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THIS "QUEEN'S" OF OURS

THIS "Queen's" of ours has produced many famous men, who have gone forth into the world, equipped with the training needed to carry them to the highest positions in medicine, science, engineering, commerce, and law. But it also sends out yearly large numbers of young men and women who, by virtue of their training within the walls of Queen's, are able to carry on the essential work of the world, and make for themselves incomes of such size as to provide them not only with the necessities of life, but with many of its luxuries. This training, of course, costs money, and the fees paid by these graduates, men and women, only in part represent the actual cost to Queen's of the teaching staff, and the money spent in erecting the necessary buildings for class-rooms, laboratories, the costly apparatus of scientific experiments, and a valuable library.

These facts are generally known to most people connected with Queen's, but it is not generally known that the income from all sources is so small that the finance committee are, at times, hard pressed to find the money to pay their monthly accounts. So hard pressed are they at present that the Senate has consented to issue an appeal for money to keep Queen's going; to keep the teaching up-to-date, to erect much-needed additional buildings to replace the old and unsightly wooden sheds left behind as relics of the great war.

This appeal is, in the first instance, being made to Queen's graduates, before being carried further afield to the general public, and it is hoped that a strong lead will be given by them. Already Emeritus Professor Sinclair has given a generous gift of £1,000, Mr. Justice Megaw £250, and the Rt. Hon. H. B. W. Armstrong £100. These sums have been made available for the general fund, and it is hoped that other similar sums will be forthcoming, as well as many contributions of half and even a quarter or less of the last of these sums.

For those graduates of Queen's who have been blessed with more of this world's goods than have been granted the rank and file, the appeal offers an unique opportunity not merely to help their *alma mater* by giving freely of their

bounty, but in erecting lasting monuments to their own memories. A laboratory could be endowed and named after its benefactor for sums varying from £5,000 to £10,000; a full-time chair could similarly be endowed and named for £30,000; a full-time lectureship for £15,000, or a part-time lectureship for £3,000 to £5,000.

In this latter category the medical school presents many opportunities. There is no lecturer in radiology, mental hygiene, psychotherapy, fevers, or tuberculosis; and the existing part-time lectureships in ophthalmology, oto-rhino-laryngology, pediatrics, dermatology, operative surgery, midwifery and gynæcology could, with the greatest benefit to Queen's be endowed and named after their benefactors.

Northern Ireland's Health Problem

By W. A. B. Iliff, M.B.E.

Assistant Secretary, Ministry of Labour, Northern Ireland

Paper read to Northern Ireland Branch of the British Medical Association, on 3rd February, 1938

In the summer of 1837 Queen Victoria met her assembled Lords and Commons and delivered to them the gracious speech from the Throne when she opened the first new session of Parliament of her reign.

Almost exactly one hundred years later his present Majesty, King George VI, opened the first new session of his reign and delivered his first speech from the Throne.

A comparison of the two royal speeches is interesting. Each of them begins in the customary manner with a reference to foreign affairs; and there is a melancholy coincidence of language. Queen Victoria, in alluding to the European situation, expressed concern at the civil war then afflicting Spain; and here are King George's words a century later—"My Ministers," said the King, "have followed with growing concern the continuance of the conflict in Spain."

Each of the royal speeches then goes on to make the usual request to the House of Commons for the necessary financial provision for the public service, and finally deals with the Government's proposals for domestic legislation. It is to this part of the two speeches that I should like to call your special attention.

Queen Victoria forecast legislation on four subjects; and of the four, oddly enough, three dealt with matters relating to Ireland. First, she asked Parliament to take into their consideration the condition of the poor in Ireland, and "whether it may not be safe and wise to establish by law some well-regulated means of relief for the destitution in that country." . . . . "Safe" and "wise"—these seem to us quaint adjectives in such a context with the fabric of our present-day

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social services standing so securely around us. Secondly, she promised a Bill to provide for the better regulation of municipal government in Ireland; then there was to be a Bill dealing with the collection of tithe composition in Ireland; and, lastly (and this was the only piece of legislation affecting the rest of the United Kingdom), a Bill to make certain reforms in the administration of justice.

And now listen to the variety of subjects with which the first Parliament of King George VI is asked to deal. I take them as they come.

The protection of the civil population against air raids. The encouragement of industrial activity at home. The unification of coal-mining royalties and a re-organisation of the coal-mining industry. The distribution of electricity. A Bill to assist the production and to increase the consumption of milk. Further proposals for the welfare of British agriculture. Legislation for the re-organisation of the white-fish industry. A publicity campaign to ensure the fullest use of the public health services. Legislation for free meals for boys and girls attending juvenile instruction centres. A Bill to provide medical care for young persons who have left school and entered employment. A Bill to reduce the age limit for pensions for the blind. A Bill to enable further information to be obtained for the study of the population problem. A Bill dealing with slum clearance and the abatement of overcrowding. Juvenile crime. Strengthening the judicial bench. A quota for the film industry. Abuse of the law relating to clubs. The regulation of wages and conditions of employment in the road transport industry and the organisation of the Fire Brigade services of the country.

At the end of such a catalogue it is indeed fitting that His Majesty should invoke the blessing of divine providence on the labours of his Parliament.

The most interesting deduction to be drawn from a comparison of these two royal speeches is, I think, that Parliament is concerning itself less and less, quantitatively anyhow, with crowns and dynasties and foreign treaties, and more and more with the day-to-day lives and surroundings of the millions in the factories and the homes of the United Kingdom itself; and one thing that cannot fail to strike us is the extent to which the Government has responded to the demands made upon it by the increasingly complex organisation of society in the modern industrial community. Whether that be a good thing or a bad thing might form the subject of a paper itself. I do not propose to debate it now. It is enough that we should recognise the tendency.

When the legislature expresses itself in measures dealing with such specialised subjects as the health of the people, the supply of electricity, the aches and pains that fish are heirs to, or the increased production of milk, it is inevitable that problems in administration should arise that can be dealt with only by the help and with the co-operation of the expert and the technicist.

And so comes about what is not one of the least perplexing questions in modern administration. To what extent is the technicist to be concerned with administration? Generally speaking, in the British Isles that question has been answered in this way: it is for the technicist to advise what *can* be done; it is

for the layman to decide what *should* be done; and it is for the layman and the technicist together to decide *how* it should be done. But such a generalisation can only be a guiding principle. It would be reactionary administration and not at all to the best ends of the public service that the technicist should not be allowed to have a say in the " what should be done " as well as in the " what can be done."

I am sure you will think I have been rather coy about getting down to grips with the subject-matter of our discussion. But I have been anxious to impress upon you, if that was necessary, the degree to which present-day legislation involves the technical in its content, and the impossibility of operating any of the technical public services except with the fullest co-operation of the professional interests concerned.

* * *

There are in Northern Ireland about 370,000 persons between the ages of 16 and 65 who are entitled, during periods of incapacity, to weekly payments by way of cash benefits under the National Health Insurance scheme.

As you know, the scheme allows insured persons to associate themselves in units known as Approved Societies, which are, to all intents and purposes, separate financial entities. While a minimum rate of cash benefit is guaranteed by the State to members of *all* approved societies, a favourable experience in any one society enables that society to pay rates of benefit higher than the guaranteed statutory minimum. Seventy-four of these separate approved society units operate in Northern Ireland, and, of that seventy-four, eighteen confine their operations to Northern Ireland. The others operate throughout the United Kingdom, and these we call " international societies." You will readily understand that the rate of benefit to which a Northern Ireland member of an international society is entitled depends not alone upon the experience of the members of that Society who happen to reside in Northern Ireland, but upon the combined experience of the members of the society residing in all parts of the United Kingdom.

This has an important influence on the finances of the National Health Insurance scheme in Northern Ireland; and allowance must be made for it in any consideration of sickness experience in this province, as reflected by the expenditure of approved societies.

It is sometimes argued that it would be to the benefit of the insured person in Northern Ireland if the approved society organisation were abolished; and a single financial unit established into which would be carried all contributions payable in respect of insured persons and out of which would be met the cost of benefit and administration. While such a system might, from certain viewpoints, have advantages if adopted for the United Kingdom as a whole, it would certainly operate to the disadvantage of the insured in Northern Ireland, if it were adopted for Northern Ireland alone.

It is possible for us to estimate what would be the position if National Health Insurance in Northern Ireland had to carry the present claims-experience standing on its own feet; and it is clear that not only would the additional benefits now

being paid disappear, but the statutory minimum rates of cash benefits and medical benefit could not be maintained by the existing rates of contribution and state grant. The financial experience of the Health Insurance scheme in Eire seems to be developing already along those lines.

A comparison of income and expenditure of the National Health Insurance scheme in Northern Ireland, on the one hand, and in the whole of the United Kingdom on the other, throws up this disturbing result—over the Northern Ireland insured population, there has been a deficiency in recent years amounting to between eight and nine shillings per head per annum. But taking the United Kingdom as a whole, a surplus has emerged year by year which amounted, during the last valuation quinquennium, to between one shilling and two shillings per head per annum.

To put the case in another way, the Northern Ireland financial experience is worse than the United Kingdom experience by an amount of between nine and eleven shillings per insured person per annum, or to the extent of almost £200,000 a year.

What are the reasons for that gap of £200,000? In the main, it can be put down to two causes. First, a lower average income, and secondly, a higher average expenditure. We are all, unfortunately, familiar with the heavy unemployment experience of Northern Ireland during the last ten or twelve years, and probably about £70,000 a year out of the £200,000 that I have mentioned can be put down to the lower contributing power of the insured population due to heavier unemployment in this province. Certain other items of income, such as interest on investments, do not accrue in Northern Ireland to the same extent as in Great Britain, for reasons which I need not enter into now; but the deficiency in income on that account is not very substantial, having regard to the size of the figures that we are dealing with.

So that we are left with an excess to be accounted for of expenditure on benefit in Northern Ireland, which is certainly over £100,000 a year. It is difficult from the statistics in our possession to translate this sum of money into weeks of incapacity, but probably the amount is something like a quarter of a million.

Why should this be? Why should Northern Ireland be "sicker" than the rest of the United Kingdom to such an extent? Remember we are dealing with the experience of a block of insured persons numbering more than 370,000 of all ages and in a very great assortment of occupations. Superficially there seems no good reason why the sickness experience of such a substantial sample should diverge from the experience of the population of the United Kingdom taken as a whole.

We are able in the Ministry of Labour to make certain broad comparisons of our expenditure on benefits in Northern Ireland with expenditure on the same benefits in the other areas of the United Kingdom. This comparison yields some interesting results, although I fear it does not carry us very far towards an appreciation of the real causes of the excess. Moreover, the fact that additional benefits are not being paid to the same average extent in Northern Ireland as in

Great Britain, means that in Northern Ireland a longer duration of incapacity than in Great Britain is covered by every pound of benefit paid. Our experience is therefore actually worse than the figures that I shall give would indicate.

The figures shew, first, that on sickness benefit, as distinct from disablement benefit, rather less is spent per head in Northern Ireland than in the other parts of the United Kingdom. I shall give you the figures for 1935 as being typical. The expenditure per head of the insured population on sickness benefit in Northern Ireland amounted to ten and a penny per annum as against twelve shillings in Scotland, eleven and fourpence in England, and thirteen and elevenpence in Wales, or eleven and sixpence over Great Britain as a whole. Men and single women make a better show in Northern Ireland than in Great Britain. Married women, however, make a very much worse show.

When we turn to disablement benefit, the picture is very different, and it is worth remembering that disablement benefit accounts for substantially more than half of the total amount of incapacity in the country. The expenditure on disablement benefit in Northern Ireland in 1935 averaged eleven and threepence per insured person as against eight and threepence in Scotland, seven and threepence in England, nine and twopence in Wales, or seven and sixpence for the whole of Great Britain. In each of the three classes (men, single women, and married women) there was a substantial excess in Northern Ireland; and in the case of married women the expenditure on disablement benefit per head was more than twice as great as in Great Britain.

Sickness benefit, as you know, is payable to an insured person during the first twenty-six weeks of incapacity, and if an illness lasts longer than twenty-six weeks disablement benefit becomes payable. But there is a provision in the National Health Insurance Act which links up any illness occurring within twelve months of the termination of a previous illness. Unless, therefore, an insured person has a clear twelve months free of illness, he is liable to have any particular illness treated as a " disablement benefit " illness if previous illnesses that link up aggregate more than twenty-six weeks in duration.

It would, therefore, seem from the figures I have quoted that we might fairly draw the inference that the excess expenditure in Northern Ireland is due either to the fact that illnesses occur more frequently, or to the fact that they last longer when they do occur, or to a combination of both of these facts. Beyond that I fear we are unable to go, simply because we have got no data on which we can safely base any deductions.

Theories of all sorts have been advanced, from time to time, to account for our excess experience of sickness in Northern Ireland.

Our climate has been blamed. Well, if some of us had our choice, I daresay we could find some other part of the globe where we should see a little more of the sun than we do in Ulster, but, from the health point of view, is our climate any more rigorous than the climate of Scotland or Wales?

Secondly, it has been suggested that the excess may arise from occupational

causes. Here, there is a good deal to be said on both sides. Admittedly the textile industry is not one in which we would expect health statistics to make a very good showing, and the textile industry occupies a large place in our industrial economy. But, on the other hand, the coal-mining industry, which, in numbers, is one of the most important industries in Great Britain, and is notoriously one in which the claims-experience is particularly heavy, is not carried on in Northern Ireland at all. Again, it is suggested that, as the agricultural industry occupies a much larger proportion of insured people in this province than it does in the rest of the United Kingdom, we may get a substantial block of our excess incapacity from that source, because the exposure of the agricultural labourer to the rigours of the elements must bring with it a train of rheumatic diseases and disorders of the respiratory system.

Thirdly, the cause has been looked for in the heavy unemployment which Northern Ireland has suffered; but here again we might compare Wales, which over the last ten years has certainly been harder hit by unemployment than Northern Ireland. One must admit that unemployment often carries with it under-nutrition and probably a lowering of the standard of physical fitness. Diet and nutrition are two problems upon which public attention has only recently been focused. Reliable information on the subject is lacking; but, at the moment, an enquiry is being carried out throughout the United Kingdom which may throw some light on it. Family budgets are being collected from a representative sample of the insured community, disclosing the various items on which the family income is spent and particularly what kinds of food are bought. While the main purpose of this enquiry is related to the preparation of an up-to-date cost-of-living index number, the results are to be made available to the various Health Departments for study in relation to problems of diet and nutrition.

It has also been suggested that the age composition of the insured population in Northern Ireland is such, that the incidence of sickness would naturally be higher. We have consulted the Government actuary on this aspect of the matter, and he advises us that this factor can be dismissed.

One circumstance which would have a weighty influence on expenditure is the standard applied in the administration of the National Health Insurance Act, that is to say, the degree of supervision over claims exercised by approved societies or by the central Government departments, and the standard observed by medical practitioners in issuing certificates of incapacity. As I have already mentioned, approved societies in Northern Ireland are for the great part "international," and it is not difficult for a society like the Prudential to secure uniformity of treatment for a claim, whether it comes from an agricultural labourer in County Down or from an agricultural labourer in Devonshire; and in the Ministry of Labour we are satisfied that a no less effective supervision over claims is maintained by our own Northern Ireland societies. So far as central administration by the various Government departments is concerned, that is co-ordinated by the National Health Insurance Joint Committee. We have in Northern Ireland a regional medical

service organised on the same lines as the corresponding service in Great Britain. This service is available to give second opinions on incapacity to approved societies and to medical practitioners, and it is used here to a considerably greater extent by approved societies, than in the rest of the United Kingdom. Moreover, we have recently established in Northern Ireland a sickness visitation scheme which operates throughout the province and provides a check on improper claims much more comprehensive in its scope than anything of the kind in existence across the water. With regard to medical certification, we are all sensible of the difficulties that confront the conscientious certifier, and he would indeed be a brave man who would come here and accuse the profession in Northern Ireland of a lower standard in this respect than the standard observed by their colleagues in Great Britain.

The situation is that, while we are all prolific in theories, we are barren of facts in support of our theories.

It seems to me that we have two means at our disposal to cope with our problem. First, administrative methods. By this I mean, by seeing that a proper use is made of the supervision machinery of approved societies and of the sickness visitation service and of the regional medical service, we should secure that only those persons are allowed to remain on health insurance funds who are genuinely incapacitated. The co-operation of the medical certifier is of course absolutely essential here, for he is the first line of defence against the improper claim. It is on these methods that we have been concentrating for the past ten years, and, without being complacent, we are satisfied that probably almost as much has been done in this direction as can be done. If that be so, it takes us to the point that our excess sickness in Northern Ireland is *genuine* sickness, and that brings me to the second means at our disposal to deal with our problem.

And it is here that the problem becomes one essentially for your profession, and for the insurance medical service in particular, with such help as we in Government departments are able to give you.

As well as what is spent on the other public health services, the insurance medical service costs Northern Ireland almost a quarter of a million pounds a year; and, of this sum, between £40,000 and £50,000 is spent on drugs. Does the community get full value for this expenditure? Or let me put it another way, is there any means by which the community might get better value for this expenditure? and not only for this expenditure, but for expenditure on all the other public services which are concerned directly or indirectly with the health of the industrial worker.

But before that question can be intelligently answered, it seems to me that it is essential that we should attempt to get at the facts of the situation, in order that some light may be thrown on the nature of our problem.

Every year over 600,000 facts about sickness in Northern Ireland are made available in the medical certificates issued by practitioners to insured persons claiming benefit. These certificates reach approved societies, and at the moment,

I fear, are regarded as nothing more than vouchers for payment of benefit. But surely they form a mass of most valuable material for study in relation to the health problem. Other facts relating to the persons in respect of whom these certificates have been issued, are in the possession of approved societies: for example, age, marital condition, occupation, duration of illness, and so on. Is it not desirable, indeed is it not essential, if we are to give serious consideration to our health problem, that these facts should be collated in some central clearing house, and afterwards examined by some body competent to make intelligent deductions from them? Something of the kind has already been happening in Scotland for some years past, and the results have been most useful to the authorities there responsible for the administration of the public health and insurance medical services.

Accordingly, my first proposal for your consideration is that the Ministry of Labour should organise a comprehensive collection and examination of the health statistics of the insured population.

It is recorded, I think, of Mr. Henry Ford that he once said, "Oh, yes, statistics are all very well, but they don't make motor-cars." That is so, but I suggest that if we had statistics of the kind that I have mentioned some light might be thrown on our problem which, as I have tried to show you, is an area that is very dark at present. And if these statistics showed us where our problem lies, or even where it did not lie, might they not also suggest to us ways of dealing with it?

I cannot to-day make any concrete suggestion about the lines of policy that we might find it desirable to follow after an examination of such health statistics. That would be premature, for my whole case is that at the moment we know really nothing about the nature of our problem. But I feel that, even within the present resources of the National Health Insurance scheme and of the other public services, we might find ourselves able to suggest something worth-while. Of course, radical developments such as a universal specialist service, a universal hospital or dental service, would be ruled out: for such startling advances Northern Ireland must await Great Britain.

But it is interesting to speculate on what might be done with the resources at our disposal.

If, for example, the enquiry showed that a substantial part of our excess disability was attributable to occupational diseases, the facts would be most useful to the authorities administering the Factory Acts, and would enable them to concentrate on a betterment of conditions in those kinds of industrial establishments where the figures showed it to be necessary.

If the statistics showed that some particular disease or diseases was the principal disabling cause among the insured population, might it be desirable that the Government should ask Queen's University to engage in some specialised research into that disease over a period of years with grants from the National Health Insurance Scheme?

Should a consultant service on modest lines be made available for practitioners, and, if so, should any group or groups of diseases have priority in the organisation of such service? Moreover, should the service be provided by the Ministry of Labour as a development of its regional medical service, or ought it to be organised through and with the help of the hospitals?

These are just one or two ideas that occur to me. I am sure that others would suggest themselves to other people after an examination of the facts.

But if we are to embark on any such programme, it is essential that from the very outset your profession should co-operate with us. We should like your advice on the kind of statistics that should be collected, in order that the information should be the most useful for our purpose, and we should certainly require your advice at a later stage on the lessons to be learned from the statistics and on the most profitable use of the resources at our disposal in trying to improve the situation.

The problem is one in which every branch of your profession can help us, specialist and general practitioner alike; and if, after consideration, your Association thinks well of the general idea that I have floated, I would suggest that, as a first step, the Ministry of Labour should discuss with your Council, at a later stage, the formation of a small committee to explore the matter further.

Before I finish, I feel I cannot do better than quote to you an extract from an address given to the Insurance Institute of London not long ago by Lord Horder. He said, " I base my plea for your patience upon the broad ground of the common weal. After all, if I take you and add my own profession (which I do with all humility), we represent the sum of the community that shows the spirit of social goodwill and of prudent foresight and that strives to guard the individual against the disaster of the premature death of a breadwinner, incapacitating and painful sickness, or unexpected economic loss. That we are all of one body is the keynote to every effort at social betterment."

Contribution to the Discussion opened by Mr. W. A. B. Iliff: *David Gray, M.A., M.D., F.R.C.P.I., Barrister-at-Law.*

As Mr. Iliff in his prelude has reminded us, the sapling of a hundred years ago has grown into that mighty tree, under whose shady branches many of us were glad to be sheltering when the economic storm burst upon these islands some years ago, and, so far from wishing to cut its shoots or lop off any of its branches, most of us desire to see it increase in girth and spread of branch, so that many more—consultants, specialists, and all those who are qualified to minister to the health of the community—may find work and contentment in its shade.

Mr. Iliff then goes on to lay the trail for a treasure hunt; £150,000 per annum buried in Northern Ireland. Some years ago treasure-hunts were a fashionable

craze; and, I think, I have noticed some attempts at their revival. Well, here's a good one! so let's all join Captain Iliff in the chase and hope for a find.

Many of you, of course, will remember that this is by no means the first time this subject of excess sickness has been broached in Northern Ireland. At intervals from 1911 I have had " pow-wows " about it and sat on committees to deal with it, but nothing fruitful was achieved; and the reason, in my view, for no progress being made was that the doctor always had the feeling he was being shot at.

To-day Mr. Iliff approaches it from a different angle. He shows us the problem and asks our help to find the true denominator. I am quite certain that we will give him all the help we possibly can, as the solution of the problem might serve the dual purpose of removing an undeserved stigma from the profession and of helping to relieve it of some of the dissatisfaction in its work, which failure to obtain remedial effects, causes. You have heard the theories advanced accounting for it—Occupation: surely statistics taken among textile workers would prove valuable in fixing the chief cause or causes of sickness in this group and point the way to measures of prevention. Heavy unemployment: this, of course, has some effect, but I think to no greater extent than elsewhere; the true bill for this, however, and a heavy one it will be, will be presented to the next generation for payment.

Age-composition of the insured population we used to consider our sheet-anchor; now, alas, its cable has been actuarially severed.

The administration in Northern Ireland is at least the equal in standard of any other part of the United Kingdom, indeed it has provided itself with an extra check in the way of its control of sickness visitation; and further, I believe, there are more references here than in other parts.

I am satisfied also that the standard of medical certification is no worse here than in other parts.

The only fact about the 600,000 certificates is, in my view, that of sickness, though perhaps that is the very fact that Mr. Iliff is not too sure about. The precision of the labels on these certificates cannot be assumed or assured. One doctor may examine a patient and find him suffering from " anæmia and debility," while a second, seeing a little deeper, may find him suffering from early " tuberculosis "; yet both labels could be correct. Again, what of the plasticity of that term "rheumatism"?—surely nothing covers such a multitude of sins or veils such a lack of knowledge; and what of the width of that term " debility," which can be used to cover a few weeks sickness to that robust-looking female who has merely drained her adrenals in a row with her husband or a fellow-worker, equally with that sallow-complexioned weedy-looking female who complains of headaches and of being more tired on rising than when going to bed, and who is possibly a victim of chronic constipation.

This question of labels or terms has been discussed on previous occasions with representatives of the approved societies, and I understood that, as a result, such

minor labels as " cold " and " debility " would ensure an immediate reference to the medical referee while ailments such as respiratory catarrh and anæmia would have periods of two to four weeks after which reference would be made, and so on with other illnesses.

