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THE ULSTER MEDICAL JOURNAL

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THE
ULSTER MEDICAL JOURNAL

PUBLISHED ON BEHALF OF THE ULSTER MEDICAL SOCIETY

Vol. XXXVI WINTER 1967 No. 1

THE EARLY OVARIOTOMISTS—PIONEERS IN ABDOMINAL SURGERY

By J. A. PRICE, M.B., B.Ch., F.R.C.S.Edin.

Presidential Address to The Ulster Medical Society, 20th October, 1966

WHEN I first embarked on the preparation of this address it was with the idea that Spencer Wells was the key figure in the development of ovariotomy—the operation for removal of an ovarian cyst. Possibly this may be true, but I soon discovered how much credit must be given to other workers in this field.

It all began in 1809. It was in that year that a courageous woman—Jane Crawford—submitted to hitherto untried surgery at the hands of Ephraim McDowell of Danville, Kentucky. Little did they realize the far-reaching results of the "experiment"—as McDowell called it.

Here is the story in his own words:

"In December 1809 I was called to see a Mrs. Crawford who had for several months thought herself pregnant, with pains from which she could find no relief. So strong was the presumption of her being in the last stage of pregnancy that two physicians requested my aid in delivering her.

"The abdomen was considerably enlarged; examination induced the conclusion that it must be an enlarged ovarium. Having never seen so large a substance extracted, nor heard of an attempt, or success attending any operation such as this required, I gave to the unhappy woman information of her dangerous situation. She appeared willing to undergo an experiment, which I promised to perform if she would come to Danville (the town where I live), a distance of sixty miles from her place of residence. This appeared almost impracticable by any, even the most favourable conveyance, though she performed the journey in a few days on horseback."

McDowell then goes on to describe the operation—an abdominal incision nine inches long was not sufficient to allow removal of the cyst entire, so he partially emptied the cyst and then removed it, leaving the ligature on the pedicle protruding in the lower end of the wound, as was the custom in amputations.

To quote him again, "In five days I visited her, and much to my astonishment found her engaged in making up her bed. I gave her particular caution for the

future, and in 25 days she returned home as she came—in good health which she continues to enjoy." She died 32 years later at the age of 79.

It is difficult for us to imagine the setting of this drama—no anaesthesia (and none for another 20 years), no sterilizing, (the work of Pasteur and Lister was still 50 years ahead), the untried operation, the climate of criticism. One story tells of a mob outside McDowell's house, ready to lynch him for murder, if he failed ! In spite of his success McDowell did not publish his report for several years until he had two further successes to his credit. In all he performed the operation 13 times with 8 recoveries.

Though born in Virginia, McDowell is said to have been of Irish or Scottish parentage—Lawson Tait claimed him as a fellow Scot. At any rate it seems certain that he spent about a year of his medical training in Edinburgh returning home in 1795. He soon became a well-known and successful surgeon and his practice extended well beyond his home town. Probably the fact that he had studied in Britain gave him a certain prestige—the traffic now seems to be in the opposite direction ! He was a tall well-built man, strong willed and reliable : of strict religious views, not given to swearing, nor did he permit it in his presence. He died in 1830 at the early age of 59 probably from appendicitis and peritonitis—an irony of fate in view of his contribution to abdominal surgery. In 1879 the Kentucky Medical Society erected a granite monument to his memory, and in 1935 the same Society dedicated a memorial to Jane Todd Crawford—heroine of the first successful operation for ovarian tumour.

No doubt McDowell had thought for some time of trying to remove an ovarian cyst, for he must have heard of the views of people like John Hunter, who in 1785 said ,"if taken in their incipient stage 'hydatids of the ovary' might be taken out, as they generally render life disagreeable for a year on two, and kill in the end. There is no reason why women should not bear spaying as well as other animals." During McDowell's sojourn in Edinburgh one of the prominent surgical teachers was John Bell, who in his lectures spoke of the hopeless nature of ovarian tumours if left alone, and dwelt on the possibilities of removal. McDowell was one of his pupils, and is said to have been "enraptured by the eloquence of his teacher" and it was to Bell that he sent a copy of the report on his first three cases. Bell was ill at the time and died without seeing it, but it fell into the hands of Mr. Lizars, Professor of Anatomy, who in 1825 attempted the operation and published a report on McDowell's cases and two of his own. We hear no more from Lizars on this subject.

Severe criticism followed. The Medico-Chirurgical Review of London in 1825 said "In despite of all that has been written regarding this cruel operation we entirely disbelieve that it has ever been performed with success, nor do we think that it ever will." The Editor later apologised for the earlier misgivings, "for which uncharitableness we ask pardon of God and of Dr. McDowell of Danville."

The next to perform ovariotomy in America was Nathan Smith who operated successfully in 1821, unaware of McDowell's earlier operation. Smith's operation is of special interest in that he cut short the ligatures of the ovarian pedicle, and closed the abdominal wound completely, even though the ligatures were thin strips cut from a leather glove. The two methods of dealing with the ligatures—to cut them short or leave them long—were to be the subject of years of argument.

After Lizars, little further interest seems to have been taken in the operation in Great Britain till in 1836 Jeaffreson—a country doctor—reported the first successful operation in England, and there were a few more in the following years.

The main impetus at this stage came from Charles Clay of Manchester, who began in 1842 his considerable series of successful ovariotomies. By 1848 he was able to publish his pamphlet. "Results of Operations in Diseases of the Ovaries by the Long Incision", describing 32 cases, with 22 surviving and 5 explorations without ill results. By 1860 he had 94 with a success rate of 69 per cent. and by 1871 he reported 250 with success in 72.8 per cent. which later rose to 395 patients with 75 per cent survivals. Many of these were done before the days of anaesthesia, and even when it became available he preferred not to use chloroform, stating, "I should infinitely prefer to operate without it, as the patient would bring to bear on her case a nerve and determination to meet so great a trial, which would assist beyond all value the after treatment."

He was an advocate of the long incision, enabling him to remove the cyst intact; he was probably justified in thinking that the 24 inch incision of his first case was a record. His treatment of the pedicle was by ligature, the ends being left long to be led out at the lower end of the wound and later removed when they had separated.

It is rather surprising that Clay had such an uphill fight to establish ovariotomy as a worthwhile procedure, but it seems that his strong personal opinions and what a critic called "his egotism and dogmatic assumptions" may have made it difficult for others to accept his views. It was said of him that he was as skilled in the use of the pen as of the scalpel, and his cutting was not confined to the latter.

In later years Lawson Tait of Birmingham claimed for Clay the title of Father of Ovariotomy as far as Europe is concerned and attributes criticism of Clay's reports to the fact that he was a provincial surgeon. Certainly there seems to have been very little but destructive criticism emanating from London at this time, and Tait wrote "In the provinces, however, many successful cases had been done and the Metropolis was, not for the only time, behindhand." It is also claimed for Clay that he performed the first successful abdominal hysterectomy.

During these earlier years of Clay's activities a few others attempted ovariotomy but with discouraging results and none had his courage in carrying on in the face of criticism. London medical circles frankly condemned the operation as disastrous —the chief critic being Dr. Robert Lee—obstetric physician to the Samaritan Hospital, London. Lee had never seen the operation though repeatedly invited to witness it. He was unpleasant enough to hint that the matter under discussion "was a money question and not one of science or humanity." He described the ovariotomists as "belly rippers with a B before and a B after", adding "the meaning of these B's I must not state plainly to the Society."

Except for Clay only one other British surgeon—Isaac Baker Brown of London —seems to have taken up ovariotomy seriously from 1850 to 1857. He had been specially interested in ovarian cysts for some years and had tried many treatments, such as tapping, injection of iodine, pressure bandaging, etc., but soon became convinced that surgery would be best. It is said that his first successful ovariotomy (in 1854) was on his sister, his three previous cases having died of sepsis! He was unfortunate in his subsequent cases and seems to have given up the operation

for a time. However, Brown is an important link in the chain, for Spencer Wells assisted him in his earlier operations and must have learnt from him something of the technique and difficulties. Wells often quoted Brown's despondent remark to him that "it's the peritonitis that beats us." Baker Brown treated the pedicle by cautery, allowing the stump to fall back into the peritoneal cavity, and in a later series was able to show good results—less than 10 per cent. mortality in 40 operations. His fame as an ovariotomist spread, and his theatre was said to be "One of the most attractive to the professional visitor in all London, admiration being invariably evoked by his brilliant dexterity and the power he displayed in the use of his left hand in certain operations. In cases of prolapsus uteri and fistula, and in fibrous tumours of the uterus he was a master." He was said to be the founder of St. Mary's Hospital, London, and was its first and only surgeon accoucheur. In 1861 the famous French surgeon Nélaton came to stay with him to watch him operate, and on his return to Paris gave a clinical lecture on what he had seen, which led to interest in ovariotomy in France.

This expert gynaecologist, at the height of his fame, was elected President of the Medical Society of London in 1865, but within a year he became involved in a medical scandal which put an end to his professional career—and possibly contributed to his early death. The sad story was well told a few years ago by Professor J. B. Fleming of Dublin in the Journal of Obstetrics and Gynaecology. Brown became obsessed with the idea that the removal of the clitoris would cure epilepsy and hysteria, but advertised his views and his successes so widely that a mass meeting of the Obstetrical Society erased his name from the list of Fellows. He died a few years later in penury. Had he lived longer the success of ovariotomy might have been established much earlier.

It was at this crisis in the history of ovariotomy that Thomas Spencer Wells joined the ranks of the ovariotomists. In 1858 he performed his first successful operations at the Samaritan Hospital, "at a time" he wrote "when few were attempting it, and most men were lapsing into the old state of indifference, if they were not loudly protesting against it." At a meeting of the Royal Medical and Chirurgical Society in 1850 there had been lengthy and heated discussion on the subject, ending in general denunciation, and this attitude still persisted. Wells was not the first to perform the operation in London for a few surgeons had published small numbers of cases, but the results were poor and there was much disagreement about methods of dealing with the pedicle, ligature materials, etc.

