax into three groups, we get a more exact conception of the operative possibilities; and consequently, of the value of intrathoracic cauterisation.

GROUP I. Adhesions which are operable, using the Jacobæus technique, i.e., from thin threads and transparent membranes to strands the thickness of a finger and large septa, provided that these adhesions have a fibrous issue part at least one centimetre long.

GROUP II. Adhesions which should be enucleated, i.e., thumb to wrist-thick adhesion complexes, in the insertions of which a tent-like elevation of the parietal pleura can be seen, showing that the lung does not directly join the chest-wall.

GROUP III. The inoperable adhesions, i.e., direct obliterations between more extensive lung areas and the chest-wall.

Between these three groups there are intermediate forms and, furthermore, two or all three of the types may be represented in the same pneumothorax.

Cords and membranes, which from their size and structure fall into the class considered operable by Jacobæus, are divided with the galvano-cautery at their insertions in the manner now described by most writers. The thoracic base of the adhesion is frequently well vascularised, and it is advisable to use the cautery at a very dull red heat.

My observations on the difficult material at Davos show that, using the Jacobæus division technique, it is possible to obtain complete lung-collapse in every seventh case adhesions of the first group, and only these, are present. With careful selection of cases, severe post-operative complications, such as empyema or lung perforation, are rare. According to the more recent figures, these complications occur in about four per cent. of cases.

The second group of adhesions is larger. In these big adhesion systems, in parts folded, in parts cubical in shape, the lung parenchyma extends almost to the thoracic wall, and pointed cavity projections are drawn into the adherent cones of lung. In such cases the division is almost invariably out of question. Extrapleural enucleation is indicated for the adhesions of this group.

I enlarge upon the scope of the customary Jacobæus operation of adhesion division by dissecting off the parietal pleura, without injury to their insertions, adhesions which are too large for division. In the same way as an incision is made around a tumour, the parietal pleura is divided with the galvano-cautery around the thoracic insertion of the adhesion at a distance of one half centimetre away from it. The pleura must, however, be well coagulated with diathermy before division; otherwise hæmorrhage from the intercostal vessels is unavoidable. This is why I employ the combined cautery.

For the coagulation I employ the high-frequency diathermy current which is universally used by surgeons when the avoidance of instrumental hæmostasis and subsequent ligature is desirable. For the actual section the galvano-cautery is more suitable than diathermy for our special requirements.

Readers who are interested in my technique will find details in the appendix.

When the parietal pleura is dissected, a loose adhesion insertion can be separated off the ribs and intercostal muscles by means of cautious scraping movements with the cautery loop. A visibly deepening and expanding pocket forms between the chest-wall and the thoracic base of the adhesion, until finally the latter hangs from the ends of the pleural incision. Thanks to the retraction of that part of the adhesion which has already been detached, the incision in the parietal pleura can now be extended left and right, and so on, until it forms a complete circle.

The structure of the detached adhesion is in no way altered. It has a cover consisting of the original parietal pleura, intrapleural fibrous tissue, and the original visceral pleura, which protects it against perforation.

The base of the adhesion is not always so loosely attached to the ribs and intercostal muscles; it may be so firmly matted to the chest-wall by fibrous tissue that blunt enucleation is out of the question. The parietal pleura is incised in circular fashion and the cautery loop laid flat on the rib or intercostal muscle as before. Blunt dissection is replaced by an alternation of coagulating diathermy and cutting galvano-cautery at red heat. The fibrous tissue is shaved directly off the rib periosteum and muscle fascia; a procedure which gives the same result as blunt enucleation in the case of a looser insertion. We meet these solid insertions in pneumothoraces of some duration. Long-standing traction causes thickening of the originally spongy areolar insertion. In a certain number of cases this hypertrophy is the result of past inflammation between the parietal pleura and the chest-wall.

These extrapleural inflammatory processes may be more recent and acute; on incising the pleura, we meet with tough œdematous granulation tissue. Enucleation is dangerous because of the risk of mobilising tubercle bacilli. When faced with such recent infections, which have usually eaten their way through the intrapleural fibrous tissue into the chest-wall from a caseous cone of lung parenchyma, one should discontinue the operation.

The successful issue of a cauterisation in cases of the second group is far less dependent upon the size of the adhesion than upon the condition of the layer between the original parietal pleura and the thoracic wall in the adhesion zone. If the fibrous tissue of this extrapleural stratum is spongy, enucleation is easy; exceptionally, even surfaces the size of the palm of the hand, may be detached by blunt dissection. Operative intervention becomes more difficult when the adhesion base is matted to the chest-wall by compact fibrous tissue. In the presence of an acute infection, for example, periostitis of a rib, operation is impossible.

The advantages of the preliminary tissue coagulation with diathermy may be summed up as follows: diathermy renders possible the absolute security of avascular section; further, the diathermy crust does not fall off, but becomes organised and replaced by fibrous tissue, which forms a solid scar. This property of the diathermy crust is very valuable in our operation, as it prevents secondary hæmorrhage or late perforation.

The pneumothorax adhesion is a product of bacterial inflammation: diathermy coagulation sterilises and permanently seals the blood-vessels and lymphatics of the enucleation area. The likelihood of operative mobilisation of bacteria is, therefore, diminished; a principle analogous to that on which the employment of diathermy in cancer surgery is based.

Employing combined cauterisation, I have succeeded in producing a total collapse in every third adhesion pneumothorax of the second group. A severe

infection of the adhesion insertion prevents operation; as already mentioned, any adhesions which are inserted on the subclavian vessels or the mediastinum cannot be enucleated. Collecting Groups I and II together, in every second case of artificial pneumothorax with adhesions I have been able to remove the adhesions completely.

Statistics of complications: In 1,200 cases there were eight true tuberculous empyemata, fourteen mixed-infection empyemata, and three perforation of cavities. There were no cases of intrapleural hæmorrhage. Therefore, about two per cent. of severe complications, as the result of which eleven patients died within weeks or months. The remainder recovered either by pleural thickening or by obliteration of the empyema cavity by means of a plasty. The empyemata were all cases in which, by reason of disease in the contra-lateral lung or owing to bad general condition, no other intervention was possible. They were cases in which I went beyond the usual indications for cauterisation. In most cases the insertions of the adhesions into the chest-wall were infected as mentioned above.

I should like to emphasize the three perforations of cavities. One may assume that perforation owing to the enucleation method was out of the question. Brauer and Rist have independently described how destructive foci in the adhesion can lead to a softening and breaking down of the intrapleural connective tissue, and can penetrate to the periosteum of the rib or to the fascia endothoracica. The thoracascopic picture of a broad insertion of an adhesion gives no indication as to whether the interior of the insertion is softening. However, this malignant state is rarely seen. (In 1,200 cases I have only seen such contingencies on three occasions.)

And now a word as to the success of the operation: In the literature this is given as an average of seventy-five per cent., which I consider is too high. What do we understand by the success of a cauterisation? In my opinion we should only consider those cases of adhesion-pneumothorax where thick adhesions are hindering recovery, and permanent recovery is brought about after cauterisation. Veran's investigations give important support to the value of cauterisation. As mentioned before, this author studied the pneumothorax cases which relapsed after re-expansion of the lung. Ninety-five per cent. of these relapses had an adhesion pneumothorax during the collapse treatment. It is not out of the question that the five per cent. of the relapses which occurred after an apparently complete pneumothorax, had adhesions which delayed recovery, as it is known that paravertebral and parasternal bands and membranes are not always visible in the radiograph. Veran's thorough work leads one to the conclusion that a total pneumothorax is the best means of bringing about permanent recovery. It will be seen from my statements that it is possible to convert every second case of adhesion pneumothorax into a total pneumothorax by separation of adhesions.

The third group of adhesions still remains to be dealt with: The direct symphysis between the surface of the diseased lung and the wall of the thorax.

The less involved part of the lung is well collapsed, but the caseous cavitated region is matted to the thoracic wall over a wide area and probably dragged upon by excessively large refills. We usually do not have to wait long for the appearance of complications; stormy pleural effusions, or metastatic deposits in the contralateral lung or other organs.

The incauterisable adhesion pneumothorax cannot be regarded as pneumothorax treatment at all. It should therefore, if the character of the lesion and the condition of the other lung permit, be replaced by thoracoplasty as quickly as possible. In special cases we can combine the adhesion pneumothorax with phrenicectomy, but in such cases the intrapleural pressure should be kept distinctly negative. For example, when diaphragmatic adhesions and basal lung foci are present, a temporary or permanent phrenic paralysis is indicated. Again, in apical lesions where the lung lobes are adherent to one another and the lung is stretched between the dome of the thorax and the diaphragm, the combination of phrenicectomy with pneumothorax may be helpful.

When thoracoplasty is indicated, the easiest and safest method is to perform the operation over the re-expanded lung. But in practice these harmful pneumothorax cases often come to us, complicated by an effusion which will not clear up. One should never operate during the phase of acute exudation, because the parietal pleura is traumatised by even the most careful rib resection, and the post-operative exudation from an inflamed pleura may be very stormy indeed.

Even when thoracoplasty has been performed over a stationary effusion, constant observation and frequent exploratory punctures are required, because an unchecked increase of exudate in the now small pleural cavity may result in a lung perforation.

REMARKS ABOUT THE OPERATIVE TECHNIQUE.

THE site of introduction of the thoracoscope depends upon the course of the principal adhesion; it is important that the clearest possible view of this should be obtained. The Jacobæus-Unverricht instrument is still the most suitable for endoscopy. The window of the optic is placed laterally on the shaft just proximal to the electric bulb, and an object appears in its true shape in the thoracoscopic picture when it is parallel to the plane of this window. The thoracic dome and adhesions in that region are best seen when the thoracoscope is inserted in the nipple line, in the fourth to the second intercostal space, and pushed upwards and laterally. (See also my first article in *Beitr. Klin. Tbk.*, 69, 4, 2.) For lateral adhesions the mid-axillary line in the fifth, sixth, or seventh interspace is the optimum site of introduction.

The lateral region of the pneumothorax cavity can be fairly accurately examined radiologically, but not the medial areas anterior and posterior to the lung. The farther we get away from the axillary line the more we are afraid of injuring the lung. As a preliminary to every thoracoscopy I therefore perform an orientating sounding, using for this a Saugmann needle with a blunt stilette which is

about 2 cms. longer than the needle and which glides smoothly up and down inside it. First, the needle is inserted perpendicularly to the chest-wall at the spot selected for the thoracoscope; when it is in the pneumothorax cavity, the stilette is pushed a short distance beyond the needle-point. The needle is now thrust in farther, and if lung or an adhesion is encountered, the stilette is pushed back; the distance between the obstruction and the skin is measurable in this way. The Saugmann needle is now withdrawn for several centimetres, and is then pushed methodically in all directions and very carefully in the direction of the adhesion, to discover how much room is available for movement of the thoracoscope. At the same time, in this way we avoid injury to the pneumothorax lung, or to adhesions which have not been revealed by X-ray examination.

Even the small needle employed for local anæsthesia will cause minute hæmorrhages, and sometimes, although rarely, larger ones, through injury to the blood-vessels of the parietal pleura; so bleeding is even more usual with the large trocar. At the commencement of thoracoscopy the blood drops from the inner end of the cannula and the optic is continuously soiled; an occurrence which is troublesome in proportion to the duration and intensity of the bleeding. Apart from this there is increased risk of infection, because the blood-soiled optic window is often cleaned without sufficient regard for the principles of asepsis. Therefore, I always place the patient in such a position that the trocar can be introduced horizontally. Thus the supine position is best for lateral adhesions where the instrument is introduced from the mid-axillary line. For apical adhesions in which, as above mentioned, the endoscope is inserted in the nipple line, the lateral position is to be recommended.

Immediately the cannula is properly in position, its outer end is depressed by the assistant. The inner end is now the highest point of the instrument, the blood trickles down the chest-wall to the lowest part of the pneumothorax cavity, and the optic is never soiled. When endoscopy commences, the thoracoscope is still kept slightly tilted upwards. If the site of introduction has been correctly chosen, this does not prevent us from obtaining a clear view of the adhesion area. After ten to fifteen minutes the inner end of the endoscope can be lowered as much as is necessary—to the vertical position if required, for these pleural hæmorrhages are usually of short duration.

In choosing the site for insertion of the cautery, the situation of the adhesions is again the deciding factor. The cautery has to be introduced so that the loop can be placed as nearly vertical as possible to the thoracic insertion of the main adhesion. Preliminary probing is unnecessary, as we can examine the inner surface of a suitable intercostal space with the thoracoscope. Here a little manœuvre recommended by Unverricht is very helpful. A finger tip is pressed between two ribs at the desired spot, and is seen from inside as a small circumscribed elevation of the intercostal space. At the same time we can roughly estimate the direction in which the cautery will travel and examine this path

for the presence of any obstruction. Besides, we have evidence as to the approximate distance between the proposed puncture-site and the adhesion. As mentioned previously, the optic window and, if possible, the axis of the thoracoscope should be parallel to the adhesion. The cautery, on the other hand, should lie at right angles to the distal end of the adhesion. It is, therefore, obvious that the respective sites of introduction will be some distance apart. When cauterising in the dome of the thorax, the cautery should be inserted high up in the axilla, in the third, fourth, or fifth interspace in the mid-axillary line. When in position, it lies perpendicular to the endoscope which has been introduced in the nipple line in the third or fourth interspace, and placed with its inner end pointing directly towards the axilla.

The place of insertion of the cautery for the lower or so-called lateral adhesions is far more variable. It is best to go in one or two fingerbreaths caudal to the thoracic end of the adhesion, making use of Unverricht's manœuvre of pressing on the intercostal space. Adhesions, the parietal insertions of which lie between the sternum and the anterior axillary line, are attacked from the posterior axillary line. For those with bases approximately on the mid-axillary line we choose the nipple line. Adhesions on the posterior wall are divided from the axillary line. Another advantage of the considerable distance between the two puncture sites is that the outer end of the cautery and the hand moving it do not come too near the operator's head, and their freedom of movement is therefore unimpaired.

Enucleation of adhesions is more difficult than simply dividing them. The necessary slight changes in the position of the cautery loop should require a minimum of effort on the part of the operator if accurate work is to be possible. Curved or arbitrarily curvable instruments wedge in their trocars very readily. My combined cautery has the same circumference as the Unverricht thoracoscope, and is thus interchangeable with the latter; a manœuvre which often renders secondary adhesions at a distance from the main one accessible to the cautery loop.

I employ a combined cautery operated by a foot-switch with pedals on opposite sides. The cautery is connected to a special electrical apparatus which supplies galvanic current and a maximally coagulating form of diathermy. The cautery loop is, on the one hand, coagulating high frequency electrode, on the other, cutting galvano-cautery.

The coagulating diathermy, which is applied in a ring on the parietal pleura around the base of the adhesion, causes severe pain. Regional anæsthesia is, therefore, necessary. Paravertebral anæsthesia is wasteful, as, even using X-ray films, we cannot localise with accuracy the intercostal nerves supplying the base of the adhesion. So we must anæsthetise more nerves than necessary; otherwise anæsthesia is uncertain. I have designed special injection needles, 20 to 25 cms. long, which can be introduced through the cautery trocar. Under endoscopic

control the needle is thrust a short way through the parietal pleura between the adhesion and the spine. One to five cubic centimetres of 0.5 per cent. novocaine-adrenalin solution are sufficient to anæsthetise the insertion region completely. With proper technique a wheal-shaped elevation of the parietal pleura is formed. The puncture not infrequently causes small hæmorrhages, which can be arrested immediately by lightly dabbing the spot with the diathermy electrode. Direct infiltration of the adhesion insertion has proved unsatisfactory, as the accumulation of fluid interferes with the action of the diathermy and impairs coagulation. Thanks to this internal anæsthesia, one can guarantee the patient a painless operation. General anæsthesia or even narcosis is superfluous. Patients who are nervous can be prepared with Scopolamin-Eukodal-Ephetonin.

Before operating upon an adhesion, the division of which is essential for the attainment of a successful therapeutic result, it is important to learn as much as possible about its nature, i.e., to which group it belongs, and its topographical relations to the blood-vessels, nerves, and mediastinum. In many cases thoracoscopic orientation gives us all the information we require. However, it is more difficult to form an opinion when numerous strands and septa interfere with thoracoscopic vision, or if the pleura is pathologically altered and not quite transparent. In order to deal with such situations, I have constructed a special sound, with which we can examine areas which it is impossible to view with the thoracoscope. This sound is of the same calibre as the combined cautery, and has at its inner end a laterally placed oval window from which a platinum iridum probe can be thrust forward to a position at right angles to the long axis of the instrument. The apparatus is introduced closed, and the window at the end is laid against the free edge of the membrane which is interfering with vision. The probe proper is now protruded, in order to sound carefully and thoroughly the space behind the membrane. If the probe meets with no obstruction, it is placed against the posterior wall of the septum, and gentle traction is made on the instrument. In this way it is possible to get some idea of the thickness and firmness of the septum, e.g., if it is thin it is bowed forward by the drag of the apparatus, and we know that we can safely divide it for three centimetres—the actual length of the probe. If after this division we still have not sufficient information, the probe is introduced a second time, into the gap left in the membrane after cauterisation. In this manner we can decide as to operability in cases which at first seemed quite unviewable; and enucleate adhesion-complexes piecemeal, without running any risk of unexpectedly injuring the lung.