The statistics I have seen and heard seem to me to point to the conclusion that our problem lies almost entirely among the women. Where shall we seek for its cause? What about exploring the avenue of the generally lower wage-level in Northern Ireland? Have we any statistics to show the proportion of married workers in the female insured populations of Scotland, Wales, England, and Northern Ireland. If the proportion were higher here, it would afford some explanation of our problem. Again, the average wage-level will have a bearing on our problem, as the lower the level, the less disparity there will be between wages and sickness benefit and the greater the temptation for every trivial ailment to be used as a means of getting a rest without much pecuniary loss. It is a true saying, at any rate in the case of the working class, that a woman's work is never done. When a man's daily work is finished, he has the evening's distractions to look forward to as a relief from the tedium of the day, but a woman comes from the factory to continue her work in the home, so that there is little, if any, relaxation for her; and constant grinding wears any, even the best, stone. I do not know if similar conditions apply everywhere. I rather fancy the good husband across the water gives some help in the home—at any rate, one sees the menfolk over there wheeling the children in the bassinet or go-car, a sight one rarely sees here.

Well, everyone tires of twelve to fourteen hours daily work, and if, at the sacrifice of a few shillings weekly, a woman can stay at home and draw Health Insurance benefit, I don't wonder that they persuade themselves, and me, sometimes, that they are ill.

Then there is what might be called the Insurance habit of mind—I say Insurance habit, though I was almost tempted to call it Ballymena habit, for in my student days in Dublin fires in the north were regarded as a good trade barometer —the volume of trade of the Northern province being in inverse ratio to its number of fires. This habit of mind regards with high favour our proud city's motto reversed—it reads, " For what we pay, how much can we get back." The manager of a well-known motor insurance company and myself used to talk over our insurance troubles. He declared that people of the well-to-do class whose car had sustained a scratched or dented wing would want him to do up the whole mudguard or perhaps give them a new one—an illustration that the habit of getting as much as you can for what you have paid is not confined to the working-classes—though, goodness knows, they have much more need to obtain the return.

Here, though it has apparently no bearing on our problem, I should like to say that in my view it would have been infinitely better if the weekly rate of sickness benefit paid bore a fixed relation to the average wage earned.

I was astonished to learn that disablement benefit accounts for more than half of the total amount of incapacity in the country.

If that be true, surely the societies themselves should, in the interests of the scheme, voluntarily, and if not, under compulsion, take steps to determine whether this total amount of incapacity was genuine or capable of considerable reduction.

It has been said that the doctor is the first line of defence. True, perhaps, with regard to sickness benefit, though even there how easily the line is breached! Self-interest sometimes compels the doctor to give way, for if he stands manfully to his guns, he is likely to die of starvation, while if he opens the breach too wide, he is shot at from behind by his fellow-defenders—the societies and the administrators. When, however, it comes to disablement benefit, the defence falls upon the societies themselves; how could any doctor refuse a monthly certificate to a person who has been drawing benefit for ten or twelve years, and has come to regard it almost as a pension? I think, perhaps, it would pay the societies to have a careful survey of every disabled person, so as to secure that those in the early days of disablement benefit are all totally incapacitated, or that any that are not so regarded be fitted by training for some other gainful occupation. In the case of those who have come to look upon it as a pension, I am afraid the hardship inflicted by the removal of benefit would stir up such a hornet's nest that the societies and the government might be sorry to have disturbed it.

Do we get value for the £50,000 yearly we spend on drugs? Of course we don't, but, innately, we are all apprehensive of sickness and death, and it is understandable that as long as the lay press by quack advertisements and otherwise keep illnesses and their easy cures by potion or pill for ever before our mind's eye, we are, even against our better selves, bound to be influenced and get our mental outlook focussed on a horizon of sickness.

I am all in favour of statistics being obtained from the societies as to the numbers on the sick list, age, sex, occupation, married or single, nature of illness certified, duration of illness, whether patient frequently ill, and if so, whether with a recurrence of the same illness or a series of illnesses as varied as a patchwork quilt. I should like to know average weekly earnings and hours of work—I am sure there are other facts we might try to ascertain. When ascertained, these should be collated by the Ministry, looked at by actuaries, examined by a small committee of our profession as suggested by Mr. Iliff, and if any safe deduction can be drawn, then would come the time to decide whether research, consultant, or other service should be provided. We all know that the National Health Insurance scheme is very far from complete, and, in my view, never can be till the service covers the whole insurable population and its dependants and provides for them the services of specialists in every phase of diagnosis and treatment. Such schemes have been envisaged by the British Medical Association and may take practical shape sooner than we expect. I should like to say here that, thanks to the ability and courteous co-operation of the staffs of our various hospitals, I have been able to make good for my insured patients some of the deficiencies of our present scheme.

In conclusion, let me speculate and go a little further than the present scheme.

I see the whole present insurable population in the new scheme with all its dependants, together with those of higher incomes who would be permitted to join on a true insurance basis. I see the co-called panel practice divorced entirely from private practice or practice for gain. The service, the greatest of all social services, will be a closed one like the army and navy. Every newly-qualified doctor will have the right of entry thereto, and shall serve as an assistant for three to five years before qualifying for a panel of his own. Each panel doctor will be responsible for no more than 1,500 to 2,000, and the maximum remuneration would be about £1,000. The commercially minded will thus have his steps turned to some other business or profession where his commercial instincts may have full scope to benefit himself without being so harmful to the community. Of course an endeavour would be made—and, I think, might be made even within the scope of the present scheme—by some carefully devised system, to secure that a bonus or extra remuneration should be paid to those doctors whose work might be regarded as " highly efficient."

The hypnosis of the public into illness by quack advertisements in the lay press will have ceased; and doctors will, once again, know something of the drugs they prescribe, if any. The doctor, as I see him, will be at least as much concerned with the well-being of his patients as in his efforts to effect cures. His endeavours will be given to the moulding of a better and more enduring vessel rather than the repair of a broken one. He will be interested in school conditions, housing, and indeed the conditions of home-life generally. He will be interested in the conditions of work of his patients and in their use of leisure. In short, he will be the old family doctor *" redivivus,"* but more enlightened and more interested in preventive medicine, and with more power to secure the prevention or mitigation of all those unfavourable influences which act and react upon the human organism to its detriment and destruction. Self-interest will be merged in the general interest of the community. It is my view, though here many of you may disagree with me, that the old family doctor with his modest income was of infinitely greater service to the community than his modern hybrid whose chief aim seems to be to exploit it. In sickness he will have the fullest help of specialists of every kind—surgeons, radiologists, psychotherapists, biochemists, etc., as well as every form of apparatus designed to help in diagnosis and assist in treatment.

He will have all the hospital accommodation required : convalescent homes by the sea and in the country; homes of rest for the aged and infirm, and hospices for the dying—for even then people will grow old and die.

I sketch for you the beauty of my vision, but its outlines are blurred and indistinct, due perhaps to my concentration on the, to me, beautiful features; but comes daylight, and I begin to see its beautiful features take on the sterner lineaments of present reality, and I awake to find it was only a dream.

However, to Mr. Iliff, the layman, I, the technicist, look for the translation of my dream into actuality.

Poverty and Infantile Mortality in Belfast

Report by The Ulster Society for Economic Research

As we pointed out in the previous report,[1] the chief difficulty in relating health to unemployment in Belfast is the non-coincidence of areas for health purposes with those for unemployment and poor relief. For health statistics the dispensary district is the unit, and for other purposes the ward is the unit.

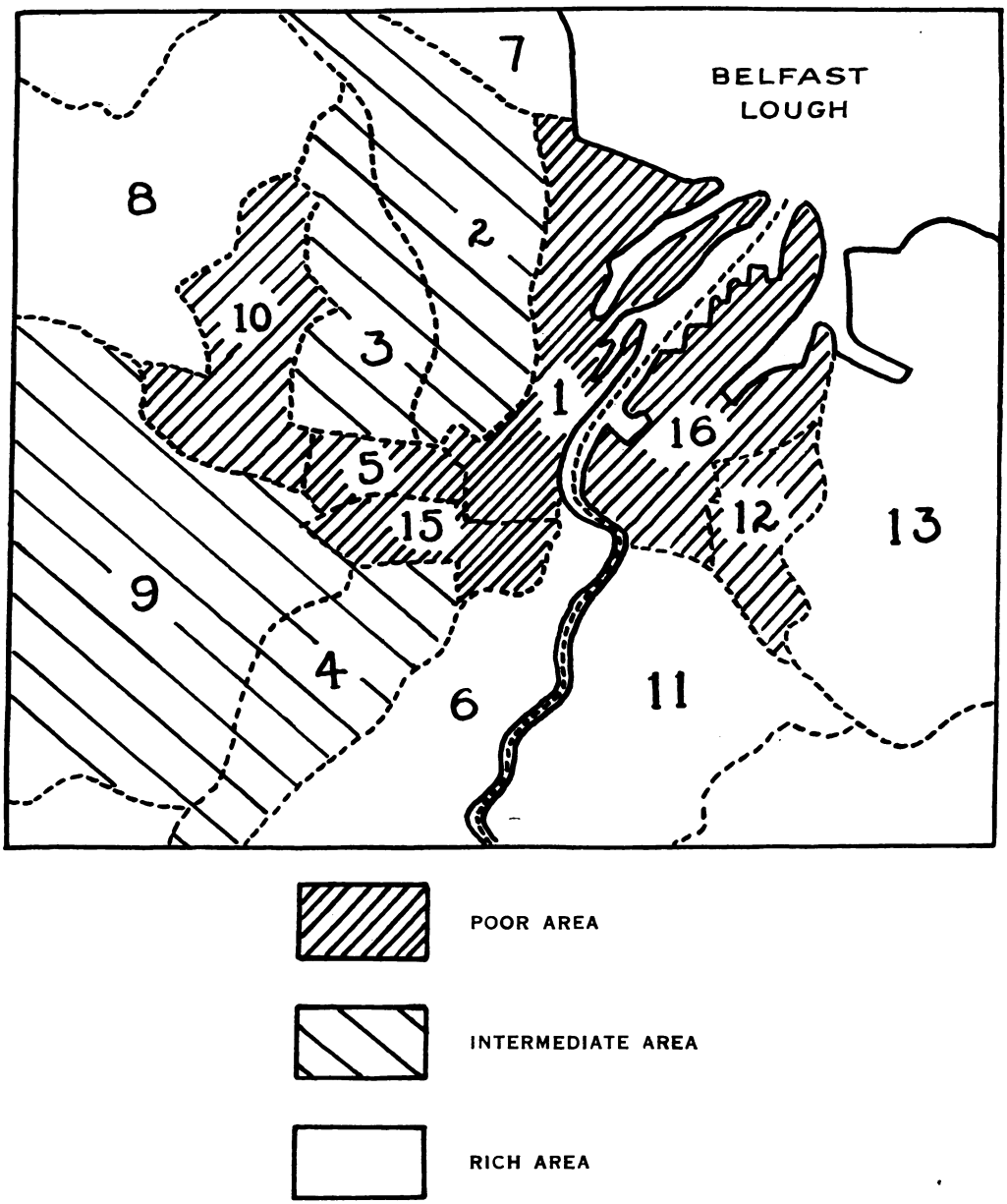
To obviate this difficulty so far as unemployment is concerned, a sample of 4,700 cases was taken, consisting of one-third of the cases on outdoor relief and one-third of those on unemployment assistance in February, 1937. These cases were then divided according to the dispensary district of residence. It was hoped that these figures would give an indication of the relative degrees of poverty in the districts, though what was actually measured is the proportion of extreme poverty and long-standing unemployment. Moreover, boundaries made for the express purpose of dividing rich from poor areas would not coincide with the boundaries of the dispensary districts, and a predominantly rich area is likely to include poor sections. An "index of poverty" was obtained for each dispensary district, defined as three times the sum of the outdoor relief and unemployment cases recorded by the sample, divided by the population of the district as given by the 1937 census, and multiplied by one hundred. These poverty indices vary from 0.9 in Greencastle (district 7) to 5.4 in Central (district 15). The variation of these indices is such that Belfast can be divided conveniently into three groups of dispensary districts, there being a marked and statistically significant difference between the lowest index in one group and the highest index in the lower group each time.

	Dispensary District No.	Name	Poverty Index
Poor Area	15	Central	5.4
	16	Pottinger	5.4
	5	Millfield	5.1
	1	Dock	5.0
	12	Ballymacarrett	4.7
	10	Woodvale	4.4
Intermediate Area	3	Shankill	3.7
	9	Falls	3.4
	2	Duncairn	3.2
	4	Workhouse	2.9
Rich Area	8	Ligoniel	2.1
	6	College	1.8
	11	Ravenhill	1.7
	13	Ballyhackamore	1.3
	7	Greencastle	0.9

A map shows the position of the dispensary districts, with the exception of Ballymachan (14), which is to the east of Ballyhackamore (13). Ballymachan has a population of only 444; there have been only twenty-four births there in the past

BELFAST

DISPENSARY DISTRICTS



nine years, so its figures have been excluded. The poor area consists of the central and dock portions of Belfast, with an extension westwards of the Woodvale district 10 into the intermediate area. This Woodvale district is the district with the lowest poverty index in the poor area; and a big proportion of the cases of poverty occurs in one estate (the Glenard estate). The intermediate area lies to the west of the poor area, whilst the rich area includes the suburbs to the north, east, and south.

As would be expected, the 1926[2] census figures show the rooms per house to be fewer in the poorer districts, and the persons per house greater, so that the variation in the number of persons per room is even more marked. The number of persons per acre is highest in the poor area, even when no allowance is made for space occupied by factories, warehouses, and other buildings which are not dwellings. The crude birth- and death-rates each increase with increasing poverty, but the increase in the birth-rate is by far the most marked. Because of this, the natural rate of increase in population is only 3.6 per thousand in the rich area, though it is 10.7 in the poor area. Yet between 1926 and 1937 the population of the poor area did not increase : it declined by 5.6 per cent. Therefore there must have been a very marked emigration from this area, part of it possibly into the rich area, for there the population increased by 21.6 per cent. over the same period.

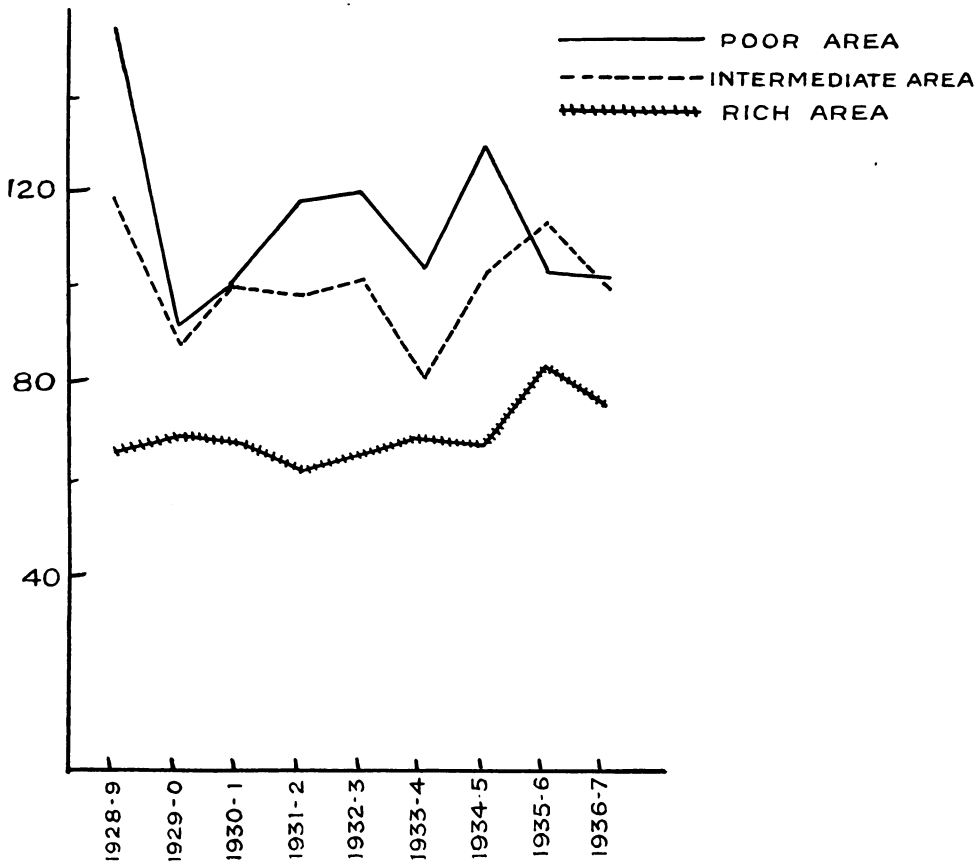
	Poor Area	Inter-mediate Area	Rich Area	Belfast
Poverty index - - - -	4.9	3.3	1.6	3.2
Persons per acre, 1937 - -	56	38	18	30
Population (thousands)—1926 -	133	166	116	415
1937 -	126	172	140	438
Rooms per house, 1926[3] - -	4.20	4.70	5.50	4.77
Persons per house, 1926[3] - -	5.20	4.80	4.50	4.84
Persons per room, 1926 - -	1.24	1.03	0.83	1.02
1936-7, July to June—				
Crude birth-rate - - -	26.6	21.2	16.6	21.3
Crude death-rate - - -	15.9	14.8	13.0	14.5
Natural increase - - -	10.7	6.4	3.6	6.8

Unfortunately, the variations in the death-rates cannot be directly compared, for no statistics of age distributions by dispensary districts have been published by means of which these rates could be standardized.

It seems, therefore, that the most satisfactory measure for comparison is the infantile mortality-rate for the different areas. In 1936-7 (year July to June), the rate for all Belfast was 95 per thousand, in the rich area only 75, and in the intermediate and poor areas slightly over 100 per thousand. The infantile mortality-rate is clearly lower in the rich area, but curiously it is not significantly lower in the intermediate than in the poor area. This is surprising, for the poverty index, as well as the figures of density of population, of birth- and of death-rates, suggest that there is a marked difference in these areas. The figures for 1935-6 confirm the latest figures, for in that year the infantile mortality-rate was actually higher in the

INFANTILE MORTALITY

RATE PER THOUSAND



INFANTILE MORTALITY

Year	Area: Poor	Area: Intermediate	Area: Rich	All Belfast
1928-9	155	120	66	121
1929-30	91	88	71	86
1930-1	103	102	68	95
1931-2	118	99	62	98
1932-3	120	102	66	101
1933-4	104	82	69	87
1934-5	131	103	67	105
1935-6	104	114	84	103
1936-7	103	101	75	95
9 years	114	101	70	99

intermediate than in the poor area. However, in earlier years the poor area has a higher rate than the intermediate area.

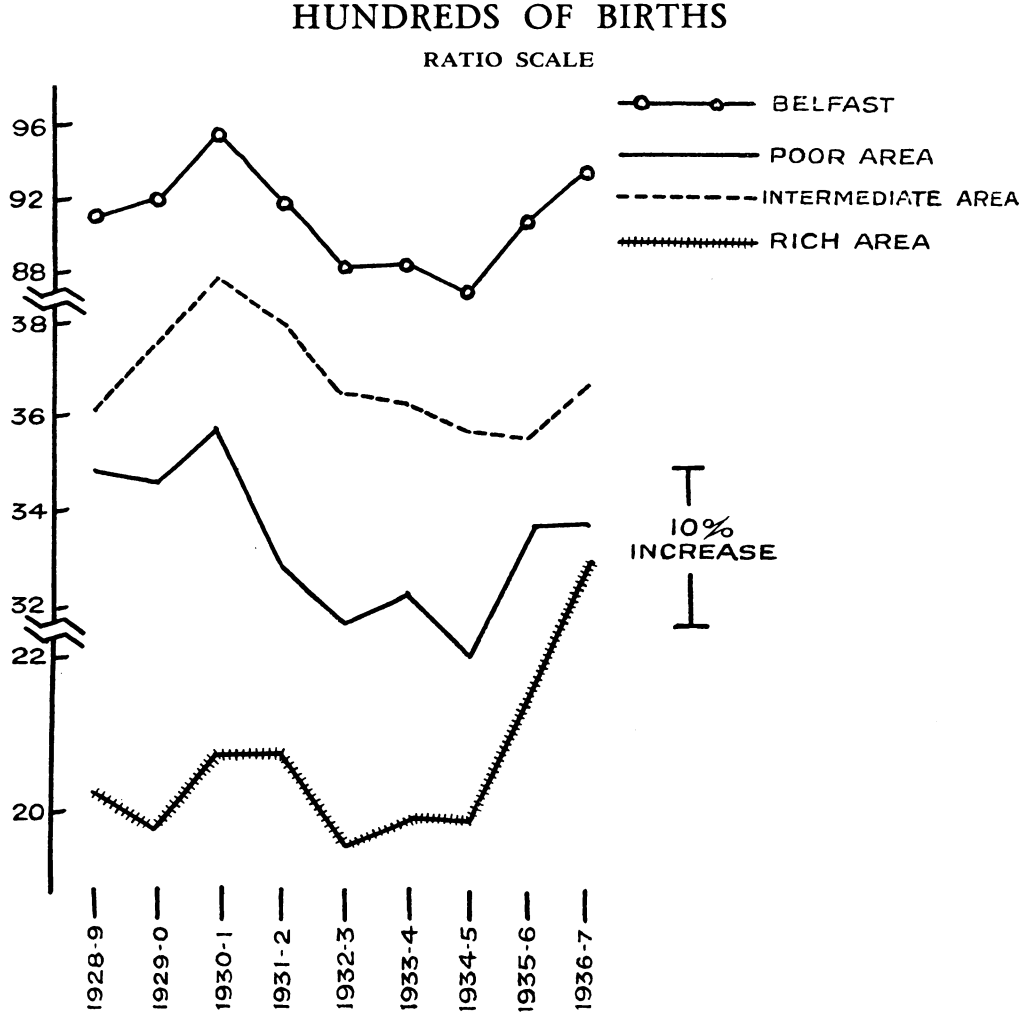
There is another curious feature observable in the figures, which is that the infant mortality-rate has become markedly higher in the rich area during the past two years. From 1928-9 to 1934-5 the rate in this area was remarkably constant, never declining below 62, nor rising above 71, whilst five of the seven values were from 66 to 69 inclusive. Then for 1935-6 the rate suddenly increased to 84, and for 1936-7 remains as high as 75. The change is certainly significant, though it is difficult to say of what it is significant. However, the result has been a lessening of the gap between the infantile mortality-rates of the poor and rich areas in the last two years. This gap averaged 50 per thousand between 1928-9 and 1934-5, but only 24 per thousand in the last two years. The difference was not great in 1929-30 and 1930-1, averaging 27 for the two years. It may be noted that those years, too, were considered to be years of moderately good trade.

A graph shows the infantile mortality-rates for each area during the past nine years, from which it appears that the rate in the rich area has not been influenced at all by the factors which influenced it in the other two areas. In particular, the high figures for 1928-9, the low figures for 1929-30 and for 1933-4, in the intermediate areas, are completely absent from the figures for the rich area. In certain years—1929-30 and 1930-1, 1935-6 and 1936-7, the infantile mortality-rate was as low in the poor area as in the intermediate area, but it was higher from 1931-2 to 1934-5.

1930-1 was a peak year for births in Belfast, and also a peak year for the poor and intermediate districts; in the rich area the peak came in the following year. For the whole city, births were fewest in 1934-5, and following that year there were large increases in births in the poor and rich areas. In the intermediate area the increase did not appear until 1936-7. On examining the figures in greater detail, it is found that the increase in births in the poor area is entirely due to the increase in one dispensary district—in Woodvale (10). In the rich and intermediate areas the increase is more general.

Part of the great increase in births during the past two years in the rich area might be explained by the increase in population. It might be supposed also that the increased infantile mortality was due to an influx of people from the poorer areas, bringing with them from those poorer areas their liability to high infantile mortality. However, in detail, the areas showing the increased number of births are not those showing the increased infantile mortality-rates. (But when births are increasing rapidly, the figure calculated for infantile mortality is lower than the true figure.) Thus the most marked increase in births has been in Ligoniel, Greencastle, and Ballyhackamore (districts 8, 7, and 13), whilst the increase in infantile mortality has been in Ravenhill and Ligoniel (11 and 8), and for the one year 1935-6 in College (6).