The young Wells gained his medical training in several places. In 1835 he went as apprentice to a general practitioner for a year, and then as pupil to a parish surgeon in Leeds. This was a fortunate move, for a medical school had recently been established there and he was thus able to further his medical education. The next year was spent in Trinity College, Dublin. Dublin and Edinburgh were then the great rivals in clinical teaching. His final years of study were in St. Thomas's Hospital from which he qualified M.R.C.S. in 1841, and he was elected F.R.C.S. in 1844 after nomination by the Royal Navy when the College made the extraordinary decision to add a large block of new Fellows without examination. He was later to serve on the Council of the Royal College of Surgeons and as its President in 1882.

Shortly after qualification Wells became a surgeon in the Royal Navy, though

the medical branch in those days was held in low esteem by the Service. His first posting was to Malta where he practised the rather limited surgery of his day, took a great interest in pathology, and sent home exemplary reports on sanitation, ventilation of ships, and other aspects of medical care of the servicemen. Altogether he served in the Navy for twelve years, but he had several long periods of leave which gave him the opportunity of visiting Paris and other centres. Ill health—probably pleurisy—caused him to be sent home in 1853 on half-pay, but he seems to have recovered quickly. He commenced practice in London and gave lectures in surgery. In 1854 he was appointed surgeon to the Dispensary of the Samaritan Free Hospital for Women and Children, though he never served on any of the large teaching hospitals.

My interest in Spencer Wells was first aroused when in 1929 I was appointed House Surgeon in the same hospital which he made so famous and where a marble bust in the hall commemorates his work. Its reputation was still high and I found on the Visiting Staff J. A. Willett of Barts' : William Gilliatt, later to be the Royal Obstetrician, and Aleck Bourne, the central figure in the famous abortion trial which he invited as a test case. I was gratified to find also three Queen's men on the staff—McKim McCullagh and Leslie Dodds as surgeons and Dr. Purvis as anaesthetist.

Shortly after his appointment to the Samaritan Hospital, Wells went off to serve as a civilian surgeon in the Crimean War, where he gained useful experience. He had the opportunity of attending to many abdominal wounds, which taught him that the peritoneum could bear rougher handling than he had thought possible. To quote him on this, "I learnt in the Crimea that a man's abdominal wall might be lacerated by fragments of shell, the intestines injured and covered with mud for several hours: and yet that, after cleansing of the cavity and accurate closure of the wounds, complete recovery was possible. When I returned to London in 1856 I was certainly much less afraid than before of abdominal wounds."

His first attempted ovariotomy in 1857 was a complete failure and made him fear "he was entering on a path which would lead to unenviable notoriety rather than to the improvement of professional reputation" and it was only the frequent sight of many women hopelessly suffering, anxious for relief at any risk, which encouraged him to go on.

When Wells began his large series of ovariotomies he pledged himself to report all cases—good or bad—so as to give a fair picture of the results, and this he seems to have done meticulously. In his book on "Diagnosis and Surgical Treatment of Ovarian Tumours" published in 1882 are detailed tables of the results of over a thousand cases. The name of the referring doctor is given in each case and one can see mentioned Dr. Pirrie, Dr. Gordon, and Dr. Ferguson, all of Belfast, Dr. Thomson of Omagh and others from Dublin, Moscow, Berlin, Montreal. He gives an intriguing description of his fortieth patient :

"She was a very young woman, who, in two years' time, had been modelled by her disease into the most perfect type of an ovarian martyr, and who rebounded into health with a rapidity and persistence absolutely marvellous, when relieved from her oppression. Nor has her subsequent career belied the good augury of her vigorous recovery. She married, and bore children, has buried three husbands, and is now in 1882 a promising widow of less than forty years of age."

Like many others his earlier experiences were disappointing; he attributed the loss of one of his first cases to failure to co-apt the peritoneal edges, for he found at post-mortem that the edges had retracted, allowing loops of intestine to adhere to the wound and to one another. Experiments which he undertook on animals proved to him that the peritoneum had to be brought together and that it healed rapidly if this were done. He therefore insisted on the careful closure of the abdominal wound and we still consider this important. By the end of 1862 Spencer Wells had done 50 cases with 33 recoveries. Clay's figures were somewhat better, but it seems that the honesty of Wells' frequent reports carried great weight and gained him support.

It was only after much opposition that he had obtained permission to do this formidable operation in the Samaritan Hospital, for the Committee were greatly influenced by the published criticisms, and were supported in their views by Dr. Robert Lee, physician to the hospital, whose insulting remarks I have already quoted. Nevertheless, in 1860 the hospital report states that 9 cases of ovariotomy had been performed, of whom 7 recovered, a better result than the large London hospitals had produced.

The diet after operation is given in detail in the minutes :

In the first few days beef-tea, arrowroot and brandy are administered every five or ten minutes.

About the eighth day the patient takes fish, light pudding, beef-tea, wine (port or champagne) and brandy—something every quarter of an hour.

In a fortnight the diet is given as follows :

6 a.m. Tea, bread and butter.
8 a.m. Breakfast with bacon, and egg beat up in the tea.
9 a.m. Glass of wine and biscuit.
10 a.m. Glass of wine and biscuit.
11 a.m. Meat and bread with wine or bitter beer.
12 noon. Dinner—meat, with soda-water and brandy.
2 p.m. Wine and biscuit.
4 p.m. Tea, bread and butter, with egg beat up in the tea.
5.30 p.m. Brandy and soda-water.
6.30 p.m. Wine or brandy, with biscuit or light cake.
8.00 p.m.—Sandwich and bitter beer.

For the night's consumption there is placed in readiness—sandwiches, beef-tea, wine and brandy.

At first Wells followed the usual practice of ligaturing the pedicle with silk and leaving the ends long enough to protrude from the wound, for he feared the effects of putrefaction of the stump if completely closed off. He soon adopted the method suggested by Duffin of leaving the stump itself in the wound, and used a clamp which achieved control of bleeding and held the pedicle at the abdominal wall till it healed. He was probably right not to trust the short ligature for the threads were often septic to begin with, not being sterilized in any way, and often were looped on the lapel of the operator's dirty old frock coat ready for use, though Wells was not guilty of this. This clamp method he followed for many years, with what seemed in retrospect a rather ill-advised obstinacy, for others such as Keith and Lawson Tait were by then obtaining better results with the short cauterized pedicle or short ligature.

He felt it was wrong to do this operation in a large hospital, sensing that there was great danger of what we now know as cross infection, though Pasteur and

Lister had still to enlighten the medical world. Every patient submitted to ovariotomy had a room and nurse to herself for a week in the hospital, and yet he found he had better results in the patient's own home. He found that after emptying the hospital for a few weeks, and with thorough cleansing and painting, almost uninterrupted success followed.

The hospital report for 1878 says "for the past year all ovariotomies have been performed antiseptically, with marked diminution in the number of unfavourable results; it may now indeed be truly said that whilst anaesthetics have deprived surgery of its terror, the antiseptic process invented by Professor Lister promises, in cases not manifestly hopeless, to do away with its fatality. We may remark, also, that a large amount of the success of the ovariotomies at the Samaritan Hospital depends on hygienic arrangements scrupulously carried out there. For instance, each patient to be operated on has a ward to herself: and, again, the whole hospital is made practically new every year by being emptied of patients and closed for several weeks, during which it is elaborately cleaned." This is still good practice.

Many visitors from far and near came to watch Wells operate and to hear from him the details of technique and after-care. Among them were famous surgeons from America, France, Germany, who returned home with greater confidence to advance the knowledge of abdominal surgery in their own countries. His activities were not confined to London, for he was soon so well known that he was asked to operate even on the Continent. In 1863 he did a successful ovariotomy in Dublin, claiming later in the Lancet that it was the first success in Ireland, but it seems that Walsh of the Adelaide Hospital had also done a successful case in the same week. Shortly after this publication in the Lancet a Dr. Thompson of Antrim wrote that he had done a successful ovariotomy in 1848 but I don't know of any confirmation of this. I do know that McMordie of the Samaritan Hospital, Belfast, reported three successful cases in 1886.

In the hospital minutes of 1872 we find a grant of £10 to Mr. Wells "for a stage for the purpose of allowing Visitors, and especially Foreigners, to witness his operation." Before entering the theatre visitors had to sign an undertaking that they had not attended a post-mortem examination, nor any dissecting-room, nor attended any case of infectious disease during the last seven days." It seems that the teaching of Semmelweis had not been in vain. Possibly the stage was also to a certain extend intended as a barrier, for at this time the surgeon was often jostled by visitors, who even trust an unwashed hand into the abdomen in their interest. Talking was also discouraged. I wonder if some of you remember Andrew Fullerton's reproof "in the summer I have no students and no talking—and less sepsis."

In Wells' writing one cannot help being impressed by his deep study of all aspects of the problem. He was largely responsible for teaching the means of examination by which ovarian swellings can be distinguished from pregnancy, phantom pregnancy, and free fluid, so that his records show few mistaken operations. For a while many believed that the cyst should not be removed until it caused considerable distress and had interfered with the patient's health; it was maintained that the anaemic patient had less bleeding: that the greater the distension of the peritoneum by the cyst the less liable it was to traumatic peritonitis, and

if she had become somewhat emaciated the abdominal wall was able to be closed more accurately. Later experience altered these views.

It is rather surprising to read that "it by no means follows that the state of robust health is one so favourable for operation as that of a patient more or less accustomed to the quiet and habits of a sick-room." He was very conscious of the responsibility of recommending an operation necessarily associated with serious risk of life, and goes on to list various moral, mental and social factors which may influence the decision. A long list of general diseases which would contra-indicate operation is also given but we read that "the mere presence of albumin in the urine has often had undue weight. It is often of no more importance than in pregnancy, and disappears after the pressure of the tumour ceases." The present day obstetrician would hardly treat this so lightly.

Retirement from the Samaritan Hospital in 1877 did not mean retirement from surgery, for he was busier than ever, and in 1890 reported the astonishing total of 1,230 completed ovariotomies with a mortality of only 4.4 per cent in his last 259 cases. At this time he extended his surgery to hysterectomy and removal of the kidney and he reported in 1888 a successful splenectomy—he had operated in the belief that it was an ovarian cyst with a long pedicle.