K. Heine recommends that in the case of the larger adhesions two thoracoscopes should be introduced, one before and one behind the structure, so that we can examine it by transmitted light. Transillumination of cords and membranes enables us to see if they contain blood-vessels or cavity off-shoots. The practical realisation of this suggestion is difficult (with the large adhesion systems in question we are glad to find enough room for one endoscope), but it gave me the idea of replacing the top of the special probe by a minute electric bulb. I

have found that the transillumination thus obtained does enable one to differentiate roughly between tissues.

This combination of probing and transillumination allows us to decide with greater certainty whether or not an adhesion is operable. Our operative field has increased to such an extent, however, that even the illuminated sound fails us at times, and to be sure, in the case of those thick and rounded formations, where we are in doubt whether we should speak of adhesions or pleural synechiæ.

The Punishment of Children

By Robert Marshall, M.D., F.R.C.P.I.

At the annual meeting of the British Pædiatric Association, held in Newcastle, Co. Down, in May, 1935, Doctor H. T. Ashby of Manchester and I were asked to open a discussion on "The Punishment of Children." The editor of the Ulster Medical Journal has very kindly asked me for the text of my contribution for inclusion in this number of the Journal. I noted with interest that of those pædiatricians who took part in the discussion, those of forty-five years or less were almost unanimous in their support of my contentions; some of the older men were hesitant to agree that the time has come when the infliction of physical suffering should be discontinued.

Since 1935 certain progress has been made. The "British Medical Journal," in its editorial of 20th March, 1937, has made a spirited protest against the birching of children. The Home Secretary has instituted a Commission of Enquiry in Britain, and Sir Dawson Bates a Commission on Juvenile Delinquency in Northern Ireland. I hope that soon both the British Parliaments will reverse the House of Lords retention of the Whipping Clause in the Children and Young Persons Act.

Within the past month a mother brought a tuberculous under-nourished child of two-and-a-half years to my out-patient department. The little creature sat apathetically still while I examined her. Almost from force of habit I said: "What a good little girl you've been." The mother seemed to regard my remark as a compliment to her parental methods, for she said with simple pride: "Oh, she knows better than to be anything else, doctor; she knows she'd get a touch of the strap if she wasn't." I am glad to say that before she left the room she promised me, and I believe sincerely, to go home and burn the strap.

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Mr. President and Gentlemen,

I recognize that the reason why I have been asked to speak this evening is that I wrote a letter to the "British Medical Journal" last December, in which I stated very definite views on corporal punishment: You may remember that Dr. R. L. Kitching had written, protesting against the attitude of the English Board of Education in reference to the caning of girls who have attained the

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age of puberty. In my letter I expressed the view that " the time has come when the caning or birching of any child under 16 years, whether by policemen, school-teachers, or parents, should be made illegal "; that our sailors and soldiers, even our criminals, are now protected by law, except in the cases of gross offences, only our children being in this sense nobody's child and all too frequently the victims of a form of " correction " which is a relic of barbarism. I also said that I hoped that in less than a hundred years' time Dr. Kitching's letter would be read with the same amazement as we now read of hangings for larceny. In 1833 a child aged 9 was sentenced to death for stealing twopence worth of paint, and even in 1875 a girl of 13, unable to pay her fine, was sent to jail for wheeling a perambulator on the pavement of a fashionable street.

While there are few offences for which adult males can be whipped, the statutes authorizing the whipping of males under 16 years are many and varied, and I submit that it is a blot on British justice that as recently as 1916 the Larceny Act states that a person under 16 years can be sentenced to as many as twenty-five strokes. There have been for many years in the eyes of the law no criminals under the age of seven, thank God, and in 1933 our law-givers actually raised this age to eight years.

Civilization has moved very slowly where injustice to the child is concerned: as I wrote my letter I had a presentiment that somebody would write another letter quoting Solomon and the English public schools, and I was right. Why people should regard this oriental potentate as an authority on the bringing up of children is beyond me. He had seven hundred wives and three hundred concubines and presumably some thousands of children. None of these achieved fame for either manners or morals, and if Rehoboam is a sample, it is a poor argument for corporal punishment. Of the public schools I shall speak later, but first I should like to mention enquiry I have made into the corporal punishment of children by order of His Majesty's Courts of Justice.

I addressed a list of questions to the Ministry of Home Affairs in Northern Ireland, and at my request Professor Thomas Sinclair, the member of the Imperial Parliament for the Queen's University of Belfast, addressed a similar list of questions to Sir John Gilmour, Home Secretary. I am happy to inform you that in Northern Ireland Courts this sentence has been a very rare one. I cannot but express my regret that last November two boys were sentenced to six strokes of the birch for stealing a ten-shilling note from a woman; they were the first to be so sentenced for about thirty years. The Borstal Institution in Northern Ireland has also inflicted corporal punishment on three occasions, the last in 1932, in every case for absconding or attempting to abscond. The statutory orders governing this Institution lay it down that such punishment may only be ordered by at least two members of the Visiting Committee, and specify that if applied to the posterior the inmate shall *not* be required to remove his clothing. I am informed that some of these offenders were over twenty years of age.

Sir John Gilmour's replies to my questions are detailed and valuable, and I propose to read them verbatim :—

(1) *How many children have been sentenced to corporal punishment during the past five years?*

The following table shows the number of children (i.e., boys under 14) ordered to be whipped by summary courts in the years 1927-1933. Girls cannot be whipped. Boys over 14 cannot be ordered to be whipped by a summary court :—

1927	- -	245	(241)	1931	- -	147	(144)
1928	- -	182	(178)	1932	- -	157	(154)
1929	- -	180	(177)	1933	- -	160	(156)
1930	- -	135	(134)				

The figures in brackets show the number dealt with by juvenile courts.

The number of youths over the age of 14 and under 17 who were ordered to be whipped by courts of assize or quarter sessions were as follows :—1927, 0; 1928, 1; 1929, 0; 1930, 1; 1931, 0; 1932, 6; 1933, 0—Total, 8.

(2) *Does this figure* (1) *represent a decrease from that of, say, twenty years ago?*

There has been a great decrease in the use of whipping in recent years. Thus the number of boys whipped by order of summary courts in 1913 was 2,163, 2,110 of these by order of juvenile courts.

(3) *What is the average age of these children and young persons?*

No information is available as to the ages of the children whipped, except that they were necessarily over 7 years of age (the minimum age of criminal responsibility, increased in 1933 to 8 years). Probably the great majority were between 11 and 14.

(4) *Is it obligatory—or customary—for the child to be examined by a medical officer in order to determine whether he is fit to receive such punishment?*

It is not obligatory for a child to be medically examined to determine whether he is fit to receive corporal punishment, but it was a recommendation of the Young Offenders Committee (1927) that a medical examination should take place, and it may be assumed that this is usual.

(5) *Is the opinion of a physician with special knowledge in either pædiatrics or pyschology ever sought in order to determine whether the delinquent is sufficiently mentally developed to understand the seriousness of the offence which has resulted in such a sentence?*

Medical advice is sometimes obtained by the court to assist it in deciding on the best method of dealing with difficult cases, but the Secretary of State is not in a position to say whether special medical examination took place in the cases included in the statistics. It is to be remembered that there are nearly one thousand juvenile courts in England and Wales, and the number of cases of whipping is relatively therefore very small.

Education authorities are now required to furnish the juvenile courts with reports on the health of children appearing before the courts.

(6) *Have any efforts ever been made to trace the after-history of children who have been subjected to this form of punishment?*

No, so far as is known.

[This answer seems strange to those who are accustomed to "follow up" investigations of forms of treatment far less drastic in other human illnesses.]

(7) *What are the powers of Governors of Borstal or similar institutions in this matter?*

As will be seen from the copy enclosed (Rule 34, iv) of the Approved School Rules, 1933, which regulate the management and discipline of the approved schools, requires that every effort shall be made to enforce discipline without resort to corporal punishment. Where it is found necessary, its application must be in strict accordance with the regulations laid down in Rules 35 and 36. The inmates of Borstal Institutions are older, ranging in age from 16 to 23 years, and they are liable to corporal punishment on the conditions applicable in prisons. In practice, however, it is only on very rare occasions that corporal punishment is inflicted for an offence against discipline in a Borstal Institution. During the last seven years there have been only six such cases in all the Borstal Institutions throughout the country.

In addition, Sir John very kindly sent me a copy of "The Magistrate" for July-August, 1934, in which there is an editorial article entitled "A Decade of Whipping." The years under review are 1923 until 1933. The figures show that in the first quinquennium twenty-three per cent. of offenders against whom a conviction was recorded were whipped; in the second quinquennium twelve per cent. of such offenders were whipped. During the second period there was a drop in recorded convictions from 9,350 to 6,092, and a drop in the proved charges from 62,930 to 61,490. The article points out that analysis of the figures supports the view that the fewer the whippings ordered by juvenile courts, the fewer the offences committed by juveniles, a view which is held by Mr. Clark Hall in his book on Children's Courts, in which he proves that birching is the least deterrent as well as the least reformative method of dealing with juvenile offenders. It is interesting to note that when the Children and Young Persons Bill was before Parliament, the Commons would have abolished the whipping clause, but the Lords insisted on retaining it.

The next aspect of the question is that of corporal punishment in schools. The cane is the traditional weapon of the schoolmasters, and some of them apparently think it as honourable as the soldier's sword. Tradition dies hard in the English public schools, but it strikes me as odd that ordinary schoolboys should be less humanely treated than those in "approved" schools and Borstal Institutions. One of the worst features of public schools punishment is the power given to prefects to inflict physical pain on children younger and weaker than themselves. I regret exceedingly that in one great school in Belfast the present headmaster has introduced this system in a school where his great predecessor ruled without a cane for twenty-seven years. This exemplifies the need for the public schools

to set the example and discard the cane; the less famous schools would follow.

I like to think that in increasing numbers schoolmasters realize that in the intense corporate loyalty of boys and girls they have a tremendous asset for manners and morals. Laugh, if you like, at the old school tie, but it is, in a sense, the national flag of England. If Napoleon came back to-morrow he would call us, not a nation of shopkeepers, but a nation of old boys. I should like to provide for every boy and girl a school he has the right to be proud of, and this cannot be while there exists the master who teaches with a book in one hand and a cane in the other, and where there is government by fear instead of the discipline of loyalty and self-respect. As a school inspector said to me last January, "If a boy cowers in self-defence when you come behind his desk and say, 'What's that you are doing?' you know what sort of school it is."

In Belfast we are fortunate in our Director of Education, who has done much, in his own words, "to stamp out caning in our elementary schools." But even yet it is my routine practice to write for my cardiac children at the Ulster Hospital a certificate that he or she is "fit for school, but unfit for drill, strenuous games, or any form of corporal punishment."

Corporal punishment in the home is regarded by some people as the priceless heritage of the British parent. You may prevent him buying cigarettes after 8 o'clock, and he scarcely complains, but the law—or some of its ministers—even encourages him to beat his children with a cane or strap. For some reason, wife-beating seems no longer fashionable. Child-beating is a cheap form of vice too—the victim is usually too frightened to complain, and the neighbours "don't like to interfere." If an accident happens and he is up before the courts, the fines are usually slight; a man and his wife were fined half a crown in Kent this year for cruelty to five children. Spread over the two parents, the fine works out at threepence per child. Dr. Costobadie said he had never seen anything like it in Russia or Ireland. The N.S.P.C.C. reports an increase in crimes of violence against children—4,233 boys and 4,005 girls were victims last year. Mr. Elliott, the Director of the Society, tells me that he views with alarm the increased number of crimes of violence against children. Only in Northern Ireland and the Irish Free State is a decrease reported: this might interest Dr. Costobadie.

The reason for this attiude of the law towards child-beating is, I believe, the ancient theological dogma of original sin: children were regarded, and are still regarded, as born sinful, and that badness must be hammered out of them. Personally I prefer Wordsworth's view of the matter, although I know he is not fashionable at the moment, and I think that his "trailing clouds of glory" were those qualities of truthfulness, honesty, and courage which we see in our out-patient departments and which are inherent in every child, until they are besmirched by adult minds. "The more I see of grown-ups the more I like my child."

Another argument against the infliction of pain is that it is impossible to assess

the dose or its possible sequelæ. As Cyril Burt says, " When all is said, in ninety-nine cases out of a hundred, corporal punishment, however inflicted, is likely to make the incipient transgressor, not more penitent, but more furtive and defiant." " Once a boy has been flogged, the psychologist finds it hard to regain his confidence and re-awaken his self-respect." One of the queerest arguments brought forward in its support is that moral delinquents are relatively insensitive to pain —as one would say, " This drug has no effect on this patient; let's give him lots of it."

A serious objection to corporal punishment is that it is so often—especially in school and home—a vicarious suffering. The *faute de mieux* schoolmaster who knows he is a cut above " ushering," but whose play has been rejected, can take it out on Jones minor; the harassed mother who does not dare to strike her husband, can beat the children he has made her bear him; the father coming home in a fine inward fury against his employer, or his foreman, or a trade union secretary, and called on by a whining unattractive wife to " correct " his child, is no fit person to be allowed by law to strike any living creature.

And this leads me to the most terrible aspect of this tragic business—the parent or guardian or teacher who is at heart a sadist, and such are commoner than one likes to think, for there are degrees in lust for cruelty.

I have taken up too much of your time, gentlemen, and I hope that you, Sir, have forgiven me, in that I have talked about how not to punish children. Corporal punishment is a refuge for the destitute. If children are properly brought up they need no cane. One does not drive a car by beating it when it it leaves the road.

One last word: when to our great regret you leave here to-morrow night by the cross-channel steamers, you will get a glimpse of one of our main industries, the export of cattle. You will see that there are special inspectors to see that their drovers do not strike them with the canes they wave. This is because blows with sticks, even through their tough and hairy hides, bruise their marketable flesh beneath and lessen its value. But these men may, if they so wish, go home and beat their own children with those same canes: their delicate bodies have no market value at all.

SOLUSEPTASINE

A New Drug in the Treatment of Hæmolytic Streptococcal Infections.

SINCE the time of Ehrlich, whose classical researches provided the means of combatting infections by various spirochætes, spirillæ, and protozol organisms, chemotherapy has until recently made little progress in its endeavour to discover drugs which will destroy less highly developed organisms " in vivo " without injury to the host.

A number of substances had been synthesised and shown to be powerful

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A number of substances had been synthesised and shown to be powerful

bactericides " in vitro," including compounds with the azo and sulphonamide groups, but it was not until 1935 that Domagk announced that a red dyestuff 4'-sulphamido-2 :4-diaminoazobenzol (Prontosil) protected mice against experimental infection by virulent human strains of hæmolytic streptococci. This substance was administered orally, and a water-soluble form parenterally in the treatment of human streptococcal infections.

The next step was the discovery by Trefouel Nitti and Bovet, working in Fourneau's laboratory at the Pasteur Institute in Paris, of a simple colourless product, para-animobenzenesulphonamide, which had a definite anti-streptococcal action both " in vitro " and " in vivo," and they concluded that in the animal body it was to this substance that the activity of the azo-compounds was due. There is a possibility of confusion over the nomenclature of this substance, and it should be noted that the simple sulphonamide p-aminobenzenesulphonamide may also be termed p-aminophenylsulphonamide, or sulphanilamide, and is issued under various trade names.

A related compound, para-benzylaminobenzenesulphonamide, has been found to be of even lower toxicity in animals, and is in clinical use under the name " Proseptasine." The introduction of these non-dye products has led to the virtual abandonment of the dye products for oral administration and their limitation parenterally to subcutaneous or intramuscular administration, as a result of reports of untoward reactions following their intravenous injection. Various workers have expressed a preference from the therapeutic point of view for the intravenous route, but, in the words of Vermelin and Hateman, " at the price of serious and repeated shock." Its use in this way has resulted in intense nitritoid crisis accompanied by sickness, headache, cutaneous parathesia, skin rashes, and rise in temperature.

The colourless compounds para-animobenzenesulphonamide and para-benzylaminobenzenesulphonamide, on account of their comparative insolubility in water, are not suitable for parenteral administration and a British manufacturer has recently issued, under the name " Soluseptasine," a colourless sulphonamide soluble in water, giving a stable solution of approximately neutral reaction and which may be injected intravenously, intramuscularly or subcutaneously.

It is probable that the oral preparations suffice for the treatment of a large number of cases of infection by hæmolytic streptococci; absorption of a single oral dose is in most instances complete in four hours; according, however, to recent reports, it takes from two to three days to establish in the body a state of saturation with a blood concentration of between 1 :5,000 and 1 :10,000, and in certain acute cases it would appear necessary therefore to administer " Soluseptasine " parenterally in conjunction with the oral preparations. Fulminating cases of septicæmia, puerperal peritonitis, threatened mastoiditis, and those cases in which a streptococcal septicæmia arises as a complication or terminal phase of another disease, are fields for the employment of an injectable preparation. In addition, oral medication may be impracticable or difficult in certain cases, on

account of some condition of the alimentary tract, such as Ludwig's angina or vomiting.

The anti-streptococcal activity of " Soluseptasine " determined in mice has been found to be equal to that of the dye products, and the doses tolerated in animals are seventy-five to one hundred per cent. higher.