The conclusions to be drawn are that infant life is much safer in the richer third of Belfast, where it is insulated from the factors which make the infantile mortality-rate higher, and make it fluctuate more violently in the other parts. But this richer



NUMBER OF BIRTHS

Year	Area: Poor	Area: Intermediate	Area: Rich	All Belfast*
1928-9	3472	3605	2026	9104
1929-30	3445	3747	1976	9172
1930-1	3557	3924	2072	9561
1931-2	3300	3811	2078	9190
1932-3	3163	3662	1955	8782
1933-4	3226	3616	1981	8827
1934-5	3105	3565	1978	8651
1935-6	3347	3554	2146	9047
1936-7	3351	3656	2335	9343
9 years	29966	33140	18547	81677

* Including dispensary district 14, Ballymachan.

area in the past two years has presented a problem, because its infant life has become less safe. The factors which caused such a reduction of births after 1931 had little influence in the rich area; and it is in this area that the recovery in the number of births since 1934 has been most marked. These features may be partly due to the increasing population of the rich area, though it is not clear that the increased infantile mortality is connected with this factor. In the poorer two-thirds of Belfast the degrees of poverty do not appear now to be directly correlated with infantile mortality; though when the depression was worse, infantile mortality was higher in the area now classified as "poor" than in that classified as "intermediate." It may be that the concentration of health services upon the most markedly poor areas has made these areas as safe for infants as the intermediate areas.

H. SCOTT BOOKER, *Hon. Secretary.*

5 Geneva Gardens, Stranmillis, Belfast.

REFERENCES.

1. *Ulster Medical Journal,* April, 1937.
2. Figures for 1937 not yet being available, though provisional figures of the Registrar-General show that for all Belfast there has been a marked improvement in the number of persons per house and per room. Some improvement appears to have been made in each area.
3. Exact figures are not computable for the individual areas.

Voluntary Institutions' Administration To-day

By DOUGLAS BOYD, M.B., D.M.R.E. CANTAB.

Hon. Radiologist, Mater Infirmorum Hospital, Belfast Hospital for Sick Children, The Benn Hospital.

Opening Address to the Medical School, Mater Infirmorum Hospital, Belfast

I AM TOLD that as a child I talked early, and with considerable fluency, quite unembarrassed by any suspicion of self-consciousness.

This was a childish characteristic which I regret that I lost at a comparatively early age, and when six odd weeks or so ago I optimistically promised to address you at this opening meeting of the hospital session, my pride was effectively tempered by the realisation that I would have to stand before you and say something that at least sounded intelligent.

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This was a childish characteristic which I regret that I lost at a comparatively early age, and when six odd weeks or so ago I optimistically promised to address you at this opening meeting of the hospital session, my pride was effectively tempered by the realisation that I would have to stand before you and say something that at least sounded intelligent.

Furthermore, having been, as it were, warned I would not have the excuse for mediocrity granted to those who speak impromptu—although I understand that the preparation of so-called "impromptu" speeches is a matter to which some devote considerable time.

I had the fortune, or misfortune, to be born on "Guy Fawkes" night, the anniversary of one earlier attempt to upset the Constitution, so it was quite inevitable that my earlier years should be stormy.

It is the truth that when, on one occasion, my home was shaken by an earth tremor, that urgent, and, to my mind, unjustifiably selective, attention was paid to my whereabouts.

My schooldays were marked by an early interest in chemistry, particularly in its pyrotechnical aspects, and were punctuated by a series of explosions. Potassium chlorate and sulphur were proved to have properties other than medicinal, and once I was assisted to hospital following the quite accidental discovery that bluestone and aluminium when heated together exploded with great violence.

In the interests of others and of the school buildings, my activities in chemistry were immediately curtailed from this date. The repressed complex had fortunately not been accepted at that time, and my school teachers wisely refrained from allowing the child to follow its natural bent, in my case, apparently, heavenwards.

To the psychologists amongst you it will be perfectly evident that my Guy Fawkesian complexes find part outlet in coils and sparks and dark room cellars, and to the psychologists I appeal with confidence, and to the others with anxiety, for a lenient reception of the subject matter of this discourse.

Opening of Hospital.

I propose first to recall the birthday of this hospital fifty-four years ago, when its doors were opened in November, 1883, by the Most Rev. Dr. Dorrian.

There was then accommodation for only twenty-eight patients, and the number of out-patients must have been correspondingly low. The progress of the hospital has been one of continual expansion, and in the twelve months preceding June, 1936, help was afforded to a grand total of no less than 53,353 patients.

The first reaction is one of regret that so many people required attention, and then there is the feeling that, after all, the hospital staff must have done a great deal to help these unfortunates. These figures are the totals from the records of the departments first interviewing the patients, and they are reproduced in the hospital report of the year.

Turning to this volume, I had hoped to find some indication of what troubles had brought these sick people for attention.

I found, as of course I should have known, that the problem of adequate classification of illness has proved a problem as impossible for solution in this hospital as elsewhere.

I found that apparently every surgical case had been treated by operation, but even the hospital radiologist with his restricted outlook realises that the occasional surgical case escapes operat—— I mean, is treated by conservative methods.

I began to realise the difficulties of selective distribution of cases when startled by the unexpected and astonishing appearance of a visceroptopic gastric carcinoma in the records of the gynæcologists!

To-day the general practitioner is not infrequently at trouble to know whether to send his patient to a consultant physician or surgeon, and the tortuosity of a problematical dividing-line between even the major sections of so-called medical and surgical ailments perplexes the experienced as well as the recently qualified.

To a medically-minded observer the whole question is one by no means devoid of humour—he sees the insurgent surgeon standing on the impregnable heights of the acute appendix, while the belligerent physician, having valiantly re-attacked and captured the greater part of the gastric and duodenal ulcer frontier, stands defiant over the spastic colon, vacillates with diverticulitis, and, as gracefully as possible under the circumstances, relinquishes serious claim to the cure of the hæmorrhoid!

This is, of course, absurd; but no more absurd than to consider any illness as other than a problem to be viewed with the eyes of a physician, irrespective of the fact that treatment may involve the use of surgery.

The time will surely come when even the very hospital reports will be compiled on these principles.

There is no greater tribute that could be paid to a surgical colleague than for it to be said that he uses his mind as a physician and his hands as a surgeon. There is nothing more complimentary to say of a physician or of a surgeon than that they temper their skill by co-operation with the experts in the various branches of their art.

Such a view takes it for granted that co-operation, or in other words, "teamwork," is the keystone on which rests the entire future of our profession, and this is indeed the truth.

When a gloomy future is foretold for the voluntary hospitals it is overlooked that in the hospital of the future, teamwork will show to the finest advantage, and the voluntary hospital of to-day, which organises itself and adapts itself to the principles of teamwork, can as confidently expect to live and to flourish as the art of medicine itself.

In considering the fundamental principles of teamwork, interesting features at once make their appearance. Each member of the team must admit that his colleagues are better fitted to deal with certain problems than he is himself. Such an admission may not come easily, even to the psychologist of the party, who should, of course, know better.

Successful teamwork demands close personal contact between the members of the team—this being a feature of particular importance when the case is one of unusual difficulty.

This personal element is perhaps a feature to which insufficient attention has yet been paid. One minute's discussion regarding the case may be of more value to the patient than a manuscript of notes.

These two features alone indicate that an adequately equipped and suitably staffed hospital of medium size is not under even the slightest handicap, and is, if anything, even more favourably placed than a large unit for the development of the co-operative team methods of the future.

Detailed Specialisation.

The adoption of such practice assumes that the diagnostic methods and treatments of the future will call for even more detailed specialisation. Each year clinical medicine is becoming more difficult, more complicated, and more detailed. Long since has the time passed when it is possible for any one man to carry at his fingertips sufficient knowledge to deal with the problems which will confront him even in a small practice.

Each year clinical medicine is becoming more difficult, more complicated, and more detailed. Long since has the time passed when it is possible for any one man to carry at his fingertips sufficient knowledge to deal with the problems which will confront him even in a small practice.

As time passes we shall see a splitting up of the art of medicine into sections more numerous than could ever have been thought of by the pioneers who decided to limit their practices to non-surgical or surgical matters.

We see physicians and surgeons acquiring experience and a reputation for being more skilled than the average in dealing with some certain complaint.

It is obvious that this tendency will continue, and that in the selection of a consultant group far more attention will be paid in the future than at present to obtain the advice of the specialist skilled in dealing with the particular complaint.

No thoughtful person can fail to realise that the overwhelming complexity of modern medical knowledge will compel specialised branches of medicine to become more numerous. Assuming that this is the underlying principle of future practice, it should be of absorbing interest to consider on what lines these developments are taking place, and to take thought of what can be done to build skilfully for the future.

Specialists of the Future.

For the specialist of the future there must be no isolation at his own particular branch. He will constantly be co-operating with a group, the individual members

of which are familiar with each other's clinical abilities and skill. He will be well aware of the limitations and difficulties attached to each member's particular art. Only in this manner will the patient be assured every advantage obtainable from consultation.

The General Practitioner—a Specialist.

In the future the general practitioner will be no less specialised in his particular branch than any other member of the team.

The student and the recently qualified doctor should consider this statement, because it is almost certain that they will resent their introduction into general practice, finding it very different from what they expected.

The National Health Insurance Scheme.

The practitioner will certainly hear the present National Health Insurance scheme bitterly attacked by doctors who have qualified years before him, and he will find that an insurance practice raises problems for which his clinical training took no account.

If he will take the trouble to inquire from some older physicians, he will realise how little progress medicine could have made under the sixpenny surgeries, the colliery practices, such as those of Yorkshire and Wales, and the many earlier questionable health societies.

He will understand that any improvement is a matter to be appreciated, and then, if he cannot work to improve an inadequate system, he should seek other fields for his activities.

The worst that could happen would be for him to work under the scheme with a feeling of resentment, which in a short time would lead to apathy—the worst misfortune that can befall a doctor.

That possibly the majority of National Health Insurance patients are on the whole looked after reasonably well, is more a tribute to the undoubted fascination of medicine and the type who choose it as a career, than any commendation of the scheme itself.

Fault of System.

From the conscientious practitioner's point of view, the chief fault of the present system is that it may so crowd his waiting-room and his visiting list, that he cannot devote as much time on each individual patient as he would desire.

On inquiry from a number of practitioners, one is immediately struck by the fact that the type of practice influences the opinion of the practitioner almost as much as the character of the man himself, or is it that the character of the man influences the type of practice in which he eventually settles?

At any rate, one often finds that the practitioner who prefers to work in a more or less mass-production system is very satisfied to have a large panel, while the

slower diagnostican merely tolerates a large panel because he finds that it is impossible to live without it.

The present scanty capitation fee of nine shillings per panel patient for the year is a sum so small that a comparatively large list is essential even to meet the costs of consulting and waiting-rooms.

The insured patient too often finds the general practitioner so busy, that his consultation is only obtainable after considerable delay and his interview restricted by the crowded state of the waiting-room.

With a long visiting list, night calls, and long crowded consulting hours, only the very fit and mentally courageous doctor can maintain an interest in his work and give his patients adequate medical service.

When the time comes, and it can only come by the united pressure of public opinion and unity in the profession itself, that the size of the individual practitioner's insured list is limited to a figure no larger than can be treated with a high standard of clinical skill, then the patient will receive benefits which frequently exist now only in theory.

This would mean a grading of the maximum size of each practitioner's list to a figure calculated on the sickness index in the district and local conditions, with a corresponding graded increase in the already too small capitation fee.

One cannot have experience of insurance practice for long without realising that the most gross abuses of the system are made by those whom the panel system was designed to help.

The patient who only seeks medical aid when it is necessary, is at a disadvantage because of the overwhelming numbers of those who demand attention on any pretext and are only satisfied when they have secured from the panel a supply of drugs of more monetary value than their weekly contribution. Such people, if denied their demands, will simply change to a less scrupulous doctor.

Possibly at some time means will be taken to stop these abuses and to reward the conscientious patient.

Advantages.

These problems, together with other matters, may be eventually dealt with in a manner satisfactory to both the honest insurance patient and the conscientious practitioner; but, at any rate, even at present, with all its faults, insurance offers the patient many advantages which he could not obtain were he not insured.

The insured patient has free choice of doctor, and in treatment is denied no drug of proved therapeutic value. Even certain proprietary medicines will be allowed, although in the most part his prescriptions are the identical proprietary articles, less refinements of taste and smell and cellophane packing, and in this he is at no therapeutic disadvantage.

Costly vaccines or sera may be prescribed, as well as surgical dressings and many varieties of surgical appliances.

Certain biological tests and diagnostic measures will be carried out without charge, but unfortunately as yet the present National Health Insurance scheme makes little provision for detailed investigation or consultant service.

As regards consultant service, the insured patient in the national scheme is little better off than the non-insured.

He has to seek the services of the consultant either in private or in hospital, and only in the carrying out of a treatment requiring costly drugs, such as insulin or liver extract, is he at any material advantage over the non-insured.

For the majority of insured patients, consultation in private is a matter out of the question because of financial reasons.

He may be able to afford one consultation fee, but certainly he cannot afford a number of consultations or anything pertaining to team investigation.

Hospitals Crowded.

In the so-called voluntary hospital of to-day, as in panel practice, the question of numbers is the problem of most pressing acuteness.

The hospitals built for the necessitous poor are now crowded to the doors by the insured patient sent there because the panel doctor is too busy to look after him; by the National Health insured patient sent for legimitate consultation; and by the middle-class patient who cannot afford or does not wish to meet the cost of investigation or treatment elsewhere.

The necessitous poor find themselves crowded out by the necessitous insured and middle class, and a problem has arisen which could not have been foreseen by those who founded the hospitals in the days when medicine was a comparatively simple affair.

Remedies of various sorts have been put forward and various plans proposed, and the hospitals, and particularly the medical profession, have struggled along, exhibiting the lack of concrete planning and co-operation which has always been the characteristic of medical progress.

While the public always took a great interest, and always will take a great interest, in medical matters, and particularly in hospitals, it is not interest which takes them to hospital when they are ill. Neither is it a feeling that the attention given to them in the modern general hospital is any better, or for that part so good, as they would receive were they able to afford consultations with specialists and the individual attention of the best nursing-homes.

It is obvious to the public that it is humanly impossible to deal with serious and complicated conditions under any limitations of time, and this, together with the not unreasonable objection of certain patients to wait for hours in externs, accounts for the fact that the consultant of to-day is able to maintain position.

The hospitals cry " wolf " and at the same time exhibit their financial instability by spending begged thousands on equipment and extensions. Financial genius . . .? Or would the average business man say differently?

The voluntary system is crumbling—or so they say—but the bending girder or stretching link, or what you will, is not the hospitals themselves. It will be the medical and nursing staffs which maintain them.

With each advancing year there is more widespread realisation of the truth that symptoms are indications of a generalised and not a localised disease.

In consequence, more detailed, more extensive, more expensive, investigation, more hospitalisation, fewer private consultations. Each advancing year sees an increased reluctance on the part of doctors to undertake specialised work in which the ratio between time-consuming hospital and private work is rapidly becoming grossly disproportionate.

Each succeeding year sees the scale tilted against the consultant, and it is hardly to be wondered that the comparative security of panel practice or public health appointments offers more attractions to the recently qualified than specialisation under conditions which render such an undertaking a more hazardous gamble from year to year.

The breakdown of the voluntary system will be when the hospitals become just a little more medically understaffed—when the nursing staff cry out for shorter hours and adequate payment on the scale of the private nursing-home no longer open to them—when the specialist finds that finally he cannot give to the hospitals the gratuitous service which the voluntary system demands.

State Control Talk.

Already there is talk of future State control, of State hospitals, of inclusion under the National Health schemes of every wage-earner up to £250 per annum and his dependants. There is talk of extension of the scheme to include the so-called middle classes, a bolstering up of the scheme by the addition of the better-fed and less-sickness-prone of the community.

In the last few years a revolution has occurred in the municipal hospitals, which now in some cases equal or surpass the voluntary hospitals. We see clinics of various sorts, some of doubtful help to the public and of none to the general practitioner.

Many feel that State medicine advancing on these lines will lack personal element so essential in dealing with the sick. Many feel that some reflection of political opinion may influence the granting of an appointment, to the detriment of medical ability and the medical profession as a whole.

The world still looks to the medical profession to be a body uninfluenced by political opinion or distinctions of creed or race; with some slight but universal lead for world unity, and such a belief may not be held or be practical with State control.

Would it be of advantage to absorb the voluntary hospitals into such schemes of State medicine? Would it be advisable to change their status so that they exist as public clinics—pay-blocks—from which the specialist of the future will derive

his living? Would it be better if the voluntary hospitals were enabled to do the work for which they were originally intended? Could this be effected by perfecting the National Health Insurance? By inclusion in such scheme of the wage-earners' dependants? By enabling the so-called middle classes to avoid hospitalisation by a system of insurance to cover the cost of specialised treatment and nursing home?

Insurance Scheme Suggestion.

It does not seem to be realised that the middle class are as a rule quite well able to meet with the ordinary problems of illness, and that it is only the major misfortunes which, as it were, catch them unprepared.

Such an insurance scheme as one would visualise as being of the utmost necessity and the greatest practical value for these particular patients would be one in which the patient insured against the risk of contracting some serious disease, such as tuberculosis or diabetes, or pernicious anæmia; one in which the patient insured against the risk of operation or of specialised investigation; against total or partial permanent disability. One visualises a scheme in which the finances were so controlled as to ensure adequate recompense, neither more nor less, for necessary skilled attention.

Such a scheme would interfere as little as possible with the present system. The general practitioner would hold his panel as the fundamental basis of his income. The specialist would find his work more fairly divided between hospital and private. He could ask for additional consultation without feeling that he was subjecting his patient to financial stress. He would work in more co-operation with his colleagues and the general practitioner, and if such a scheme were feasible in practice, it has many features in theory to commend it.

The greatest influence in the adoption of such a scheme would be public opinion. The weight of public opinion would as surely insist on its adoption as the modern complexity of medicine has enforced specialised practice, ultimately self-destroying in its present-day application.

Closer Co-operation.

In the meantime, great advantages could be obtained by closer co-operation between the groups of hospital consultants and the general practitioner, and also between the hospitals themselves.

A first step would be the restricting of hospital service to the emergency cases, the very poor patients and those patients referred for consultation and investigation, who bring with them the letter of introduction which indicates that the most important member of the team is willing to co-operate.

Every hospital secretary agrees that such a policy is correct, but avers that two reasons render it impossible. The first is that the general practitioner will almost certainly fail to carry his end of the burden, as experience has too often proved in the past.

This is hardly to be wondered at under the usual conditions of over-worked

general practice, but making such a letter so far as practical a criterion of admission would benefit the patient, practitioner, and hospital. The second reason offered is that the hospital subscriber has contracted with the hospital to receive the benefits of hospital service, and that these services must be given, irrespective of whether the patient's general practitioner is pleased or otherwise. In addition the hospital subscriber receives prior right and must be dealt with in preference to the necessitous poor person who cannot afford either to be a panel patient or a subscriber or to see a doctor elsewhere. Truly a sorry state of affairs. Pathetic and rankling evidence of how the voluntary hospital has been forced from its ideals.

The hospital management which withholds such a step of reform on the pretext that alteration might result in financial loss, fails to realise that a patient thoughtful enough to become a voluntary subscriber would without doubt welcome such steps as would insure him the benefits of medical co-operation.

The unpleasant duties of the hospital almoner would be lessened were the practitioner to give privately sufficient details to prevent hospital abuse; and the almoner service, instead of existing as a " means test," would enter on its historical duties as the section of the hospital disbursing financial aid for those unable to benefit because of dire necessity.

Appointment Times.

Inside the portals of the hospital, means might be taken to lessen the irksome hours of waiting by instituting some system of appointment times for those who seek consultation, and linked with this the provision of adequate facilities for letters and copies of reports to be sent to the practitioner.

Co-operation between the hospitals themselves would enable them to avoid re-duplication of certain expensive and lesser-used equipments, and not unlikely result in a substantial saving in the prevention of duplicated investigation due to the habit of certain patients in wandering from hospital to hospital.

If the present voluntary system should break down, as would appear so likely that it may do, there is no alternative other than State control.

The voluntary system shakes under the strain of unfair stresses. But there is one pleasant feature—possibly a logical development of the increasing complexity of medicine. To-day in many hospitals there are welcome signs that specialised team-practice and friendly co-operation are finding place.

Is it too much to hope that this friendly co-operation will grow and will extend to matters outside of the hospitals? Is it too much to expect that the whirligig of time, which has perforce stripped the hospitals of their prefix of "voluntary," will again revolve—and that the hospitals will live in complete fulfilment of the ideals of their founders? And as so clearly stated by the founders of this institution—that it will exist so that "Sickness and destitution will ever be the only necessary passports to the wards."

Diabetes Insipidus
The Role of the Anterior Hypophysis

By J. H. BIGGART, M D., D.SC.

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IN the routine examination of some seven hundred brains, seven were found to have shown the clinical syndrome of diabetes insipidus (Biggart, 1935, 1936, and 1937). Whilst the anatomical findings in these seven cases allow of the interpretation of the pathogenesis of the diabetic syndrome on the basis of the destruction of the (1) supraoptic nuclei, or (2) the supraoptic-hypophyseal tract, or (3) the posterior hypophysis and its epithelial investments, it is a curious and still unexplained observation that polyuria is not found in all cases in which these structures are involved. It seems difficult, for example, for the supraoptic hypophyseal tract to escape in many patients suffering from tumours of the pars tuberalis, and yet many of these do not show the syndrome. Other patients with diabetes insipidus show a diminution in the polyuria, which may eventually entirely disappear, and yet at post-mortem a lesion may be found which, because of its destruction of the supraoptic-hypophyseal system, might well be expected to be associated with polyuria.

The following case, therefore, because of the site of the lesion, seemed worthy of analysis and report :—

The patient, Mrs. J. McD., was a woman of fifty-four years of age. One year previously she had a radical mastectomy performed for the removal of a tumour of the left breast. Pathological examination of the tissue showed the tumour to be a scirrhous type of carcinoma. Following this operation, she was quite well until one month ago. Since then she has noticed a rapid loss in weight, and has suffered from pains. These pains are most severe over the back of the neck and over the head.

There is no history of any urinary trouble. She has no nocturia, and no frequency.

Examination of the patient showed little of note. She was emaciated, with a dry, rather inelastic skin. There was an enlarged gland palpable in the left axilla. Nothing abnormal was noted in the heart, lungs, or abdomen.

Two days before death some left facial weakness developed, and examination of the fundus showed some papillœdema. Paresis of the seventh cranial nerve appeared, and the patient gradually became weaker, and died in coma with signs of pulmonary œdema.

During her stay in hospital the urinary output in the twenty-four hours varied from ten to fifteen ounces—a definite oliguria. The specific gravity was 1025. There was no sugar and no albumen.

Autopsy showed a few lymph-nodes in the left axilla filled with carcinomatous

C.M.
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deposits. No metastases were present in the viscera. A malignant deposit was found in the sella turcica.

The hypophysis was about four times its normal size, and weighed 2.5 gm. The stalk was thickened, measuring three millimetres in diameter. There was a continuation of the tumour into the hypothalamus, and here it was seen to project on the floor of the third ventricle.

Histological examination of the hypophysis and hypothalamus showed the presence of an encephaloid carcinoma, which resembled mammary carcinoma. The metastasis had almost completely destroyed the anterior lobe of the hypophysis, only a thin rim of compressed tissue being found. This served as a capsule to the metastasis. The posterior lobe and stalk with its investment of pars tuberalis were completely replaced by malignant tissue, the anatomical outline of the original tissue being, however, remarkably preserved. The tumour continued directly into the hypothalamus, where it replaced the tuber cinereum, and completely divided the supraoptic-hypophyseal tracts. It projected into the floor of the third ventricle, and small seeded tumours were found scattered over the ependyma in the more posterior part of the third ventricle. The distribution of the lesion is shown diagrammatically in figure 1.

Comment.

It is apparent from the histological description of the distribution of the lesion, that on the basis of the conclusions reached in the previous publications on this subject, diabetes insipidus might have been expected in this patient. Instead of showing this syndrome, the patient appeared clinically to be more nearly an example of Simmond's hypophyseal cachexia, in which a low urinary output is not uncommon (Zondek). If one compares the lesion in this patient with that found in two other cases of metastasis in this region which were associated with diabetes insipidus (fig. 2), it becomes obvious that the only essential difference is the destruction of the anterior lobe of the hypophysis in the present case. This finding seems to suggest that even in the presence of the essential lesion of the supraoptic-hypophyseal tracts or of the cells which manufacture the antidiuretic hormone, the anterior lobe must be intact, or at least that sufficient functional tissue must remain to prevent a condition of hypopituitarism.

There are several observations which appear to support this suggestion. Thus, whilst diabetes insipidus is occasionally found as a complication of acromegaly, it has not been found in any case of chromophobe adenoma which I have examined, and with this finding all the clinicians whom I have consulted agree.