Many honours were given him—a baronetcy, appointment as Surgeon to the Royal Household, and with Simpson and Syme of Edinburgh he received the Fellowship of the King and Queen's College of Physicians of Ireland. As his prosperity increased he bought a small country estate at Golder's Hill, near Hampstead, where he entertained on a generous scale. He was a familiar sight for many years, driving his carriage and pair from his home to his rooms in Upper Grosvenor Street—every inch the successful surgeon, confident orator, and leader of his profession. He died in 1897, more fortunate than many pioneers in that he had lived to see the fruits of his labours.

Between 1862 and 1872 excellent results were being obtained in Edinburgh by Thomas Keith (1827-1885). He had been earlier apprenticed to Simpson—famed for his introduction of chloroform to obstetric and surgical practice. Keith did most of his operations in a small private hospital but he was later appointed "extra surgeon for ovariotomy" to Edinburgh Royal Infirmary in acknowledgement of his special skill.

He was a quiet man, dogged by ill-health and not much given to debate or publication. He seems to have been a most able diagnostician for his reports show few unfinished operations and few mistakes in diagnosis. It is reported that he successfully removed a cyst of 120 lbs. weight. In 1872 he was able to report a success rate of 81.6 per cent. in 136 operations—the best results in Europe. He later moved to London where he had several years of professional collaboration with his friend Spencer Wells.

In his earlier years he treated the pedicle by exteriorising it in a clamp but with a mortality of about 20 per cent, so he says he took to Mr. Brown's cautery method "in a sort of despair." "For a time it was used irregularly, and only in the worst cases, or in those not favourable for the clamp. The result of the first fifty cautery cases, published in the Lancet, gave a mortality of less than one in twelve and the results that followed were much better." Later his mortality was under 4 per cent. In his method the stump was grasped in a clamp which was

screwed tight and then heated by repeated applications of the cautery iron. This went on for about 20 minutes so that bystanders often thought him unduly cautious, but it resulted in a pedicle which was dry as parchment. The great advantage over the clamp was that the abdominal wound could now be closed completely in most cases, though Keith attributes much of his success in severe cases to the use of glass drainage tubes. Later he followed Lister in using carbolised catgut ligatures.

A point which he stressed in his technique was the careful removal of all blood from the peritoneal cavity, for he had had the unfortunate experience of gross infection of retained blood. Many still held the view that rapid operating was the key to success, with minimum exposure of the peritoneum to air, and that the risk was increased by spending time on such a procedure as "the toilet of the peritoneum" as it came to be called. Keith's major contribution was his advocacy of the intra-peritoneal treatment of the pedicle—not generally adopted for many years.

Spencer Wells had been operating on ovarian cysts for 14 years when in 1872, at a discussion in London, an appeal was made for other surgeons to contribute their experiences. By this time Wells had completed 500 with 20 per cent. mortality. It was in answer to this appeal that a new star appeared, in the person of Lawson Tait of Birmingham. He reported 9 cases of ovariotomy with 8 recoveries.

Born in Edinburgh in 1845, he was educated at Heriot's and seems to have obtained a scholarship to the University at the early age of 15 years, though he did not take the university degree. He qualified L.R.C.S., L.R.C.P. Edinburgh in 1866 and a year later, after visiting Dublin and other centres, he became House Surgeon in Wakefield Hospital.

During his student days he was well known as one intolerant of authority and of the didactic teaching so common in his day, and his sympathies lay with those like Darwin who were questioning the accepted concepts of medicine and science. He frequently joined in discussions on these matters and developed a skill in debate which lasted all his life. He dearly loved a fight and was to be found as a partisan in every argument, as shown in his very long letters to the Lancet and other publications, and his frequent contributions at medical society meetings.

It was at Wakefield, in 1868, that Tait first performed ovariotomy, when he was 23 years old, and he repeated it four times in the next 2 years. In a way, it was rather extraordinary that he should have done so, for at the time of qualifying, he expressed "a firm resolve not to deliberately open the abdomen." He had been shocked by the many bad results which he had seen as a student.

In Edinburgh, he conceived a great regard for James Syme, one of the most famous surgeons of his time, and there is little doubt that the example of his teacher made a lasting impression. Tait has described him thus: "always perfectly dressed in his old fashioned way and as clean as a new pin. He was always washing his hands; his assistants had to be like him, and his nurses were noted for their tidiness and cleanliness." "At operation he always turned up the sleeves of a dress coat in which he might, before the operation, have appeared before his Queen." This was in contrast to the methods of most other surgical units, where the theatre was a shambles, and the wards reeked of suppuration and gangrene. He talks of the awful things he saw in his six years of pupilage when even the simplest operation was followed by suppuration and, as a French doctor put it "a pin prick is a door open to death." It required some courage therefore for the young surgeon

to attempt an abdominal operation, though he must have known of the work of Clay and Wells, for he followed Wells closely in technique. He lost only one of his first ten cases.

He moved to Birmingham in 1870, remarking that it was the centre of England, and if a man became well-known he could be called on more readily than from London. It was not long before he became well-known, not only in Birmingham, but far outside it. He founded the Hospital for Women, and lived next door to it for many years, so that he could more readily attend his patients. In spite of his busy practice he found time to write an essay on "Pathology and Treatment of Ovarian Diseases" for which he was awarded the Hastings Gold Medal of the British Medical Association in 1873. This publication did much to establish him as an authority on the subject and he embodied it in a text book on Diseases of the Ovaries which he wrote in 1882.

His early success with ovariotomy was not sustained, for he had the fearsome mortality of 19 in his first 50 cases or 38 per cent., while Wells had a steady mortality of 25 per cent. Tait had used the carbolic spray and other precautions laid down by Lister and so he doubted the claims made for the new antiseptic technique and said so in his usual downright way. Keith had achieved good results without it and Tait concluded that the intra-peritoneal treatment of the pedicle was what mattered and that he had been wrong to follow Wells in using the clamp and extra-peritoneal fixation technique: "my results with it were so bad that its employment will ever be to me a matter of bitter and lasting regret."

In abandoning the Lister antisepsis he remembered the care taken by Syme and by Keith to have everything as clean as possible—using boiling water to cleanse his instruments and to soak his ligatures: he had come to develop a large measure of asepsis—a logical outcome of Pasteur's and Lister's work, but to the end of his days he denied this influence.

In his chapter on ovariotomy Tait expresses himself strongly on the spread of septic infection: "for any surgeon to perform an ovariotomy while he is engaged in dissection or in the performance of post mortem examinations, or while he is attending any case from which he may be likely to convey septic infection, should therefore be looked on as a professional offence of the gravest kind." He feared that antiseptics could be looked on as "a royal road to success, as a something which puts the skilled and competent on a level with the inexperienced and incompetent: an antiseptic spray will not condone the want of manipulative dexterity or the absence of readiness in emergency." By the end of 1882 he was able to report 101 cases with only three deaths, so he felt he was now on the right lines.

Encouraged by his success in abdominal surgery for ovarian cysts he turned his attention to surgery for other conditions and for a time removed bilateral cystic ovaries for the control of excessive menstruation associated with myoma of the uterus: he even removed them for dysmenorrhoea and epilepsy. His next advance was to remove the chronically infected Fallopian tube and ovary—a potent cause of chronic ill-health right up to the antibiotic age. I have a clear recollection of operating on many such cases, with the satisfaction of seeing a remarkable return to health, but Tait met amazing opposition to this innovation, particularly in London.

Lawson Tait was the first to operate on the recently ruptured ectopic pregnancy. It is almost incredible to us that prior to 1883, a woman who was so unfortunate as to sustain a ruptured tubal pregnancy was left to die of internal haemorrhage. Though he lost his first patient he learnt from that experience that the first essential was speed in getting to the site of rupture to control bleeding. He continued to operate on all cases he was called to—in five years 42 operations with two deaths. Howard Kelly wrote in 1912: "conquest of this malady was one of the most brilliant achievements of the last century."

Not content with his conquests in the pelvis this brilliant and progressive surgeon went on to drain the gall bladder, to open hydatid cysts of the liver and to operate on the kidney. Here is his credo at this stage in his career: "For my own part, so fearless am I now of abdominal surgery, so splendid have been my results in fields of practice which, until three years ago, seemed hopelessly enclosed, that I venture to lay down a surgical law, that in every case of disease in the abdomen or pelvis, in which the health is destroyed or life threatened, and in which the condition is not evidently due to malignant disease, an exploration of the cavity should be made." What a change has come over the scene since McDowell's operation in Kentucky.

So we come to the beginning of a new century—and a new era in abdominal surgery. The torch was taken up by men like Bland Sutton, Comyns Berkeley and Victor Bonney. While greater safety permitted more radical surgery, paradoxically enough it also encouraged conservatism in pelvic surgery, enabling vital organs to be restored more or less to normal by the excision of non-malignant tumours of the uterus or cysts of the ovary. I would like to underline this for any of my younger colleagues who may find themselves in doubt about the treatment of the unexpected cyst of the ovary. My advice is to leave it if you don't know how to do a conservative operation—it can be dealt with later if necessary—the ovary can't be replaced—not even to-day!

No one man can be given the credit for these advances: we all climb on the shoulders of our predecessors.

The future of gynaecology is unlikely to lie in further great advances in abdominal surgery, but we will still have to rely on it for relief in many diseases, and countless women must be grateful to these pioneers—the ovariotomists. I am naturally enough rather prejudiced in their favour, but I would like to close with the remarks of the famous physician, Sir William Osler, a few years before his death:

"Perhaps as specialists no class in our profession has been more roundly abused for meddlesome work than gynaecologists, yet what shall not be forgiven to the men that, as a direct outcome of the very operative details that have received the bitterest criticism to-day, are saving lives that otherwise would have inevitably been lost. It has not always been professional encouragement that has supported them during advances on special lines, but humanity owes a great debt of gratitude to those devoted men that have striven during the last half century for exactness in knowledge and for practical application of such knowledge—a debt too great to pay; too great even to acknowledge."