Various theories have been advanced to explain the streptococcicidal action of these drugs. Levaditi and Vaisman believed that they acted in three ways: preventing the encapsulation of the streptococcus, neutralising the micro-organism's destructive action on leucocytes, and preventing the hæmolytic action of the streptococcus. It has been suggested that, as with chemo-therapeutic agents used in the treatment of syphilis, so these streptococcicidal drugs may have a more or less specific stimulating action on the reticulo-endothelial system.

Long and Bliss comment on the fact that multiplication of streptococci in vitro is inhibited by para-aminobenzenesulphonamide, and suggested that while this inhibitory effect probably occurs also in vivo, the marked degree of phagocytosis by leucocytes observed in such cases may be explained by damage to the streptococci caused by the drug. They believe that phagocytosis of the streptococci by the polymorphonuclear leucocytes is important in controlling the infection during the early stages of treatment, and that later mononuclèars also play a part.

Fulminating cases of streptococcal infection occur sometimes in apparently robust individuals whose lymphatic system has been, as it were, caught napping, and whose serum has a natural bactericidal power lower than normal. If in such cases it can be proved that, apart from the leucocyte stimulations, these chemical agents administered repeatedly for several days can hold in check the invading streptococci, the respite thus afforded might give the patient time to rally and bring his own natural powers of defence to the assistance of the direct chemical action of the drug.

There are experimental grounds for believing that these drugs do exert a direct chemical action on the streptococcus. It may sometimes be unsafe to argue from mice to men: but the results obtained in experiments on mice are at least suggestive. The white mouse lacks any natural resistance to intraperitoneal inoculation with multiple lethal doses of virulent hæmolytic streptococci. Such mice infected with one thousand times the minimum lethal dose, and thereafter treated at four-hourly intervals for sixty hours with a gradually tapering off of the therapy over the ensuing two weeks, were found to survive in some cases up to thirty days of inoculation.

In health the human serum has a normal bactericidal power; patients apparently in robust health who rapidly succumb to streptococcal septicæmia and those exhausted by prolonged illness may be compared to the mouse with its normal lack of resistance.

The use of streptococcicides both for prophylaxis and treatment is the greatest advance in therapeutics made for many years, and clinical reports on the latest addition to their number will be anticipated with interest.

A Plan for the Reorientation of the Social Services

By J. Campbell Young, M.B., B.S.LOND.

The chief ambition of men and of nations is, not merely to maintain present standards, but to aim continually at higher development. The achievement of this ambition lies with the children. Therefore, there is potential value to the State in every baby born a citizen. This potential value will be increased if every child is brought up in healthy conditions, and trained according to its capacity.

In adult years the potential value of the child becomes actual value to the State. This "actual value" is greater than the cost of up-bringing in childhood, and of subsistence in sickness and old-age, and of subsistence in adult working years.

I suggest that the potential value of children be acknowledged at birth, or shortly before, and a free bargain be offered by the State to the family of every child. The State will offer to pay, for the family (not, perhaps, to the family), all necessary expenses incurred for the child, that the family cannot themselves provide. The family, on their part, will undertake to commence repayment of all sums lent, at the rate of 2½ per cent. per annum. This provides for mutual acknowledgment of family responsibility, and provides, also, a check on family extravagance. On reaching adult earning years, the child will take over its share of the outstanding debt.

Cattle- and horse-breeders have always, in effect, borrowed on the potential value of their calves and foals, in order to bring them to a well-developed maturity, and they do, in fact, find that the actual value of the mature animals repays the cost of their upbringing, and leaves the margin on which the breeders live.

Are British citizens, well brought up, less likely to repay their cost than cattle and horses?

If the potential value of the children is to become actual value, and the cost of upbringing repaid, and provision made for sickness and old age, opportunity to work must be provided. To this end, I suggest that the Ministry of Labour take control of all unskilled and semi-skilled labour, and pay each labourer a minimum wage. Industry would then hire the unskilled and semi-skilled labour it required from the Ministry, and pay to the Ministry the minimum wage, plus an additional charge to support the unemployed.

Unemployment is expensive to the country, and demoralising to the unemployed; it is a double loss to the nation. It is a national problem, because while private enterprise must make profits in cash, the profits of the nation are in the well-being of its people. To prevent the demoralisation which follows on idleness, the Ministry of Labour at its regional centres would offer available work in rotation to the unemployed in its care (*unemployed skilled workers* would be eligible for unskilled work, while awaiting re-employment), and only men who refused to volunteer would require to be drafted to the less pleasant forms of work.

There is much work waiting to be done which would be of value to the nation, but would show too little immediate profit, to be undertaken by private firms or persons. Surplus labour could be offered by the Ministry for such work, and a rent on improved property charged in place of the full wages account.

Settlement in areas that once supported a population, but are now derelict, could be offered to volunteers. The initial heavy labour could be carried out by many men, and a rent charged to the ultimate tenants to repay the cost, in whole or in part, in the course of time. Young men could be trained for emigration in the process. The initial cost of such work would not greatly exceed the cost of keeping the same men in idleness, and permanent productive national wealth would be created where none now exists.

If any surplus labour still remained, some of the older men could be encouraged to form self-supporting colonies. The necessary capital could be found or repaid out of their "minimum wage" or pension, and their work, plus their pension, could be made to provide them with an almost luxurious old-age. If all unskilled labour were thus controlled, the jealousy of industry, which has hitherto obstructed the desire of the unemployed to work, and the desire of the State that work should be provided to prevent degeneration, would be obviated.

Britain is losing, indeed has already lost, much of the foreign trade that her big start in manufacture gave her. She herself has provided the younger countries with the machinery to manufacture the simpler staple products. *Britain's best hope for the future lies in continually developing new and better methods and commodities.* If she must do this, she must train and maintain a vigorous manhood, capable of holding the lead.

An important difference between man and the animals is that man works. His work gives him experience and wealth. Experience gives him the capacity, and wealth gives him the means to develop further. Wealth is made up of abstract as well as concrete things. Progress is as impossible without thought and literature, art and beauty, religion and self-respect, as without food, homes, clothing, comfort, and material wealth.

The evolution of man's body is proceeding at a rate so slow compared to the evolution of his mind, as to appear almost at a standstill.

The evolution of his mind is always towards social development. In so far as a man develops his thought and keeps it to himself, the wealth of thought he produces is as sterile as the miser's hoard of gold. Society develops in size and in quality. In a democratic society like our own, it is impossible—it has proved to be impossible, to develop quality in some sections, and quantity in others. Neither good nor bad qualities breed true. *The nation must raise the average quality of its citizens.* It cannot develop either the number or the quality of its citizens without first supplying surplus means of subsistence. Not till the vegetable kingdom had developed sufficiently did the animal kingdom appear, because animals had to be fed.

The rapid growth of the population of the last century gave rise to fears that starvation was imminent; material wealth had to be increased manifold to maintain the increasing numbers. Driven by fear of want, man's evolution took a practical form, and the industrial era met and conquered the danger. There is now plenty for all, but the fear of want is still almost universally present. Man does not work for himself primarily, but for his children. He will often be content with a bare subsistence for himself, but he cannot endure to be afraid for his children. As the fear of want arose, a scramble for the present and future available wealth took place. Every man said to himself: "If some children are to starve, I cannot allow mine to suffer." No accumulation of wealth satisfied. Successful men would not be content, but fought on to make their families more and more secure; unsuccessful men fought each other, worked for less and less money rather than none at all, and so the present conditions originated. There is still fear; individual men are still demanding greater and greater security, but the State is taking their surplus from them, and distributing it to the families that lost most heavily in the scramble for wealth. The scramble is no longer necessary, but the habit and methods of it remain. Security from actual want can be assured to every British citizen. What enormous energy would be freed for other and higher purposes, if this fear were removed!

The condition of plenty being achieved, unemployment increased, and now the fear that work will not be obtained for their sons dominates the thoughts of many fathers. The birth-rate is falling, and already the foundation of this fear begins to be shaken. Surely this passage from fear to fear can be modified. It is with this end in view that the plan I suggest has evolved.

The social services, in so far as they consist in giving money or services on a basis of charity, neither expecting nor receiving any return, are a double loss to the nation. They are expensive and wasteful, and they demoralise.

The industries of the country must ultimately bear the cost of all taxation. Social services of a charitable nature cost about £500,000,000 per annum. If they were replaced by a plan of loans (which are not suitably provided out of a revenue), industry would be relieved of taxation to this amount, and could afford, without raising prices at all, to raise wages to an equivalent extent—industry would be compensated for the imposition of a minimum wage as suggested above. The largest unlimited free market left for exploitation is to be found in rising standards of living.

Altruism analysed is often broad-minded selfishness. *It would pay Industry to raise wages.* The transfer of £500,000,000 per annum from taxation to wages would cost industry nothing, would raise standards of living without increasing prices, would increase markets, and so increase industrial activity, and decrease unemployment, and modify the need for many of the social services. It is biologically unsound to give something for nothing; it does not help a man to happiness, it demoralises him. Why then spend £500,000,000 per annum, and cripple industry, to achieve less than nothing? The charitable social services

are costly in money now; in future generations they will cost degeneration and national extinction. Just so the Roman Empire fell.

Is there nothing of value in British inheritance? Is there no "blood stock" worth preserving? I believe that, with few exceptions, there is no British family that is not worth preserving. The long, long history of comparatively free development, that makes up the inheritance of every Briton, must contain so much that is British and good, that British inheritance must be worth preserving and developing, in every family at least for one generation. Families called bad, in this or any one generation, have not come from bad stock. Bad stock does not survive many generations, it is self-eliminating in evolution, and can only survive several generations by being carried on a foundation of good inheritance.

The plan of loans at 2½ per cent. for the upbringing of children, is designed to replace the social services, the cost of which, as described above, can be devoted to increasing wages. Increased wages will to some extent modify the need for the present social services, but it is not sufficient to prevent poverty. It is essential that the State, as father to its children, should adopt the universal ambition of fathers, to give children better and better opportunities to develop.

The inheritance of every child is different, and opportunity must be adjusted to individual capacity, or waste and loss will arise to State, father, and child. Parents in all but abnormal cases will willingly undertake first responsibility for the well-being of their children. If the parents, or the family in a wider sense, cannot perform their duty, it devolves upon the State as second father. The State, in many of the social services, already acknowledges this responsibility, but in so doing tends to ignore the family. The co-operation of the parents is of great value, and cannot be ignored without waste. It is impossible for the State to adjust expenditure to need without the co-operation of the parents.

The origin of the family, as the unit of human society, is lost in very remote antiquity. The instincts, feelings, and duties, the authority, and the obedience, the intimacy and the reserve, the freedom and the restraint, the widely-differing relationships and degrees and kinds of love, that have their roots buried deep in our unconscious being, were once, and for many generations, hard, fiercely-fought problems in the forefront of man's conscious mind. Very many other systems for living together must have been tried and tried again, and found to fail. Men in every generation have tried to break away from the family unit; the Russian State has tried to flout it, and has failed. Social legislation which ignores the family unit may escape absurdity, but it can never become effective for good. Social legislation which makes appeal to the vast experience, power, and emotion, instinct in the family, will have abundant energy to carry it out, and abundant happiness, the true wealth of nations, as its reward.

In the ante-natal clinics, child-welfare centres, nursery schools, free education, free meals and milk in schools, free medical and dental care, and in hospitals, the State already acknowledges its responsibility. But these things are charities,

patronising, demoralising, expensive, inadequate, unsystematic: its children ask for bread, and the State gives them a stone.

I suggest that the State could and should use and encourage the normal, self-reliant, self-respecting institution of the family to promote the well-being of its children. It would cost but little more in cash to lend, not give, the cost of necessary things.

Repayment of loans at 2½ per cent. per annum would normally be effected in forty years. There are about nine million children in England and Wales at present under the age of fifteen. If loans of an average of fifty pounds per annum per child were made, £450,000,000 annually would be required. Repayment of loans would supply one-fortieth of the amount in the second year, one-twentieth in the third year, and the whole amount in the forty-first year, and the scheme would then be self-supporting.

Of course there would be losses, due to death of parents and children, and to default, but these could be met in various ways. Obviously 3 per cent. could be charged; one-half per cent. being earmarked to cover losses, but the scheme is of sufficient value to the State to permit, I think, of the waiving of all charges except repayment of capital. In 1933 the social services cost £480,000,000, and the cost has been greatly increased since. For this expenditure there is no repayment to the State. It is given as charity, and is often demoralising to the recipients, who grumble at its inadequacy.

As the scheme develops, it will be seen that practically all the so-called social services can be replaced by self-help, on this basis.

HOUSING.

If men had no children, they would build few homes. Men build homes for their children. Behind home-building lies the strongest motive of man's life. On this motive the State may build securely.

In 1933 the State spent £44,806,000 on the Housing Acts. The inadequacy of this amount has been followed by the enormous recent expenditure on slum clearance. The results are vastly displeasing. Cheap architecture, unworthy of the name, cheap materials already breaking up, tiny rooms, steep stairs, narrow passages, form the homes of the people. Houses are monuments, portraying the national mind of the generations that build them. Succeeding generations will read that near-sighted economy, to the verge of meanness, and beyond was the outstanding characteristic of recent years.

The present Housing Act subsidises many schemes of local authorities for slum clearance. The problem is an urgent one, and absorbs a great deal of money, but it leaves untouched the housing problem of the family that does not look for charity, but whose income is small. This income-class includes many of the hardest-working and most reliable citizens. Many of them would be willing and anxious to draw as of right, and not as charity, on the potential value to the State of their children. The great majority of the children emerging from this class are of definite value to the State.

I suggest that the State can profitably offer loans for home-building, now or at any time, to these families. Profit to the State consists, not in cash, but in the well-being of its citizens.

If a family can satisfy a Building Society that it has reasonable prospects of fulfilling its own share of a house-purchase contract, the State can with safety offer the children's share of the contract on loan, but without interest, to the family. The family, on their part, would agree to commence repayment of all loans at 2½ per cent. The loans would be made at the time of building or purchase of the house, to enable the family to select a house, more suited to their needs, their ambitions, and their prospects, than they would otherwise be compelled to do. I suggest that one-sixth of the contract price, with an upper limit of £100 for the first child, and £50 for other children, might be offered to families with an income of less than £1,000 per annum. I would further suggest that purchase of the freehold of the site be also made a condition of the loan.

The loans would pay the deposit required by Building Societies before they will advance money, and enable many families to buy their homes, who must now rent them. Often the rent they pay exceeds the annual cost of a house-purchase agreement.

The plan aims at increasing the *national* value of its homes. It would give all families who availed themselves of it, a wider choice, in which they would be able to express something of the national feeling for the home. Architects and builders would find less necessity to erect the too numerous monuments to meanness they must perpetrate to-day. For them there is neither pride nor pleasure, and little profit in such work. Poor houses are poor security for loans. I think that the willing co-operation of the Building Societies, the Royal Institute of British Architects, and the recently formed Builders' Association, would be readily obtained to ensure that the houses built under some such plan as this would be of real and lasting value, would be real security for the loans to both the Building Societies and the State, and after twenty years or so become a source of pride and profit to the family.

Housing does not depend to any large extent on imported materials. Fundamentally the two things needed are work and capital—the work of the architect, the builder, and of the workers in the building and auxiliary trades, and the work of the politicians. The new capital required to finance the plan would be provided to a larger extent each year by the repayments of previous loans, and after forty years of full working the plan would be self-supporting—would continually increase the value of the nation's homes without any further State aid.

There is nothing revolutionary about this plan. It simply assists normal human home-making along normal well-tried lines. It requires no new Government department. The Building Societies already have all the organisation required. They, in their own interests, could and would verify the fulfilment of necessary conditions, they could include the State contract with their own, to them the loans could be paid, and they could collect the State's dues with their own. Only

when their contract with the family was completed, would the need arise for direct collection of debt by the State. Even then many families would prefer to continue full instalment payments to the Building Societies till the home was their own.

The increase of business would provide additional revenue for the Building Societies, and I think they would render these services without other fee. The State would have to bear losses, but they would be small, they would be trifling in comparison to the national gain in health, happiness, and family pride and responsibility.

I am confident that this plan, started on a safe foundation of small loans, would appeal so strongly to the powerful motives instinct in family life, that larger and larger loans could be offered with safety, and smaller incomes enabled to buy homes instead of renting houses.

Loans for home-building would not be made out of revenue, but would be new money. Artificial inflation, with rising prices, occurs when currency is increased without a corresponding increase in national wealth. All loans for home-building would, very promptly, increase the national wealth in exact proportion to the amount of new money created. National wealth would be further increased by the pride and happiness, comfort and health, that families would enjoy, and by an improving standard of domestic architecture. Furthermore, the money so lent would be sent on so active a career of exchange through all the building and auxiliary trades, that prices would tend to fall.

Building subsidies are temporary; they give no promise of permanent trade; they discourage capital outlay to increase production, and prices are driven up. The loans suggested would be permanent, and would encourage capital expenditure for greater production, and greater production would automatically tend to lower prices. Fear of the evils of inflation may surely be ruled out.

MEDICAL SERVICES.

The following pages discuss the advantages of extending the operation of the National Health Insurance Acts, to cover the whole of the population, and suggest

(1) That an efficient medical service is essential and, therefore, worth paying for.

(2) That the National Health Insurance Acts, though well planned, are too inadequately financed to achieve any result worth having, from a national point of view.

(3) That the money actually spent on health services in Great Britain is enough to provide a good service, but that it is wastefully applied.