Furthermore, there appears to be a general agreement that hypophysectomy does not produce a permanent polyuria. The question, however, of whether removal of the anterior hypophysis from an animal showing diabetes insipidus will bring about a return to a normal urinary output has not been settled, but is at present being investigated (Biggart and Alexander). Mahoney and Sheehan

have stated that the polyuria can be abolished by thyroidectomy, though Fisher, Ingram, and Ranson find that the operation only diminishes, and does not abolish, the polyuria in the cat. This effect of thyroidectomy may only be due to the abolition of the effect of the anterior hypophysis acting through the thyroid. Barnes, Regan, and Bueno and Biassotti have been able to produce a diuresis in normal animals by the administration of anterior hypophyseal extracts.

If this idea of the necessity for a relatively intact anterior hypophysis is correct, it helps to explain why patients with diabetes insipidus may eventually become oliguric with the progression of the lesion. The case reported by Strausz could quite easily fit into this category. A boy of nine years developed polyuria (7000 c.c. daily). This continued until the age of thirteen, when it gradually disappeared, but from being an intelligent, mentally active boy, he became dull and stupid. At fifteen years of age he had typical myxœdema and no symptoms of diabetes insipidus. Unfortunately, there was no autopsy.

On clinical grounds von Hann has also postulated a rôle for the anterior hypophysis in the evolution of permanent polyuria.

In decerberate hypophysectomised cats, Newton and Smirk found a normal water metabolism, which would also agree with the suggestion here put forward.

Finally, a permanent polyuria has never been produced in a completely hypophysectomised animal. Polyuria can be produced after hypophysectomy, but it is always transient.

Against the acceptance of this rôle of the anterior hypophysis, it may be urged that epidermoid tumours of the pars tuberalis are not infrequently associated with polyuria, even when symptoms such as amenorrhœa suggest that the functions of the anterior hypophysis are in abeyance. This objection, however, can scarcely be regarded as valid unless such cases are shown to have a relatively complete destruction of the anterior hypophysis. Furthermore, even the complete Frohlich's dystrophia adiposo-genitalis syndrome may result from a simple hypothalamic puncture (Biggart and Alexander) in the presence of what appears histologically to be a normal anterior hypophysis.

In view of these facts, the study of the present case would suggest that whilst the antidiuretic function of the hypophysis is linked up with the posterior lobe and its hypothalamic connections, the anterior lobe is in some way necessary for the permanent polyuria of diabetes insipidus. Some of the available evidence suggests that the thyroid forms a link in the expression of this function, but it may not be the only means whereby this function is expressed. Dix, Rogoff, and Barnes have recently shown that, whilst anterior hypophyseal extracts or thyroid produce a diuresis in the normal dog, they fail to do so in animals which have been depancreatectomised.

The complete absence of any history of polyuria in this patient suggests that the metastasis has primarily involved the anterior hypophysis, and that the destruction of the supraoptic-hypophyseal tracts and the posterior hypophysis

occurred subsequently when the lack of antidiuretic function could no longer be appreciated by the body tissues.

SUMMARY.

1. A case of hypophyseal and hypothalamic damage is recorded in which there was no history or signs of diabetes insipidus.

2. It is suggested that the anterior hypophysis plays an essential part in the production of a permanent polyuria.

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The Mental Manifestations of Head Injuries in Children

By H. HILTON STEWART, M.D., M.R.C.P.(LOND.)

Hon. Physician with charge of out-patients,
Ulster Hospital for Children and Women, Belfast

MENTAL changes following head injuries may be classified as temporary and permanent. Temporary changes are common, and indeed almost any severe head injury is accompanied by a series of these mental changes which conform to a definite pattern. The patient who survives gradually returns to normal, although convalescence is prolonged and possibly retarded by the condition known as post-traumatic psychosis (Symonds), or receding dementia (Martin).

The frequency of the temporary mental change following severe head injury is in acute contrast to the rarity of permanent mental change. Looking over the records of all cases of head injuries admitted to the wards of the Royal Victoria Hospital, Belfast, in the past five years, I found only one in which mental change, seemingly permanent, was recorded.

In considering this subject as applied to children, several important questions suggest themselves. What is the frequency of permanent mental changes in children? Does this change conform to any particular pattern? What is the lesion, if any? Or to what can one attribute the cause?

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In considering this subject as applied to children, several important questions suggest themselves. What is the frequency of permanent mental changes in children? Does this change conform to any particular pattern? What is the lesion, if any? Or to what can one attribute the cause?

The answers to these questions have been sought for in an examination of fifty children, all of whom had had severe head injury. Three cases were discarded as being unsuitable for study owing to a doubt about the period of unconsciousness, but the remaining forty-seven had severe cerebral injury with unconsciousness for a considerable period.

Table 1 shows the actual classification of these cases :—

Number of cases examined	47
Number with depressed fracture	21
Number with fractured base	5
Number with linear fracture	10
No fracture but unconscious	11
Number free from all symptoms	27
Number with symptoms	20

Symptoms were complained of by twenty children out of forty-seven. These symptoms did not differ very much from other observers, except possibly in frequency.

Table 2 shows these various symptoms :—

Nervous.	Headaches.	Giddiness.	Nausea.	Behaviour changes.	Fits.
7	7	1	1	3	1

The " nervous cases " one must exclude as being necessarily due to head injury, because the sympton is far too common amongst children attending hospital from other complaints to warrant its inclusion in the list of mental sequelæ of head injuries.

Headaches scarcely come into the scope of this paper, except possibly in cases of compensation neurosis. This condition is by no means rare in children, but in my experience it is commoner in the child with the slight head injury, and I am of the opinion that the symptoms are often suggested by the parents to the child. The only case of headache investigated in this group of seven was one due to compensation neurosis. On admission to hospital this child made no further complaint, nor were there any physical signs present. The ancillary tests, including X-ray of head and cerebral spinal-fluid examination, were normal, and yet on discharge the complaint was renewed and did not disappear until the child was awarded £100 in court.

Epileptic fits are well-known sequelæ of head injury in those predisposed, and have been described often. They therefore require no further comment here.

Behaviour changes following head injuries have been described by several authors, and the three cases found in this series are similar to those described by Ritchie Russell and Blau. The former finds post-concussional symptoms in sixty-six per cent. of the cases studied, the chief of these being nervousness, and changes in behaviour and personality. Blau, in a review of twenty-two cases, establishes four groups—(1) Post-traumatic acute psychosis; (2) Post-traumatic chronic

behaviour disorders; (3) Post-traumatic epilepsy, with secondary deterioration; (4) Post-traumatic cerebral defect conditions, and post-traumatic secondary intellectual deterioration. The chief symptoms noted by him in group 2 were overactivity, restlessness, destructiveness, impulsiveness, assaultiveness, cruelty to animals, emotional instability, temper and tantrums, truancy, and delinquency.

These behaviour changes appear to me to constitute one of the real social as well as medical problems with which one is likely to meet in the modern age of increased road accidents. A detailed study was therefore made of these three cases.

Case 1—T. N., aged 12 years, was said to be a very bad boy since the accident. For example, when sent a message by his mother, he would stay away for hours and perhaps spend the money on something else. He was missing from his home for three nights, and was finally found in a watchman's hut.

Case 2—H. H., aged 5 years, was said to go into fits of rage, and would strike anyone. Nine months after the accident he was said to have suddenly lost his memory on the street. He was found wandering aimlessly as if he did not know where he was.

Case 3—W. M., aged 9 years, said to be self-willed and restless, pulls his clothing to pieces, has headaches occasionally, and walks in his sleep.

Cases 1 and 2 were diagnosed cerebral contusion without fracture, at the time of the accident, while Case 3 had a linear fracture in the parieto-occipital region. All were unconscious for a considerable time. All symptoms were dated by the parents as beginning with the accident.

The explanation of these behaviour disorders is far from clear. The ideal solution would be the establishment of a definite pathological basis for such symptoms. This has not been possible, and the only suggestion as to a pathological basis is that these cases are similar to post-encephalitic behaviour disorders.

The other possible explanation is that the accident merely unmasks a personality, the abnormal trends of which might develop sooner or later in any case. If this solution were correct, one might conceivably expect to find some evidence of behaviour trouble, nervous family history, or degeneracy, in the family history of the affected cases.

Investigation in these lines does not seem to have been done, and therefore in these three cases an attempt was made to find what sort of parents and home-life these children had.

This proved to be a difficult investigation. In all three cases the guardian who brought the child to hospital denied that the father or mother was nervous in any way. Few statements made by the relatives could be trusted, because any stigmata of degeneracy were carefully hidden. Hence schoolmasters, schoolmistresses, visiting nurses, etc., were asked to co-operate in the search.

Case 1 turns out to be an illegitimate child being boarded with a relative. The mother had gone to America, and the father was never heard of. The home was

kept in a state of squalor, the guardians were most unreliable in their statements, and evidence of degeneracy was present everywhere.

Case 2 had an irresponsible father. He was described by the schoolmaster as being impetuous and highly strung. When he heard his child had been knocked down he did not bother about the injured child, but immediately attacked the motorist. The latter received such a rough handling that he had to be removed to hospital. Is it any wonder then that this child is very short tempered, and would attack anyone?

Case 3 gave most difficulty of all, for even a visit to the child's home revealed nothing. In this case I am indebted to the district tuberculosis nurse for her good offices in gaining the confidence of the child's mother.

She learned that the child's father was a confirmed drunkard; that he often accused his wife of infidelity, even when he was sober, although this was not the case. He abused his wife, and recently threatened to cut her throat with the bread-knife. On one occasion he took the hatchet to her. He denied the parentage of any of his children. He took the children's Coronation treat tickets and burnt them. Everyone dreaded his return home in the evening and the week-ends, when he was continuously drunk.

This, then, gives an idea of the family background in these cases, and I am of the opinion that family background cannot be overlooked in mental changes following head injuries. Just as is the case in other organic nervous diseases, the head injury acts more by unmasking the symptoms rather than being the sole responsible factor.

The frequency of behaviour changes following head injury cannot be estimated from such a small study, but Beckman, in a series of two hundred and thirty-one cases, found nineteen with behaviour changes, roughly about eight per cent. Three of these were permanent.

One concludes that these cases of mental sequalæ of head injuries do tend to show the same type of symptoms. These symptoms belong to the group of behaviour disorders. How far the symptoms are permanent is impossible to say, but none of the present series has shown any improvement in from one to four years.

The above paper is based on a contribution made to the Section of Neurology at the annual meeting of the B.M.A. in Belfast, 1937.

I am indebted to Dr. J. Mulligan for his assistance in compiling these cases; to the nursing-staff of the Ulster Hospital for their valuable assistance; and to Miss Knox of the Tuberculosis Institute for her co-operation.

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Studies from the Institute of Pathology, Queen's University

Introduction.

Pathology may be defined as a study of disease, which in turn has been defined as a deviation from the normal or vital processes of the body. Such a definition does not indicate the study of a static picture, but rather the study of a progression of pictures—a process. A dead body, therefore, cannot suffer from disease, but in it we may find evidence that during life there was some deviation of its vital processes from the normal. It is only, however, by a study of the diseased body during life—a study embracing the alterations in function, which the disease process has developed — that we are enabled to understand the mechanism whereby the changes found in the dead body have been produced. Our knowledge of the disease process has been built up piece by piece, by the slow fusion of a series of correlated observations. The study of the sick person, the observation of his symptoms, of changes in the biochemistry of his body, of the presence of this or that type of virulent organism, and the knowledge of the anatomical changes as observed in the various organs at post-mortem, are all equally useful. Observation along one only of these lines, no matter how competent the observer, is in itself incomplete, and not only inhibits understanding of the particular disease process, but also leads to an unintelligent empiricism in treatment.

As it is obviously impossible for each and every practitioner to study every patient from all these various aspects, it was considered that the clinico-pathological correlation of symptoms and anatomical findings in a series of cases might be of some general interest. Accordingly it is our intention to publish a series of cases representative of the material which is being added to the departmental museum. As such material is primarily for the teaching of students, the series will consist of quite common diseases, which may well be found in the practice of any general practitioner.

The method adopted is not original. Cohnheim first emphasised the fact of disease being an alteration of the vital processes of the body. In this country the case system of teaching, in which the diseased body is regarded as a whole, rather than as a collection of unrelated and isolated organs, was introduced by Professor Lorrain Smith. In America and elsewhere the study of pathological physiology has been stimulated by McCallum's Textbook. To these and many others we acknowledge our indebtedness.

J. Henry Biggart.

Case 1.—A Patient with Miliary Tuberculosis.

Clinical history.—The patient was a married woman, aged 25 years. She had one daughter, aged 1 9/12th years. The previous pregnancy and labour were entirely normal. She has had amenorrhœa for the past five months.

On the 23/7/37, whilst she was putting out her washing, she fell off a chair, and was very frightened.

On the 24/7/37 she took sharp intermittent pains in the lower abdomen, and subsequently she noted some blood-stained vaginal discharge. She was admitted to Lurgan Infirmary, where she was delivered of a five-months fœtus. The fœtus and membranes appeared to be passed intact, and there seemed to be no complications.

Following the delivery, however, the patient began to show an intermittent temperature, ranging from 98 to 102 degrees. Prontosil had no effect in aborting this fever. Her heart, lungs, throat, and abdomen were carefully examined, but failed to show any cause for the temperature.

Vaginal examination on the 14/8/37 showed the absence of any discharge, and nothing abnormal could be felt in the fornices. Swabs from the uterus were sterile. A thickened mass could be felt posterior to the uterus. Various tests were performed. The Wassermann was negative. X-ray of the chest showed nothing abnormal. Agglutination for bacillus abortus was negative, and a catheter specimen of urine was found to be sterile.

7/9/37.—Further vaginal examination. " Mass felt posterior to the uterus now feels like matted intestine. Considerable thickening has developed in both fornices. There is little tenderness on bi-manual examination."

The patient left Lurgan Infirmary against medical advice, and after a short stay at home was admitted to the Royal Maternity Hospital. The patient was now very emaciated. The mass could still be palpated in her abdomen, and her temperature was still elevated. The Widal test was negative. The white-cell blood-count showed 3,200 cells per cmm. She gradually became weaker, and died without any clinical diagnosis being confirmed, on the 18/10/37.

POST-MORTEM, 18/10/37.

The body is that of a rather emaciated young woman. The pupils are equal and dilated. There is no discharge from the ears. The distribution of the body-hair is female in type. Rigor mortis is beginning to appear.

Body cavities.—The left pleural sac is normal. The right pleural sac is partly obliterated by fibrous adhesions. The mesentery is adherent to the anterior abdominal wall and to the brim of the pelvis. The pericardial sac contains two ounces of straw-coloured fluid.

THORAX. *Heart*—This is extremely small. Weight 6 oz. The right auricle and ventricle appear normal. The tricuspid and pulmonary valves are thin and competent. The left auricle and ventricle show much atrophy. The myocardium is pale. The mitral and aortic valves are thin.

Left Lung.—This feels heavier than normal. The pleura is everywhere dotted with minute greyish areas, which tend to become larger as the anterior margin of the lung is approached. These nodules appear to lie in the immediate subpleural tissue. There is no pleurisy. A few glands are present at the hilum, but on section these show nothing of note.

On section the bronchi show a little congestion. The lung-tissue is studded with small yellowish-white nodules about 1 mm. in diameter. In the upper lobe there is some conglomeration of these nodules. Towards the apex a few of these conglomerate nodules show softening in the centre, and resemble minute abscesses.

Right Lung.—The pleura shows some shaggy fibrous adhesions. These are also found between the pleura and the pericardium. The bronchi contain a little œdematous fluid. The hilum lymph-nodes are a little larger on this side, and on section are flecked with minute whitish areas. On section of the lung, the appearance is very similar to that of the opposite lung.

ABDOMEN. *Spleen.*—This is slightly enlarged, with rounded edges and marked lobulation. The clefts between the lobules are filled by a yellowish cheesy material. On section the pulp is soft and filled with blood. The trabeculæ are not prominent. The malphigian corpuscles are indistinct.

Liver.—This weighs 3 lb. 4 oz. Its capsule is covered with numerous small whitish nodules, which can easily be scraped off, leaving a rather reddened area. The common bile-duct is patent, and the gall-bladder normal. On section the liver-substance is yellow and friable. The pattern of the lobules is still preserved, and the yellow areas are most prominent in the central zone of the lobules. The radicles of the portal vein and the bile-duct appear normal. An occasional small whitish follicle surrounded by a zone of congestion can be seen on the cut surface.

Pancreas.—Weighs 80 gm. The ducts are patent. There is enlargement of the lymph-nodes at the head of the pancreas, and on section these are found to contain small caseous areas. The acinar tissue shows no abnormality.

Kidneys.—These are of normal size. The capsule strips easily, leaving a smooth surface upon which a few yellow follicles can be seen. On section the cortex is pale, and the cortical striæ regular. The tuberculous follicles appear confined to the cortex and cortico-medullary junction. Further sections show a few lesions in the medulla, elongated in the direction of the medullary rays. The pelvis is normal. The ureter is not dilated, and its mucosa is thin and pale.

Bladder.—This appears quite healthy.

Adrenals.—These are small. On section there is complete disappearance of the cortical lipoid. The medulla is normal. There are no lesions visible to the naked eye.

Stomach and Intestines.—The stomach shows nothing of note. The small intestine is everywhere covered by yellowish nodules 1 to 2 mm. in diameter. Here and there adjacent coils are adherent by fibrous adhesions, and this adherence is most marked in the coils of ileum in the pelvis. On opening the intestine, no lesions are found.

Mesentery.—This is everywhere covered by whitish nodules 1 to 2 mm. in diameter, entirely comparable to those found in the serous coat of the intestine. Careful search shows a few enlarged caseous nodes, but apart from a few glands

found in the ileo-cæcal angle, there is remarkably little involvement of the mesenteric lymph-nodes.

GENITAL ORGANS.—The *vagina* shows an excess of mucoid secretion. There is an erosion on the anterior margin of the cervical canal, and careful examination of this shows that the base of the erosion is stippled with small yellowish points.

The *uterus* is adherent to the coils of intestine. It is of normal size. On section the endometrium is everywhere converted into a layer of caseous tissue. This caseation is most marked in the fundus. The endometrium of both tubes is also caseous. Related to the right tube there is a conglomerate mass of enlarged caseous lymph-nodes.

NECK ORGANS.—There is no enlargement of the cervical lymph-nodes. The œsophagus is normal. The trachea shows nothing of note. The tracheo-bronchial lymph-nodes are anthracotic, but no lesions can be detected in them.

The right lobe of the thyroid appears enlarged to almost twice the size of the left. On section the left lobe appears to be a normal colloid containing gland. The right lobe is found to be occupied by a cystic mass. The cavity of the cyst contains a thin colloid fluid. The wall of the cyst varies between 0.5 to 1 cm. in thickness, and is composed of rather whitish firm tissue.

AORTA.—This is thin-walled and elastic. The intima shows no lesions. The para-aortic glands are greatly enlarged and matted together. These enlarged glands extend also along the course of the internal iliac vessels. On section they are almost completely replaced by caseous material. They have an intimate relationship to the inferior vena cava and to the chylous cistern, but no definite point of rupture can be detected on naked-eye examination.

MICROSCOPICAL EXAMINATION.

Heart.—The endocardium is normal. The muscle-fibres are atrophic. The interstitial tissue of the left ventricular wall shows some curious spindle-shaped nodules, not specially in relation to the coronary vessels, which are composed of fibroblasts and a few lymphocytes and mononuclears. They show some resemblance to the Aschoff nodules of acute rheumatic fever, but are not typical. Bacterial stains are negative.

Lungs.—The small yellowish nodules noticed on naked-eye examination are found to be minute areas of caseating pneumonia. Bacterial stains show that such areas are extremely rich in tubercle bacilli. The nodules vary slightly in age, and the various stages in their formation can be traced. The first stage appears to be the accumulation of large mononuclears in one or two alveoli. The next stage is the necrosis and caseation of these cells—a process which may or may not involve the alveolar walls. Nowhere is there a textbook tuberculous follicle. No giant cells are seen. Some of the lesions have ulcerated into the terminal bronchioles. Neighbouring small vessels show an inflammatory infiltration of their coats with mononuclear cells and a marked proliferation of fibroblasts underneath their endothelium. No old tuberculous lesions are found in the lungs. Overlying the

subpleural lesions the cells lining the pleural cavity are swollen and tend to be columnar.

Bronchial lymph-nodes.—These also contain a few small recent tuberculous lesions. There is no old tuberculosis.

Spleen.—There is much congestion of the pulp, which is studded with small soft tubercles.

Liver.—There is an extreme degree of fatty change, which, whilst most marked in the central zone, extends almost to the periphery of the lobule. Very numerous tuberculous lesions are found, but none of these presents the usual follicular formation. These are of slightly varying age. The earliest consists simply of an aggregation of large mononuclear cells in which numerous tubercle bacilli can be demonstrated. Necrosis subsequently occurs, giving rise to a small focus of caseation surrounded by large mononuclear cells. Lymphocytes are extremely scanty. There are no giant cells. The bile ducts and radicles of the portal vein appear normal.

Pancreas.—This also shows a few tuberculous lesions.

Kidney.—A few tubercles are found in the cortex. The tubular epithelium shows cloudy swelling. There is some thickening of the basement membrane of the capillaries in the glomeruli.

Uterus and Tubes.—Practically all the endometrium is replaced by caseous tissue. A few small caseous areas are also seen in the underlying muscle. In the cervix the caseation is more patchy and more prone to be submucosal. The lining of the Fallopian tubes is also caseous.

Thyroid.—The left lobe shows a few caseous lesions of miliary size. The wall of the large cyst in the right lobe shows numerous small acini, which contain little or no colloid. These acini are separated by a stroma, which appears to be colloid. The histological appearance is that usually called a "fœtal adenoma." There are no tubercles in the adenomatous area.

Para-aortic lymph-nodes.—These are almost entirely composed of caseous material. They are adherent to many of the small venous radicles of the vena cava, and in one section a small venous tributary is found filled with large mononuclear cells.

Bacteriology.

The organism was isolated on culture from some of the tuberculous tissue in the abdomen. It showed the cultural and biological characteristics of the bovine strain of bacillus tuberculosis.

Anatomical diagnosis.—Tuberculosis (bovine strain) of abdominal lymph-nodes; tuberculous peritonitis; tuberculous endometritis; miliary tuberculosis of the lungs, spleen, liver, kidneys, pancreas, and thyroid; cystic 'fœtal adenoma' of the thyroid.

Comment.

From the clinical point of view this patient was interesting in showing a chronic fever of unexplained origin. The recent delivery, and the complications

which may ensue in such cases, first of all directed attention to the uterus and its adnexa. The character of the fever, its chronicity, and its failure to react to prontosil medication, gradually suggested that the infection was not the usual puerperal fever of streptococcal origin. This was finally verified when the uterine swab was found to be sterile.

It was now apparent to the clinician that he was dealing with a fever of unknown origin, and the various tests which were subsequently performed were carried out in the effort to obtain some evidence as to the nature of the infection. Syphilis, infection by the bacillus abortus, typhoid and its related infections, pyelitis and cystitis, were thus ruled out. Tuberculosis was also considered, and the negative X-ray examination of the chest was perhaps given too much importance. It is important to realise that soft caseating lesions in tuberculosis of the lung do not as a rule offer any hindrance to the passage of X-rays, and hence do not appear in the negative. It is only with the occurrence of fibrosis or calcification that such lesions can easily be seen. The absence of any sputum or cough also served to allay any suspicions as regards the lungs.

The first positive finding was the palpation of a mass posterior to the uterus, which felt like matted intestine. This finding might suggest tuberculous peritonitis in many patients, but its interpretation in this particular patient was rendered more difficult by the history of the recent abortion, and it is difficult to determine how a differential diagnosis could clearly have been made between tuberculosis and a pelvic inflammatory mass secondary to the abortion. The best differential point was only arrived at later, as the occurrence of the leucopenia—the white cells only numbered 3,200 per cmm.—practically rules out any lesions due to pyogenic organisms. Emaciation could be of little help, as it might occur in any febrile condition of such chronicity.

At the post-mortem examination we find that the cause of the patient's symptoms—fever, emaciation, and leucopenia—can all be explained by the presence of a miliary tuberculosis.

Clinical experience has shown that pregnancy in some ill-understood way may alter a tuberculous patient's resistance to the progress of the disease, and quite frequently in such patients the puerperium ushers in a flare-up of the disease. As it is unlikely that the virulence of the organism is altered, it is apparent that the alteration must be in the tissues of the patient, but we are still completely ignorant as to how this change in resistance is produced.