I wish to express my thanks to Miss Webster of the Queen's University Library, to my secretary Miss Dawson, and to Mr. Robins who prepared the photographic slides.

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BOOK REVIEW

PUBLIC HEALTH AND PREVENTIVE MEDICINE. By J. B. Meredith Davies, M.D.(Lond.), D.P.H. (Pp. 318; figs. 5; Tables 26. 25s). London: Baillière, Tindall & Cassell, 1966.

This book provides an up-to-date text for students of social medicine. It is concise and nearly all the topics which are usually dealt with in undergraduate courses are clearly and adequately covered. It includes chapters on the history of public health, vital statistics, the epidemiology of infectious and non-infectious diseases, the community health services, the care of the elderly, preventive medicine in general practice, welfare services, rehabilitation, health education, international health control, food and nutrition and environmental health control.

The balance of the book is good and the author rightly devotes most space to current health problems and medical services in Great Britain. There are however short sections on the control of important tropical diseases and on the work of the World Health Organisation. No mention is made of the slight differences in the health services in Northern Ireland .

Although the book is packed with information it is quite easy to read and the index is comprehensive.

It will no doubt be compared with another recent text book in the same field (*An Introduction to Social Medicine* by McKeown, T. and Lowe, C. R. Blackwell, 1966. 50s. pp. 327). The latter book gives a more dynamic view of the subject and the authors express their criticisms of existing services and suggestions for their improvement. For these reasons it is perhaps more stimulating and interesting to read. Both books provide a sound foundation for the medical undergraduate and students of allied professions who are interested in social medicine.

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J.P.

HOSPITAL RELATIONSHIPS

By W. H. T. SHEPHERD, M.D., F.F.R., F.F.R.(I), D.M.R.D.

OPENING ADDRESS OF THE WINTER SESSION
Royal Victoria Hospital, 6th October, 1966

Mr. Chairman, Ladies and Gentlemen,

For about 130 years it has been the custom in this Hospital for a member of staff, in order of seniority, to be deputed by his colleagues to give the Annual Oration to the newly arrived students at the beginning of each hospital year. The term 'Orator' is very flattering to the speaker, but I must tell you that my only qualification for this particular task is a great regard for the work and traditions of the Royal Victoria Hospital, fostered as a medical student in this School before the war, and as a member of its staff since 1949.

If at first I address my remarks mainly to the students I trust I will be forgiven by my colleagues, and particularly by the honorary consultants present—may I say how much pleasure it gives us all to have our honorary consultants here this morning.

As medical students, ladies and gentlemen, you have spent the past two-and-a-half years in the pre-clinical school, during which time you have come into contact only with your teachers and fellow-students, some I hope from other disciplines. You have furthered your knowledge of the basic sciences, and have been concerned with the study of the structure and function of the human body. From now on in the clinical school and in the hospital wards and out-patient departments you will learn how the body reacts to disease, injury, stress and the process of ageing. The study of pathology will complete a triad with anatomy and physiology on which an understanding of clinical medicine is based, and I would suggest that without the continued study of these three subjects your knowledge of the reaction of the human body to disease and injury will be deficient.

During the next three years you will study the text-books of medicine and its many sub-divisions. These books describe disease processes and their treatments and combined with lectures and tutorials will assist you in the scientific application of medicine to the problems you will encounter. You will not, however, learn to understand patients from these text-books, and some people believe that the over-zealous application of scientific methods in medicine may lead to some neglect of the patient as an individual. While there may be a grain of truth in this, it must be said that no doctor can be of real service to his patient unless he possesses the necessary technical and scientific knowledge. Without this the greatest understanding and care for the patient as an individual will be of little avail. This is not to belittle the humanity of our profession, for I cannot believe that any of you, when you have added to your scientific education a considerable period of time spent with patients in the wards of this hospital, where patient care is the personal responsibility of your teachers, can do other than develop these human values which Bronowski lists as "tenderness, kindliness, human intimacy and love." This is best summed up, I think, in a rather old-fashioned word

"compassion". Somerset Maughan confessed that nine-tenths of what he knew about human nature was learnt during his five years as a medical student at St. Thomas's Hospital.

Your objective in this hospital and medical school, therefore, is a sound training in the basic science of medicine, and the application of these skills to the individual problems of your patients. Books, lectures and tutorials are a part only of your training; a proportion of your day should be spent with patients—in talking to them, that is in history taking, in eliciting physical signs, in understanding methods of investigation and treatment and the effects of disease and injury on the body and mind. Dr. Alastair Hunter in his Bradshaw lecture to the Royal College of Physicians last year expressed this most lucidly when he said "the unique function and skill of a doctor is the ability to identify and evaluate the signs and symptoms of mental and physical disorder in a patient. It is a technical skill which must be learned in the undergraduate period, otherwise it is unlikely to be learned at all. It is founded upon a substantial body of knowledge, but it can be properly understood only by studying patients."

Modern methods of treatment have resulted in a great relief of suffering and the prolongation of life for a large number of people to the Biblical threescore years and ten, but you will find that certain treatments may sometimes cause harm and increase suffering rather than alleviate illness. Iatrogenic disease is becoming more common and all of us must be aware of and familiar with the risks that can accompany modern medical, surgical and radio-therapeutic measures. These risks are sometimes inescapable, but one should always attempt to balance possible ill-effects against the good to be expected. The prayer of Sir Robert Hutchinson may still have relevance :

"From inability to let well alone;
From too much zeal for the new,
And contempt for what is old;
From putting knowledge before wisdom,
Science before art, cleverness before commonsense;
From treating patients as cases;
And for making the cure of the disease more grievous than the endurance of the same,
Good Lord, deliver us."

During your three years of clinical study in this hospital and medical school you will of necessity spend a large part of your time in these buildings and their surroundings. Medicine provides, I think, a liberal education and I believe that medical students mature rapidly through contact with the work of the hospital, not only in the wards but by meeting all varieties and grades of staff. Extra-curricular activities have an important place in your education, whether on the playing fields of the University, in pursuing an interest in the arts, or on the more social and convivial occasions when under-graduates muster in their various clubs and societies.

This hospital, to which we welcome you this morning, exists primarily to serve the community, but in addition, as a teaching hospital, it has a responsibility with the Medical Faculty of the University for the training of future doctors and the advancement of medical knowledge. These functions pose problems, some of which

may take years to resolve, and will probably be passed to you, the next generation of doctors, for solution. I would like, this morning, to examine a few of the difficulties, as I see them, confronting the hospital today in its various relationships with the community at large, concentrating on our requirements as a teaching hospital, our place in the medical school, and the changes which advances in medical science are making in the relationships of the hospital to the public.

The Royal Victoria Hospital

You should know that this hospital originated in 1792 as a dispensary in rooms given by the Belfast Charitable Society. Five years later it was re-housed in Factory Row—now Berry Street—and as it possessed six beds could accommodate patients. This soon proved inadequate, and in 1799 three houses were acquired in West Street at the corner of Smithfield.

As the need for hospital beds increased a site was obtained in Frederick Street and in 1817 a hospital of 100 beds was opened. Students were admitted as resident pupils the following year, thus founding in Belfast a tradition later adopted by most teaching hospitals.

Clinical lectures were given in 1826 by Dr. James McDonnell, the founder of the original dispensary and the man mainly responsible for the establishment of this hospital and the Belfast Medical School. These events were eloquently described by Dr. Bereen in his oration two years ago.

The Belfast Medical School dates from 1835. The hospital by 1847 had increased its beds to 128 and over the years served the public and the medical school well. Its value to the community established, increasing demands on its space necessitated a further move, and the Royal Victoria Hospital, more or less as we know it today, opened on this site in 1903.

Although the Royal Victoria Hospital building itself has remained virtually unchanged since 1903 apart from an extension to the wards in 1937 this site—the Grosvenor Road site—has undergone a considerable transformation to serve the community and medical school.

The passing years have seen the growth of the Royal Maternity Hospital and the Royal Belfast Hospital for Sick Children, and the grouping of Ophthalmic and Ear, Nose and Throat Services in a new block at the Falls Road boundary of the site. The Clinical Buildings of the Medical School, developed before and after the last war, have been augmented recently by the Dental School and the Microbiology Building. Extensive accommodation has been provided for our nurses in Musson and Bostock House, and now the Board of Management of this hospital, by a most imaginative use of the Endowment Fund, have provided a modern block of flats for the accommodation of trained nurses. The Hospital has also used its endowments for many buildings and improvements to existing buildings, notably Quin House to accommodate the Northern Ireland Service for Neurological Surgery and Neurology, the gynaecological wards and theatres and, in part, the Metabolic Unit.

With all this site development the Royal Victoria Hospital itself has remained virtually unchanged since 1903. We still have the large open wards with meagre toilet arrangements, no provision for the isolation of infected or noisy patients, inadequate accommodation in the wards for medical and nursing staff, and no

space for the teaching of medical students apart from ward rounds. Except for neurosurgery, neurology, and endocrinology, specialist units have to be fitted into the general wards.

The inadequacy of this accommodation for a modern teaching hospital was recognised by the Northern Ireland Hospitals Authority some five years ago and a planning team was formed, under Mr. Sinclair Irwin's chairmanship, to consider the implications and detail proposals for a new Royal Victoria Hospital. As a beginning, the first stage of a new theatre and radiology block was completed in 1964 and the out-patient clinics of the new hospital should be in use by the end of 1968.

The rebuilding of the Royal itself, with its wards, specialist departments and laboratories remains to be accomplished. The planning team, assisted by their architectural and engineering advisors, have shown in their two reports how the new Royal can be accommodated on the site, without interfering with the work of the present hospital, and built in three stages so that each stage can be commissioned as it is completed.

It was with great dismay that we learned recently that under the Ministry of Health's Plan for the Hospital Service in Northern Ireland the rebuilding of the Royal Victoria Hospital has been postponed for the next ten to fifteen years. This Ministry decision on the main teaching hospital in Northern Ireland is to me inexplicable, particularly as this hospital is largely responsible, with the medical faculty, for the teaching and training of our medical students. It provides a base for the regional specialities of neurological and cardiac surgery, carries out about one-quarter of the medical work of the Province, and is the centre to which all the provincial hospitals look for specialist help, and may I presume to say, for inspiration.