(4) That the general practitioner, the consultant, and the hospital services can be used to much greater advantage than they are.

(5) That treatment of individual citizens by public health medical officers cannot make for efficiency.

(6) That the cost of present medical services is about three pounds per person

per annum, and that this amount could and should be collected and administered expressly for the promotion of national health.

(7) That the treatment and prevention of disease is of less importance than the promotion of positive health, and that the collection, study, and application of knowledge be planned for this purpose.

There are many institutions in the national life which have grown up with the nation, and are now so integral a part of it that their automatic functioning is taken for granted, and Government interferes with them hardly at all. It is certain that these institutions were well tested, in times past, before they won such universal approbation as to be accepted without question by succeeding generations.

The family doctor, or general practitioner, is one of these institutions. He holds a place in the affections of the people that would enable his sphere of usefulness to be widely extended.

Out of the general practitioner's need for assistance in special cases has grown the consultant service. This service also has won the approval and affection of the people.

Out of the specialist's need and desire to study, and surely also out of their love for their service, the hospitals grew, monuments to the altruism of the medical profession, as well as to the kindly patronage of the wealthy donors of money.

The remuneration of the medical profession for its hospital services scarcely exists. The surgeon, for example, who gives most of his days and many of his nights to hospital work, must, if he would live at all, extract from his few paying patients the largest fee he can wring out of their anxiety. This stupid system survives only because the pride and the gratitude, combined with the helplessness, of the paying patient permit it. The surgeon hates it, nobody likes it.

The general practitioner, in order to meet the needs of poorer and poorer, but still independent, town-dwellers, reduced his fees and increased his hours of work, till he could no longer provide a service worthy of the name. The number of his patients reduced the amount of attention he could give to them beyond useful limits, and their poverty precluded them from obeying his instructions for treatment.

The National Health Insurance Acts came to the rescue, but the standards of cheap medicine had fallen so low that a considerable raising of them brought no real profit to the nation. It was hoped, for instance, that the records of ill-health kept by the panel doctor would be of great value in pointing out where the ills of the people chiefly arose. Two thousand five hundred panel patients, plus private practice, was the allotment to panel practitioners.

There are three main functions of medicine :—

(1) The treatment of disease when it arises.

(2) The prevention of disease.

(3) The study and promotion of *positive health.*

The panel practitioner, working eighty hours a week, cannot effectively perform the first of these functions. He simply cannot produce valuable records, when he has not time, even to examine some of his patients properly, and has to send many of them to hospital for the purpose. Preventive medicine is quite beyond his power, and still undreamt of are any positive health measures.

The panel practitioner is set to work in just the environment where positive health services are most required, and where the material for study of positive health is most readily available. But he cannot study, he cannot collect the material for study, he cannot even prescribe properly. Quantity of work shuts out quality.

The methods of the National Health Insurance Acts stand the biological test well; they are founded on the natural development of the medical services of the country, and they interfere very little with the liberties of patients and doctors. But they perpetuate a very low standard of medicine; they have added greatly to the burden of the voluntary hospitals without acknowledgment; they have made the people hospital-minded without providing hospitals for them. In short, they are inadequate and mean.

The public health activities of the Ministry of Health are in a different category. Primarily their function is to provide communal health services : services required by everyone, rich and poor, in common. It is not the function of public health to render medical services to individual citizens, nor can such services be rendered without duplicating and conflicting with the general practitioner service. Individuals cannot be visited in their homes when ill, by State-employed medical men, nor can the supervision of the health of an individual be properly carried out by half a dozen different organisations with little or no contact between them. The flitting of the immature citizen from the care of the ante-natal clinic to the maternity hospital, to the child-welfare centre, then, perhaps, if actual sickness arises, to an offended family doctor, thence after a wide gap to the schools medical service, which finds that bad teeth, bad tonsils, bad ears, bad nutrition, are already undermining health; on leaving school there is another wide gap before the panel doctor finally takes over; this cannot be called a system. Stop-gap services create further gaps.

A child is subject to conditions affecting its health nine months before it is born. I suggest that every child be registered on the panel of a family doctor as soon after conception as possible, and that the doctor be held responsible for the positive health of the child throughout its life. In order that material for the study of positive health may be made available as soon as possible, the doctor shall be required to keep a full record of circumstances likely to affect the child's health of body or mind. So important will this record be that he will probably require trained secretarial assistance. He will not be able to supervise the positive health and treat the sickness of more than 1,000 to 1,500 persons.

The nation is becoming fond of its hospitals. They are no longer purely charitable institutions. The right to enter them is becoming a privilege for

which people are willing to pay. The general practitioner cannot hope to maintain his positive health service of the future, without the special facilities of hospitals, which must, therefore, be readily available to him.

It is estimated that the annual medical bill of Great Britain is—

Private expenditure on medical services - - -	£67,000,000
National Health Insurance benefits - - - -	13,000,000
Cost of medical services falling on public funds - -	28,000,000
	£108,000,000
Cash benefits in maternity, sickness, etc. - - -	£19,000,000

There are about 40,000,000 persons in Great Britain. Three pounds per annum per person is roughly the cost of the medical services of Great Britain at the present time.

Civilised people begin to realise that healthy "lower classes" are just as essential to the nation as healthy "upper classes." A more extreme view is taken in Russia. This is a modern, selfish conception; an older and more potent teaching says, "Thou shalt love thy neighbour as thyself." Altruism came before the broad-minded selfishness, which says, "It is better for me, when it is well with my neighbour. It is to the advantage of my country, and my purse, to raise all standards of life, for all citizens." Mental and physical defectives first drew men's sympathy, and eugenists are alarmed, lest the nation suffer degeneration in consequence. Certainly it is folly to feed, clothe, and educate defective children expensively, and, at the same time, allow healthy children to degenerate through simple under-nourishment, and other avoidable, though possibly imperfectly understood causes.

It is essential to understand to what extent ill-health of mind and body are the result of civilisation, of the rush and noise and incessant movement of the life in crowded towns; of the artificial nature of many foods, canned, dried, chilled, frozen, and manufactured, before they reach the town-dweller; of the absence of facilities for exercise of mind and body; of the absence of leisure and quietude, without which, understanding and appreciation of experience is impossible.

Every cell in a man's body demands opportunity to exercise its capacities, and every man demands the same opportunity for himself and his children. The industrial civilisation of the present time, in almost all countries, gives insufficient attention to the harmonious development of all the capacities of men. It insists too strongly on earning capacity. It was, no doubt, necessary to develop the means of communication between, and the means of feeding, the rapidly increasing populations of the last century; but that urgency is over. The work is accomplished. There is plenty for all, and populations are tending to come to a standstill, and threaten even to fall in numbers. The need now, as all men realise, is to consolidate the material gains of the industrial era, and develop the

neglected moral, spiritual, and cultural aspects of man's character to the level of his intellectual, scientific, business, and other utilitarian capacities.

In the grown men of to-day, evolution is completing the industrial experiment; they are materialists, but they wish for a more complete and a more harmonious development for their children.

The highest duty of medicine is to study and apply the means to this end. This is Positive Health practice. The materials for this study are not found by the bedside, nor in hospitals or clinics, but in the homes of the people. The only student who can collect this material, the only man who would be welcomed, not to say tolerated, in the homes of the people, is the family doctor. He knows that his bottles and treatments are but poor aids to nature in the cure of disease, and he would delight to study and serve nature in the promotion of positive health. Parents would not be slow to seek his advice, if he knew what advice to give. At present he does not.

The National Health Insurance Acts must be more generously planned. All citizens must, if possible, be brought within its scope. The number of persons on one doctor's panel must be halved, and the capitation fee doubled. Then it will be possible for positive health to be studied. The doctor would then be able to keep full records of all essential circumstances likely to affect the well-being of the persons on his panel. He could then be held, in growing degree, responsible for reducing morbidity-rates. He could judge his efficiency by comparison of one year with another, and of his own set of figures with another's.

If every citizen were required to be registered with a general practitioner, at or before birth, or on becoming resident in the country, a complete perpetual census would be available, and many useful statistics, not only medical in nature, could be collected easily, if required for other purposes. In order to maintain the privacy of records, as well as to ensure the identity of them throughout the life they recorded, I suggest that finger-prints and a number, only, appear on the record. The doctor would undertake to keep the "key" list of names and numbers secure and private. Incidentally, normal citizens should not object to a central register of finger-prints, and if the use of finger-print identification were not abused, it would often prove of value. The records would be based on questionnaires, to be filled up for all persons, at annual or bi-annual examinations, supplemented by the doctor's own findings. The doctor would thus serve as a definite link between every individual citizen and the State. He would function with his fellows, as a nervous system in the Body Politic.

The cost of this "nervous system," at present values, would be one pound per person per annum, and would include, of course, the general practitioner service as rendered now, the universal application of preventive medicine, and advice on positive health, as it became available. Doctors are not good clerks, and their skill can be better employed than in making general as opposed to individual records. Trained secretaries would be required, if the fullest use were to be made of this system, and information for national health or Government purposes collected.

HOSPITALS.

The growing interest in and affection for the hospitals is a valuable national asset, but it is changing the function of the hospitals. They were established as charitable institutions for destitute people, and, until recently, only destitute people applied for admission. The National Health Insurance Acts taught the beneficiaries that sickness need not be a sudden and unexpected financial tragedy. Medical care and medicines were insured, and available as of right. They did not understand or appreciate the exclusion of specialist advice, and, when the need arose, they disliked the large fees that were payable. So they were sent to hospital, and got the specialist's services free of charge.

That a patient was an insured person, was taken as sufficient evidence of his inability to pay a consulting-fee. From the out-patient department the insured patient was admitted to the wards. The hospitals could no longer work on a purely charitable basis, and commenced to make charges. Almoners were appointed to restrain "abuse" of hospital services, and patients, because they paid something, thought they paid all, and retained their self-respect. The amount of work done by the specialist staffs of hospitals, without reward, is daily increasing. The already disproportionate consulting-fees charged to paying patients must increase, and drive more and more people to swallow their pride and attend hospital. Eventually only the wealthy will be able to take private advice, and even they will be shocked at the fees they will have to pay.

I suggest that the problem be faced squarely, and that the hospitals be enabled to provide specialist services to all who require them. Let the voluntary aspect be retained, and be responsible for equipment and for buildings, so that local pride and local charity be given scope for its admirable activity, but let the payment of specialist staffs of hospitals be included in the cost-per-person account of the National Health Insurance plan.

I have insufficient knowledge on which to suggest details, but think that thirty shillings per person per annum would provide ordinary hospital out-patient and public-ward, as well as general-practitioner, service for families whose average income per person is less than fifty pounds per annum. Family incomes averaging over one hundred and fifty or two hundred pounds per person per annum could afford three pounds annually for each member, and would be entitled to the type of service now provided by the paying-wards often attached to hospitals. These private wards would have out-patient departments where the long waiting, often necessary now, would be reduced. The assistant staff would do the harder work, and gain the experience of the ordinary hospital service, while the seniors would be freer to teach, and would draw a larger income from the paying-wards.

Specialist consultation would have to be available in the homes of the people. Patients able but unwilling to attend hospital, would be at liberty, on payment of a small fee, to request a consultant to visit the house, or to make an appointment at the consultant's address. There would be no compulsion on the plutocrat to use these services. His annual payments could be regarded as charity or

taxation, and he would be free to keep the present expensive nursing-homes and specialists in his service. The children of plutocrats have no certain security against becoming chargeable to the nation in later life, and the three pounds per annum would serve as insurance against the risk.

A panel of more than 1,500 persons would require an assistant to be engaged, who would reach partnership status when the practice attained 2,000 to 2,500; at 2,500 a further assistant would be added.

All persons will require to pay their own capitation fee, and the fees of their children if possible. Where families cannot pay for their children. I suggest that the fee be lent at 2½ per cent., as suggested above, and be repayable in adult life by the child. The general practitioner would keep these accounts and collect the repayments from the families.

A Medical Council, divorced as far as possible from Government control, would administer these funds; would formulate the questionnaires, reviewing them, and using the resulting information to the best advantage and would advise on the distribution of hospital accommodation. If voluntary contributions fell off, the Council might have to supplement hospital funds. They would leave hospital administration in the hands of staff and governors as at present, to permit of free development, but would allot money for the payment of staff, in proportion to the size of the community served, and the nature and amount of the work done. They would be responsible for the training of students, midwives, nurses, and if found necessary, of secretaries.

Well-trained midwives appear to show better results in midwifery than doctors. Midwifery has always been the province of women, and perhaps should return to them. The knowledge of the doctor would, perhaps, be best applied in antenatal care, and for the anæsthesia and supervision of labour. There would be less use of instruments, and less interference with natural processes. The use of instruments should be, and if positive health ideals were established, would be confined to specialist obstetricians, who would be available under the system suggested.

It might be found possible and advisable to have nurses available for home-nursing. A nursing service that could be freely drawn upon might indeed prove an economy, for many cases that now go to hospital could be treated at home by the family doctor under consultant's advice.

The employment basis of the National Insurance Acts leaves out the dependants of insured persons, and is, therefore, an unsatisfactory basis. I suggest that cumulative sick-leave on full pay of, say, one week per year of service, should be the responsibility of employers, and that longer periods of sickness should bring the individual under the care of the Ministry of Labour, for financial assistance. Money payments should be divorced from health services.

NUTRITION.

The growth of large cities has made the distribution of fresh and natural foods difficult and expensive. Poverty has put them out of reach of many

families. The consequent limitation of markets has prevented the British farmer from increasing his production, to meet the needs of the rapidly increasing population of the last century. His comparatively small production prevents him from lowering his prices to compete with large foreign producers, in spite of the costs of carriage which the foreign products have to bear. If another war cannot be avoided, this dependence of Britain on foreign food will be a greater handicap than it was in the Great War.

The problem of under-nourishment in Britain is exercising the minds of many men to-day. Not many people now starve. The social services enable nearly everyone to obtain food enough to fill their bellies, but millions of people cannot buy enough of the kind of food they require to enable them to reach and maintain their normal development.

The State is anxious about the nourishment of its children. It provides, in some schools, free or cheap milk, and in others free meals, and it gives free or cheap milk to nursing mothers and to infants. Milk is specially recommended as a good food, but it is expensive, and many families cannot buy enough of it.

The State would like its children to have other foods as well—dairy produce, fresh vegetables, fruit, and meat. The State would also like to see its milk, and dairy, and cattle industries flourishing, in order to keep people on the land, and also in order to secure more food in time of war. Increase of home production of food would decrease foreign indebtedness. The State supports these industries by subsidies and tariffs.

Let the State lend to the children, on the security of their potential value, and of the family promise to repay at 2½ per cent., as described above, the amount of their bills for these foods. Let the doctor of the child order the necessary diet, let an economic price be estimated, and let the amount be loaned to the parents. In some cases, no doubt, the money would be misapplied by the parents, but mothers, and even fathers, as a rule would be loath to rob their own children.

If it is thought that parents have, in fact, fallen so low, let them order the necessary milk, for instance, over the signature of the child's doctor, and let the State pay the bill to the milkman, through his bank, who could verify the doctor's signature through his bank. The parents would repay 2½ per cent. of the loan per annum. Both these easy systems would be available if the registration of all children with a general practitioner were accomplished. The doctor's secretary could collect the repayments, and keep the accounts up to date, when the bills were brought for the doctor's signature.

At present proper food might be provided through the Friendly Societies; but simple registration without the conclusive identification of finger-prints, or continuous dependence on the Friendly Societies, would open a wide door for default in repayment by the child in adult life. Loans for home-building would be secured on the house; loans of health insurance fees would be accompanied by finger-print records, and would offer future benefits as well as immediate advantage; but without the continuous contact maintained between the citizen and the

State, by the medical record suggested, systematic default on loans for nutrition would be easy and tempting.

The success of the plan of loans, if it is to be extended to provide for such imponderable benefits as nutrition and education, depends on its continuous appeal throughout the life of the citizen. The privileges of British citizenship must exceed its liabilities. Under the plan, a child who benefited and incurred a debt would be assured of the opportunity to work and repay the debt; he would be assured of a minimum wage in sickness and old age; and when he became a father, the loans would be available to help in the upbringing of his family.

Finger-print registration, confined to all borrowers (parents and children) under the plan, would obviate the danger of defaulters changing their identity and claiming fresh benefit at a later date, but without universal finger-print registration the State would be liable to loss on loans to children who defaulted in adult life, and did not claim any further benefit for themselves or their children.

All children in a family and, of course, both parents would be liable for repayment of the family loans, though the State could afford to take a generous view in some cases of hardship, and often, on the death of a child, would cancel part of the family debt.

The health of agriculture as well as of children would be improved by extending the plan of loans to provide proper nutrition. The loans would enable families to pay economic prices for milk, dairy produce, eggs, meat, fresh vegetables, and fruit, and subsidies, which are but patch-work policy, would be unnecessary. Increased consumption would lead to increased production; increased production would lead to lower prices, and would employ more families on the land, where they would be more easily and cheaply fed than in the towns.

The prompt and proportionate material increase of the nation's wealth, which would offset the inflationary tendency of new-money loans for home-building, is not so clearly visible when food has been chewed and digested by a hungry child, but health of its children may be thought of as wealth of the nation, without a great strain on the imagination.