The only old lesions found in the patient were situated in the mesenteric and para-aortic lymph-nodes. No healed lesions were found in the lungs, and the absence of any older foci of infection in the cervical or bronchial lymph-nodes renders it relatively certain that the infection has entered the body by way of the alimentary tract. It is impossible to state how long the infection has been present in these abdominal lymph-nodes, but the probability is some years. It is also most probable that the infection was contracted by the ingestion of infected milk. Here

the infection seems to have remained latent until fanned to life and further progress by the pregnancy. The history of the fall, which led to the abortion, cannot, however, be disregarded, as the distended uterus may have forced one of these soft enlarged nodes against the vertebral column and led to its rupture into the peritoneal cavity. Indeed, the early onset of fever in the puerperium suggests such a possibility.

The peritonitis is due to the direct discharge of tubercle bacilli into the peritoneal cavity. The extreme number of tuberculous foci on the surface of the intestines, and their rich content of organisms, show that a large number of bacteria have been discharged, and that there has been little or no hindrance to their growth.

The occurrence of endometritis in this patient would appear to be related to the presence of the peritonitis. Implantation of the ovum could scarcely be expected in a tuberculous endometrium. Indeed, passage of the ovum along these caseous Fallopian tubes would be impossible. Hence the uterine involvement must have arisen at some time subsequent to the abortion. If we are correct in the assumption that the discharge of bacilli occurred at the time of the abortion, it is possible that the denuded surface of the interior of the uterus offered a favourable nidus for the growth of organisms which obtained access to it along the Fallopian tubes. Certainly the caseation is most marked in the fundus, which was presumably the placental site.

As regards the miliary tuberculosis, it would seem to have arisen from the para-aortic lymph-nodes, though unfortunately the post-mortem examination was not successful in demonstrating the actual point of vascular invasion. The histological examination, however, renders it probable that the glands have discharged into some tributary of the inferior vena cava. The wide dissemination of the tubercles with involvement of the pancreas, which usually escapes, suggests a very heavy blood stream infection. This suggestion is supported by the finding of a large number of the organisms in each tubercle examined.

Throughout the post-mortem report it is repeatedly stated that the miliary tubercles showed no follicular arrangement. The usual textbook description of a tuberculous follicle is that it consists of a central zone of caseation, surrounded by a zone of large mononuclears and perhaps a few giant cells, which in turn is surrounded by a zone of lymphocytes. In this patient, however, there are no such structures. The presence of the organisms evokes an aggregation of large mononuclear cells which soon became necrotic. In fact, necrosis occurs so rapidly that no time is given for the formation of giant cells. This aggregation of large mononuclear cells and their subsequent caseation is usually referred to as a 'soft' tubercle, and its occurrence denotes usually two things—(1) a large number of organisms, and (2) the fact that the patient is in a state of hypersensitivity to the proteins of the tubercle bacillus. That a large number of organisms is present in each individual lesion is apparent on microscopical examination. No studies of the state of sensitivity to the proteins of the bacillus are available.

To sum up, therefore, we have in this patient an example of a tuberculous infection acquired through the ingestion of the organisms. These organisms reached the abdominal glands without leaving any apparent lesion of the intestinal mucosa. By rupture of these glands into the peritoneal cavity a tuberculous peritonitis was produced. This rupture may be related to the fall and subsequent abortion. Invasion of the venous tributaries of the inferior vena cava led to a widespread miliary tuberculosis. In the production of the post-mortem picture the points to be considered are—(1) the influence of pregnancy on the patient's resistance to the disease, (2) the massive dose of organisms disseminated by the blood and throughout the peritoneal cavity, and (3) a probable state of hypersensitivity to the proteins of the tubercle bacillus.

From the clinical side the points most worthy of note are—(1) the differential diagnosis of long-continued fever, (2) the importance of a white-cell count in such conditions, (3) the possibility of a negative X-ray picture in suspected tuberculosis of the lungs, and (4) once again the importance of pregnancy in the evolution of tuberculosis.

J. H. B.

The Pulse in Chinese Medicine

By Richard H. Hunter, M.D. M.Ch. Ph.D. M.R.I.A.
Queen's University, Belfast

The medical literature of China is very voluminous, and dates from the most remote periods. It is claimed that some of the books were written as far back as 3000 B.C., but this seems doubtful, as Chinese writing is said not to have been invented until 2698 B.C. Soon after this date it is said that Huang ti compiled the Nei ching, which is thought to be the oldest medical work known. This work is based largely on legend, but it contains a number of passages which present an astonishing amount of physiological knowledge on the circulation of the blood. Indeed, certain of the passages on this subject suggest that Harvey's epoch-making discovery of the circulation of the blood had been anticipated in China at this early period. The following passages clearly support this view :—

> " All the blood is under the control of the heart."
>
> " The blood flows continuously in a circle and never stops."
>
> " The blood cannot but flow continuously like the current of a river, or the sun and moon in their orbits. It may be compared to a circle without beginning or end."

After reading these lines it is not surprising to find that the Chinese paid a good deal of attention to the pulse in sickness, and so much importance was given to it that a regular sect of physicians arose who based their practice on it alone. They were, it is true, only the lowest grade of physicians, as Sun Szu-mo, an early

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After reading these lines it is not surprising to find that the Chinese paid a good deal of attention to the pulse in sickness, and so much importance was given to it that a regular sect of physicians arose who based their practice on it alone. They were, it is true, only the lowest grade of physicians, as Sun Szu-mo, an early

physician, informs us that "the skilful doctor knows what is wrong by observing alone, the middling doctor by listening, and the inferior doctor by feeling the pulse."

The first really important work on the pulse, of which there are 156 known to exist, appears to have been written by a court physician named Wang Shu-ho, who lived about A.D. 280, during the Western China dynasty. This work consists of ten volumes, and is known as the Mo Ching, or Pulse Classic.

This is the period in Chinese history that medicine reached its zenith. Its fame extended to Annam and Siam, to Korea and Japan, and it influenced medicine in these countries to such a degree that it eventually replaced the indigenous practice. China at this period was to her neighbouring countries what Greece later became to Europe: the source of all morals and culture, and directly and indirectly Japan and Siam received their first germs of science, religion, and arts from her.

The description of the pulse given in the Mo Ching is extremely complicated, and its practice constituted a most detailed procedure amounting almost to a solemn ritual. The examination was made upon both right and left wrists, the physican using his right hand for the left pulse, and his left hand for the right pulse. The middle finger was first laid on the artery at the end of the radius, then adding the index and ring fingers whilst the thumb rested on the back of the carpus. It was taught that the best time for taking the pulse was at sunrise. It was also advised that the physican should keep cool and collected, first noting if his own breathing was in order. This was really an important point, as the physican's rate of breathing was used to count the pulse-beats. One inspiration and one expiration constituted one cycle of respiration, and four beats of the pulse to each cycle was taken as the normal.

It was also taught that the pulse extended for one and nine-tenth inches, and that it was divided into three parts. Each of these three parts was said to have two different and distinct pulses, one internal and one external, making twelve pulses in all, six on the right and six on the left side. Each of these twelve pulses in turn corresponded to twelve definite internal organs, the normal or abnormal conditions of which were indicated in the behaviour of the pulse. According to Wang Shu-ho, the first part of the right-hand pulse revealed the condition of the lungs and large intestine, while the same portion of the left pulse revealed the conditions of the heart and small intestine. The middle of the right pulse revealed the condition of the spleen and stomach, and the left pulse the liver and gall-bladder. The last and distal part of the right pulse was concerned with the genital organs, and the left with the kidneys and urinary bladder.

In the various treatises on the pulse, opinions differed widely concerning the supposed relationship with particular organs, so that the Chinese student must have had great difficulty in making up his mind as to which theory to accept. One point, however, all these theories possessed in common, and that was the great emphasis which was laid on variations in the pulse. Not only were the rate,

character, rhythm, volume, tension, etc., minutely observed, but the age, sex, temperament, constitution, weight, and growth of the patient, as well as the time of day, season of the year, influence of the stars, all were considered. These fine distinctions, however, apparently only existed on paper, for there does not appear ever to have been a really satisfactory demonstration of them on the living patient.

But of the many types of pulse described, there were four principal varieties :

(1) A superficial or light-flowing pulse, like a piece of wood floating on water.

(2) A deep or deeply impressed pulse, like a stone thrown into water.

(3) A slow pulse, with three beats to one cycle of respiration.

(4) A quick pulse, with six beats to the cycle of one respiration.

A host of subsidiary varieties of pulse were also said to exist. There were the slippery, small, empty, full, long, short, thready, tense, tardy, wiry, soft, feeble, running, irregular pulses, and many others.

Each of these varieties of pulse, either singly or in combination, was believed to reveal a distinct disease. The superficial pulse belonging to a young male adult pointed to complaints contracted from without, through the five influences : wind, cold, dampness, heat, dryness. If the pulse was found to be superficial and strong, it indicated wind and heat ; if superficial and weak, it meant a deficiency of blood ; if it was slow, it meant external chills ; and if quick, it meant wind and fever ; while if it was found to be tardy, rheumatism was the diagnosis.

If a deep pulse was found in a young adult female, it indicated disease associated with the seven passions : joy, anger, anxiety, worry, grief, fear, and shock. If the pulse was deep and slow, it meant weakness and cold ; if it was found to be deep and quick, it meant latent heat. If, on the other hand, it was found to be deep and tense, it meant colic due to chills ; if deep and slippery, it indicated indigestion.

Chinese anatomy described the internal organs in two groups :—

(1) The five "tsangs" or solid organs, which consisted of the heart, liver, spleen, lungs, and kidneys.

(2) The six " fus," or hollow organs, which were the gall-bladder, stomach, large intestine, small intestine, urinary bladder, and the genital tract.

The slow pulse was said to indicate the solid organs, and the quick pulse the hollow ones. When the slow pulse was strong, it indicated pain, but when weak it indicated debility. The quick strong pulse indicated internal fire (i.e., inflammation), while a quick and weak pulse indicated abscess formation.

The pulse was also used to assist in making a prognosis, and early Chinese physicians claimed that, in cases of apoplexy, the absence of immediate danger was indicated by a superficial and slow pulse, but that in cases where death was imminent, the pulse became firm, rapid, and large. In typhoid fever the pulse was said to be superficial, full, and overflowing, when no immediate danger was near, but that it became thready, small, and soft when a patient was in danger of death. In malaria fever a taut pulse was held to be a favourable sign, but if

it became large, scattered, and irregular, the outlook was unfavourable. In cases of diarrhœa, without immediate danger, the pulse was deep, small, slippery, and feeble; but that it became strong, large, superficial, and quick when the outlook became serious and death threatened. A good sign in cases of vomiting was said to be a superficial and slippery pulse, but if it became deep, quick, fine, and small, it indicated bleeding in the intestine and that the case was beyond hope. It was also said that one need not be alarmed to find an irregular pulse in cholera, and that it was only when this sign was found associated with a curled tongue and shrivelled testicles that recovery was improbable. It was also said that the pulse became weak and quick in wasting diseases, and to become thin and small when death was certain.

A good sign in a disease closely resembling the signs and symptoms of diabetes, was a large and quick pulse, but if it was slender, thready, short, and small, the outlook was considered to be hopeless.

Nine kinds of pain in the abdomen were described, and each was associated with a specific form of pulse. A slender pulse indicated a quick recovery from pain, while a large full pulse denoted a slow convalesence.

A favourable outlook in jaundice was a full, overflowing, and quick pulse, but a superficial, thready, small pulse was a bad omen. In dropsical swellings the pulse was said to be superficial, large, and full when no immediate danger was present; but if it became deep and slender, death was near.

In cases where there was an accumulation of humours in the system, no danger existed if the pulse was strong and full; but if deep and slender, the case was serious. In diseases caused by evil spirits, the pulse was said to vary in both wrists. But when such obnoxious influences existed, and the belly became swollen, a tense and fine pulse was held to be hopeful, but a large superficial pulse had a serious outlook.

Several varieties of pulse were described which were said to indicate impending death. If it resembled the pecking of a bird or of water dripping from a cracked roof, death was expected within four days of its onset. If the pulse was like the snapping of a cord, or like the flipping of a finger against a stone, in cases of kidney disease, death was due in four days. In diseases of the liver, a pulse like the string of a new bow indicated death within eight days. If the pulse resembled the rapid rolling of peas, death might be expected within twenty-four hours.

An important point when making observations on the pulse was to make due allowance for the season of the year, and for the constitution and sex of the patient. In spring the pulse was tremulous, in summer it was full and overflowing, in autumn it was elastic, and in winter it became "deep like a stone thrown into water."

It was also taught that the pulse of a thin person was generally more superficial and full than that of a fat person: that five beats to one cycle of respiration was

normal in a hot-tempered person; that in the aged the pulse was mostly empty, and in young people it was large, and in infants rapid.

Differentiation was also made between the pulses of the sexes. The pulse on the left hand of males should be large to correspond with the male-sex principle, but in females it should be the opposite character, the female-sex principle predominating on the right side of the body.

Marvellous claims were made for the diagnostic value of the pulse. A well-trained physician was said to be able to tell if a woman was pregnant, and even to predict the sex and development of the fœtus. For example, in cases where menstruation had ceased from no apparent cause, a slippery pulse would indicate pregnancy; if it were, in addition, rapid and scattered, it showed that the pregnancy was one of three months' duration, but if it was rapid and not scattered it indicated a pregnancy of five months' duration. If the pulse of the left wrist was rapid, a son could be expected; but if a right pulse was rapid, a daughter would surely be born. Twins could be foretold by an overflowing pulse in both wrists, and triplets if both wrists were smooth and regular.

Beliefs such as these were held by Chinese physicians right up to recent times, and, indeed, native physicians in outlying portions of China still believe them, and base their practice on them. It is not surprising then to find that physicians in China did not receive recognition as being men of any great standing in the community, and were assigned to the lowest grade of society. This fact is clear from a study of the T'ang Annals, in which it is stated: "Mathematicians, surveyors, fortune-tellers, physiognomists, physicians, and magicians were charlatans, and the sages did not regard them as educated." Chu Hsi, the famous commentator on the Confucian classics, supports this view, and states: "Sun Szu-mo was a noted doctor of literature of the T'ang dynasty, but as he practised healing as a profession he was relegated to the class of artisans."

CASE REPORTS

THREE RECENT CASES OF GASTRIC ULCER TREATED BY GASTRECTOMY

By P. T. CRYMBLE, M.B., F.R.C.S.ENG.,
Royal Victoria Hospital, Belfast.

1. LABOURER, AGED 33.

History.—Double pneumonia four years ago, and pneumonia in August, 1937. Epigastric pain for the last three years, relieved by alkalies. Two courses of medical treatment had no permanent effect. Vomiting.

Examination.—X-ray showed a mid-gastric hour-glass contraction, with a large Haudeks niche.

normal in a hot-tempered person; that in the aged the pulse was mostly empty, and in young people it was large, and in infants rapid.

Differentiation was also made between the pulses of the sexes. The pulse on the left hand of males should be large to correspond with the male-sex principle, but in females it should be the opposite character, the female-sex principle predominating on the right side of the body.

Marvellous claims were made for the diagnostic value of the pulse. A well-trained physician was said to be able to tell if a woman was pregnant, and even to predict the sex and development of the fœtus. For example, in cases where menstruation had ceased from no apparent cause, a slippery pulse would indicate pregnancy; if it were, in addition, rapid and scattered, it showed that the pregnancy was one of three months' duration, but if it was rapid and not scattered it indicated a pregnancy of five months' duration. If the pulse of the left wrist was rapid, a son could be expected; but if a right pulse was rapid, a daughter would surely be born. Twins could be foretold by an overflowing pulse in both wrists, and triplets if both wrists were smooth and regular.

Beliefs such as these were held by Chinese physicians right up to recent times, and, indeed, native physicians in outlying portions of China still believe them, and base their practice on them. It is not surprising then to find that physicians in China did not receive recognition as being men of any great standing in the community, and were assigned to the lowest grade of society. This fact is clear from a study of the T'ang Annals, in which it is stated: "Mathematicians, surveyors, fortune-tellers, physiognomists, physicians, and magicians were charlatans, and the sages did not regard them as educated." Chu Hsi, the famous commentator on the Confucian classics, supports this view, and states: "Sun Szu-mo was a noted doctor of literature of the T'ang dynasty, but as he practised healing as a profession he was relegated to the class of artisans."

CASE REPORTS

THREE RECENT CASES OF GASTRIC ULCER TREATED BY GASTRECTOMY

By P. T. CRYMBLE, M.B., F.R.C.S.ENG.,
Royal Victoria Hospital, Belfast.

1. LABOURER, AGED 33.

History.—Double pneumonia four years ago, and pneumonia in August, 1937. Epigastric pain for the last three years, relieved by alkalies. Two courses of medical treatment had no permanent effect. Vomiting.

Examination.—X-ray showed a mid-gastric hour-glass contraction, with a large Haudeks niche.

Operation (9/11/37).—There was a large lesser-curve ulcer floored by the pancreas. Two-thirds of the stomach was removed, including the ulcer, and an end-to-side retrocolic gastro-jejunostomy performed.

Present condition.—Has increased his weight by two stones, and is free from symptoms.

2. PORTER, AGED 50.

History.—Pneumonia thirty years ago; for eight weeks has had severe epigastric pain after food; pain is not relieved by alkalies, and may awaken the patient at night; vomiting after food.

X-Ray.—Well-marked Haudeks niche on the lesser curve, immediately above the incisura angularis.

Operation (29/1/37).—There was a lesser-curve ulcer in the position seen in the radiogram. It was the size of a sixpence, had perforated all coats, and was floored by thickened omentum. The area of stomach surrounding the ulcer was œdematous. The stomach was remarkably free from gastritis. Three-fifths of the stomach was removed, the pyloric end being left for infolding. The canal was restored by a retrocolic end-to-side gastro-jejunostomy.

Result.—Very good.

3. PORTER, AGED 40.

History.—From 1934 to 1936 had epigastric pain half an hour after food. The pain was relieved by alkalies or vomiting. In February, 1936, operated on for acute perforation of the stomach. The perforation, which was situated on the anterior surface of the stomach, below and to the left of the incisura angularis, was closed. During the following year he had occasional attacks of indigestion, which finally became continuous, with daily vomiting.

X-Ray.—Hour-glass contraction at the junction of the upper and middle thirds, with a niche projecting from the great curve.

Operation (2/3/37).—There was an hour-glass contraction and an ulcer corresponding to the X-ray. The ulcer was on the posterior aspect of the great curve and was adherent to the posterior abdominal wall and to thickened gastro-splenic ligament. The stomach was mobilised, and divided through the pyloric portion. The distal end was infolded and closed. The stomach was divided above the level of the ulcer and the ulcer-bearing portion of stomach removed. The canal was restored by an ante-colic end-to-side gastro-jejunostomy. The mesocolon was too short to permit a retrocolic operation. Subsequently gastric lavage was required to check the post-operative vomiting.

Present condition.—Excellent. He carries out the full duties of an hospital porter and is free from dyspepsia.

NOTE.—These three cases now complete a series of seventy-four cases of gastrectomy for ulcer, with six deaths, an operation mortality of eight per cent. The operations were done from 1923 to 1937. No cases were done prior to 1923, and the series is consecutive. Two of the deaths were cardiac, and the patients desired operation for the relief of intolerable pain, in spite of the fact that the

cardiac condition was explained to them. A third death followed gastrectomy for repeated hæmorrhages from the left gastric artery. A fourth death was definitely due to technical difficulties involved by removal of almost the whole lesser curve. One cannot help but feel that this operation is not receiving the support which it deserves. Possibly the patients would rather try anything as long as operation is not suggested. Possibly the physicians, seeing their patients leave hospital reasonably well, are content. Whatever the cause, one occasionally sees moribund cases which might have been saved by surgery, and post-mortem specimens which have caused death by hæmorrhage or malignant change in a simple ulcer.

TWO CASES OF NON-SPECIFIC INFECTIVE GRANULOMA OF THE ILEO-CÆCAL REGION

By P. T. CRYMBLE, M.B., F.R.C.S.ENG.,
Royal Victoria Hospital, Belfast.

In 1932 Crohn described a number of cases of disease of the terminal ileum and ileo-cæcal valve, to which he gave the name—regional ileitis. It had the following characteristics :—

A subacute or chronic necrotising and cicatrising inflammation with ulceration of the mucous membrane accompanied by connective tissue reaction of the neighbouring bowel wall.

Stenosis and fistulæ may result.

Fifty per cent. of the cases have had an appendicectomy performed previously.

The disease may be encountered in any of the four following states :—

1. Acute, and usually dignosed as appendicitis. The terminal ileum is thick œdematous, and red; its mesentery thickened and containing enlarged glands.
2. Mucosal ulceration. Symptoms of intestinal irritation with diarrhœa, mucus, and blood.
3. Chronic obstruction with palpable tumour.
4. External or internal fistulæ.

The two cases about to be described appear to fall into class 3.

CASE OF NON-SPECIFIC INFECTIVE GRANULOMA.

C. McW., WOMAN AGED 58. ROYAL VICTORIA HOSPITAL.

Previous History.—Rheumatic pains for five years. Finger-joints stiff.

History of Present Affection.—Three months ago took severe pain in the epigastrium, which gradually spread over the whole abdomen and had no relation to food. Loss of appetite, vomiting, diarrhœa, and swelling of the abdomen were present.

Fig. 1—Labourer, aged 33.

Opaque meal of stomach, showing a mid-gastric hour-glass contraction, with a large Haudeks niche.

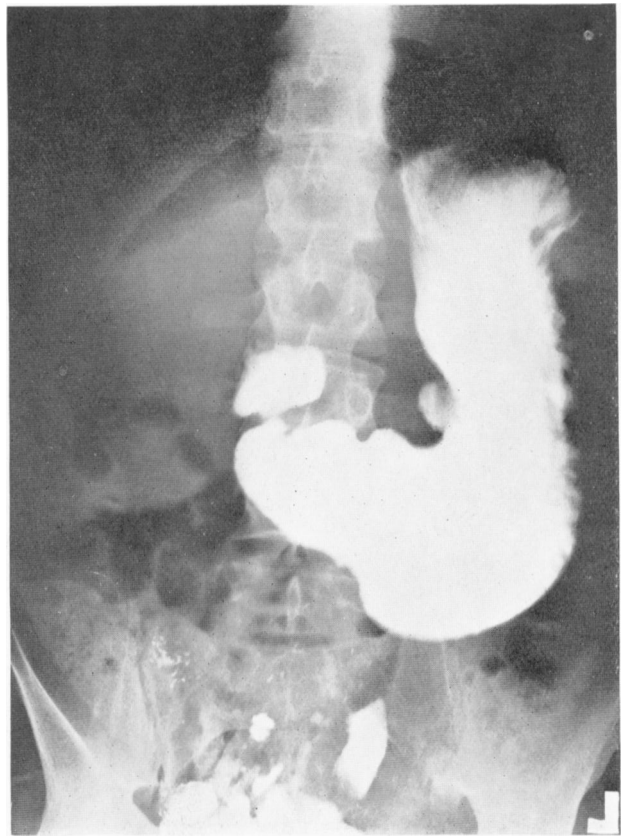

Fig. 2—Porter, aged 50.

Opaque meal of stomach, showing a well-marked Haudeks niche on the lesser curve, immediately above the incisura angularis.

Fig. 3—Porter, aged 40.

Opaque meal of stomach, showing hour-glass contraction at the junction of the upper and middle thirds, with a niche projecting from the greater curve.

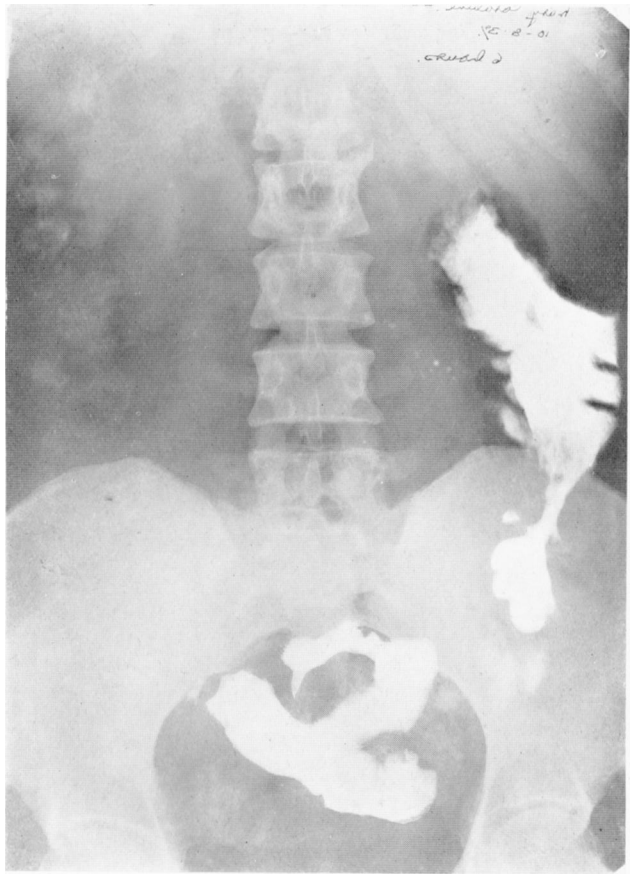

Fig. 4—M. C., aged 38.