The Northern Ireland Hospitals Authority, the University, and the Board of Management, have done a great deal with the amount of money available to them to provide us with the necessary accommodation and facilities to keep this hospital moving forward, but one must now ask if the Ministry of Health seriously believes that the worn out and obsolete accommodation of 1903 can any longer support the medical requirements of a teaching hospital in 1966, provide the accommodation which the public have a right to expect, or meet the aspirations of the medical and nursing staff. One must also ask how such a decision will help us to keep our best medical graduates in Northern Ireland when the development of the main teaching hospital has been brought to a standstill.

The planning of a new teaching hospital is based on a consideration of its functions. Its primary object is the investigation, treatment and care of its patients. Superimposed on this are the requirements of teaching and research. The function of the medical school is to provide a new generation of doctors to take care of the sick, and by research to advance medical knowledge. The medical school and hospital are thus inter-dependent, both contributing to the teaching and research programme which provide for tomorrow's medical requirements. In the teaching hospital the proper balance between service requirements on the one hand and teaching and research on the other is difficult to define. Stress on teaching and research may lead to selection of patients for admission with emphasis on special interests, to failure to accept elderly long stay and psychiatric

patients, and to poor out-patient and casualty facilities. Such a hospital is not providing a full service for its local community, however good its reputation as a teaching and research institution. Surely the hospital must have as its primary duty the care of the sick, and it has been the main concern of those planning the new Royal Victoria Hospital to provide a first-class hospital for the community where teaching and research can be undertaken in the most favourable conditions.

The new out-patient department, now being built, has been designed to provide good consultation and examination rooms for all disciplines, facilities for the investigation and treatment of out-patients in wings adjoining the consultation floors, and first-class standards in waiting and changing accommodation. It includes the first stage of an accident and emergency admission unit, where the patient can if necessary be resuscitated, investigated and treated, and where all specialist resources are available for the care of the seriously injured patient. The requirements of teachers and students have been met by giving each consultation suite a large consulting and teaching room for small groups of students and their teacher. while a large lecture theatre, designed for out-patient teaching, has been provided for demonstrations and discussion with larger numbers. As all specialities are housed in this building it is our hope that students will be able to see and study a representative sample of the ailments of the community.

Hospital and Medical School

This hospital is fortunate in having the clinical side of the medical school housed on the Grosvenor Road site in association with our group of teaching hospitals. The pre-clinical school will shortly be established on the ground of the old Deaf and Dumb Institute, beside the Belfast City Hospital, also associated with the medical school as a teaching hospital, and like ourselves, having a comprehensive rebuilding programme.

The Belfast City Hospital site is separated from the Grosvenor Road site by only 700 yards and it seemed to the Planning Team that this proximity merited attention in the development plan, particularly as they were advised that a General Practitioner Unit was necessary as part of the comprehensive teaching facilities on the site, and that it was desirable that space should be reserved for the public health services. In view of the limited area of the two hospital estates it would be ideal if the intervening property could be designated under the Town Planning Scheme for long-term medical development.

These points were made in the First Report of the Planning Team in 1964 when they wrote: "It seems possible that the linking of the two Groups as part of a large Town Planning Scheme would realise the hopes of the Medical Staff for a campus whose activities would maintain medical care, teaching, and research, together with some aspects of the public health service and the requirements of general practitioners. The larger medical complex would have the benefits of a closer association with the scientific departments of the University."

These adjacent sites, housing not only the teaching hospitals but also the medical school provide an opportunity of achieving a well-balanced teaching hospital group, serving the community without any selective admission policy, with a good accident and emergency admission service, and presenting our students with a cross-section of the illnesses of our community. Such a liaison would be of the

greatest value to the medical school, providing both under-graduate and post-graduate training. I do not think it possible to have this training in water-tight compartments—they are indivisible; an under-graduate teaching hospital must also be a post-graduate hospital, since it must train its junior medical staff and research workers.

Medical school and teaching hospital are of course under different managements —in these costly days I do not think any university would wish to own and finance its teaching hospital. It must therefore be the concern of these two bodies, both medically and administratively, to secure an alliance that will be to the advantage of both patients and students. As I have said, medical school and hospital are inter-dependent but have different goals, the medical school dealing with teaching and the expansion of knowledge for tomorrow's requirements and the hospital caring for today's sick but also taking part in teaching and expanding knowledge. I think we would all agree with the findings of Clark and Sheps from the Medical School of the University of Pittsburg that "the teaching hospital and medical school be two separate, distinct but collaborating entities." To this end their views on some of the issues that must be resolved for a proper partnership may be of interest.

1. The sharing of the four goals of patient care, community service, education, and research.
2. The appointments of medical school and hospital staff should be made jointly so that the best interests of both institutions are served. This should result in the selection of medical staff who are proficient in patient care and community service – the primary goals of the hospital – but at the same time are capable of conducting medical education and research, the primary goals of the medical schools.
3. The student should be a member of the medical team, so that he can be given some responsibility, under supervision, for patient care.
4. The participation of all patients in the teaching programme, unless it is felt that a patient might be harmed.
5. The maintenance of the highest standards of patient care, and
6. The support of medical research by both institutions.

Many of these points are covered already in our own relationships with the medical faculty, but such relationships are always capable of improvement. The greatest problem in human relationships is our individual personalities. As W. M. Dixon has so truthfully phrased it: "The most troublesome thing in the world is the individual man. If anything is in evidence, he is in evidence, and the varieties of this creature are without end. Many are the races and many the temperaments. Who will enumerate them? There are vehement and hot-headed men, selfless and conciliatory men. There are sybarites and ascetics, dreamers and bustling men of affairs, clever and stupid, worldly and religious, mockers and sceptics, pugnacious, loyal, cunning, treacherous, cheerful and melancholy men. There are eagles among them, tigers, doves and serpents. They display, varying as they do in appearance, talents, behaviour, every type of unpredictable reaction to their surroundings". Most of us, ladies and gentlemen, fit some of these adjectives and perhaps one should suggest to those medical students not prepared to enjoy a concentration of such individuals that they should maintain their sanity in other medical spheres outside the teaching hospital and medical school.

Hospital and Community

The advances in medical science and in the effectiveness of treatment over the past twenty-five years have produced profound changes in the relationships of medicine as a whole, and the hospital in particular, to the community.

As Sir George Godber has stressed, medical care is not now a simple matter of one patient and one doctor; it has to be organised. The initiation of the National Health Service in 1948 advanced the evolution of clinical medicine into the hospital service, with its consultants and specialists, and the general practitioner service. This process did not begin with the introduction of the health service; it has been going on in all countries for the past half-century, but certainly in this country has been greatly accelerated by the finance made available to the hospitals by the state. This has resulted in a marked increase in the number of consultants in the hospitals and the sub-division of hospital practice into separate specialties within medicine and surgery. The lone doctor is now at a considerable disadvantage without the help of his colleagues. The assessment of a neurological problem, for example, requires not only consultation between neurologist and neurological surgeon, but also with their colleagues in neuro-radiology, physiology, pathology, otology and ophthalmology so that the additional information to be gained from contrast investigations of the nervous system, echo-encephalography, isotope scanning, electro-encephalography, electro-myography and other measurements can be fitted together to provide as detailed a diagnosis as possible. This example of the co-operation required to practice medicine today can be expanded in all branches of hospital practice, and illustrates the fact that specialization makes the specialist more dependent upon colleagues, not only medical but also non-medical—chemists, physicists, engineers and a great number of skilled technicians.

The advance of medicine therefore, makes larger hospitals a necessity as specialist services must be grouped if they are to be effective. A full general hospital service cannot be provided in a small hospital, and here we have a conflict between social convenience and an efficient hospital service. The community must understand this and face the fact that major medical treatment must be concentrated in larger medical centres, and that for some specialties such as neurological, plastic, and cardiac surgery there can be only one centre for a population of about one-and-a-half millions.

The public and their representatives the politicians either fail or are reluctant to take an imaginative view of the hospital service, probably because they regard it as non-profit making and a claim on the Exchequer. But illness can cause a double loss to the country; every day a skilled person is not working the country loses not only the profit of his skill, but also in our Welfare State the money required to maintain the man and his dependants. The sooner he can resume work by virtue of effective treatment the less will be this double loss to the country.

Up to date the medical service has been the "Cinderella" of the social services. The health services generally have fared badly compared with education and other social services which are taking increasing shares of the national income. From a political point of view the hospital service affects a relatively small number of people, generally for only a short period of time, and it would seem that so far successive governments have been able to rely on the loyalties of those engaged in hospital practice to make the best of the conditions in which they have to care for

the sick.

Attitudes are changing. Modern medical practice requires money for buildings, staff and equipment. As living conditions improve, patients will no longer tolerate the large, open, antiquated, Nightingale type of ward. The money for all this must come from the public and if they want better hospitals and medical care they must be persuaded that more money should be spent on health. If more is not made available the present list of outdated hospital accommodation will lengthen and this country fall further behind other countries in the standard of its hospitals.

This country spends only 0.23 per cent of the gross national income building hospitals, and comparison with other countries shows how far we are falling behind. The United States spends five-and-a-half times as much; Czechoslovakia eight-and-a-half times; Ceylon nine times; Sweden ten-and-a-half times, and Israel twelve-and-a-half times. A proportion of this may be spent in overtaking past neglect, as we should be doing, but some of these countries are building on a hospital service already more advanced than ours. If we devoted to hospital building a similar proportion of our resources as Sweden, it would cost £530,000,000 annually. This is more than we have spent on capital development in the first seventeen years of the National Health Service. You may regard expenditure on this level at first sight to be impracticable, but if so remember that over the past ten years the proportion of our national income spent privately on motoring has increased from $3\frac{1}{2}$ to $6\frac{1}{2}$ per cent, that the citizens of the United Kingdom turn over every year in gambling more than 1,000 million pounds, while alcohol and tobacco account for the staggering total of 2,500 million pounds a year – 8 per cent of the national income.