The money lent would benefit, not only the children, but many distributing and producing industries as well. If these industries were under the control of one board of directors, I think there is no doubt whatever that they would finance the loans (at 2½ per cent. repayment only), and call it good business, regardless of any improvement in the health of the children. It would be good business in a long view, for repayments of old loans would supply every year a larger proportion of the new money required, till, after forty years, the increased business and profits, which would have accrued all along, would continue without further outlay.

It would be premature and absurd to work out detailed methods of making loans and collecting repayments, before the plan is approved by anyone except myself, but the creation of any new Government department is repugnant to a fundamental principle of the scheme, which is to use, and allow to develop, those

methods and institutions in the national life which have grown up with the nation, and whose efficiency has been thoroughly tried and tested in the past. The function of Government would be to facilitate the increased use of the motive power latent in these methods and institutions, but not to interfere with them.

Man is clever, but not clever enough to foretell where interference with old methods, or imposition of new ones, will eventually lead. Socialism, Communism, Nazism, Fascism, all demand that Government shall do new things, and make revolutionary experiments. If they succeed for a time, it is at the expense of freedom of development. Man does not know whither his development is tending. The same forces of evolution that formed man from very simple beginnings, have, out of men, formed nations, and individual men may have as little understanding of the destiny of nations as, say, a kidney-cell has of the destiny of the man it serves.

Potential in the single-celled ovum, whence each human being grows, are all the physical, mental, and spiritual capacities of the adult. With all our knowledge, we can add or subtract so little. We may give the same education, and provide a similar environment, but the results are always different. The experience of the child, the lesson it learns from our "controlled experiment," is influenced by, and is so small an addition to the experience of its ancestry since the world began.

Let us, then, respect the past experience of the nation. Let us use our cleverness to understand it a little, let us not hasten to alter or control; let us obey sometimes the high command, "Be still and know that I am God."

Hydronephrosis

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Hydronephrosis means dilation of the pelvis of the kidney by urine which has accumulated, because of obstruction of the urinary tract at some point distal to the pelvis, most commonly the pelvi-ureteral junction.

If the obstruction be at a lower level, the ureter becomes dilated first, and the kidney is involved later. Occasionally the obstruction is confined to one or more of the minor calyces.

Formerly it was considered that either intermittent or gradually increasing obstruction was required to produce this condition, and that sudden complete obstruction led to anuria and atrophy, but Hinman and others have shown by animal experiment that complete obstruction is followed much more frequently by hydronephrosis than by primary atrophy.

The increased intrapelvic pressure is in turn transmitted to the renal tubules, which dilate and press upon the adjacent veins, thus impeding the circulation and accelerating the process of atrophy of the parenchyma. Indeed, experiments have shown that ischæmia is more important in the causation of atrophy than back-pressure on the tubules.

At first the tubules in the peripheral portion are compressed, and here also pressure on veins exercises a damaging influence on blood-supply. The glomeruli appear not to become dilated, but to undergo fibrous atrophy.

Nevertheless the kidney continues to function for long periods even when there is only a thin shell of renal tissue left—otherwise, of course, the sac would cease to increase in size.

This has an important bearing on treatment, and constitutes a strong argument for conservative surgery rather than nephrectomy of these damaged organs.

In early cases function can improve enormously if the obstructive factor be removed, and in late cases the process can at least be arrested, and the individual left with some active renal tissue.

Under normal circumstances the pressure in pelvis and ureters is nil, and in experimental animals it is found that a rise of 10 mms. of mercury leads to a diminished output of urine which ceases altogether when the pressure rises to 20–30 mms. Probably for this reason the hydronephrosis produced by complete obstruction becomes stationary in size when this pressure is reached. Normally, however, in the human, hydronephrosis is not (except as an accidental event) produced by complete but by partial obstruction, so urine continues to be filtered through but much less concentrated and of lower specific gravity than on the normal side. Duncan Morison has shewn that in hydronephrotic sacs, colloids, solutions, and dyes introduced are reabsorbed through the tubules and lymphatics.

An additional factor influencing the output of urine is the fact that there is

an afferent set of arterioles to the glomeruli, and an efferent set round the convoluted tubules, which are under different nervous controls.

Winton and others have demonstrated that perfusion of weak adrenalin solution causes dilatation of the afferent and constriction of the efferent arterioles, with a consequent increased flow of urine, and that higher concentrations of adrenalin had the reverse effect.

Weak stimulation of the nerves of the pedicle or section acts similarly to weak adrenalin, and stronger stimulation to strong adrenalin solutions. No doubt these factors have an important influence on urinary output in hydronephrosis, since the majority of cases apparently depend on over-action of the sympathetic, as will be discussed later.

The causes of hydronephrosis, as found clinically, may be classified as mechanical obstructions and obstructions due to intrinsic neuro-muscular disorders.

Any blockage of the urinary tract, either of the lumen by stone, tumour, valves, etc., of the wall by atresia or stricture, or pressure from without by neoplasm, aneurysm, etc., is liable to lead to dilatation of the urinary tract proximal to it. Both kidneys will be involved if this occurs in bladder or urethra, or affects both ureters. Enlargement of the prostrate is a familiar example of this occurrence. One kidney will be affected if a single ureter is implicated.

I do not propose to discuss this group of causes, as treatment has to be directed to the primary condition, relief of which may be expected to arrest the progress of the hydronephrosis, unless infection has supervened or the presence of a tumour demands nephrectomy.

There remain, however, a number of cases in which the obstruction is ascribed to local conditions, e.g., bands, adhesions, ptosis, and aberrant vessels. Apart from ptosis, these conditions are only likely to be discovered by exposure of the kidney. Considerable doubt now exists about the direct obstructive effect of these factors. The ureter is a relatively thick-walled tube, and there is considerable laxity of its surrounding tissues. Experimentally it has proved very difficult to produce obstruction unless an acute and fixed kink is made. In actual fact one sees many pyelograms showing ureteral kinks without any increase in size of the proximal ureter and pelvis. Marked ptosis is frequently encountered without any evidence of hydronephrosis, and when these co-exist it must be remembered that the increased weight and size of a hydronephrotic kidney is itself conducive to ptosis. Aberrant vessels are certainly found very often in conjunction with hydronephrosis, but quite often do not coincide with the point of narrowing, but stretch across the distended sac at a higher level. It is indeed difficult to believe that an artery passing either in front of or behind the ureter could do more than push it aside, unless it could compress it against an unyielding counter-force. Nevertheless, the existence of these vessels in so many cases cannot be disregarded, and Quinby postulates that the pulsation of the artery acts as a stimulus and upsets the normal peristaltic rhythm.

It is now generally agreed that achalasia occurs at the pelvi-ureteral junction, and that this is comparable to achalasia of the lower end of the œsophagus. This point is the site of a sphincter action, although no true sphincter can be demonstrated histologically; observation of a number of cases of hydronephrosis in which the constriction can be seen, yet in which no resistance is offered to the passage of a ureteral catheter from below, confirms this opinion.

Radiographic observations also support this view, and French observers claim that by serial radiograms taken during the excretion of uroselectan, similar sphincter action exists at the proximal and distal ends of the stems of the minor calyces. Certainly in pyelograms showing various degrees of pelvic dilatation, one notes that the dilatation does not reach the infundibula or give rise to the characteristic clubbing in place of the normal cup-shaped appearance until an advanced stage. Occasionally one sees clubbing of the infundibula with still narrow stems suggesting a local achalasia.

The nerve-supply of the kidney from renal plexus and splanchnic nerves via the semi-lunar and first lumbar ganglia, reaches it almost entirely along the arterial walls in the pedicle and even in the vessel walls. The results of section of these nerves by sympathectomy in relieving early cases of uncomplicated hydronephrosis and associated pain confirms the existence of achalasia. Few if any vagal fibres reach the kidney—Dambrin denies their existence, and vaso-constrictor fibres greatly exceed vaso-dilator; the former group act as sphincter constrictors. On the other hand, any interference with the ureter may damage its intrinsic nerve-supply and result in its dilatation; although various observers disagree about the existence of intrinsic ganglia, Caporali's experimental work seems to prove their undoubted existence.

I have analysed the findings in the seventy-one cases of hydronephrosis admitted to the wards of the Royal Victoria Hospital in the years 1925-1936 inclusive. Forty-seven of these were operated on, and in these the exact condition present can be stated.

I have described as achalasia those cases where no other possible obstructive factor was present. I have not included in this series cases where renal or ureteral calculi were known to be present before operation, as in these treatment was concerned with the stone, and hydronephrosis was a secondary effect. The one case in which a stone was found was only diagnosed at operation.

Condition found.	Number.	Per cent.	Nature of operation.
Achalasia	20	42.5	Nephrectomy 11, Sympathectomy 7, Explored 2.
Aberrant vessels alone	11	23.4	Nephrectomy 7, vessel tied 4.
Aberrant vessels combined with:			
(a) kinks and bands	1	2.1	Nephropexy and vessel tied 1. Bands divided.
(b) kink of ureter	1	2.1	Vessel ligated.
(c) horseshoe kidney	1	2.1	Nephrectomy.
Hydro-ureter and hydronephrosis	3	6.3	Nephrectomy.
Strictures (1 doubtful)	3	6.3	Nephrectomy.
Double ureters	2	4.2	Nephrectomy.

Ptosis - - - - - -	1	2.1	Nephropexy.
Bands - - - - - -	1	2.1	Division of bands.
Kink and Stricture - -	1	2.1	Nephrectomy.
Inflammation of pyramids -	1	2.1	Nephrectomy.
Stone - - - - - -	1	2.1	Nephrectomy.

If we accept the view that aberrant vessels act by initiating achalasia and the hydro-ureter group as a similar condition involving the uretero-vesical junction, thirty-four cases at least come into this category.

In the present series there were forty-two women and twenty-nine men.

In forty-six cases the right kidney was involved alone, in nineteen the left. The condition was double in five, in one case the side was not stated. The duration of symptoms ranged from three hours to twenty years. The average age was 34 years, the youngest 13, and the oldest 65.

I have tabulated the symptoms in their order of frequency.

	Number.	Per cent.	
Pain - - - - - -	63	88.7	
Vomiting - - - -	17	23.9	In one case the only symptom.
Frequency - - - -	15	21.1	
Swelling - - - - -	9	12.6	
Hæmaturia - - - -	8	11.1	In three cases it was the only symptom, and in one there was frequency and hæmaturia only.
Dysuria - - - - -	5	7.0	
Oliguria - - - - -	5	7.0	
Shivering - - - -	3	4.2	
Polyuria - - - - -	2	2.8	
No history - - - -	2	2.8	
Anuria - - - - -	1	1.4	

The pain is described variously as aching, dragging, burning, dull, often crampy, and severe during attacks. Almost twice as many had intermittent as had constant pain, often months or years intervened between the attacks. In the vast majority, pain was in the costo-vertebral angle, but sometimes was felt at a lower level or in the back, and in a few was described as abdominal.

About one-third had no radiation, the remainder complained of radiation most commonly to the back or downwards to groin, thigh, and abdomen. Only eight specified radiation to external genitals. In one case the shoulder was implicated.

About twenty per cent. found the pain relieved by rest and aggravated by exertion; in a few heat gave some relief, and a small number required morphia during attacks.

Pain probably depends on distension, peristalsis, and the dragging of the enlarged kidney, but there seemed to be no constant relation between the size of the hydronephrosis and the pain; probably the patient's threshold for painful stimuli is the determining factor in many cases. Presumably during attacks there is a temporary increase in tension.

Vomiting seems to be a reflex phenomenon occurring during these attacks, but no doubt in some cases there is pressure on duodenum, stomach, etc. The one

case in which vomiting was the only symptom had a very large sac displacing the colon, but no antecedent symptoms until a week before operation.

Frequency might be expected to be associated with infection, but in only four of the seventeen who had this symptom was any evidence of infection present, and in none was it severe.

It also must be regarded as a reflex due to transmission of increased peristalsis to the bladder.

In nine cases the patients themselves noted the enlarged kidney, and in the six of these submitted to operation a large sac was found. In one the swelling disappeared with rest.

Dysuria was noted in five cases, and two of these had evidence of infection, in two this was definitely absent, and in the remaining case was not recorded. Apart from co-existing cystitis, it is an uncommon symptom, as might be expected.

Oliguria occurred in five cases and anuria in one, the last a woman of 65 with a right-sided hydronephrosis—œdema and redness of the ureteral orifice was noted, but she was not considered fit for operation. Probably as in calculi, it is reflex, and due to congestion of the kidneys, as Winton has pointed out in experiments.

Shivering attacks occurred thrice; one had a definite cystitis, one an extremely large sac probably slightly infected. No infection could be found in the third.

Polyuria was only present in two cases, in one of which it alternated with oliguria—a large hydronephrosis was found at operation. There seems to be little evidence that the sac empties periodically, as was once thought.

Hæmaturia was recorded in eight cases, in three being the only symptom, and in two others combined only with frequency. Unfortunately, only one of these submitted to operation, so it is impossible to exclude the co-existence of some local reason beyond the obstruction. In the one case in which the kidney was explored, no cause was found for either the hydronephrosis or the bleeding.

It may be the result of chronic congestion or a low-grade chronic nephritis. In one personal case of unilateral hæmaturia I found the kidney outwardly normal, but an aberrant artery present, ligature of this resulted in temporary cessation of bleeding, but it recurred and necessitated nephrectomy; histologically the glomeruli showed hyaline degeneration and catarrhal inflammation. It is thus difficult to assess the connection of hæmaturia with hydronephrosis unless the kidney is removed and sectioned.

Local signs are often absent, the enlarged kidney only being palpable in fifteen, and tenderness in eleven. In three cases with a palpable mass the diagnosis was only made at operation, pancreatic cysts or tumours being suspected. In one case with tenderness, cholecystitis was diagnosed, but hydronephrosis discovered. It seems probable that only those with a very large sac, a thin abdomen, or a ptosed kidney can be easily felt. One or other of these factors was present in the cases presenting a palpable mass or kidney.

Diagnosis, however, depends chiefly on radiography; intravenous uroselectan will show the dilated pelvis in most cases, but in advanced examples no filling may be seen on the affected side; a retrograde pyelography is then necessary. Uroselectan was not used in this series until 1932, being a new drug.

In seven cases diagnosis was based on uroselectan pyelography alone, in three of these the side involved failed to give a shadow—all being relatively large sacs.

In six cases both uroselectan and retrograde pyelography were used. In one a double hydronephrosis was present, and no shadow was shown on the uroselectan films. In another case the catheter would not pass on one side; here uroselectan gave the diagnosis of a double lesion.

These methods are essentially complementary, uroselectan providing a good test of excretory and dynamic function, but if these are defective, may fail to give a clear outline of the pelvis or even to show a shadow. Cystoscopy tells us of the condition of the bladder, the presence or absence of infection, confirms functional activity, and retrograde pyelography when feasible supplies a clear outline of pelvis and calyces.

In forty-six of the remaining cases cystoscopy was carried out, and in thirty-six of these a retrograde pyelogram provided the diagnosis. Diuresis was noted in nineteen cases. It is certainly much commoner than this, but obtaining sufficient urine from the two sides for specific gravity often involves a long wait. Occasionally no specimen can be obtained from one or other side for various reasons. Of the ten cases cystoscoped but in which no pyelogram was done, seven were operated on, four because a ureteral catheter would not pass on the suspected side. These were in pre-uroselectan days. In one case blood was coming from the ureter, and in one diuresis and the presence of a tumour satisfied diagnostic requirements. In one there was no report on the ureteral specimens. The three not operated on had diuresis.

Infection was surprisingly uncommon. In only nine cases was there any evidence of it, and in no case was it more than slight. In only four were B. Coli cultured, the remaining five had minor degrees of cystitis. This seems to be quite against the view at one time held by Winsbury White that infection resulting in fibrotic changes in pelvis and pelvi-ureteral junction was an important causative factor. It is not surprising that some degree of infection should develop when stasis is present, but it is certainly unusual for those with known pyelitis to develop hydronephrosis.

Apart from those with infection or hæmaturia, albuminuria is only recorded once, and it cannot be too strongly emphasised that a normal urine is no guide to the presence or absence of hydronephrosis.

Before considering the operations actually performed in this series, it must be stressed that hydronephrosis is far commoner than these figures of in-patients would suggest. A great many cases of minor degrees are encountered, and until recent years nephrectomy or exploration was the only treatment that could be offered. The patient, unless pain had become frequent or severe, naturally was

unwilling to part with a kidney, and the surgeon equally unwilling to press for the removal of an organ often with fairly satisfactory function. Yet the condition is insidious, and gradually in most cases the kidney is destroyed.

An analysis of the operations performed in this series is as follows. There was no mortality.

Nephrectomy	30	Sympathectomy	7
Aberrant vessels tied	3	Exploration	2
+ kinks	1	Bands divided	1
+ bands	1	Nephropexy	1
+ nephropexy	1		

Obviously the results of nephrectomy for a unilateral lesion must be satisfactory in relieving symptoms produced thereby, but a single kidney is left to carry on. This it does quite adequately in health, but an individual with one kidney is undoubtedly at a disadvantage should trauma or disease beset him.

The tying of aberrant vessels, relieving kinks and bands, or performing a nephropexy, may give relief from symptoms, but in the light of present knowledge are not likely to arrest progress of the hydronephrosis.