Non-specific infective granuloma of the ileo-cæcal region. Six-hour opaque meal, showing a stricture in the ileo-cæcal region. Viewed from behind.

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History of Present Affection.—Three months ago took severe pain in the epigastrium, which gradually spread over the whole abdomen and had no relation to food. Loss of appetite, vomiting, diarrhœa, and swelling of the abdomen were present.

Examination.—The whole abdomen was somewhat tender, and the six-hour opaque meal showed only a thin opaque streak in the region of the ascending colon. An opaque enema showed two slight hour-glass contractions in the ascending colon.

Operation.—Pathology : The terminal ileum was dilated, hypertrophied, showed a mesenteric diverticulum near the cæcum and a few gelatinous-looking nodules on its surface. There was palpable thickening of the valvula coli, some enlarged mesenteric glands, and the mesentery was loaded with fat.

As one could not exclude an early carcinoma, a right colectomy was performed, and the following additional pathology disclosed :—

(*a*) A walnut-sized polyp on the colonic margin of the valvula coli.

(*b*) Some scarring of the mucous membrane of the valvula coli.

(*c*) Ileal polyposis.

Subsequently Professor Young reported that the polyps were in reality lipomata, and that there was no evidence of malignant disease or tubercle.

The patient made a good recovery from her right colectomy.

M. C., AGED 38.

Previous operations—appendicectomy and cholecystectomy. For one and a half years has complained of intermittent attacks of pain in the right iliac fossa. On examination there was a large palpable tumour in the right iliac fossa, and a six-hour opaque meal showed a stricture near the ileo-cæcal junction.

At operation one found the following :—

Marked thickening of the great omentum.

Marked deposit of fat around the ascending colon.

Stricture of the ileo-cæcal valve.

The cæcum was absent and the ileum was continuous with the ascending colon.

The stricture was produced by a mass of fibro-lipomatous tissue which surrounded the valve.

A right colectomy was performed, the canal being restored by an end-to-side anastomosis between the ileum and the transverse colon.

Convalesence was delayed by a temporary fæcal leakage through the drainage opening.

She left hospital in good condition.

SOLITARY CYST IN THE NECK OF THE HUMERUS.

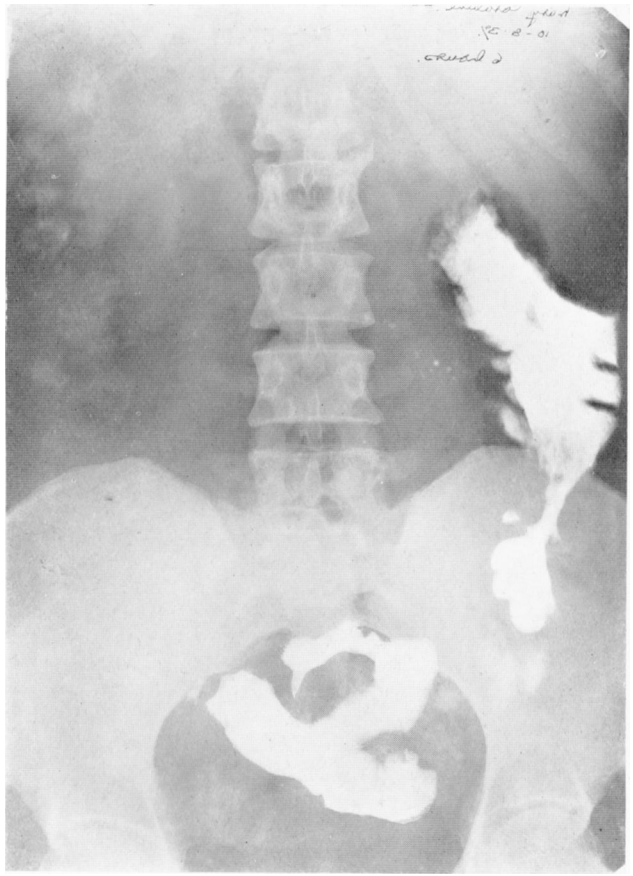
The patient was a boy who injured his arm throwing a snowball. The radiogram showed a large cyst in the surgical neck of the humerus with an incomplete pathological fracture.

At operation a window was made in the cyst-wall and a little red-currant jelly material removed. The interior was swabbed out with a little carbolic acid.

Some weeks later the cavity had almost completely disappeared as a result of deposit of new bone.

Fig. 3—Porter, aged 40.

Opaque meal of stomach, showing hour-glass contraction at the junction of the upper and middle thirds, with a niche projecting from the greater curve.



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Non-specific infective granuloma of the ileo-cæcal region. Six-hour opaque meal, showing a stricture in the ileo-cæcal region. Viewed from behind.

A CASE OF LUNG ABSCESS

By CECIL KIDD, M.D.,
Medical Registrar, Royal Victoria Hospital, Belfast.

THE following case is of clinical interest for three reasons: (a) The etiological possibilities, (b) The therapeutic problem, (c) A good result after prolonged and hazardous illness.

R. McC., AGED 50 YEARS; OCCUPATION—PRINTER.

This man, who is well known to me, had no history of previous illness except periodic indefinite dyspeptic symptoms. On the evening of the 2nd October, 1936. he was seized with sudden violent abdominal pain. I saw him some thirty minutes later, when he presented typical signs and symptoms of an acute abdominal catastrophy. He was immediately admitted to the Royal Victoria Hospital, where a laparotomy under general anæsthesia was performed by Mr. C. A. Calvert. He found free fluid in the abdominal cavity and a large perforated ulcer at the pylorus. This was sealed in the usual manner and the abdomen closed with drainage.

His post-operative condition appeared reasonably good until the 9th October, when he had severe malæna. An alarming condition of shock and profound secondary anæmia was only slightly improved by a blood transfusion. Hæmorrhage recurred twice within a few days, necessitating two further blood transfusions. He was now very toxic, and in the third post-operative week started running a hectic temperature.

On the 5th November a radiogram of the thorax and upper abdomen showed elevation of the right cupola of the diaphragm, and as his condition showed marked deterioration, Mr. Calvert resected his twelfth rib and explored the subphrenic spaces, without however finding any localised abscess formation. His condition continued to be most critical for the next two weeks, when he unaccountably showed signs of improvement. This continued, and he was discharged from hospital on 3rd December, 1936, without signs or symptoms except a not unnatural secondary anæmia.

He remained under my supervision for the next month, and during this time he continued to improve in general health, remaining unscathed during our local epidemic of influenza. Towards the end of January he went to Newcastle, and after ten days returned with complaint of severe cough and a ventral hernia. This cough was paroxysmal in character, almost without sputum, and worse at night. Clinical signs were slight, showing some relative dullness and impaired air-entry at the posterior aspect of the middle zone of the right lung.

Within a week he became toxic in appearance, began to run an evening temperature associated with heavy sweats, and his fingers showed a definite change towards clubbing. Clubbing of the fingers is apparently of quick development and an early clinical sign.

A few days later rupture into a bronchus occurred with production of large quantities of purulent sputum, with at times slight hæmoptysis. An X-ray chest at this stage (fig. 1) showed the typical appearance of a lung abscess peripherally situated in the right middle zone.

He now stated that he felt much improved, except for the rather unpleasant taste of his sputum, and he soon became adept at pusturally draining himself twice daily. This condition of affairs continued without clinical or radiological change until 17th March, a period of considerable perplexity as to the next indicated line of treatment. On that date the abscess ruptured into the pleural cavity, accompanied by considerable thoracic pain and clinical signs of pleural effusion.

He was admitted to a medical ward in Royal Victoria Hospital, and figure 2 is a radiogram taken at this stage, showing a right-sided pyopneumothorax with the abscess demonstrating a fluid level. Quantities of purulent fluid were aspirated from the right thorax at intervals of a week, with gradual subsidence of his temperature and improvement in his general condition. On the 18th April, 1937, Mr. Calvert resected a portion of rib under local anæsthesia, leaving a rubber catheter for drainage. The patient now had a demonstrable air communication between bronchus and drainage bottle.

Drainage was maintained until early June, and during this time sputum became gradually less in quantity and more mucoid in type.

He was treated on general tonic lines with ultra-violet radiations and one small blood transfusion, and he was discharged from hospital on 30th June, 1937.

He has just returned from a holiday, and reports an increase in weight of over two stone. He has a small quantity of morning sputum, mucoid in type, and clinically he is somewhat limited in expansion of the right thorax and there is some relative dullness due to pleural thickening. This is confirmed by X-ray (figure 3), which shows disappearance of the lung abscess. The right cupola of the diaphragm is elevated and is probably fixed by adhesions, and there is some fibrosis of the area.

The possibility of a secondary bronchiectasis still remains, but the patient is extremely fortunate and well content with his present state.

Discussion.

It is claimed in current medical literature that lung abscess like bronchial carcinoma is becoming increasingly frequent. This may not be a true increase in incidence, but with modern dignostic facilities our ability to recognise these conditions may have improved. Purse (1937) reports, in a recent contribution, sixty-six cases of lung abscess in the Royal Victoria Hospital during the past six years.

It is interesting to observe from the literature that no clarity exists as to the etiology of this condition. Lilianthal's (1931) classification is the most compact and self-explanatory. He divides lung abscesses into two main types—"interstitial"

and "bronchogenic." The interstitial group includes cases due to injury, blood-borne infection and lymph-borne infection; the bronchogenic cases consisting of the aspiratory group of infection.

Maxwell (1934), in his exhaustive examination of 315 cases from a post-mortem angle, shows that, regardless of etiology, the right lung is more commonly the site of a lung abscess than the left. Multiple abscesses are said to be more commonly due to septic emboli and of peripheral situation, and more often in the lower lobe.

Exponents of the aspiratory theory can, however, produce statistics showing that the distribution is very similar in cases resulting from aspiration of foreign material. Abscess situation is therefore of no definite assistance in arriving at an etiological conclusion. It would seem reasonable to expect hilar abscesses to result from aspiration, and peripheral abscesses from emboli.

It is remarkable to note the high incidence of lung abscess reported in the U.S.A. following tonsillectomy. In this country this is apparently a relatively rare association. The etiology of post-tonsillectomy pulmonary suppuration may be either aspiratory or embolic.

Lymph-borne infection does not appear to have had the same consideration as other routes of infection, and it seems feasible that this method of spread can account for a big proportion of cases associated with abdominal operation. Among associated causal conditions, abdominal operations takes a high place. Maxwell (1934) reports in his series of 315 cases (single and multiple) forty-seven cases following abdominal operation, and ten per cent. of these following gastric or duodenal perforation. In over seventy-five per cent. of this post-operative group there was gross sepsis of the operative site and this, he concludes, points to an embolic origin for the majority of cases.

In the case reported, one cannot be dogmatic regarding etiology, but relegates it to Lilianthal's interstitial group. The condition was either due to embolism or lymphatic spread from a probably infected subphrenic area. Although not in the lower lobe, one nevertheless inclines to the latter as the most likely cause in this case.

The bacteriology of lung abscess shows a variety of organisms, and although there is no specificity of fusiform bacilli, spirochates, or anærobic organisms, these appear to be frequently present.

In the case reported, the bacteriologist reported anærobic streptococci in the pus.

The occurrence of an empyema due to rupture of the abscess into the pleural cavity would appear to be a good prognostic sign.

Eggers (1926) reported ten cases of lung abscess and empyema with recovery after drainage in every case.

Purse (1937) reports that of eleven cases of this complication in his series which came to operation, only two died.

It is emphasised that the stage at which rupture into the pleural cavity occurs is the determining factor. If it occurs early in the acute stage, before the abscess ruptures into a bronchus, the issue is usually fatal. If, however, as in this case, the pleura has had an opportunity to localise infection, and when the abscess is also draining through a bronchus, the resultant pyopneumothorax is actually nature's effort at effecting the first stage of a thorocotomy with much less risk to the patient.

Treatment of a lung abscess resolves itself into medical and surgical, the latter being commonly a last and desperate resort. There can be no doubt that a spontaneous cure may occur, the abscess rupturing into a bronchus and being expectorated, with apparent clinical restoration to normal conditions and with radiological confirmation.

Rest for the patient, with exhibition of creosote, novarsenobillon in the presence of spirochoetes and pustural drainage, with close observation of developments clinically and radiologically, are the general therapeutic lines.

Bronchoscopic aspiration is suggested, but it is not likely to be of much assistance when the abscess is draining freely through a bronchus. It may, however, be of use in improving drainage in selected cases.

Artificial pneumothorax is advocated by some authorities when the lesion is central or hilar. Peripheral abscesses should not be subjected to this treatment, owing to the danger of causing rupture into the pleural cavity. Many fatalities are reported as an inadvertent result of this line of treatment.

Surgical intervention is chiefly indicated when the abscess is peripherally situated and where bronchial drainage cannot be established. There is no definite time-factor suggested as most suitable for surgical interference, each case having to be judged on its merits. Operation should be reserved for cases which are progressively becoming worse, and lack of dramatic improvement in the early stages is not necessarily an indication for surgical drainage.

A two-stage drainage is the modern method and the mortality is forty to fifty per cent. The difficulties are accurate localisation and the constant risk of infecting the pleural cavity.

My grateful thanks are due to Dr. Boyd Campbell and Mr. Irwin and Mr. Calvert for permission to publish this case.

I am also indebted to Mr. Purse for access to his recent paper on this subject, and to Dr. James Maxwell, London, for a copy of his original paper.

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A CASE OF NON-OPAQUE RENAL CALCULUS

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

ON the 4th of January a woman thirty years of age came to me with the complaint of pain low down in her left lower abdomen. This had been present intermittently for three weeks, and had begun at the time of her period, which was the first she had since March. She had no urinary symptoms of any kind. Three years before she had had swollen ankles for a few weeks, and had been fully investigated, but no evidence of renal or cardiac disease was found. Beyond childish ailments, she had no previous illness.

She was a slim and healthy young woman, and examination revealed no abnormality of any kind. I felt almost certain that her pain was gynæcological in origin, but had her X-rayed. Dr. Beath took two films, neither of which shewed any trace of calculus in any part of her urinary tract. Next day she brought me a sample of urine at my request, and to my surprise it was full of blood. Thinking this might be due to menstruation, I took a catheter specimen, and found it still loaded with blood. Dr. Davison examined this, confirmed the blood, but found no other abnormal constituents, and it was sterile.

I then cystoscoped her and took specimens from both ureters, and a retrograde pyelogram was done. By this time she had stopped bleeding, and beyond some left-sided diuresis there was no difference in the two ureteral samples. The pyelogram shewed a little enlargement of the pelvis and a faint rounded negative shadow the size of a sixpence.

Dr. Beath and I came to the conclusion that, with the history and the negative findings in the straight X-ray, this most probably was a papilloma causing a filling defect in either the anterior or posterior wall of the pelvis. We decided, however, to do an intravenous pyelography as a check. Again the shadow was present in both negatives.

Several of my colleagues to whom I showed the films agreed that papilloma was the most probable explanation.

On the 16th I explored her left kidney and to my delight found a hard moveable body in the pelvis—it was easily extracted and proved to be a grey flat circular stone about the size of a shilling. Analysis revealed that it consisted almost entirely of ammonium, magnesium, and potassium phosphates, with only the faintest trace of oxalates and carbonates, practically no calcium being present.

This case illustrates both the limitations and the value of radiography in diagnosis. But for the fact that this patient was encountered at a time when she had blood in her urine—an occurrence of which she herself was quite unaware—the renal tract might easily have been absolved from blame in view of the negative X-ray findings.

Indeed I was on the point of referring her to a gynæcologist, but fortunately we were compelled to do a retrograde pyelogram in the first instance, and the

negative shadow in the midst of the denser one shewed a pathological condition, so leading to operation and a solution.

Radiography cannot show a calculus that is not opaque to X-rays, but if a contrast medium giving a dense shadow, in this case, sodium iodide 12½ per cent., be used, the stone will almost certainly give a negative shadow.

HYPER VENTILATION TETANY

By R. W. M. STRAIN, B.SC., M.D., *from The Royal Victoria Hospital, Belfast.*

TETANY is by no means a common condition, and of its several causes, over-ventilation of the lungs probably is the rarest. Two such cases occurred in the Royal Victoria Hospital within a few months of each other, and so it seems worth while putting them on record. One of them was already referred to some time ago in the Ulster Medical Society by Professor Thomson, in connection with a discussion on alkalosis, but the hyper ventilation was not stressed at the time.

1. The first case was a girl of 20, a probationer nurse in a mental hospital. For four days she had had some pain in her back, especially when she took a deep breath, but suddenly the pain became worse and she collapsed and lost consciousness. She recovered in about fifteen minutes, and then it was noticed that her respirations were very fast. Within a few hours she was complaining of "pins and needles" in her hands and feet, and suddenly they became stiff. On examination she was found to have typical carpo-pedal spasms. Spasms were frequent and lasted about five minutes each, until she was admitted to the Royal Victoria Hospital some hours later. By that time she no longer had open tetany, but she had spasm of the face muscles when the facial nerve was tapped, and constriction round an arm or a leg produced a carpal or a pedal spasm. Except for some tenderness in the right costo-vertebral angle, there was no abnormality found on physical examination. Her temperature was 97.4°F. and her pulse 60. Her respiration rate was forty-eight per minute.

Dr. McCoy was good enough to do her alveolar carbon dioxide at once, and found it to be 3.2 per cent.—about half the normal. She had a normal blood calcium of 8.9 mgm. per cent.

The following day while being examined she again had spontaneous carpo-pedal spasms. She was treated with oral ammonium chloride. The respiration rate gradually returned to normal, and there were no more signs of tetany.

She had never seen a case of tetany herself.

2. The second case was an unemployed girl of 22.

Ten months previously she had had pleurisy and had been in the Belfast Union Infirmary. She came to the medical extern at the Royal Victoria Hospital complaining that the old pain that she had had at the time of the pleurisy had returned, that for several days she had been having almost continuous headaches, that she felt sick, and was vomiting almost everything she ate. She also complained of excessive sweating.

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She did not look ill, but was panting for breath—her respiration rate was at one time as high as sixty per minute.

Her pulse was 90 and her temperature 97.0°F.

Nothing abnormal was found on examination, and X-ray confirmed the absence of any lesion in her lungs.

She had some twitching of her right shoulder.

There was no manifest tetany, but on tapping the facial nerve, spasm of the face-muscles was produced, especially at the corners of the mouth. Carpo-pedal spasms could not be produced by constrictions round the limbs. She was excreting an alkaline urine.

After a day or two in hospital her symptoms cleared up.

In neither of these cases was any organic basis found for the hyper ventilation, and so the primary lesion must be regarded as functional. Such a psycho-neurosis and post-lethargic encephalitis are generally given as the most common causes of over-breathing.

The resulting biochemical disturbance seems to be something like this :—

The reaction of the blood depends on the ratio

$$\frac{H_2CO_3}{NaHCO_3}$$

With over-ventilation the numerator is reduced, and leaves a relative alkalosis with the loss of carbon dioxide from the blood. To correct this, some of the sodium bicarbonate is redistributed in an attempt to restore the original ratio. This does not bring about complete compensation, and so there is alkalosis, although the alkali reserve has been lowered. To help to keep the blood pH correct, the kidney secretes a less-acid or, as in the second case, an alkaline urine.

Disturbance in estimated blood-calcium is not a feature in this type of tetany, though there may be a disturbance in ionisation.

While the respirations are fast they are very shallow, so that the fall in blood carbonic acid is not enough to cause apnœa.

In the first of these two cases the alkalosis was expressed in terms of open tetany. In the second case headache, nausea, and vomiting were marked, while the tetany was latent.

The thanks of the author are due to Professor Thomson and Dr. Turkington for permission to report these cases.

TWO CASES OF CHRONIC HÆMOLYTIC ANÆMIA

By J. T. Lewis, B.SC., M.D., F.R.C.P.LOND.,
Royal Victoria Hospital, Belfast.

The essential criteria of a " hæmolytic anæmia " are as follows :—

(1) A progressive anæmia.

(2) An increase in the plasma bilirubin and in the urinary urobilin.

She did not look ill, but was panting for breath—her respiration rate was at one time as high as sixty per minute.

Her pulse was 90 and her temperature 97.0°F.

Nothing abnormal was found on examination, and X-ray confirmed the absence of any lesion in her lungs.

She had some twitching of her right shoulder.

There was no manifest tetany, but on tapping the facial nerve, spasm of the face-muscles was produced, especially at the corners of the mouth. Carpo-pedal spasms could not be produced by constrictions round the limbs. She was excreting an alkaline urine.

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(1) A progressive anæmia.

(2) An increase in the plasma bilirubin and in the urinary urobilin.

(3) Evidence of increased activity in the bone-marrow, as shown by a high reticulocyte count, and often by the presence of nucleated red cells in the peripheral blood.

The causes of hæmolytic anæmia may be classified in the following way :—

Extrinsic—(a) Infections, e.g., streptococcal, bac. Welchii.
(b) Chemical, e.g., lead, etc.

Intrinsic— (a) Acute hæmolytic anæmia (Lederer type).
(b) Chronic hæmolytic anæmia.
(c) Rare conditions, e.g., sickle-cell anæmia, etc.

The two cases to be described fall into the group of chronic hæmolytic anæmias. This group includes several types of blood-disease, e.g., acholuric jaundice, atypical cases of Hodgkin's disease, atypical leukæmias, etc.

From a practical point of view the main interest in the group is the fact that such cases may be mistaken for Addison's (pernicious) anæmia, to which they bear a superficial resemblance.

My object in reporting these cases is to emphasize the differences between hæmolytic anæmia and pernicious anæmia.

CASE 1.—Female, aged 38. Seen in July, 1937. She had complained for some months of increasing weakness, pallor, and exhaustion. The only significant point in her history was the fact that she had for some time been taking a preparation for the relief of chronic asthma, from which she had suffered for many years. This preparation contained two unusual drugs—calcium benzylphthalate and phenylsemicarbazide. The possible significance of these will be referred to later.

Her appearance suggested a moderately intense anæmia, and her colour was distinctly icteric.

On examination, the only findings were a chronic bronchitis of the spastic type, and an easily palpable spleen. There were no enlarged glands, and her tongue did not show the features of an achlorhydric glossitis.

The urine was normal except for the presence of a marked excess of urobilin.

Blood—Hæmoglobin, 46 per cent.; red cells, 2,200,000 per cmm.; leucocytes 5,000 per cmm.; colour index, 1.05.

Film—A megalocytic, hyperchromic type of anæmia. Many nucleated red cells, both erythroblasts and normoblasts. Polychromasia marked. Leucocytes normal.

Reticulocytes—35 per cent.

Van den Bergh—Negative direct reaction, strongly positive indirect reaction.

Wassermann reaction—Negative.

Red-cell fragility—Not increased.

Fractional test-meal—Hydrochloric acid present in excess.

These findings agree with the criteria already given for the diagnosis of chronic hæmolytic anæmia.

It was decided to observe the effect of the administration of liver extract (intramuscular) and large doses of iron on this case. After two months of this treatment, the examination of the blood showed :—Hæmoglobin, 65 per cent.; red cells, 3,500,000 per cmm.; reticulocytes, 26 per cent.; film—nucleated red cells still present.

It now became impossible to follow up the case further, but I am informed that she relapsed, and further liver treatment had no effect. She was given a blood-transfusion by Sir Thos. Houston, who has kindly asked me to see the case with him recently. The response to the transfusion has been remarkable. Her hæmoglobin has risen to one hundred per cent., and her film appears normal. The spleen is still slightly enlarged.

CASE 2.—Female, aged 35. Seen in September, 1937. She gave a history of failure of health for the past year, with fatigue, headache, weakness, dyspepsia, and a tendency to loose motions. She was obviously anæmic and definitely icteric. Her tongue was clean, but not smooth. There were no enlarged glands, but the spleen was palpable. Her urine contained a faint trace of albumen and a large amount of urobilin. In this case there was no history of any unusual drug, but she had had liver at intervals.