The hospital service needs more money – it is for the public to say whether they want more money spent on their health or not, but if they do, they must make this plain to their elected representatives who will have to decide whether it is to come from higher taxation, a cut in other expenditures, or direct payment of a proportion of the cost of hospital accommodation and treatment.

The great increase in specialisation in hospital practice since the last war has been due, at least in part, to scientific progress in medicine, but this increase has in turn promoted further scientific advances. This poses problems, not only for us in our relations with our patients, but also for the patients themselves. The doctor in many instances no longer relies entirely on his own observations and experience, but has to take into account an ever-increasing number of laboratory, radiological and electro-physiological examinations, giving to them due consideration in arriving at a final judgment, often in consultation. Diagnosis is more precise and medical and surgical treatment better controlled by the information and monitoring now available. This means more intensive observation of the hospital patient, and an increase in the amount of medical and nursing time required in hospital.

Between 1948 and 1965 consultant and specialist staff in Northern Ireland has expanded by 160 per cent and other medical staff by 182 per cent. Hospital beds have not increased in number to any great extent, so here, as in other countries, more intensive and effective treatment is given in a shorter time. The number of doctors working in hospitals is increasing much faster than in general medical practice and if present trends continue will inevitably bring us to the present Swedish proportions of three doctors in the hospital service to one outside.

This intensive medical practice does raise problems for our patients, mainly because it is becoming more difficult for the patient and doctor to maintain the personal relationship that used to exist. As I have said, more and more doctors are concerned with the care of the individual patient, and the patient is spending a shorter time in hospital. There is a real danger here that communication between doctor and patient may suffer, and this may, at least in part, be the cause of the vastly greater number of complaints made against hospitals and their staffs in recent years. Sir George Godber considers that "the commonest type of complaint made against hospitals clearly stems from lack of understanding of what was or could be done. Patients may be frightened; they may be hostile because of their need to conceal fear; some may even occasionally be stupid; and many are worried because they are uninformed".

Many patients today are better informed on medical matters, since most popular newspapers have their medical columnists, The British Medical Association publishes its popular "Family Doctor", and television beams into every home not only the "Emergency Ward Ten" and "Dr. Kildare" brand of medicine, but factual and well presented material like that seen in the B.B.C. series "Your life in their hands".

The contemporary patient therefore should have some insight and some ability to understand medicine as it relates to his needs. This knowledge may be highly distorted but it is the reason why many patients expect some definite information about their illnesses and their consequences, and why the doctor should endeavour to supply it. This can be the most difficult aspect of hospital practice and with certain patients – and doctors – may be impossible, but there is a great need for all of us to give more thought to this problem of communication with our patients, and to interest our students in it.

In countries less fortunately situated than ourselves without adequate national income, particularly in the so-called emerging countries, there is a conflict in medical priorities between nutritional, preventive and hygienic measures and the demands of the hospital service for the latest and most expensive tools of modern medicine. Many countries cannot afford to save a few lives by these means at the expense of the many who would otherwise be saved by adequate public health measures.

Priorities also exist in comparatively wealthy countries, although it is seldom that these are discussed outside the hospital. In very affluent countries the rich can obtain prolongation of life by such measures as organ transplantation, renal dialysis and cardiac surgery, but are these available to all who require them in a service provided by the state? In this country the public purse is limited in the amount of money it makes available to the health service unless and until the public decides otherwise. The Treasury at present has a certain amount available to spend on health and allocates this to the Ministry of Health. This ministry decides what should be spent on general practice, public health, and hospital services. Then individual hospitals receive their annual budget when the regional boards have considered their requirements.

If we, as a teaching hospital, decide that we need money for a new service essential for some of our patients, such as renal dialysis or cardiac monitoring, presumably this should come out of our annual budget. If it does not some service

in another hospital will have to carry on with less money unless the public purse makes the extra money available.

Theoretically the present system should result in everyone from the ministry down to individual hospitals having a say in deciding priorities of medical care, in analysing costs, in discarding those things that are inessential, and in eliminating extravagance. In practice, as we know, we are only beginning to consider these matters. Decisions can be very difficult where finance conflicts with human values. The hospital service in this country undoubtedly requires more money from the public purse or from the public directly when we consider the amounts spent in comparable countries, but in providing this finance people are entitled to know that extravagance and inessentials are curtailed.

In conclusion, Mr. Chairman, I would say to the students that although our profession is dedicated to the maintenance of good health, medicine in itself is not enough. The state and the public also have responsibilities not only in ensuring that proper accommodation, adequate equipment, and sufficient staff are provided to practice and teach medicine, but in understanding that good health demands a proper standard of housing, a nutritious diet, pure water, clean air and facilities for exercise and recreation.

I believe that a sentence in one of Carlyle's essays is still pertinent today – "Our duty is not to *see* what lies dimly at a distance, but to *do* what lies clearly at hand".

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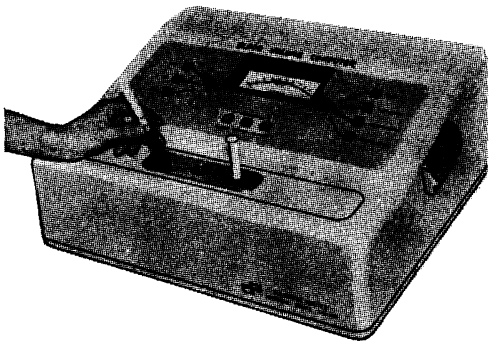

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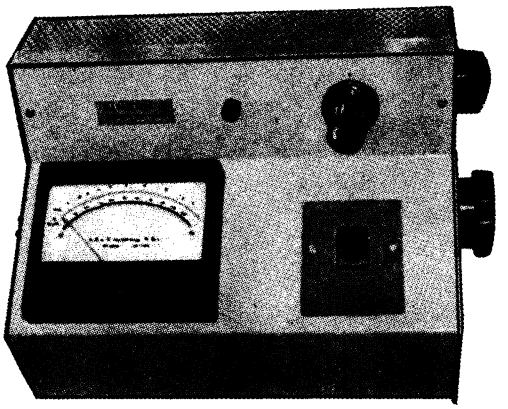

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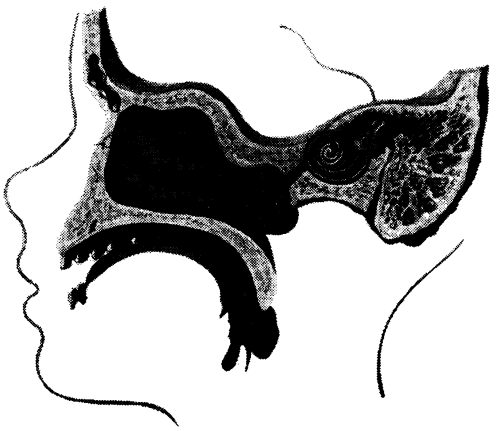

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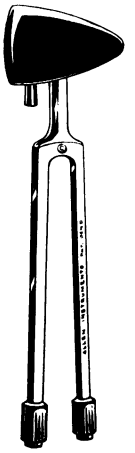

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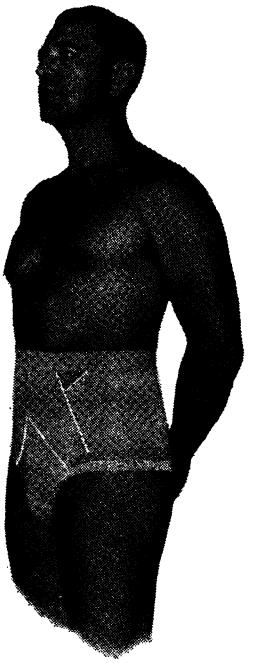

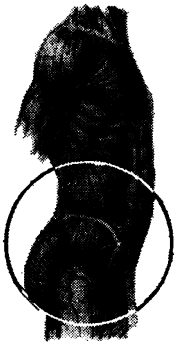

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Medical Officer of Health and Port Medical Officer, Belfast.

Based on an address given to the British Medical Association, Belfast Division, 13th October, 1966

TO the general public the work of the Port Health Service is little known with the result that it gets very little publicity except on those rare occasions when a large passenger liner is held up with a case of suspected smallpox on board. Port health authorities whether they are concerned with a seaport or airport have one major function and that is to protect the country of which they are the gateway from disease introduced from outside sources.

The history of the port health services of the world has been one of evolution of theories and accumulation of knowledge. It has involved the epidemiology and control of communicable diseases which have in past centuries threatened the very existence of mankind. When disease was thought to originate, only in an obviously sick person, preventing its spread seemed a comparatively simple procedure; isolate the sick person and there should be no further spread of the disease. This was so, even in the days when travel between countries was slow and along well established trade routes overland or by sea. Even the threat of the death penalty, which was there to compel sick persons to remain apart from their fellows, was ineffective. During the many centuries when epidemic disease was thought to be a visitation from the Almighty little could be done to prevent its spread save by prayer, sacrifice or resort to witchcraft. As soon, however, as more rational views prevailed, and when it was realized that persons and goods coming from an infected area to a healthy one could introduce an epidemic, efforts were made to mount guards at the gateways to towns and continents to prevent these disastrous calamities. These guards, in the form of rules and regulations set up many centuries ago, were the forerunners of the port health services of today. The course, though not the actual mechanism of spread of these importations of disease, was soon recognised – e.g., the actual spot near Weymouth where the man landed, who imported the Black Death into England in 1348, is known and his route from there has been traced. Through the research of Spanish historians we also know the name of the negro who first brought smallpox to the Indians in Mexico in 1520 and paved the way for the 3½ million deaths from smallpox which followed. The origin of the well known and disastrous epidemic of plague, which struck the village of Eyam in Derbyshire in 1665, can be traced to a box of old clothes received from London by a local tailor. The citizens of Eyam voluntarily isolated themselves under the guidance of their parson, Rev. William Mompesson, and when they emerged 13 months later 259 had died out of a population of 350 i.e. 74 per cent mortality. The tercentenary of this supreme example of self sacrifice was celebrated in Eyam last year.