Sympathectomy, although first performed in the human by Papin sixteen years ago, has naturally been on trial, but the results as described by Kimbrough in America and others are so promising that it must by now be accorded an important place in the treatment of hydronephrosis. It offers the alternative of conservative as opposed to radical surgery, with the advantages previously referred to. It is true, as Kimbrough has emphasised, that in the larger sacs it must be combined at times with nephrostomy, plastic operations on the sacs, ureteral splintage and even nephropexy in some cases, but it preserves even if it does not rejuvenate a partially damaged kidney.

The first sympathectomy in this series was carried out in 1933 by the late Professor Fullerton, to whom genito-urinary surgery owes so much. This appears to have been the only case in which he applied it to the treatment of hydronephrosis, although from personal knowledge I know he had used it successfully on several occasions for renal pain.

My own experience is limited to six personal cases, also one in conjunction with Mr. Stevenson and one with Mr. Purce (the latter not in this series). These cases, dating as they do only from 1935, are too few and too recent to justify definite conclusions, and I hope in a later communication to give a detailed account of them. They were all relieved of pain.

I have followed up one of my earliest cases by doing pyelograms at intervals, and there has been a slow but steady diminution in the dilatation of pelvis and calyces, as well as relief from pain. Since then I have had to perform a partial gastrectomy for gastric ulcer on this patient, but despite this her progress has been uninterrupted.

The operation has technical difficulties as regards adequate exposure of the pedicle, and sometimes bleeding from lateral branches and from veins is difficult to control. In one case I believe that I included the main artery in the ligature

when bleeding was formidable, as subsequent uroselectan pyelograms failed to show any filling on this side. This accident should not occur, but as nephrectomy hitherto would have been the recognised procedure, is but a return to radical surgery, and of course the patient is permanently relieved from symptoms.

In conclusion, it can be said that conservative surgery has now an established place in the treatment of hydronephrosis. As elsewhere, it must be used in early stages if the maximum benefit is to ensue, advanced cases and infected cases will still require nephrectomy, and failures may be expected from time to time. It is essential that the pathological factors be carefully identified in each case, and in those suitable, adequate denervation must be carried out and if necessary supplemented by the additional measures referred to.

I am deeply indebted to Dr. Muriel Frazer for her valuable help in collecting the case records and to the members of the surgical staff of the Royal Victoria Hospital for permission to use them.

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REVIEW

ELEMENTARY GENETICS (Catechism Series). By Hans Grüneberg, Ph.D.(Bonn), M.D.(Berlin). Edinburgh: E. & S. Livingstone, 1937. pp. 87. Price 1s. 6d. net.

The recommendation of the General Medical Council that Genetics should be included in the medical curriculum has prompted Messrs. Livingstone to issue, as part of their well-known Catechism series, a part devoted to this subject, specially compiled for medical students. It is written by Dr. Hans Grüneberg, of University College, London, and the accuracy of the teaching cannot be questioned. It begins with the usual plant experiments, and gradually passes from these relatively simple experiments through more complex mouse experiments to deductions and histories of human genetics. All the sections are clearly written, and examples are given in such a way that even the dullest student could not fail to grasp the principles involved.

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when bleeding was formidable, as subsequent uroselectan pyelograms failed to show any filling on this side. This accident should not occur, but as nephrectomy hitherto would have been the recognised procedure, is but a return to radical surgery, and of course the patient is permanently relieved from symptoms.

In conclusion, it can be said that conservative surgery has now an established place in the treatment of hydronephrosis. As elsewhere, it must be used in early stages if the maximum benefit is to ensue, advanced cases and infected cases will still require nephrectomy, and failures may be expected from time to time. It is essential that the pathological factors be carefully identified in each case, and in those suitable, adequate denervation must be carried out and if necessary supplemented by the additional measures referred to.

I am deeply indebted to Dr. Muriel Frazer for her valuable help in collecting the case records and to the members of the surgical staff of the Royal Victoria Hospital for permission to use them.

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REVIEW

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THE BELFAST HOSPITALS

No. 3. The Royal Maternity Hospital

BELFAST in 1791 was a relatively small town with a population of 18,320, of whom a large proportion were of the poorer classes. The dispensary from which the Royal Victoria Hospital developed had not yet appeared, and the only organized effort in helping the poor when illness overcame them was the Charitable Society of Belfast, founded in 1768.

About this time an earnest young curate came to the Parish Church of St. Ann, situated in Donegall Street. This young man, the Rev. John Clarke, when visiting in his parish, was struck with the "scanty accommodation and provision afforded by poor households" during confinements. So much was he impressed by the conditions, that he determined to attempt the foundation of an institute to which an expectant mother might apply for admittance and help. He mentioned his ideas to some of the wealthier members of his parish, and as a result of the activity of one benevolent lady whose name has not been recorded, a scheme for the founding of a lying-in hospital was evolved. A private house, situated at 25 Donegall Street, was rented, and converted into a lying-in hospital with six beds, and it was opened for the reception of patients on February 20, 1794.

The opening of the hospital was not allowed to pass without opposition. Doctor William Drennan, in a letter to his sister, written while he was in Dublin, gives the main objections to the scheme. This letter reads :—

"I have long been in professional opinion against all hospital institutions, and this among the number. They almost always end in jobs, or at least the greatest part of the expenditure goes to the support of the servants and different apparatus of the house. The management is almost always neglected, after a year or two. The best mode would be a fund dedicated for the feeing of professional attendance on the poor at their own homes and dispensing relief where it is really wanting. The very puerperal fever which generally takes its rise in hospitals and kills more than are saved by accoucheurs is a great objection. At this instant, there is a fever in the Lying-in Hospital here (Dublin), and which has cost several lives to women and nurse-tenders, yet they are so fearful of its becoming known that tar is being burned for fear of alarming, though indeed a preventative of no importance, except in the women's ideas."

Dr. Drennan goes on to state :—

"If a house be established, the great advice is cleanliness and frequent washing. Simple water is the sovereign remedy against all infectious diseases, when frequently and properly used. Nature has supplied the remedy in abundance, but we trust to a thousand follies, such as vinegar, camphor, tobacco, etc. 'WASH AND BE CLEAN' should be the motto over the door of every hospital."

But in spite of these and similar objections, the hospital was opened, and it

performed valuable service for a period of thirty-six years, amongst "the respectable poor," where proper provision "could not be afforded in confinements that required some degree of comfort."

In a report of the hospital, published in the "Belfast News-Letter" on Friday, January 20, 1804, it is stated that during the previous year, sixty-three patients were treated, of whom "forty-nine were tradesmen's and labourers' wives resident in town, ten were wives of soldiers and sailors absent, and four rather exceptional, but with such circumstances attending each as might remove the scruples of the most rigid, in regard to proper objects of compassion."

At this period of the hospital's history, the usual trials occurred. The number of patients increased, and there were ups and downs in the funds subscribed by the charitable public. But the work was steadily carried on, until the numbers of patients applying for admission became so many that the committee of management decided on a more ambitious scheme, and in August, 1830, they opened a new and enlarged hospital.

The new hospital was built in ground granted rent free by the committee of the Belfast Charitable Society, within its private grounds. It was opened with a debt of £79. 5s., "after paying the contractors of the building £819, and fitting the hospital with offices, beds, etc."

In the first year of its existence in its new home, 103 patients were treated within its wards, and thirteen in their own homes. And with the hospital's undoubted benefits to pregnant women becoming known, the number of patients increased, and in 1839 the number of in-patients reached 192, "of whom one died in childbirth, notwithstanding that the utmost exertions were used for her preservation by the physician who had charge of the hospital."

One of the most interesting points in the published reports of the hospital in those early days is that the death-rate was practically nil. When it is remembered that asepsis was an unknown quantity at this period, this fact is a very astonishing one, especially when such references are made in the medical reports as "the advantage of having a slop-box on the floor of the bedrooms" (made in 1840), and that in 1844 there was an "insufficient supply of soft water for the use of the institution."

An epoch in the history of the hospital appears in the annual report of 1852, where it states that the hospital committee received "an application from Doctors Burden, Andrews, and Ferguson, relative to our opening the hospital to the students studying midwifery, under Dr. Burden, at Queen's College. The representatives of these gentlemen had weight with the committee, and led to their acquiescing in an application so frequently made before, and so often rejected by former committees. Yet what surprises your committee is, that after assenting to the wishes of these gentlemen, with the proviso that each sudent should contribute a fee annually towards the funds of the hospital, no advantage has yet been taken of the liberty given."

Why students did not attend is not clear from the annual reports and minute

books, and it was not until 1854 that they did so. The committee's report for this year refers to the matter in the following words: "Medical students have by permission been attending this hospital during the present session, under the superintendence of Dr. Burden. We have not found as yet any reason to regret having yielded our consent to the measure."

About this time, dissensions appear to have arisen in the committee on the general policy of the hospital. The original intention of its founders was to "confine the benefits of the charity to *poor,* but married, women." Some members of the committee thought this married rule should be enforced, and others, of a broader mind, felt it should be relaxed. These dissensions are reflected in the committee's report of 1852, in which it was proposed that the medical practitioners attending the hospital should assume complete responsibility for the hospital, as the committee "feel assured that the time cannot be far distant when this (hitherto we may say private) charity must be enlarged, to meet the necessities of a large class of unfortunates who cannot be allowed, in a Christian community, to perish in sin and misery."

The proposed enlargement of the hospital caused further dissension in the committee, and in 1855 the committee proposed to resign in favour of the committee of the Belfast Charitable Society, on whose ground the hospital stood. But the ladies' committee continued to act, though they brought into force the following rule to reduce the number of patients :—

"Poor married women, on presenting a certificate of good character from any respectable householder, are admissible, by order of members of the ladies' committee and the medical staff."

When this "married" rule was relaxed is not known, but apparently it was allowed to slide gradually into oblivion, rather than by the passing of an act annulling it.

The year 1883 was a serious one in the history of the hospital. "Early in May the institution was visited by an outbreak of puerperal fever, which was attended with fatal results in several cases." The hospital was closed for one month, and reopened, but the fever again appeared, and it was then closed for three months. On opening the hospital at the end of this time no further cases of fever appeared.

In the long history of the hospital, it is a testimony to the care of the nursing and visiting staffs that this is the only blot on its escutcheon, for up until this period the event of a death within its walls was so rare an event as to call for special mention in its published reports.

The year 1900 is another important period in the hospital's history. The annual report for that year states : "Owing to the question having arisen about the Belfast Charitable Society being unable to give us a lease of our present site, except at the full rent obtainable, and in view of the possibility of proceedings being taken by them to regain possession, and the difficulty that would arise because of the Society not being incorporated, it was decided at a special meeting to take steps to acquire a legal constitution."

The committee then made an application to the Board of Trade on February 23, 1901—

(1) To form, establish, endow, maintain, and conduct a hospital and nursing institute, with the necessary branches, for the treatment and benefit of necessitous women of all religious denominations in their confinement or suffering from diseases of women, and for the medical treatment of infants of necessitous persons during sickness or in any way directly connected thereto.

(2) To provide medical and surgical relief for such persons as aforesaid, and to employ medical and surgical officers, nurses, and all proper attendants for the purposes aforesaid, and to supply all medical and surgical appliances and things, and all such provisions and necessaries as may be required for the purposes aforesaid, and to provide for the training of medical pupils, midwives, and nurses.

This was the application made to the Board of Trade for a licence to form, under the name "Incorporated Belfast Maternity Hospital," a hospital to be registered with limited liability without the addition of the word 'Limited' to its name.

It was well for the hospital that this step had been taken, for the Belfast Charitable Society gave "notice to quit" upon November 1 of that year (1901). The committee defended the action, and as a result they made an arrangement with the Charitable Society to remain in possession of the lying-in premises for a further limited period, until the committee could find suitable accommodation elsewhere.

The search for a site for a new hospital near Carlisle Circus was begun, but ground was not available in this locality, and eventually the committee decided upon a site in Townsend Street, with seventy-five feet of frontage and one hundred and eighty feet in depth.

Plans for a new hospital were prepared, and passed by the medical committee on July 20, 1903. Work then started, and the new hospital with twenty-three beds was opened for the reception of patients on November 7, 1904. The ceremony was performed by Countess Grosvenor, wife of the Chief Secretary for Ireland at that time. The building cost a sum of £9,000 to erect, in addition to the cost of the ground rent, and in 1905 the whole debt was cleared off, leaving a small balance towards painting and decorating "when the walls would be dry." The Board of Trade having granted its licence, the hospital opened its doors under its new title, "The Incorporated Belfast Maternity Hospital."

The work of the hospital increased, although it was feared that the transfer from Clifton Street might reduce the number of patients. It was recognized by the Central Midwives Board as a training school for nurses in 1905, and in the following year the position of the hospital was further dignified by the Belfast City Council, under Act of Parliament, setting into force a rule that "all midwives practising in Belfast be registered and conform to rules and regulations which have been drawn up." These included the holding of a diploma from the Central Midwives Board.

The number of patients increased in 1906 to 373, and in 1912 it reached the figure of 641. The number of patients continued to increase as the benefits of the hospital

treatment became more generally recognized, and during the war period of 1914-9 much excellent work was done.

An incubator for immature babies was installed and, of even more importance, an ante-natal clinic was inaugurated. In the minutes of the medical committee, dated December 8, 1920, the following notes appear: The staff had under consideration the establishment of an ante-natal clinic, and were of the opinion that the same should be inaugurated by Professor C. G. Lowry and Dr. Thomas Holmes. They considered this much more important than the mere gynæcological work, for which there exists at present ample provision for such in several of the other city hospitals."

One of the factors in deciding on this inauguration of the ante-natal clinic was the rapidly rising death-rate among the patients of the hospital. Who or what was responsible for this unhappy state of affairs is not a matter which would repay inquiry, but the death-rate rose in 1922 to no less than 14.4 per cent., and in 1923 to 18.7 per cent.

The committee of management and the medical committee were greatly alarmed, and determined to put a stop to this state of affairs. A generally trained couch-room sister was appointed to assist the matron with her duties, and an arrangement having been made with Queen's University, in addition to a resident medical officer who was changed every six months, a resident obstetric tutor was appointed.

The first holder of this post was Dr. Macafee, and the wisdom of the committee's choice was soon apparent, for in the first nine months of his assuming duty, the death-rate fell to 12.1 per cent., and with the next three months it fell to six per cent.

Dr. Macafee held office until 1926, and when he retired after three years' service, the death-rate had been reduced to 1.07 per cent. This valuable work performed by Dr. Macafee was rewarded in that year in his being elected to the visiting staff of the hospital.

The year 1926 saw the inauguration of a clinic for babies up to six months, with Dr. F. M. B. Allen in charge. It also saw the early campaign for a new and modern hospital. This scheme was set on foot by Professor C. G. Lowry, who worked untiringly to bring it to a successful reality. In season and out of season he carried on his campaign, and his enthusiasm gradually brought converts to his support. The Belfast Corporation allocated a free site of five acres near the Royal Victoria Hospital for a new maternity hospital; funds were collected; negotiations were started for the amalgamation of the Maternity and Royal Victoria Hospitals, and the building of a new maternity hospital begun. The foundation stone of the new hospital was laid in 1931, and the hospital opened for patients on August 1, 1933, when "the matron, nursing staff, with ten mothers and six babies, were transferred to it from the old Townsend Street building."

The official opening of the hospital took place on October 21, 1933, when Mrs. Stanley Baldwin, O.B.E., performed the ceremony, at the request of Her

Grace the Duchess of Abercorn. This new building was opened free of debt, after a cost of £130,000, with sixty-four beds available for occupation. Since then, additions have been made, and to-day there are eighty-five beds available, and a private patients' block is being erected. During the last year, 1,691 patients were admitted to the hospital wards, and 578 patients were treated in their own homes. Eight thousand four hundred and ninety-seven examinations were made in the ante-natal clinic, and 2,669 attendances recorded in the out-patient baby clinic.

These figures show the important work which the hospital is performing, and when consideration is taken of the training of midwives and medical students, which it engages in annually, the total cost of its maintenance should not be difficult to raise, and it more than warrants the grant of free ground which the Belfast City Council made for its erection. —R. H. H.

CASE REPORTS

TUBERCULOUS ABSCESS OF THE TONGUE

By C. J. A. WOODSIDE, M.B., F.R.C.S.I.
Royal Victoria Hospital, Belfast

TUBERCULOSIS of the tongue is a rare disease. Spencer and Cade, in the third edition of Butlin's "Diseases of the Tongue," record eighty-six cases of all types in 24,989 post-mortems on tuberculous subjects. The majority of cases are ulcerative lesions in subjects of phthisis.

The reported case was a man twenty-seven years old who had noted a globular swelling on the right side of his tongue for fourteen days. It was painful and was being abraded by his teeth, but he had no other complaints, and denied that he had either cough or spit.

On the right side of his tongue there was a rounded swelling the size of a cherry, fluctuant, but indurated around its origin from the tongue. His teeth were carious and his gums unhealthy. There were some enlarged glands on both sides of the neck.

The Wassermann reaction was negative, and aspiration yielded a thin turbid fluid which was sterile on culture.

I excised a wedge-shaped portion of the tongue including the nodule; and the microscopic report was that the tongue presented the characters of a tuberculous infection—small areas of caseation surrounded by epithelioid cells, lymphocytes, and occasional giant cells. Surrounding these zones was granulation tissue. The squamous epithelium was moderately hyperplastic. Subsequent X-ray films showed extensive tuberculous infiltration of both lungs. The wound healed by first intention.