Blood—Hæmoglobin, 36 per cent.; red cells, 1,730,000 per cmm.; leucocytes, 8,200 per cmm.; colour index, 1.

Film—Marked anisocytosis and megalocytosis. No nucleated red cells seen. Polychromatic cells plentiful. Leucocytes appeared normal.

Reticulocytes—30 per cent.

Van den Bergh—Direct reaction negative; indirect reaction strongly positive.

Wassermann reaction—Negative.

Red-cell fragility—Normal.

Fractional test-meal.—Hydrochloric acid present in normal amount.

She has been treated by intramuscular liver and large doses of iron by mouth. There has been a slow but steady improvement, and her last blood examination gave the following figures :—Hæmoglobin, 62 per cent.; red cells, 4,010,000 per cmm.; film—No definite abnormality in red or white cells; reticulocytes, 5 per cent.

If there is any indication of a relapse in the future, one would certainly advise a blood-transfusion in view of the dramatic response in the previous case.

The question of splenectomy has been considered, but at the moment does not appear to be desirable.

It should be emphasised that the administration of liver to these cases has no real scientific basis, and the apparent improvement may only represent a natural fluctuation in the disease.

DIFFERENTIATION FROM PERNICIOUS ANÆMIA.

It will be seen that there are some points in common between chronic hæmolytic anæmia and pernicious anæmia. In both one finds a high colour-index (this is

not invariable in hæmolytic anæmia), megalocytosis, increased bilirubin in the blood, and excess of urobilin in the urine.

There are, however, two essential points of difference :—

(1) In hæmolytic anæmia it is unusual to find any abnormality in gastric secretion, whereas achlorhydria is almost an essential point in the diagnosis of pernicious anæmia.

(2) In hæmolytic anæmia a constant reticulocytosis is always present in the peripheral blood, even when the anæmia is rapidly progressing. A reticulocytosis only occurs in pernicious anæmia at the onset of a remission, and is transitory.

The megalocytosis of chronic hæmolytic anæmia has been frequently noted. It is certainly not due to deficiency of the specific anti-anæmic factor. In a recent paper Davidson[1] suggests that prolonged and excessive erythroblastic activity results in the formation of large primitive erythroblasts, " the descendants of which have a diameter greater than normal."

Discussion.

In attempting to classify these cases, one notices that they agree closely with a group of anæmias which have been described by Davidson and others[2]. There appear to be four possibilities :—

(1) *Drugs*—This might have an etiological bearing in Case 1. I have been unable to ascertain whether the chemicals in the " asthma cure " could produce hæmolytic effects. It is perhaps significant that the patient has now ceased to take the drug.

In the second case there is no history to suggest a chemical origin.

(2) *Atypical leukæmia.*—The absence of any immature white cells in the blood on repeated examinations, and the subsequent histories of the cases, would rule out this possibility.

(3) *Atypical Hodgkin's disease.*—It is difficult to exclude this completely, except to state that there are no other signs to suggest the disease.

(4) *Acholuric jaundice.*—It would seem that these cases can best be classified as acquired acholuric jaundice. In making this statement, one is aware that many authorities deny the existence of such a condition, and hold that all cases of acholuric jaundice are " congenital," the so-called " acquired form " being simply a delayed manifestation of the familial disease.

In the patients described there was no family history of jaundice or anæmia, but the fragility of the red cells of relatives was not tested.

The fact that the fragility in the two patients was normal does not, apparently, rule out such a diagnosis.

References.

1. Davidson and Fullerton, *Quart. Jour. Med.*, January, 1938.
2. Davidson, *Quart. Jour. Med.*, October, 1932.

PREGNANCY COMPLICATED BY A DEGENERATING FIBROID

By C. H. G. MACAFEE, M.B., F.R.C.S.(ENG.), F.C.O.G.,
Royal Victoria Hospital, Belfast.

THE main interest in this case lies in the difficulty the patient presented in arriving at a correct diagnosis and also the question of treatment.

MRS. B., AGED 28½, MARRIED 7/12 YEAR.

22/10/37.—The patient was seen first on this date on account of a *continuous uterine hæmorrhage,* which had lasted from 1/10/37. The previous menstrual period had commenced on 29/8/37, and was three days early.

The patient stated that the loss of which she complained had started at a normal menstrual period, but on closer questioning it was found that this period was really four days late. She was feeling nauseated, and had definite breast changes.

On examination.—A soft swelling was palpable just above the symphisis pubis. This was symmetrical in outline and corresponded in size to a pregnancy of fourteen to sixteen weeks. On vaginal examination the abdominal swelling could not be separated from the uterus, the cervix was soft and congested, and protruding from the external os was a vascular polyp, which bled freely on examination.

The diagnosis made at this time was a pregnancy of longer duration than the period of amenorrhœa would suggest, with the possibility of pseudo-menstruation having been caused by the vascular polyp. The Aschheim-Zondex test was positive.

24/10/37.—The cervical polyp was removed with the thermo-cautery, after which there was no further hæmorrhage.

8/1/38.—The patient was now seen for acute abdominal symptoms. She had complained of pain in the left *iliac fossa* since 4/1/38, which had become worse on 5/1/38, and was localised to the epigastrium and right side. She had vomited on 7/1/38.

Condition on examination.—The patient looked seriously ill, with furred tongue, pulse 120, and temperature 101°F., and complained of general abdominal tenderness. The uterus appeared to be about 28/30-weeks size, i.e., ten weeks larger than it should be if the last period was on 29/8/37, and four to six weeks larger than the size calculated on 22/10/37.

There was marked tenderness with some rigidity all over the abdomen, but both tenderness and rigidity were most marked in the region of the right hypochondrium, and in this area the uterine wall felt distinctly harder than elsewhere.

The patient stated that she had felt movements about a week previously, but no fœtal heart could be heard.

DIFFERENTIAL DIAGNOSIS.

Red degeneration of a fibroid.—The association of the gradually increasing pain, rise of pulse and temperature with a more or less localised area of tenderness and firmness of the uterus, was in favour of this diagnosis.

The presence of a fibroid would also explain the disproportion between the size of the uterus and the period of amenorrhœa which was noted on both occasions.

Acute appendicitis.—The fact that the pain had started in the left side, that the patient had been ill for four days without being in a more serious condition, and the relative lack of acute tenderness in the right iliac fossa or right kidney region was against this diagnosis.

Rapidly growing hyatid mole.—On the only occasion on which I had seen this condition with the uterus of comparable size, the patient was more seriously ill, and her main complaint was excruciating pain in her back.

I hoped to differentiate this condition by demonstrating fœtal parts by X-ray, but it was only after a careful search of the plate that the outline of a fœtal skull could be seen. The difficulty encountered was due to the fact that we expected to find a much larger fœtus than was actually present (see X-ray).

Twisted ovarian cyst.—The gradual onset of the pain, and marked elevation of pulse and temperature were against this diagnosis, and a cyst of this size would probably have been felt on the examination made on 22/10/37.

Acute pyelitis.—The onset of the pain in the left side, the lack of tenderness in both kidney regions, and the fact that a cathether sample of urine cultured on 5/1/38 showed no pus or organisms, almost ruled out this diagnosis.

Acute cholecystitis.—This is an occasional complication of pregnancy, but is more likely to occur in the puerperium. The history and findings on examination were against the diagnosis.

The provisional diagnosis before the operation was red degeneration of a fibroid, and was based largely on the X-ray picture and the clinical findings.

Treatment.

Most authorities advise that the treatment of red degeneration of a fibroid complicating pregnancy should be conservative. Shaw, for example, states: "Operative treatment is contra-indicated, for the symptoms subside with rest in bed, and further complications, such as infection, are most unknown."

In spite of this well-recognised fact, operative treatment was selected for two reasons—(a) the increasing severity of the symptoms, and (b) the size of the tumour as shown by X-ray.

When the patient was anæsthetised and the abdomen relaxed, the size and position of the tumour was well outlined, and it occupied most of the upper abdomen above the umbilicus, the uterus being below the umbilicus.

On abdominal section the tumour proved to be a fibroid about the size of a sixteen-weeks pregnancy, attached to the fundus and posterior walls of the uterus, which was about twenty-weeks size.

The tumour was excised from the uterine wall, the scar peritonised, and the appendix, which contained numerous copraliths, was also removed.

The patient made an uninterrupted recovery without a miscarriage occurring.

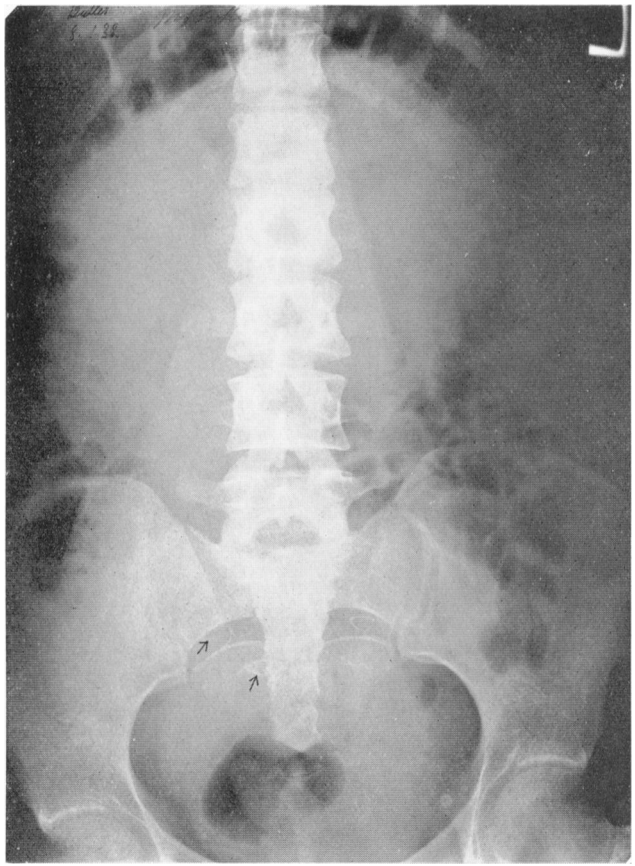

Fig. 1.
X-ray before operation, showing dense shadow of tumour. Arrows denote position of fœtal skull.

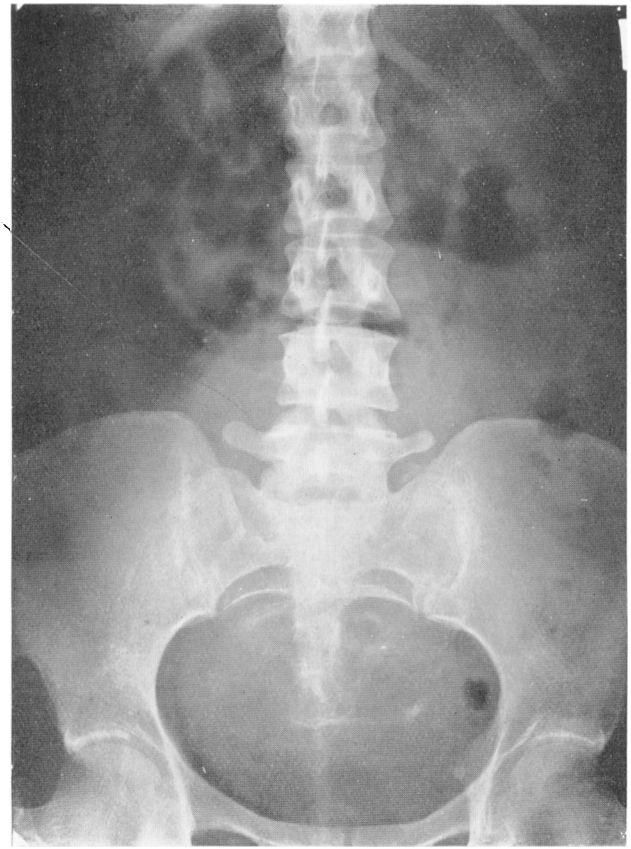

Fig. 2.
X-ray three weeks after operation.

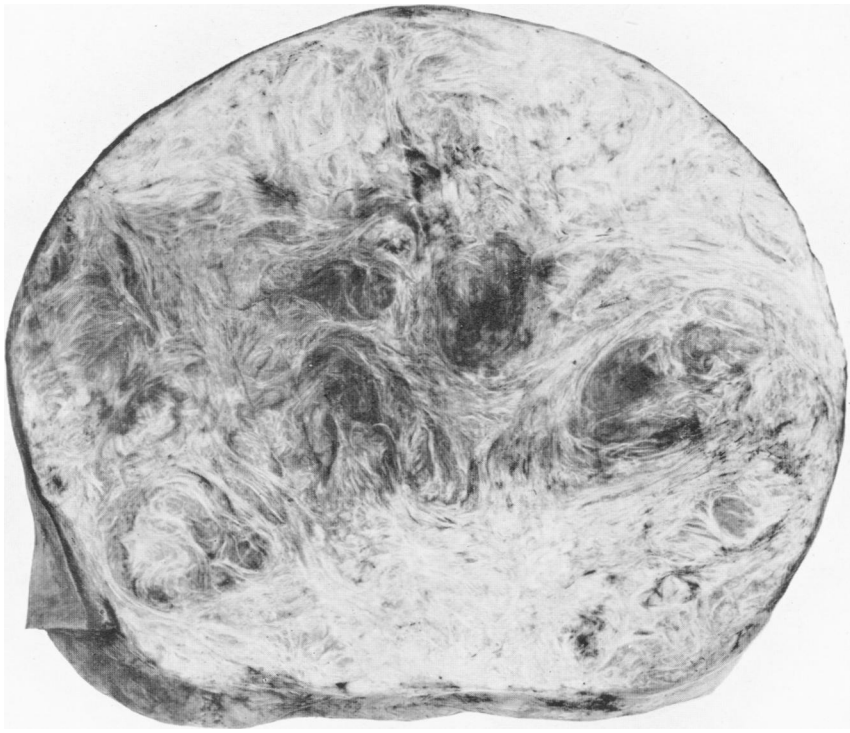

Fig. 3.
Photograph of tumour.

THE NEW ANATOMY*

It has always been the custom of our profession to withhold approval from any innovation, however promising, until it has been proved to the uttermost. So it comes about that the new resolutions of the General Medical Council in regard to professional education do but officially ordain the close co-ordination between the teaching of anatomy and physiology on the one hand, and clinical subjects on the other, which was already well on the way to become the established practice of the medical schools.

In these resolutions it is suggested that approximately one-third of the total time available in the second year of studies should be allotted to "the elements of the methods of clinical examination, including physical signs, the use of the stethoscope, ophthalmoscope, etc., and the examination of body-fluids (with demonstrations on living subjects, normal and abnormal)." This reminds us that, though painstaking dissection and accurate observation must always remain the foundation of anatomical knowledge, yet these must be correlated with the observation of living structures, now facilitated by the advances in radiological technique, and approved apparatus such as the gastroscope.

Although oral teaching has long laid stress on these vital aspects of anatomy, it has hitherto been difficult to find suitable supplementary books. That problem has now been solved by Professor Hamilton and his collaborators.

It would be impossible to compile a comprehensive list of the novel and admirable qualities of this work. "Treasure your variations" has never been a popular aphorism with the average student, too wont to complain that an arm lacking palmaris longus, or a right lung with only two lobes, is "wrong"! It is encouraging to find emphasis laid, from the first page, on the individuality of anatomical structure, with brief notes on some of the commoner variations and on the main physical types. Those pages of the Introduction which are devoted to radiology provide a summary, brief but adequate, for the general reader, of the physical basis of radiology and the more important radiological procedures, such as the use of contrast media—with reference to opaque meals, intravenous pyelograms, and ventriculography—and even the use of the Potter-Bucky diaphragm, and the technique of kymography. The rest of the Introduction contains general descriptions of the skin, nerves, muscles, principal vessels, and the skeleton as a whole. Thereafter, the book is arranged in sections which correspond with the "parts" in which the body is usually dissected.

The sections dealing with the limbs comprise surface markings, motor points of muscles, movements at joints, and a really excellent set of radiographs showing

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*SURFACE AND RADIOLOGICAL ANATOMY FOR STUDENTS AND GENERAL PRACTITIONERS. First Edition. By Arthur B. Appleton, M.A., M.D. (Cantab.); William J. Hamilton, M.D., B.Ch.(Belf.), D.Sc.(Glasg.), F.R.S.E.; and Ivan C. C. Tchaperoff, M.A., M.D., B.Ch.(Cantab.), D.M.R.E. Cambridge: W. Heffer & Sons Ltd., 1938. pp. 309, figs. 338. Price 15s.

different stages of ossification. The data relating to ossification are also concisely tabulated in an appendix. The method of presentation of surface-form is very striking : throughout the book there are parallel illustrations of each part, one being an actual photograph of the part in a well-developed subject, the other an anatomical drawing which reveals the structures underlying surface prominences and depressions. The surface projections of deeper structures are also shown superimposed on photographs. In fact, everything possible is illustrated by photographs, thus facilitating the study of the living model, who never seems to look like the usual diagram!

A similar plan is followed in the sections on the trunk, head, and neck, but supplemented by descriptions of the usual methods of investigation, clinical and instrumental, ranging from palpation and percussion to accounts of the information to be obtained by the use of specula, sigmoidoscope, cystocope, etc. The radiographs in these sections include examples of all the standard techniques, and, in addition, reproductions and explanations of other positions and procedures —such as oblique views of thorax and sialograms—valuable, but less commonly seen, and often misinterpreted by the student. Especially noteworthy are some very fine radiographs showing the rugæ of the normal stomach, and contrasting the appearances of the J-shaped and "steerhorn" type under varying conditions.

The actual production of the book must be regarded as a triumph of collaboration between publishers and authors. The paper has a pleasant surface—smooth, perfectly suited for the reproduction of radiographs, yet with a matt finish very restful to the eyes. A few blank leaves are included for the reader's own notes.

Professor Hamilton and his colleagues deserve the thanks of all their readers for a very fine piece of work. We offer them our hearty congratulations.

ROYAL VICTORIA HOSPITAL NEW PAY-BLOCK OPENED

An innovation in hospital services in Belfast is the opening of the new pay-block of the Royal Victoria Hospital. This is an important addition to the hospital, and it is following the policy of the British Voluntary Hospitals' Association and of the British Medical Association, of "paying wards for paying patients." It has been built from funds received from the residual estate of the late Mr. Henry Musgrave, at a cost of £50,000, and is to be known at the Musgrave Clinic.

The building consists of forty-four bedrooms and two four-bedded rooms, with an operating-theatre and an X-ray department. Each floor of the building is planned as a separate unit, with a suite of service rooms consisting of a sister's room, sink-room, clinical room, sterilising-room, food-service room, flower-room, bathroom, and linen-room. They are all pleasantly decorated, and have oak floors and built-in wardrooms. The doors are the flush hospital type, and fitted with springs that check them automatically and noiselessly. In addition, the telephone

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service has been arranged in such a way that it can be linked up with the private rooms to suit patients, who, subject to medical approval, desire to keep in touch with their ordinary affairs. The block is built on a steel-work construction, and it is fire-proof throughout.

It is not intended that this new block should compete with private nursing homes. A definite limit will be put on the type of patients admitted, and they will be charged only the actual cost of maintenance, but the patients will be responsible for the payment of the attending surgeons and physicians. The block is designed to meet the needs of those middle-class people who, ordinarily, would not be able to enter private nursing homes on account of the cost, but who at the same time are beyond the scope of the ordinary wards of the voluntary hospital, which caters for the very poor.

This relatively small beginning in a paying-block should fill a long-felt want in Belfast and its surrounding district, and it is hoped that ere long it will be extended to such dimensions as to be in keeping with the population of the area which it serves.

B.M.A.—NORTHERN IRELAND BRANCH
NORTH-EAST ULSTER DIVISION

THE second annual social meeting of the Division was held in The Cafe, Coleraine, on Monday, 3rd January. The large number of guests were welcomed by the chairman and Mrs. Bateman.

After tea, Dr. Bateman introduced Dr. R. H. Hunter, Belfast, who gave a talk on tales from The Zoo. The speaker gave a most interesting and racy account of his varied experiences with the animals in the Zoological Gardens in London and Belfast. He delighted the company with stories of the almost uncanny intelligence displayed by some of the animals. He described, for example, how an elephant in Belfast Zoo recognised immediately, a trainer whom the elephant had not seen since leaving a circus a few years previously. He also told how an elephant had emptied its drinking water over two young men who were teasing it. Dr. Hunter gave interesting details regarding the building of enclosures for the animals, as these are built with an exact knowledge of how high the different animals are able to jump. The audience were much impressed and amused by Dr. Hunter's statement that it is a comparatively simple matter to enter a lion's cage, because a human being can always think a few seconds ahead of a lion.

The talk was illustrated by a large number of excellent lantern slides from Dr. Hunter's collection.

A vote of thanks to the speaker for his most instructive and delightful talk was passed with enthusiasm, on the proposal of Dr. J. M. Hunter, seconded by Dr. Ross Thomson.

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A MEETING of the Division was held in The Cafe, Coleraine, on Monday, 7th February. The minutes of the previous meeting were read and passed. Two resolutions from the Tyrone Division regarding the Dispensary System and the Mental Treatment Act were adopted. A number of short papers were then read by members of the Division.

Dr. Ekin described a case of leukæmia, and drew attention to difficulties in diagnosis.

Dr. McGlade discussed the use of Optochin in pneumonia. He described some cases in which this drug had apparently been very successful. He mentioned that he had never seen any ill-effect on the eyes, as a result of treatment.

Dr. Allison gave an account of a patient who had had pleurisy, pneumonia, hæmoptysis, and hæmaturia. The patient on several occasions was very critically ill, but eventually recovered. In spite of many investigations, the cause of the illness was not discovered.

Dr. Boyd gave an account of his experience with Prolutan. One patient had had six miscarriages, for which no cause could be discovered. During the last pregnancy, Prolutan was given, and the patient has now reached the eighth month of the present pregnancy. Another patient who had had four pregnancies which terminated for no apparent reason at four to five months, is now receiving Prolutan and has reached five and a half months.

Dr. McClelland's case was that of a boy who received a ragged cut on the forehead, which became septic, but healed up normally. Later on the patient developed irregular pyrexia, which continued for many weeks, with symptoms pointing to abdominal adenitis. The opinion was that latent tubercular glands in the abdomen had been activated by the septic infection in the forehead. The patient eventually recovered.

Finally, Dr. Adams gave his views on old age. He described several cases in Garvagh district, of people who had reached a ripe old age and enjoyed excellent health in spite of the fact that they disregarded the rules of hygiene and dietetics. Many of them had many septic teeth, and the speaker maintained that by producing their own antitoxins, these people had reached old age without any attention from physicians, surgeons, or dentists. Dr. Adams maintained that the secret of healthy old-age was contentment and that this far outweighed other factors. He attributed the contentment of elderly people in the country as partly due to the Old Age Pension scheme.

All the papers were followed with interest, and stimulated discussion. The best thanks of the meeting were expressed to all who had taken part.

The hope was expressed that more meetings of this kind would be held in the future.

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

EGLINTON TERRACE, PORTRUSH.

ULSTER MEDICAL SOCIETY

The fifth meeting of the Ulster Medical Society for session 1937-38, was held in the Whitla Medical Institute on Thursday, 13th January, 1938. The president, Professor W. W. D. Thomson, occupied the chair, and the following interesting cinematograph films were shown :—

(a) Sufficiency and Insufficiency of the Mitral Valve.
(b) Reduction and Treatment of Simple Fracture of the Leg.
(c) Fracture of both Malleoli and Lateral Displacement of the Foot.
(d) Treatment of Talipes Equino-varus.
(e) Motion pictures of the Pharynx.
(f) Motion pictures of the Larynx.