It is not certain when and where isolation for a specific period was first introduced as a preventive measure or when information concerning epidemic disease was first passed from country to country. These measures lie in the mists of time and

certainly there are frequent references to isolation of sick and unclean persons in the Laws of Moses. For example, we read "He is unclean, he shall dwell alone, and without the camp his habitation shall be.' One of the first references to statutory and organised compulsory isolation of travellers is in the fifth century A.D. when the Byzantine Emperor Justinian made a quarantine law at the time of a great plague epidemic. People coming to Constantinople from infected areas were ordered to be "purified" in special places and given a health certificate. The Republic of Ragusa in Dalmatia on the Adriatic (now known as Dubrovnik) was certainly very conscious of this problem in the late fourteenth century and visitors to Dubrovnik today can visit the buildings, later called lazarettos, outside the Ploche or southern gate of the city. Travellers and their baggage from sea and land were isolated for a period of 40 days here before being permitted to enter the city. The setting up of lazarettos on this pattern was the policy of countries on the Mediterranean and Adriatic sea boards. The most typical examples of these were at Marseilles, Venice, Genoa, Leghorn and Trieste.

Other cities and countries soon followed the example of the Ragusians and Venetians until some form of sanitary control on imports of persons and goods became general in many countries during the next five centuries. Traffic from Egypt to Europe, especially cotton goods, was the chief source of plague and the underlying idea of quarantine was that the passage of time would give the disease an opportunity to show itself and lead to dissipation of the infection. The name "quarantine" is said to have been based on the period of 40 days during which Christ and Moses had remained in self-imposed isolation in the wilderness. The word "lazaretto" probably gets its origin from Lazarus, whose name came to be used in mediaeval Latin for a leprous or infected person.

J. D. McDonald, a medical historian, describes vividly some of the practices adopted in quarantine. He tells us that "this was indeed a strange and marvellous ritual in Mediterranean and Ardiatic ports where lazarettos abounded and the law was vigorously enforced. On arrival, ships would be visited by the quarantine officer who, while making elaborate use of tongs and vinegar, would examine the Bill of Health and prescribe the quarantine accordingly. For plague the highest rigour was enforced for 80 days. Goods were exposed and turned daily for 20 days. If cotton were part of the cargo the bales would be broken up and the deck hands would toss the contents over their heads daily for 60 days. If nobody contracted plague the cotton was considered free from infection. Meanwhile crew and passengers were confined to the lazaretto and examined daily for tenderness in the axillae and groins. In some ports the authorities took far less interest and merely locked everything and everybody up for 40 days and took no further action until disease actually broke out."

For information on lazarettos, their location and layout, we owe much to the prison reformer, John Howard, who, during the latter part of the eighteenth century, visited all the lazarettos in Europe and published reports on each, together with detailed maps and plans.

To the rigours of quarantine were also added the restrictions of the Cordon Sanitaire which took many forms. The first reaction of a threatened community might be to attempt to isolate itself completely from the advancing danger, and military force was often used to prevent those inside from getting out and

those outside from getting in. In privileged communities or in the case of the well-to-do it was common practice for the wealthy to move out of capitals and danger areas into a healthier environment, usually in the country. In England, when the court moved to Windsor from London during the plague of 1625, a gallows was erected at Windsor to hang anybody who arrived from London. But these attempts at complete isolation were largely unsuccessful as it was impossible to sever all communications between adjacent communities.

Between the fourteenth and nineteenth century nearly all civilized countries of the world adopted some form of port health control. There was often no reliable information concerning the state of health in foreign countries, so quarantine measures could be based on rumour alone. To avoid quarantine, masters of ships had to produce a clean "Bill of Health". These Bills of Health have now been abolished but they were the primitive forerunners of the Maritime Declaration of Health which is in general use in the ports of the world today. This ancient system of control was not only usually quite ineffective but was often cruel to the point of barbarity. It also encouraged dishonesty, bribery, corruption and concealment and was a great hindrance to travel and to the free flow of trade. The conditions under which crews and passengers were incarcerated, either in hulks and ships or in lazarettos on shore, were sometimes indescribable and worse than those experienced in many of the prisons of the time. Attempts to avoid quarantine by giving false information could have disastrous results.

One of the most striking examples of the hardships, which passengers had to bear less than 85 years ago, was the misadventure of those on board the Italian ship, Matteo Bruzzo, which sailed from Genoa for Montevideo on 30th September 1884. Cholera broke out on the ship on arrival at Montevideo and she was refused permission to land passengers either there or at Rio de Janeiro. The master had no alternative but to return to Italy where his ship was quarantined at the island of Pianosa near Elba. When the passengers of the Matteo Bruzzo finally disembarked at Leghorn they had been at sea for four months and were only 78 miles away from their original port of embarkation. Innumerable illustrations of serious inconvenience and great injustice caused by quarantine practices have been cited by historians, among whom are John Howard and John Jacques Rousseau. Both have given first hand accounts of the discomforts and extreme rigours of confinement in lazarettos.

Improved means of transport, especially the introduction of steam and the increased growth of international trade, made these unnecessary encumberances of quarantine even more unbearable than before. Furthermore it was evident that many of the measures adopted were not only damaging to trade but were ineffective in preventing the spread of disease. Based as they were on supposition rather than on scientific knowledge of the disease against which they were directed, obstructive quarantine measure were doomed to fail as often as to succeed. In fact, one can attribute most of the success to good fortune rather than to good management. Political opposition also came from those who saw in quarantine a method of state interference in the affairs of private individuals. These criticisms were not without justification in view of the penalties of life and death accorded to the quarantine authorities. In the eighteenth century a warship, which was alloted to the Port of Liverpool, patrolled up and down the River Mersey to ensure that incoming ships

did not attempt to dock before being given a clean Bill of Health. As late as 1825 the last Quarantine Act in England prescribed the death penalty for persons communicating with any ship in quarantine.

Somewhat similar procedures to those described by McDonald were attempted in the large seaports of Britain especially London and Liverpool. During the seventeenth and eighteenth century the British quarantine regulations were directed mainly against plague as it threatened from various areas. Isolation of persons and goods had mainly been on disused ships anchored in estuaries, but ships with foul Bills of Health could complete their quarantine at Mediterranean ports before arrival in this country. In 1765 money was voted by Parliament for a lazaretto in the Scilly Isles and in 1800 £65,000 for one at Chetney Hill in Kent for which a further £105,000 was later provided. The first was never built and the Chetney Hill project was a complete fiasco. It sank into the mud of the the Medway and its remains were eventually sold for £15,000.

Lazarettos were not built in Ireland and there is little historical evidence of the imposition of quarantine procedures as far as Belfast is concerned. It would appear that suspected or infected ships were kept for a quarantine period moored beyond the entrance to the main channel off Carrickfergus at a point known as Garmoyle Pool. Fortunately Ireland escaped the great plague epidemics but during the nineteenth century Belfast suffered severe outbreaks of smallpox, typhus and cholera.

In 1873 the Belfast Board of Guardians erected a cholera intercepting hospital on the West Twin Island as there was at that time cholera in European seaports. In 1884 and again in 1892 this hospital was extended and further accommodation was added to it in 1900 as there was plague in Glasgow in that year. As the hospital stood in a position where it impeded essential harbour development and reclamation it was destroyed by burning in 1910 and re-erected on piles on a new site on the Seal Channel. This second hospital was demolished in 1930 as it was no longer required and in any case Purdysburn Fever Hospital could now deal with any serious infectious diseases from the port. During its lifetime of 57 years the cholera hospital received no cholera cases but it was called upon to house smallpox patients on several occasions.

Since the end of the last century knowledge has made tremendous advances and many of the diseases which were once dreaded have lost their ancient terror. Among all the quarantinable diseases, smallpox is the one which still causes the greatest concern to the port medical officer and against which he must maintain constant vigilance. Smallpox remains the disease most frequently responsible for infected ships. During the past six years 100 ships have been reported infected with this disease by the World Health Organisation. The presence of endemic smallpox foci constitutes a serious health threat to all countries and especially so today when, thanks to rapid air travel, one is only a few hours away from an endemic smallpox area. Of more than 100,000 cases notified in 1963 about 25,000 people died. Measures to control epidemics are theoretically simple but sometimes difficult to carry out in practice. They challenge the efficiency of port health, public health and laboratory services, hospitals and general practitioners. Smallpox patients and their contacts must be isolated, casual contacts vaccinated; their number may be several thousands and sharp watch must be kept for further cases or other similar illnesses like chickenpox which may be confused with it. A further

problem is, that in countries free from the disease, few doctors have seen a case and modified cases produce further problems of diagnosis. Unfortunately unvaccinated doctors are among the first to contract smallpox.

The problem of prompt control of imported smallpox are made much more difficult by rapid air travel. Here is the sequence of events following an imported case into Britain in 1960. "Mr. Jones", two days after arriving in London by air from Malaysia fell ill, saw his doctor and was admitted to hospital as a confirmed case of smallpox. The Ministry of Health immediately informed the World Health Organisation in Geneva and a far flung follow-up of people, who had contact with "Mr. Jones" had to be set in motion. Cables went out from W.H.O. to the countries where the flight had landed, Kuala Lumpur, Colombo, Bombay, Teheran, Istanbul and Rome. Some passengers had got off the plane at Bombay for Karachi and Moscow and at Rome for Africa, Germany and Scandinavia. Other passengers from London had already continued their flight to the U.S.A. In all these places a careful check had to be made to see that contacts of "Mr. Jones" had valid smallpox certificates. All were warned to see a doctor at once should they feel at all unwell. Some were vaccinated. The swift notification of cases is an essential part of smallpox control, nationally and internationally. Under the International Sanitary Regulations which apply all over the world and are the modern successors to the old quarantine laws, countries have a duty to notify W.H.O. within 24 hours of a case occurring in their territory. The information always refers to the local area where smallpox is present. This local area is a built-in feature of the regulations as only travellers from these areas are subjected to the inconvenience of port health control. The port medical officer has up-to-date information of every area in the world where smallpox or other quarantinable disease is present so he keeps a constant watch for ships coming from these areas. This information is given in a daily radio bulletin broadcast from Geneva and re-transmitted throughout the world. It appears in printed form in a weekly epidemiological record. When warned of possible danger in time port medical officers can take precautions to prevent disease from spreading. A rapid information service of this kind is essential in view of the risk of high-speed international spread of disease through the ever increasing volume and range of traffic by sea and air. Every ship which enters the Port of Belfast from an area of the world, where smallpox is regularly found, is met by a port medical officer. Only when the doctor is satisfied that there is no danger of smallpox is the ship permitted to land passengers and crew and unload her cargo.