I am indebted to Dr. J. A. Fisher of the Pathological Laboratory, Royal Victoria Hospital, for the pathological report.

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SYPHILITIC MESAORTITIS, TWO SACCULAR ANEURYSMS, HÆMOPERICARDIUM

By W. NOEL WILSON, M.D., B.SC., D.P.H.
Institute of Pathology, Queen's University, Belfast

THIS case is not reported as a rarity, for hæmopericardium is not infrequent as the immediate cause of death in aneurysm of the ascending arch of the aorta; but it may be of some interest as an example of the sudden fatal termination so often seen in cardio-vascular syphilis.

The subject was a male in middle adult life. His exact age was not ascertainable. The only clinical history available was that he had been under medical treatment at home for "heart trouble."

He resumed everyday activities against advice, and collapsed while walking in the street on 13th January, 1937. He was dead on admission to hospital.

SUMMARY OF POST-MORTEM FINDINGS.

The pericardial sac contained several large masses of blood-clot, and about half a pint of fluid blood. The entire thoracic aorta was greatly dilated, the arch being especially affected. Two saccular aneurysms were present on the ascending part of the aortic arch.

The thoracic aorta was the seat of a syphilitic mesaortitis throughout its length, with the addition of atheromatous degeneration and calcification. The diagnosis was confirmed microscopically.

No definite point of leakage was discovered in either of the two aneurysms.

The hæmopericardium had apparently resulted from a gradual oozing of blood through the wall of the lower sac, and had determined a sudden cardiac failure by mechanical interference with the heart's action. The cusps of the aortic valve were healthy, as were also the coronary arteries. But a relative incompetence had been produced by stretching of the aortic ring in the diffuse dilatation of the aortic arch.

The development of two aneurysms, and the extreme friability of the wall of the aorta in general, suggested a particularly severe infection. There were no other stigmata of specific disease.

A CASE OF JUVENILE G.P.I.

By H. HILTON STEWART, M.D., M.R.C.P.LOND.
Hon. Physician in charge of Out-patients, Ulster Hospital, Templemore Avenue, Belfast

DETAILS in the semeiology of G.P.I. vary greatly. The onsets are different from case to case, and the so-called grandiose commencement is comparatively rare. The most characteristic syndrome in the disease is the personality change. That is, the change in personal attire, personal cleanliness, and personal interest in the

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home and family. Moral responsibility also alters. This change is one of the several interesting points illustrated in the following case.

H. B., a boy of 11½ years, was brought to the Ulster Hospital on 18th May, 1936, complaining of headaches and, according to his mother, getting all mixed up when talking. He was said to have been "queer" for the past two years, and had now become dull and listless. He took no interest in things. He would sit about and do nothing. He had been quite smart at school, and had won several prizes before the present state developed. He had become stooped, as if there was something wrong with his back. All movement was said to be slow. The headaches were frontal, but there was no vomiting. He wants to go to bed very early and sleep very soundly. Great difficulty was now experienced in fastening and undoing his clothes and in using a knife and fork.

Examination showed a dull, apathetic boy. Fundi were normal. Argyll Robertson pupils on both sides, otherwise the cranial nerves were normal.

All movements of the arms were slow, and there was some bilaterial inco-ordination. Arm reflexes were brisk. Abdominal reflexes all present. Some inco-ordination of legs, but reflexes all normal, plantars being flexor.

His mentality was dull, and he could not even repeat the alphabet correctly. His speech was slow and slurred. His mouth tended to hang open, and saliva dribbled freely.

Cerebro-spinal fluid: Protein .09 per cent., cells 40 per cmm., large 4,555,553,000. Wassermann positive; Sigma 12.0. This confirmed the diagnosis of juvenile G.P.I.

Inquiring into the family history, it had been ascertained that the father had had a "nervous breakdown" two weeks before the patient was born. He had been sent to Purdysburn Mental Hospital, but was now discharged and was living at home.

There had been three children in all, the present patient being the eldest. The others were normal.

Inquiries were made at Purdysburn Mental Hospital, and the report stated that the father was a case of G.P.I., and he had had malaria treatment (ten rigors).

I then summoned the whole family, and found that the Wassermann reaction of the father, mother, and the two younger children was negative. Moreover, the two younger children were normal in every way to physical examination, and had no stigmata of congenital syphilis.

Here, then, is an interesting finding. A man can acquire syphilis, develop G.P.I., beget a child who develops G.P.I., have suitable treatment, and then be the father of two more children who appear quite normal.

All treatment of juvenile G.P.I. is generally admitted to be unsatisfactory, and the prognosis universally poor.[1] The case in question was treated with tryparsamide.

Hans Reese[2] wrote a rather encouraging article on the use of this drug in G.P.I. He recommends a dose of 0.04 grm. per kilo of body-weight. The average dose for a man is three grammes, and for a child two grammes. Less than one gramme is a sub-therapeutic dose, and aggravates symptoms. He claims fifty-four per cent. arrest in a series of 341 cases. The great danger of this drug is optic atrophy.

Reese says that in 1,254 cases treated with tryparsamide, only two per cent. had permanent optic tract changes. The usual disturbance, he says, usually occurs from four to eighteen hours after the injection, and mostly after the third to the fifth injection. Should this eye trouble occur, intravenous sodium sulphate injections are recommended.

H. B. has had two courses of tryparsamide at six months interval. His vision was carefully checked by Mrs. Lynn by the visual field. He has had no ill effect, and his mother reports great improvement. He can now repeat the alphabet correctly, and he can play games with the other children in the district. His Wassermann is still positive, but the cerebro-spinal fluid has improved considerably. On the last occasion, 4th September, 1936, the report was :—Protein 0.04 per cent., globulin trace, cells not increased, large 5,555,500,000.

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SCIENTIFIC REPORT

Dear Sir,

Our indolent disposition and our conscience are always at odds. However, both were in entire accord when we came across a description of a "Simplified Pregnancy Test" involving the use of methylene blue. It was stated that when two drops of 1 :1000 methylene blue are added to 10 c.c. of urine from a case of pregnancy, a green colour results. We seized on this in a highly scientific spirit, and tested it in our Prenatal Clinic, using urines from cases in all stages of pregnancy, known non-pregnant cases, and a number of male urines.

Our scientific endeavours have been few, and we promised ourselves a write-up in a journal of established reputation and large reading public. We feel that the results of the experiment warrant publication in your department.

Briefly summarized, they are as follows :—That the majority of women attending our clinic were not pregnant at all, but the doctor, two nurses, the cleaner, the porter, the building superintendent, the telephone operator, and one W.P.A. worker (an expectant father) all were !

These findings, partaking of a scandalous nature, since they cast aspersions among other things on two unmarried women and one elderly widow, had far-reaching consequences. We hastily decided to abandon scientific research to hardier souls.—F. I. T., New York.

—*Reprinted from The Journal of the American Medical Association.*

Reese says that in 1,254 cases treated with tryparsamide, only two per cent. had permanent optic tract changes. The usual disturbance, he says, usually occurs from four to eighteen hours after the injection, and mostly after the third to the fifth injection. Should this eye trouble occur, intravenous sodium sulphate injections are recommended.

H. B. has had two courses of tryparsamide at six months interval. His vision was carefully checked by Mrs. Lynn by the visual field. He has had no ill effect, and his mother reports great improvement. He can now repeat the alphabet correctly, and he can play games with the other children in the district. His Wassermann is still positive, but the cerebro-spinal fluid has improved considerably. On the last occasion, 4th September, 1936, the report was :—Protein 0.04 per cent., globulin trace, cells not increased, large 5,555,500,000.

REFERENCES.

1. *Proceedings Royal Society of Medicine,* 1936, May, Vol. 29, No. 7, p. 763.
2. REESE, HANS H., *Journal of Nervous and Mental Diseases,* 1933, October, Vol. 78, No. 4, p. 354.

SCIENTIFIC REPORT

Dear Sir,

Our indolent disposition and our conscience are always at odds. However, both were in entire accord when we came across a description of a "Simplified Pregnancy Test" involving the use of methylene blue. It was stated that when two drops of 1 :1000 methylene blue are added to 10 c.c. of urine from a case of pregnancy, a green colour results. We seized on this in a highly scientific spirit, and tested it in our Prenatal Clinic, using urines from cases in all stages of pregnancy, known non-pregnant cases, and a number of male urines.

Our scientific endeavours have been few, and we promised ourselves a write-up in a journal of established reputation and large reading public. We feel that the results of the experiment warrant publication in your department.

Briefly summarized, they are as follows :—That the majority of women attending our clinic were not pregnant at all, but the doctor, two nurses, the cleaner, the porter, the building superintendent, the telephone operator, and one W.P.A. worker (an expectant father) all were !

These findings, partaking of a scandalous nature, since they cast aspersions among other things on two unmarried women and one elderly widow, had far-reaching consequences. We hastily decided to abandon scientific research to hardier souls.—F. I. T., New York.

—*Reprinted from The Journal of the American Medical Association.*

ULSTER MEDICAL SOCIETY
COUNCIL'S REPORT FOR SESSION 1936-7

The Council begs to present the seventy-fifth annual report of the Society.

The roll of the Society now stands as follows :—

Hon. Fellows - - - - - - -	7
Life Fellows - - - - - - -	13
Life Members (Old Regulations) - - -	2
Fellows - - - - - - - -	269
Members - - - - - - - -	70
Total - - - - - -	361

During the year the Society has suffered the following losses by death :—

Dr. Robt. McDowell, Fellow since 1899; Dr. A. McC. D. Monypeny, Fellow since 1932; Dr. N. C. Patrick, Fellow since 1921; Dr. W. J. Taggart, Fellow since 1909; Dr. J. M. Warnock, Fellow since 1932.

Owing to the activity in connection with the forthcoming annual British Medical Association meeting in Belfast, the programme of the past year was considerably curtailed, and only five meetings of the Society were held. The attendances on the whole were satisfactory, but there seem to be very few of the younger Fellows and Members who are willing to read scientific papers at the meetings.

The Society was honoured by a paper from Dr. Maurer of Davos, Switzerland, while a very enjoyable joint meeting took place with the British Dental Association (North of Ireland Branch) on Dental Sepsis.

The annual laboratory meeting was again a great success, and reflected the greatest credit on Prof. Young and the staff of the Pathological Institute.

The annual dinner was held in February, a new departure in the history of the Society, and was again a very enjoyable function. In the coming session the Council propose to have the dinner at the end of October, at which the new president will be installed and the presidential address will be delivered at the first meeting of the Society

The ULSTER MEDICAL JOURNAL continues to flourish under the able editorship of Dr. R. H. Hunter, and its high standard has been fully maintained during the past year.

Your Council has met on five occasions, and the following attendances are recorded :—

The President 4, Sir T. Houston 2, Dr. T. S. Holmes 0, Dr. R. H. Hunter 0, Mr. J. R. Wheeler 3, Dr. Frackelton 1, Mr. Irwin 1, Dr. T. Kennedy 0, Dr. R. S. Allison 2, Prof. W. D. Thomson 3, Prof. J. S. Young 1, Dr. H. L. H. Greer 4, Dr. Allen 4, Mr. C. A. Calvert 1, Dr. H. H. Stewart 4, Dr. Lyttle 3, Dr. James Boyd 4, Mr. Mitchell 2, Hon. Secretary 5.

F. P. MONTGOMERY.

Elmwood, University Terrace.
Belfast.

ULSTER MEDICAL SOCIETY

The annual golf competition was held at the Royal County Down Golf Club, Newcastle, on 2nd June, 1937. The weather was fine, and about forty members took part in the competition. The president (Professor P. T. Crymble) entertained members to lunch and tea, and a most enjoyable day was spent. This year's winner of the Hanna Cup was Dr. J. C. Robb, who finished two up on bogey. Dr. Foster Coates was runner-up, being "all square."

The annual meeting of the Ulster Medical Society was held on Friday, 4th June, 1937. Professor P. T. Crymble occupied the chair. The honorary secretary read the minutes of the previous meeting. He was following by the honorary treasurer and the honorary librarian, each of whom submitted his report. These were passed, and the meeting went on to elect the office-bearers for the ensuing year. These were as follows:—

President: W. W. D. Thomson, B.A., B.SC., M.D., D.P.H., F.R.C.P.LOND.

Vice-Presidents: H. P. Malcolm, M.C., M.B., M.CH.; G. G. Lyttle, M.B., B.S., M.R.C.S., L.R.C.P.

Hon. Treasurer: C. A. Calvert, M.B., F.R.C.S.I.

Hon. Secretary: F. P. Montgomery, M.C., M.B., D.M.R.E.CANTAB.

Hon. Librarian: R. S. Allison, M.D., M.RC.P.LOND.

Hon. Editorial Secretary: H. H. Stewart, M.D., M.R.C.P.LOND.

Council: James Boyd, M.A., M.D., B.SC., D.P.H.; W. G. Frackelton, M.D.; Ian Fraser, M.B., M.CH., F.R.C.S.ENG., F.R.C.S.I.; H. L. H. Greer, M.B., F.R.C.S.ENG., F.C.O.G; S. I. Turkington, M.D., D.P.H.; J. R. WHEELER, M.B, D.L.O., D.O.M.S., F.R.C.S.ED.

Editorial Board: Prof. P. T. Crymble, M.B., F.R.C.S.ENG.; Prof. W. W. D. Thomson, B.A., B.SC., M.D., D.P.H., F.R.C.P.LOND.; Prof. Henry Barcroft; and one to be elected later.

Hon. Editor: R. H. Hunter, M.D., M.CH., PH.D., M.R.I.A.

The following notice of motion by Council was then considered:—"That Fellows or Members whose subscriptions are two years or more in arrears shall be regarded as having allowed their Membership or Fellowship to lapse."

The Hon. Secretary proposed that the motion be passed. This was seconded by Mr. Fraser, and passed.

H. HILTON STEWART.

18 Malone Road,
Belfast.

BRITISH MEDICAL ASSOCIATION NORTH-EAST ULSTER DIVISION

THE sixth annual dinner was held at the Giant's Causeway Hotel on Saturday, 10th April. The chairman, Dr. Sloan M. Bolton, presided over a record attendance, there being almost one hundred members and guests present. At the outset

the chairman paid a brief tribute to Dr. C. Forsythe, who had died the previous day, at the age of 88, and who had been an honoured member of the profession in the district.

After dinner the toast of The King was honoured, after which Mr. George B. Hanna, K.C., M.P., proposed the health of the British Medical Association. During his speech he congratulated Professor R. J. Johnstone, M.P., on his election to the high honour of President-Elect, and mentioned his close friendship with Professor Johnstone as a colleague in the Northern Parliament. Professor Johnstone, who was received with great enthusiasm, spoke of the work of the Association, and assured the company that the local committee were determined to make the Belfast meeting in July a landmark in the history of the Association. He also praised the hard work of the local secretary, Dr. Allen, in Belfast, and his assistants.

Dr. J. M. Hunter then proposed the health of the guests in a racy speech, and Major Kirkland, London, in replying, congratulated the chairman, and recalled that his father, Dr. S. J. Bolton, who was present, had also served with distinction as chairman of the Division. Dr. F. M. B. Allen, secretary of the Northern Ireland Branch, also replied and congratulated the Division on its many activities.

The health of the chairman was received with musical honours, following a witty speech by Dr. J. S. McGlade, and Dr. Sloan Bolton, replying, thanked the members for their co-operation, and commented on the friendly relations existing between the doctors of the district.

The last toast, that of the musical guests, was given by Dr. D. Boylan, and Mr. Hugh Carson, chairman of Portrush Urban District Council, replied.

During the evening Mr. Rodney Malcolmson, L.D.S., and Dr. C. Emerson delighted everybody with humorous songs and sketches, which included allusions to many of the company present. On the more serious side, Mr. Hugh Carson's songs were greatly appreciated. Mr. A. J. W. Christie also gave a selection on the ocarina.

"Auld Lang Syne" brought to a close what was the most successful dinner the Division has yet held.

J. HUNTER, *Hon. Secretary.*

36 Eglinton Terrace,
Portrush.

FIFTH INTERNATIONAL CONGRESS OF RADIOLOGY

THE fifth International Congress of Radiology will meet in Chicago, Illinois, U.S.A., September 13 to 17, inclusive, it was announced to-day by Dr. Arthur C. Christie of Washington, D.C., president of the Congress. This will be the first time the Congress has ever met in the United States. Probably five hundred delegates and visitors from Europe will attend the Congress, Dr. Christie said.

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Others from Mexico, Canada, and South America, and at least two thousand delegates and visitors from all parts of the United States will be present, he added.

The first International Congress of Radiology—devoted to the medical and scientific development of X-ray and radium—met in London in 1925. The second Congress convened in Stockholm in 1928, the third in Paris in 1931, and the fourth in Zurich in 1934.

Large delegations are expected to attend the Congress from England, Germany, Italy, and France, according to advance information received by Dr. B. H. Orndoff, secretary of the Congress, whose office is 2561 N. Clark Street, Chicago, Illinois.

On the International Executive Committee of the Congress are:—Dr. Arthur C. Christie of Washington, D.C., chairman; Dr. C. Thurstan Holland of Liverpool; Dr. Gosta Forssell of Stockholm; Dr. Antoine Beclere of Paris, Dr. Hans R. Schinz of Zurich; Dr. Karl Frik of Berlin; Dr. Mario Ponzio of Turin, Italy; Dr. Tamotsu Watanabe of Osaka, Japan; Dr. Heliodoro Tellez-Plasencia of Santander, Spain; and Dr. Gottwald Schwarz of Vienna.