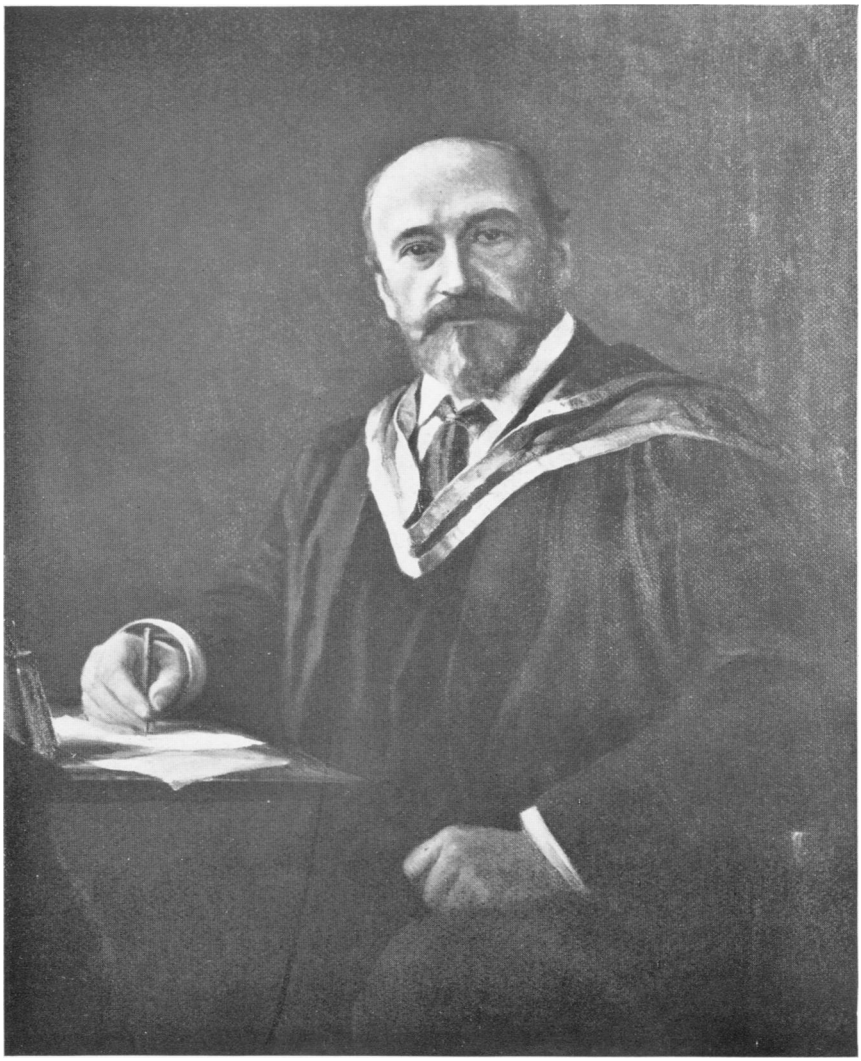
The sixth meeting of the session was held on Thursday, 27th January, 1938, in the Institute, with the president, Professor W. W. D. Thomson, in the chair. The following short papers, published elsewhere in this number of the Journal, were read :—

(1) Prof. P. T. CRYMBLE—
  (a) "Two Cases of Non-specific Granuloma (Crohn's Disease) treated by Right Colectomy."
  (b) "A Large Gastric Ulcer treated by Gastrectomy."
  (c) "Simple Cyst of the Humerus."
(2) Mr. C. J. A. WOODSIDE—
  "A Case of Non-Opaque Renal Calculus, with Radiographs."
(3) Dr. J. T. LEWIS—
  "Two Cases of Chronic Hæmolytic Anæmia."
(4) Mr. C. H. G. MACAFEE—
  "Pregnancy Complicated by Degenerating Fibroid."
(5) Dr. R. W. M. STRAIN—
  "Two Cases of Hyper Ventilation Tetany."

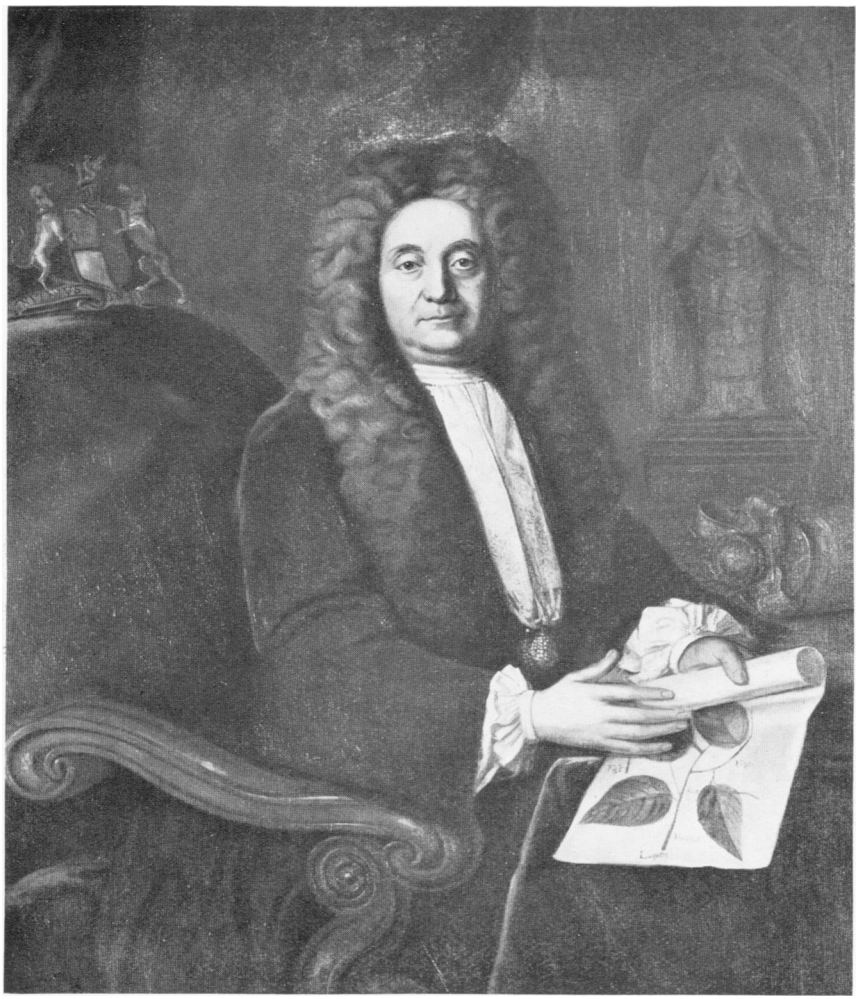
The seventh meeting of the session was held in the Institute on Thursday, 10th February, 1938. The president, Professor W. W. D. Thomson, occupied the chair, and the following papers, published elsewhere in this number of the Journal, were read :—

(1) Dr. S. I. TURKINGTON—
  "The Historical Development of the Resident Pupil System."
(2) Dr. R. H. HUNTER—
  "The Pulse in Chinese Medicine."

The annual dinner of the Society took place on Thursday, 17th February, 1938, in the Whitla Institute. Professor Thomson presided, and the guests included Sir Humphrey Rolleston. After the dinner the president made a presentation to the Society of two portraits of Sir William Whitla and Sir Hans Sloan (described elsewhere in this number of the Journal). The Honorary Fellowship of the



Portrait of Sir William Whitla, M.D., LL.D.,
by Frank McKelvey in 1938.



**Portrait of Sir Hans Sloan, Bart., M.D., F.R.S.
Painted by Clifford Hall, after the original by
Stephen Slaughter in 1736.**

Society was conferred upon Sir Humphrey Rolleston, Sir Robert Johnstone, and Mr. A. B. Mitchell.

The eighth meeting of the Society was held on Thursday, 24th February, in the Whitla Institute. The president occupied the chair, and Dr. William Moody of London delivered an address, "Child Guidance and Practice." It is hoped to publish an account of this paper in the July number of the Journal.

The annual laboratory meeting of the Society was held in the Institute of Pathology of Queen's University, on Thursday, 3rd March, 1938. A very interesting series of specimens, radiograms, etc., were on view, and a very large number of members took part in the discussions.

H. HILTON STEWART, *Hon. Secretary.*

Malone Road, Belfast.

ULSTER MEDICAL SOCIETY
PRESENTATION OF TWO PORTRAITS

THE annual dinner of the Ulster Medical Society for 1938 was rendered memorable by the presentation to the Society of two portraits, by the president, Professor W. W. D. Thomson. One of these is that of the greatest benefactor the Society has known, Sir William Whitla, and the other that of a distinguished Ulsterman, Sir Hans Sloan, the founder of the British Museum (see ULSTER MEDICAL JOURNAL, January 1938).

Professor Thomson, in making the presentation, said he recalled a former social gathering fifteen years ago, when his wife and he were the recipients of a presentation from the Society on his return from a long illness. In the years which had supervened they had often pondered how they could show they were not unmindful of the past, and he felt a great desire before his year as president had elapsed to make some gesture to the Society indicative of his appreciation. But he was puzzled how to express that gesture until he stood in the National Portrait Gallery before the picture of Sir Hans Sloan, when his difficulties became clear, and he formed the plan of presenting a copy of that portrait to the Society, to remind the profession that the founder of the British Museum had been born in their midst, and to serve as an inspiration to the hundreds of young men who, as Hans Sloan had done, left Northern Ireland to seek fame and fortune in other lands. From that idea sprang a second—that the Whitla Medical Institute should possess a portrait of its honoured donor, Sir William Whitla, which should serve to give a contact with his personality to those who would meet in that hall long after those who knew him in the flesh had passed from the scene.

He was all the more confirmed in his plan when he recalled the words of Sir William Whitla at the opening of the Institute: "When I saw it possible that I could erect this building, and so carry out a day-dream of years, I set about planning how I might, in it, symbolise in art some noble precept or example to

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our profession, and leave it here as a help and encouragement to those coming after—something that a weary brother seeing may take heart again."

Hence, continued Professor Thomson, we find the heads of Thomas Andrews, Alexander Gordon, Henry MacCormac, and Peter Redfern cut in the stone bosses on the outside of the building; hence the stained-glass window placed above the mantlepiece in the library in memory of Dr. William Smyth of Burtonport, who gave his life to save the typhus-stricken natives of the Island of Arranmore.

Although a hundred years separated the death of Sloan and the birth of Whitla, yet the juxtaposition of the portraits of these two men is not inappropriate. Both, when mere boys, were attracted to the study of medicine, and arrived strangers and unknown in a great city, served their apprenticeship in an apothecary's shop, and finally, after many difficulties, attained their M.D. degrees. They were both specially interested in the treatment of disease, in drugs and therapeutics, and that both possessed an encyclopædic knowledge of the literature of their period is shown by their writings. Sloan revolutionised the Pharmacopœia of his time as far as the superstition and ignorance of his age allowed, while Whitla's "Dictionary of Treatment and Materia Medica" were standard textbooks to thousands of practitioners and medical students. To both came fame and honours and a great position. Both were shrewd and practical men of affairs and successful in their practice, but generous withal, and many a widow and orphan had reason to call their names "Blessed." They were in all the philanthropic and social movements of their day. Both had an intensely religious strain in their characters, and it is a strange coincidence that to both the Book of Daniel made a strong appeal. In his latter days Sir William spent much time in the attempt to elucidate the hidden meaning of that Book; while Sir Hans chose from its pages the foreword for his great work, "The Voyage to Jamaica"—"Many shall run to and fro, and knowledge shall be increased." It was a happy inspiration which led Dr. Robert Marshall to suggest words from the Book of Daniel as an inscription on the tablet erected to Sir William's memory in Ward 2 of the Royal Victoria Hospital: "Skilful in all wisdom and cunning in knowledge and understanding science"—words equally applicable to the peculiar genius of Hans Sloan.

Both had personal experience of suffering, yet each was granted length of days, and both by their carefully conceived and generous benefactions have given cause to those that come after them to remember them with grateful thanks.

The portrait of Sir Hans Sloan is a copy of the famous portrait which hangs in the National Portrait Gallery, and it was painted by Mr. Clifford Hall, of London. The work was admirably carried out, and the portrait forms a valuable asset to the Institute in which it hangs. It was unveiled by Sir Humphrey Rolleston. It is painted in the difficult technique of glazing transparent colours over solid monochrome, and the accessories worked into the design serve to throw out in marked contrast, the head and figure of the dominating personality of the sitter. Copying a portrait painted in this manner is an exacting task, and Mr. Hall is to be congratulated in the brilliant way in which he has carried out the work.

Mr. Hall describes the portrait as follows :—

Its finest qualities lie in its design. It is built up, in the first place, on a number of opposing diagonals. The main ones from left to right consist of the direction of the lace cravat and of the position of the sitter's arms. The opposing ones from right to left are found in the admirable placing of the hands, in the lines of the partly unrolled drawing, the cloth covering the table, the lower arm of the chair, and the lines of the coat. This arrangement gives an impression of life and alertness.

The dignity of the head with its large wig is further enhanced by the insistence on the curved back of the chair and by the architectural curves of the stone niche in which the statue is placed.

To paint a successful portrait it not an easy task at the best. When the painter is faced with the problem of combining a number of objects and details which, although they suggest, as in this case, the personality and character of the sitter, are not in themselves easy to combine, then the problem is one that can only be solved by a thoroughly good design.

Stephen Slaughter, an Irish artist, who painted the portrait in 1736, has succeeded in solving the problem. That he has taken certain liberties with the drawing is undeniable, but in the main his design is sound and expresses those qualities one would associate with Sir Hans : dignity and a lively intelligence.

The painter has also disposed his telling masses of colour well and on the same diagonal plan. Thus the large expanse of the back of the chair on the left is a dark greenish-blue, and the table-cover on the right, diagonally opposite, is practically the same colour. In a similar fashion, the bright gold of the chair-arm on the left is echoed by the colouring of the mace. The treatment of the head is vigorous and fresh, and the rest of the picture well subordinated to it.

If there were no actual proof that Slaughter's painting is what is popularly described nowadays as "a good likeness," it would not matter. In any case, it is not and never will be the artist's place to compete with the photograph. If he cannot give more than the camera, then he has failed. But when one studies this portrait, one feels certain that the painter has given us something that is in agreement with historical fact; moreover, it has penetration. Perhaps he has delicately hinted, in the expression of the face and poise of the figure, at a slight tendency towards pomposity, but the hint is only a kindly one, for, above all, stress is laid on those characteristics and attainments which made Sir Hans Sloan one of the most eminent men of the eighteenth century.

Sir William Whitla's portrait was painted from photographs by the Belfast artist, Mr. Frank McKelvey, and it was unveiled by Sir Thomas Houston. It shows Sir William seated by a table in a characteristic attitude, and it is a speaking portrait. Sir William's old students testified to the remarkable likeness shown on the canvas, and heartily congratulated Mr. McKelvey on his work. It is painted in the modern direct method, in simple low-coloured tones, with strongly modelled head, characteristic of the man.

BRITISH MEDICAL ASSOCIATION
NORTHERN IRELAND BRANCH

The present session of the Northern Ireland Branch, under Dr. T. B. Pedlow's presidency, promises to be outstanding in the interest being taken in the affairs of the medical profession in Ulster. Dr. Pedlow's presidential address was an attractive and racy account of his experiences in medical practice in Lurgan, and was much appreciated by his large audience. At the February meeting, Mr. W. A. B. Iliff (Assistant Secretary, Ministry of Labour) read a paper on Northern Ireland's health problem. This is published in this issue. It was followed by a very interesting discussion opened by Dr. D. Gray and Dr. S. McComb. Dr. Gray's paper is also published in this issue. As a result of this important discussion, the Council have referred further consideration to a standing committee.

This standing committee of Council is an innovation in the activities of the Branch. It is hoped that it will provide a useful liaison between the profession and lay bodies in making contact where medical problems arise in connection with administration, or where projected developments have a bearing upon medical or health matters. Notification of the existence of the committee has been sent to various Government Departments, Boards of Guardians, Rural, Urban, and County Councils, and it is hoped thereby to initiate consideration of new developments before they are enforced, and consultation with representatives of the medical profession in advance. The membership includes, in addition to the president, honorary treasurer, and honorary secretaries, Drs. G. G. Lyttle, S. B. Boyd Campbell, S. McComb, F. P. Montgomery, and A. J. Dempsey.

In March Dr. Leonard Kidd read a paper advocating the establishment of a Ministry of Health in Northern Ireland. The case made out by Dr. Kidd for the proper co-ordination of medical services and related problems is a very strong one, as will be seen by a study of his paper, to be published later on. It is realised that progress towards this ideal is not likely to be made until public opinion is in a better position to appreciate the difficulties of all aspects of medical practice and the handicaps which exist in the fulfilment of the ideal standard of service to the health of the individual and the community which doctors are in a position to provide. This will receive the attention and interest of the Branch Council during the next months.

The Branch associates itself with the many expressions of pleasure and congratulations at the honour of knighthood conferred upon the president of the Association, Sir Robert Johnstone, by His Majesty the King, and wishes him and Lady Johnstone all happiness in the well-merited honour. The honorary fellowship conferred upon Sir Robert by the fellows and members of the Ulster Medical Society is a further tribute to the place he holds in the affection and esteem of his colleagues.

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

73 UNIVERSITY ROAD, BELFAST.

REVIEWS

PRACTICAL HANDBOOK OF BACTERIOLOGY. By Mackie and McCartney. 1938. Fifth Edition. Edinburgh: E. & S. Livingstone. Pp. 586. Price 12s. 6d. net.

The new edition of Mackie and McCartney's "Practical Handbook of Bacteriology" should be a very useful volume for the student of bacteriology and the laboratory worker. It is divided into three sections, the first and third being devoted to immunology and general bacteriology respectively. The more important phenomena of immunity and details of the more commonly occurring bacteria are set out with great lucidity, and these sections will be found of value to the junior student of bacteriology.

The middle section of the book deals with bacteriological technique, including the methods of collecting specimens and of their examination, and a full account of the preparation of culture media. The methods of performing the Wassermann test and its various modifications are described, and also the complement fixation tests.

In this new edition the methylene blue reduction method for the bacteriological testing of milk is described, and the details of procedure given are those laid down by the Ministry of Health in their recent report. The grouping of streptococci by the precipitation reaction is dealt with, and the method of carrying out the test. Griffith's method of seriological typing of streptococci is also described. A more detailed table for the identification of the food-poisoning bacteria than that in the last edition, is given, and this will be found very useful. Reference is made to the more recently identified types of pneumococci, to the Vi antigen in B. typhosus, and to this oxidase reaction for the identification of gonococci in cultures. The chapter on filterable viruses has been revised and enlarged and is particularly good.

The book is easy to read, and no doubt will be as popular as its previous editions with student and practical worker.

SKELETON SKETCHES IN LOOSE-LEAF FORM FOR STUDENTS IN HUMAN ANATOMY. London: Garrett and Campbell, Ltd. Pp. 58, with additional writing and tracing paper. Leather cover. Price 10s. 6d. Diagrams alone: Series 1 (20 sheets), 2s.; Series 2 (27 sheets), 3s.; Series 3 (11 sheets), 2s.

The publishers are to be congratulated on an excellent idea, well carried out. Anyone who has lectured to medical students knows how much attention, which might profitably be devoted to the words of the lecturer, is distracted to the effort of copying and labelling a complicated diagram, the result being ultimately both inaccurate and incomprehensible. Messrs. Garrett and Campbell have produced a set of "skeleton sketches"—outline drawings of bones, joints, and larger portions of the skeleton, on which the student can insert the various muscles, related vessels, nerves, etc. The advantages are obvious: the student does not waste time in producing an outline remotely resembling, say, the maxilla, and the outline, being reasonably correct, can afterwards be compared with the actual bone with some hope of identifying the various structures.

The complete set consists of three series made up as follows: Series 1 shows individual bones, each drawn from several aspects, e.g., humerus—anterior, posterior, and lateral views. The various bony points may be labelled, and origins and insertions of muscles marked. Series 2 shows two or more articulated bones, so that the complete course of muscles acting on the different joints can be drawn in, and the relations of vessels, nerves, etc., may also be shown. These sketches vary in complexity from outlines of humerus, radius, and ulna articulated together, to a hemi-section of the whole skeleton. Series 3 comprises outline drawings

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Apart from their time-saving function in the lecture-room, these drawings should be most useful for revision. By indicating structures lying at different depths on separate sheets of tracing paper superimposed on the bony framework, quite a stereoscopic effect is obtained, and an excellent, individual atlas of anatomy can be constructed.

ELEMENTS OF SURGICAL DIAGNOSIS. By Sir Alfred Pearce Gould, K.C.V.O., C.B.E., M.S., F.R.C.S. Eighth Edition. 1938. Revised by Eric Pearce Gould, M.D., M.Ch., F.R.C.S. Cassell & Co. 10s. 6d. net.

Another reviewer has stated that this book will, on investigation, frequently prove to be the cause of the bulge so often seen in the student's coat-pocket. Undoubtedly its handy size, as compared with its larger and more profusely illustrated rivals, is a factor in its popularity, but hardly the only one. Its subject matter is remarkably complete, and careful methods of examination are everywhere emphasised as the basis of accurate diagnosis. A noteworthy omission, however, is the absence of any reference to comparative measurements as a method of determining the presence and extent of muscular wasting in suspected joint disease. An excellent series of X-ray plates has been introduced, and greater emphasis has been laid in the text on X-ray methods and diagnosis. The book is not easy to read, a feature which is hardly a fault, but is inherent in its method of treating the subject. It is a book to be used at the bedside, and the student who uses it there consistently and conscientiously, will undoubtedly develop sound methods and achieve diagnostic ability. This last edition has been revised by the son of the original author.

BLACK'S MEDICAL DICTIONARY

His Majesty the King has been pleased to accept the 100,000th copy of " Black's Medical Dictionary." To mark the reaching of this total, on the publication of the fourteenth edition, copies were also presented to Sir Kingsley Wood, Minister of Health, and to Mr. Walter Elliot, Secretary of State for Scotland, who, like Dr. Comrie, the author of the " Dictionery," is the possessor of Scottish medical degrees. A copy was also presented to Lord Nuffield, who wrote that the gift was a particularly acceptable one, since by a coincidence he had just been thinking of purchasing such a book.

Messrs. Adam & Charles Black first published the " Dictionary " in 1906. Since then nineteen large impressions have been printed, and Dr. Comrie has revised it for fourteen new editions. From a crown 8vo book of 850 pages, it has grown to a demy 8vo volume of over 1,000 pages and 500 illustrations. This latest edition, revised to October, 1937, incorporates the results of the most recent medical advances, and the latest available statistics.

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of head, neck, and trunk, with bony framework lightly indicated, allowing viscera to be filled in in their proper relations. Some transverse sections through the limbs are also included.

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Apart from their time-saving function in the lecture-room, these drawings should be most useful for revision. By indicating structures lying at different depths on separate sheets of tracing paper superimposed on the bony framework, quite a stereoscopic effect is obtained, and an excellent, individual atlas of anatomy can be constructed.

ELEMENTS OF SURGICAL DIAGNOSIS. By Sir Alfred Pearce Gould, K.C.V.O., C.B.E., M.S., F.R.C.S. Eighth Edition. 1938. Revised by Eric Pearce Gould, M.D., M.Ch., F.R.C.S. Cassell & Co. 10s. 6d. net.

Another reviewer has stated that this book will, on investigation, frequently prove to be the cause of the bulge so often seen in the student's coat-pocket. Undoubtedly its handy size, as compared with its larger and more profusely illustrated rivals, is a factor in its popularity, but hardly the only one. Its subject matter is remarkably complete, and careful methods of examination are everywhere emphasised as the basis of accurate diagnosis. A noteworthy omission, however, is the absence of any reference to comparative measurements as a method of determining the presence and extent of muscular wasting in suspected joint disease. An excellent series of X-ray plates has been introduced, and greater emphasis has been laid in the text on X-ray methods and diagnosis. The book is not easy to read, a feature which is hardly a fault, but is inherent in its method of treating the subject. It is a book to be used at the bedside, and the student who uses it there consistently and conscientiously, will undoubtedly develop sound methods and achieve diagnostic ability. This last edition has been revised by the son of the original author.

BLACK'S MEDICAL DICTIONARY

His Majesty the King has been pleased to accept the 100,000th copy of " Black's Medical Dictionary." To mark the reaching of this total, on the publication of the fourteenth edition, copies were also presented to Sir Kingsley Wood, Minister of Health, and to Mr. Walter Elliot, Secretary of State for Scotland, who, like Dr. Comrie, the author of the " Dictionery," is the possessor of Scottish medical degrees. A copy was also presented to Lord Nuffield, who wrote that the gift was a particularly acceptable one, since by a coincidence he had just been thinking of purchasing such a book.

Messrs. Adam & Charles Black first published the " Dictionary " in 1906. Since then nineteen large impressions have been printed, and Dr. Comrie has revised it for fourteen new editions. From a crown 8vo book of 850 pages, it has grown to a demy 8vo volume of over 1,000 pages and 500 illustrations. This latest edition, revised to October, 1937, incorporates the results of the most recent medical advances, and the latest available statistics.