Chairman of delegates for each national group are:—Dr. Wolfgang Freiherr von Wieser of Vienna; Dr. F. Sluys of Brussels; Dr. G. E. Richards of Toronto; Dr. P. L. Farinas of Havana, Cuba; Prof. Fleming Moller of Copenhagen; Dr. M. A. Afifi of Alexandria, Egypt; Dr. S. Mustakallio of Helsingfors, Finland; Dr. Joseph Belot of Paris; Prof. G. Herrnheiser of Praha; Prof. Dr. Med. Karl Frik of Berlin; Dr. Russell Reynolds of London; Dr. Athanase Lambadaridis of Athens; Dr. D. J. Steenhuis of Leiden, Holland; Dr. Bela Kelen of Budapest; Dr. M. J. S. Pillai of Madras, India; Dr. R. M. Beath of Belfast; Prof. Ruggero Balli of Modena, Italy; Dr. Torleif Dale of Oslo; Dr. Emil Meisels of Lwow, Poland; Dr. Francisco Benard-Guedes of Lisbon, Portugal; Dr. E. Lazeanu of Bucharest, Roumania; Prof. Gosta Forssell of Stockholm; Prof. Hans Schinz of Zurich; Dr. Muhterem Gökmen of Istanbul, Turkey; and Dr. Edwin C. Ernst of St. Louis, Missouri, U.S.A.

Honorary vice-presidents are:—Dr. George E. Pfahler of Philadelphia, Pennsylvania, U.S.A.; Dr. James Ewing of New York City, U.S.A.; and Dr. William D. Coolidge of Schenectady, New York, U.S.A.

Leaders in other branches of medicine will participate in the Congress, too, as Dr. Christie points out that "The Unity of Medicine" will be the theme of the entire Congress.

"These international congresses seek to maintain a continuity of programme over the years, and in consequence such vital subjects to the radiologist (and to the general public) as diagnosis and treatment of cancer and many other diseases and teaching and training in radiology will be on the agenda of this congress as well as at former meetings.

"Radiology is an important branch of medicine, and is indeed part of the

entire tree, and not merely a specialty as it was once regarded," added Dr. Christie.

More than 250 scientific papers will be read at the five-day meeting. These will be delivered in each lecturer's own language, and will be automatically flashed on screens in English, German, and French, as the papers are read.

What will probably be the greatest scientific and technical exhibit in the history of a radiological congress will be assembled by physicians, physicists, and manufacturers of such equipment in conjunction with the Congress.

INTERNATIONAL CONGRESS OF OPHTHALMOLOGY

CAIRO, 8TH to 15TH DECEMBER, 1937

ON the occasion of the International Congress of Ophthalmology, to be held at Cairo from the 8th to the 15th December, 1937, several trips in the Orient have been organized, leaving Marseilles on 3rd December, 1937.

The first trip comprises first-class passage from Marseilles to Alexandria by the de luxe steamer "Mariette Pacha" (15,000 tons), belonging to the Messageries Maritimes line, lunch and dinner on 7th December—the date of arrival at Alexandria—first-class railway journey from Alexandria to Cairo and return, conveyances from the railway stations to hotels and vice versa, the stay at a first-class hotel during the sitting of the Congress (bed and breakfast only), all meals on 16th and 17th December, arrival at Marseilles on 21st December. Price £55.

The second trip comprises the services indicated above up to 16th December, with, besides, a visit to Upper Egypt (Luxor, the Valley of the Kings, Assouan, all expenses included with sleeping-car), the return to be effected by the s.s. "Champollion," arriving at Marseilles on 28th December. Price £80.

The third trip will be the same as the second, with an additional visit to Palestine and Syria, and return to Marseilles on 4th January, 1938. Price £114.

And lastly, a fourth trip, which will be identical with the preceding, except that the visit to Syria will be more complete (Homs, Hama, Antioch, Latakia, etc.), and return to Marseilles via the Northern Mediterranean (Rhodes, Smyrna, Stamboul, the Piraeus, Athens, Naples). Price £133.

The programme giving full particulars of these several trips will be sent free of charge on request addressed to Cie des Messageries Maritimes, 72/75 Fenchurch Street, London, E.C.3.

Those desiring to take part in any of these several trips will do well to apply as early as possible, as the best cabin accommodation will naturally go to the first applicants.

Doctors who are not ophthalmologists may, up to the limit of accommodation available, register their names for any of the above trips, so long as their applications are approved by the International Council of Ophthalmology, though naturally they can take no part in the special work of the Congress.

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REVIEWS

BUCHANAN'S MANUAL OF ANATOMY. Sixth Edition. Edited by J. E. Frazer, D.Sc., F.R.C.S. London: Baillière, Tindall & Cox, 1937. pp. 1,772; figs. 1,042. Price 35s.

The tragic illness of Professor J. E. Frazer, so soon after completing the work of preparing this, the sixth edition of Buchanan's well-known Manual of Anatomy, produces a feeling of sadness in the reviewer. But a close study of its pages causes a feeling of pride that it is the work of a British anatomist, and a worthy monument to the efficiency and knowledge of its author.

This edition is written, as the earlier editions, by following the structures as they are exposed in dissections, rather than the systematic method whereby each structure is completely described as a unit. Differences of opinion occur as to which is the better method, but for purposes of reference, the systematic method is unquestionably the better, while for a student studying anatomy for the first time, the writer of this review is strongly of the opinion that the "dissection" approach gives him a better idea of the relative importance of the various structures to one another, and of their precise position in the body.

The book is clearly written, and admirably illustrated by simple and accurate line-drawings. And if one is to offer anything but carping criticism of such an excellent work, the only thing which offers itself for really constructive criticism is the stress that is given some of the structures as opposed to others. For example: The General Medical Council has recommended the close co-operation between anatomists as such, and their clinical colleagues in hospital, for the teaching of medical students. This implies that the student should be taught to recognize anatomy as an essential part of his clinical training, and, as a result, look upon the structures of the human body in the light of their importance in clinical work, surgical and medical. This aspect of anatomy does not seem to have been sufficiently stressed by Professor Frazer in writing this book. This is shown in the rather scanty description given (page 565) of the femoral sheath and canal, so important in operations for hernia. In this description no mention is made of the deep relations of the sheath to Cooper's fascia, or of its deep connections with the capsule of the hip-joint, and although figure 344 shows the attachment of the anterior layer of the sheath to the deep aspect of the inguinal ligament, no mention of it is made in the text. Neither is there any mention made of the relation of the genito-femoral nerve piercing the lateral wall of the sheath. Again, muscles are each described in such a way as to mislead the student in the belief that each muscle has a separate existence and action of its own. This is not consistent with the known facts regarding the action of muscles. Any individual movement of a limb, no matter how simple, is the result of a series of contractions and relaxations of several muscles acting together. In Professor Frazer's book, "The Anatomy of the Human Skeleton," this point is clearly brought out in the description given there of the movements which take place at the shoulder-joint. It seems, therefore, a pity to be unable to find any reference to this matter in Buchanan's Anatomy. Then again, no reference is made to the point on the great sciatic nerve where it lies below the skin and fascia, uncovered by muscles, a point of importance in the treatment of sciatica. Nélaton's line (page 552) is described in the general text, but Bryant's triangle is given in small type, suggesting that this is of less importance than Nélaton's line, whereas the reverse is the truth, Nélaton's line rarely being used clinically, while Bryant's triangle is frequently used. In describing the phrenic nerve (page 1189), no mention is made of the fifth cervical root occasionally passing with the nerve to the subclavius muscle, and thence joining the main phrenic nerve lower down in the thorax. The operation of phrenic avulsion depends on this fact, yet this mode of formation is not mentioned. The description given of the abdominal organs are not in conformity with present-day knowledge gained from radiography. The description of the stomach in particular gives the student no idea of the changing form of this organ. It states (page 761): "When the stomach is empty, the pylorus usually lies about half an inch to the right of the median line, but this distance is increased during *distension* to one and a half or

two inches, or even more." This account gives no indication of the changing position of the pylorus from the "transpyloric plane" to below the level of the umbilicus, the common position to see the pylorus in X-ray photographs.

These criticisms are not made in any carping spirit, in a book which is recognized as being so accurate in its descriptions, but rather to point out that the mere memorizing of detailed descriptions, without any regard for their relative and clinical importance, is not in keeping vith modern trends in anatomy.

DISEASES OF THE NOSE, THROAT, AND EAR. By Simson Hall, M.B., Ch.B., F.R.C.P.E., F.R.C.S.E. Edinburgh: E. & S. Livingstone, 1937. pp. 420; figs. 55. Price 10s. 6d.

This book is intended for senior students and general practitioners. It deals in a very practical manner with the commoner diseases of the ear, nose, and throat likely to be met with in general practice. It is compact and easily read.

The coloured frontispiece is rather diagrammatic. It is not usual to see the cone of light so clear and regular in cases with large, old-standing perforations; otherwise the diagrams are very good and might with benefit be more numerous.

The chapter on Adenoids is very complete. The treatment of acute tonsillitis is rather sketchy; no mention is made of anti-streptococcal serum or drugs of the sulphonamide group in the severe infections. In the treatment of diphtheria, it is recommended to give five hundred units of anti-toxin in doubtful cases. This would appear to be a very small dose: five thousand units is the more usual amount.

Agranulocytic angina is mentioned, but drugs which produce an artificial leucocytosis, such as pent-nucleotide, are omitted. Acute œdema of the glottis is very well done, especially the indications for laryngotomy and tracheotomy.

In the description of catheterization of the Eustachian tube, it is more usual to place the auscultation tube in the patient's ear before passing the catheter; this tends to prevent jarring movements which are painful for the patient.

The technique of paracentesis is described in detail. It is recommended to incise the drum from above downwards; this is against all teaching, as the danger of dislocation of the stapes is greater than when the incision is from below upwards.

The chapter on chronic otitis media is exceptionally clear, practical, and concise. The special features of infection by the pneumococcus type III (strep. mucosus) are clearly defined.

The author has succeeded in his task, and his work can be confidently recommended to all students and practitioners.

DISEASES OF THE NOSE AND THROAT. By Sir St. Sinclair Thomson, M.D., F.R.C.S., and V. E. Negus, M.S., F.R.C.S. Fourth Edition. London: Cassell & Co., Ltd., 1937. pp. 976; figs. 386; plates (many coloured), 29. Price 45s. net.

This book, first published in 1911 as the personal experiences of Sir St. Sinclair Thomson, has now reached its fourth edition, after passing through several reprintings. This proof of the high esteem in which it is held must be highly gratifying to its author, and is ample evidence of its high value to any young man setting out on the study of diseases of the nose and throat. The present edition is considerably larger than the original work, due to a greater amount of space given to illustrations, and to detailed attention given to the many advances in our knowledge of the subject. These changes render the work even more readable than any of the earlier editions, and the authors are to be congratulated on what is really the standard English work on the nose and throat.

The changes in this present edition include a very full description of the technique of local anæsthesia, and a valuable assay of the intra-tracheal method of general anæsthesia. The two

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This book, first published in 1911 as the personal experiences of Sir St. Sinclair Thomson, has now reached its fourth edition, after passing through several reprintings. This proof of the high esteem in which it is held must be highly gratifying to its author, and is ample evidence of its high value to any young man setting out on the study of diseases of the nose and throat. The present edition is considerably larger than the original work, due to a greater amount of space given to illustrations, and to detailed attention given to the many advances in our knowledge of the subject. These changes render the work even more readable than any of the earlier editions, and the authors are to be congratulated on what is really the standard English work on the nose and throat.

The changes in this present edition include a very full description of the technique of local anæsthesia, and a valuable assay of the intra-tracheal method of general anæsthesia. The two

two inches, or even more." This account gives no indication of the changing position of the pylorus from the "transpyloric plane" to below the level of the umbilicus, the common position to see the pylorus in X-ray photographs.

These criticisms are not made in any carping spirit, in a book which is recognized as being so accurate in its descriptions, but rather to point out that the mere memorizing of detailed descriptions, without any regard for their relative and clinical importance, is not in keeping vith modern trends in anatomy.

DISEASES OF THE NOSE, THROAT, AND EAR. By Simson Hall, M.B., Ch.B., F.R.C.P.E., F.R.C.S.E. Edinburgh: E. & S. Livingstone, 1937. pp. 420; figs. 55. Price 10s. 6d.

This book is intended for senior students and general practitioners. It deals in a very practical manner with the commoner diseases of the ear, nose, and throat likely to be met with in general practice. It is compact and easily read.

The coloured frontispiece is rather diagrammatic. It is not usual to see the cone of light so clear and regular in cases with large, old-standing perforations; otherwise the diagrams are very good and might with benefit be more numerous.

The chapter on Adenoids is very complete. The treatment of acute tonsillitis is rather sketchy; no mention is made of anti-streptococcal serum or drugs of the sulphonamide group in the severe infections. In the treatment of diphtheria, it is recommended to give five hundred units of anti-toxin in doubtful cases. This would appear to be a very small dose: five thousand units is the more usual amount.

Agranulocytic angina is mentioned, but drugs which produce an artificial leucocytosis, such as pent-nucleotide, are omitted. Acute œdema of the glottis is very well done, especially the indications for laryngotomy and tracheotomy.

In the description of catheterization of the Eustachian tube, it is more usual to place the auscultation tube in the patient's ear before passing the catheter; this tends to prevent jarring movements which are painful for the patient.

The technique of paracentesis is described in detail. It is recommended to incise the drum from above downwards; this is against all teaching, as the danger of dislocation of the stapes is greater than when the incision is from below upwards.

The chapter on chronic otitis media is exceptionally clear, practical, and concise. The special features of infection by the pneumococcus type III (strep. mucosus) are clearly defined.

The author has succeeded in his task, and his work can be confidently recommended to all students and practitioners.

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chief methods for the removal of diseased tonsils—with the guillotine and by dissection, are fully described; but the surgeon is wisely left to make his own choice after consideration of the circumstances of the case. Considerable changes have been made in the chapter on affections of the trachea and bronchi; and abscess, bronchiectasis, neoplasms, and the technique of lipiodol injections, are described according to present-day knowledge.

Progress in the study of intrinsic cancer of the larynx has justified the choice of a number of surgical procedures, and other methods, including a brief description of Hautant's operation for cases where the extent or situation of the growth hardly justifies complete laryngectomy.

The section on Pre-oral Endoscopy has been entirely rewritten by Mr. Negus. Instruments and head-rests are described, both for efficiency in examination and treatment, and also in an effort to make the surgeon less dependent on trained assistants. These are a few of the many indications of the wide scope of its teaching. But every phase of the subject discussed bears throughout its pages the stamp of that soundness of judgment which is obtained only after years of patient study and work, and is a monument to the industry and patience of two of the best-known laryngologists of our time.

MANUAL OF PRACTICAL ANATOMY. By J. E. Frazer and R. H. Robbins. London : Baillière, Tindall & Cox, 1937. Vol. I—Upper and Lower Limbs and Abdomen : pp. 536, figs. 281. Vol. II—Thorax, Head, and Neck and Nervous System : pp. 454, figs. 290. Price 10s. 6d. each volume.

British Anatomy appears to-day to be torn by conflicting views, not on problems of anatomy, but on methods and standards of teaching. Should human anatomy be taught in detail as a mere exercise in memory? Should it be taught only on general morphological principles? Should it be taught in a mere cursory manner? Different teachers appear to hold such strong opinions in support of one or other of these contentions, that they go so far as to publish students' textbooks based on their views. Professor J. E. Frazer and Dr. R. H. Robbins appear to support the last of the above views, and they have published two volumes of dissecting manuals which are stated by them to "follow the curriculum and the accepted teaching" of, presumably, the London medical schools, to which both authors are attached. If this is so, then indeed may the provincial schools hold high their heads, for the standard of knowledge in these volumes is lower than the teaching in any of the provincial schools known to the writer of this review. The statement, "The skin hardly requires introduction," is what one might find in a popular first-aid manual, but is strangely out of place in a work presented to medical students, as is the description, "Nerves are white cords." Then, too, in a book which professes to prepare a student for "his future work," the description of the palmar spaces compressed to three lines is rather astonishing, as is the very elementary description of the ischio-rectal fossa, and many other dissections which have important bearings in clinical surgery.

The books are illustrated by many excellent line-drawings, but the presence of many old figures taken from Hirschfeld and Leveillé detract considerably from their worth; and why the same figure of the sympathetic system should be reproduced on three separate pages (figs. 216, 239, and 245) is not apparent, for its value to the student dissecting for the first time must be nil.

It is unfortunate that the volumes should have been written in what is known as the B.R. nomenclature, which has no advantages over the B.N.A., or the so-called "new terminology." How any committee of otherwise sensible men could have deluded themselves into the belief that they were doing anatomy a service by devising it is not clear, for it does not appear to be based either on morphological or philological grounds. Changes of the nature introduced in this terminology merely tend to make anatomy and anatomists the laughing stock of surgeons and physiologists; and those responsible for it could surely have found a better outlet for their energies in trying to advance knowledge of the subject which they teach, rather than wasting their time, and that of harassed students, with a new and unfortunate vocabulary.

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