Travellers coming from, or having passed through, infected areas must have valid smallpox vaccination certificates or be vaccinated on arrival and kept under surveillance during the incubation period of the disease. If a traveller from an infected area refuses vaccination a port medical officer has statutory power to put him into isolation for 14 days but this action is seldom necessary. With the revocation of compulsory vaccination in the United Kingdom the number of persons protected has tended to decline annually and the numbers protected here have already fallen to a dangerously low level. This has greatly increased the responsibility of the port medical officer and others who have the task of excluding the disease from this country. It is, therefore, most important that those groups in the community who are most likely to come into contact with his disease, should be protected by vaccination, i.e., doctors, nurses, auxiliary medical staffs, ambulance personnel and of

course all those involved in any way with work at airports or seaports.

The solution to the problem of smallpox in the world lies, not in mass vaccination of people of western countries, who are free from the disease, but in the eradication of infection in the countries, especially India and the Far East, where it is endemic. Much progress has been made already in the developing nations of Africa, and port health services have now little to fear from the seaports or airports of the entire African continent. Under the guidance of the World Health Organisation intensive efforts are now being made by those countries in which both smallpox and cholera are still endemic to organise mass immunisation campaigns and improve sanitary conditions. These countries are helping themselves and the rest of the world by raising their sanitary standards and concentrating on eliminating sources of disease within their borders. When these quarantinable diseases are eliminated from them in the not too distant future a whole chapter of international public health history will close.

I would at this point like to make some reference to our own port of Belfast and say something of the work of the Port Health Service here. This service is a natural extension of the Environmental Health Service and as such has a vigorous and stimulating role to play in the public health services of our city.

History records that Belfast was first recognised as a port by the government of the day just over 300 years ago when in 1662 by an Order in Council it was officially made a "landing place" such recognition being probably for customs purposes. Since that time successive generations of those responsible for the development and operation of this great port have endeavoured to ensure that the accommodation and facilities provided for the reception of vessels and their cargoes are adequate and the most suitable and up to date of their kind in the world. Belfast is an ideal ocean terminal. Its position on the Transatlantic routes and its position in relation to Great Britain and the continent make it an ideal centre for the distribution of goods. One outstanding feature is that owing to the tidal range of only 9½ feet no dock gates are necessary and ships can enter and leave their berths at all stages of the tide without hindrance. Within the dock area there are 8 miles of quays and an area of 31 acres of sheds. During the years this port has seen a vast expansion in her trade and commerce and is now the sixth largest in the United Kingdom. The total seaborne tonnage of goods imported into and exported during the year 1965 amounted to over 7 million tons. It is estimated that the total value of goods handled during that year exceeded £500 million, being carried in 7,733 vessels with a total tonnage of over 7 million tons net register.

Another great economic asset not only to Belfast but to the whole of Northern Ireland has been the recent erection at a cost of £7,000,000 of the B.P. Oil Refinery. This refinery can process 1,300,000 tons of crude oil annually and among the products produced are three grades of motor spirit, butane, propane, aviation turbine, kerosene, industrial gas oil, three grades of fuel oil, diesel vehicle oil (Derv) and liquid sulphur. In this refinery hydrogen sulphide which is the most offensive effluvia of refineries is absorbed, practically all sulphur being converted to liquid and sold for use in the manufacture of fertilizers. Atmospheric pollution is at a remarkably low level. All Belfast's gas supply will come from the refinery in less than two year's time and no more coal gas will then be produced at the present gasworks.

The limits of the Belfast Port Health Authority extend from the docks to a point indicated by a line drawn from Black Head in Co. Antrim to Orlock Point in Co. Down and shipping coming within this area is subject to its jurisdiction. The masters of ships from foreign ports notify the Port Medical Officer by coded signal, prior to their arrival, informing him from which foreign ports they have come and whether there is any sickness among crew or passengers or any other relevant health information. The master is in fact requesting health clearance or "free pratique" as it is called and he is normally granted permission to enter the port and proceed to his place of mooring. His ship will be boarded off Carrickfergus by the duty pilot who will take over the helm and guide her to her mooring place in the docks. On her way up the Lough the ship will be flying the famous yellow "Q" flag indicating that she is still in quarantine and not yet cleared by the Port Medical Officer. Originally this flag, the Yellow Jack, was used on a ship to indicate that a hanging was taking place and that other ships should "keep their distance". By night the "Q" flag is replaced by coloured lights at the masthead. If the master suspects that he has a case of infectious disease on board or if he requires the services of a port medical officer he will fly the flag signal L.I.M. from the masthead. If the answers on the Maritime Declaration of Health are satisfactory, the ship is cleared at once and everyone can now proceed about his normal business; the pilot can go ashore; the immigration and customs and waterguard staff can come aboard and cargo discharge can begin. The aim of the port health authorities of today is to carry out their protective functions with the minimum of inconvenience to passengers and crew and shipping owners. Every hour a ship spends in port adds expense to her owners whose aim is to have a quick turn round and return her to her lawful business of plying trade on the high seas. The aim is also to free travellers, traders and international traffic from unnecessary restrictions but there are, of course, minimum procedures, some in the interests of health, which must be observed. It has been said that if Sir Francis Drake wished to circumnavigate the globe today he would find it very difficult to do so. First of all his ship would not be in compliance with Board of Trade Regulations, he would be stopped because he had no passport, arrested for taking money out of the country illegally and if he succeeded in getting out of the country at all he would be detained because he had not had his inoculations!

While in port, ships are visited daily by port public health officers who have a wide range of duties to perform. In order to ensure healthy living conditions at sea, ships are treated very much in the same way as houses. The inspectors inspect ships of many nationalities and types of construction. Last year ships of 35 nationalities arrived in Belfast from 236 different ports, some of them in far away places with strange sounding names. The standard of crew accommodation varies from nationality to nationality and from ship to ship. The age of the ship, the trade on which she is engaged, the efficiency of the master and the cleanliness of the members of her crew may all be relevant to her state of morale. During the past 25 years there has been a steady improvement in the standards in ships of most nationalities; British requirements are among the best in the world. The port health inspector in his routine duties will visit and inspect all ships in port; he will make his inspection of crew accommodation, sanitary arrangements, wash rooms, store room, especially food stores, cooking and catering arrangements. He will also

take samples of the ship's water supply for bacteriological examination. Belfast's water supply has a very high reputation among shipping owners for its purity and potability and ships proceeding to this port will often delay filling their tanks until they arrive here. During 1965 the Belfast Water Commissioners sold 14 thousand tons of water to shipping at a cost of approximately £7,000.

The responsibilities of the port health authority, in addition to those concerning the risk of importation of disease by humans, also involve the risk of importation of disease by foodstuffs, hides, skins and bone meal. It is in this branch of his work on ships, on quays and in the sheds and warehouses that much of the day of the port health officer is spent. The amount of foodstuffs arriving here from overseas is somewhere in the region of 200,000 tons per annum. A large percentage of this must be inspected to ensure that it is fit for human consumption. Imported food may be unfit for a variety of reasons and rigid controls are necessary to ensure that food is free from disease, sound and undamaged, handled in an hygienic manner and free from food poisoning organisms.

All meat and meat products arriving here from overseas must bear the stamp of the country of origin. This stamp is not a warranty of quality or freedom from disease but merely indicates that the meat was inspected by a qualified person in a registered establishment. Prior to the Aberdeen typhoid outbreak it was thought that external examination of tinned meat containers was sufficient but it is now realized that pathogenic organisms can live for months or even years in canned products without revealing their presence. Owing to the risk of typhoid, paratyphoid and food poisoning from infected meat products, whether in chilled carcases or in cans, examination of these products has in many ports overshadowed all other considerations especially since the Aberdeen typhoid outbreak of 1964. Boneless beef and veal from various countries, including the Argentine and New Zealand, have during recent years also given cause for much concern owing to high bacterial contamination. The process of boning out during manufacture appears to spread contamination and unless the greatest care is taken in the killing establishments overseas considerable quantities of these products are rendered unfit for human consumption and must be dealt with by the port health officers. To some extent the Aberdeen outbreak was a blessing in disguise as the Milne Committee Report, which followed it, recommended much stricter control over establishments exporting meat and meat products to this country. Recently some Australian exporters have been sending boneless kangaroo meat to Britain and practically all port medical officers have been reporting that it is heavily contaminated with salmonella organisms. It is understood that the importers of this meat may hope to "save the day" by sterilizing it and selling it as pet food!

Other instances in recent years which have necessitated the detention or destruction of foodstuffs by our port health staffs have included:

1. A cargo of rice heavily contaminated by rat droppings.
2. Chinese egg and egg albumen containing paratyphoid organisms (all liquid egg and egg albumen must now be pasteurised by law),
3. Desiccated coconut from Ceylon contaminated with salmonellae from faecal sources,
4. Tomato puree with rich growth of mould,
5. Peanuts from Africa containing the poison aflatoxin in dangerous concen-

tration (aflatoxin is known to cause cancer in the livers of ducks and turkeys),

6. Fruit sprayed with excess amount of arsenical insecticides not to mention many tons of food products which have been damaged by sea water, damaged by fire or contaminated with oil or chemicals due to spillage or improper storage in holds and cargo spaces. Some food may be salvaged but much is beyond redemption and must be destroyed.

Among the nuisances still found in ships are unclean and sometimes verminous quarters. Except in the large bulk grain carrying ships which are subject to mites and weevils the most common insect found is the cockroach or very occasionally the flea or the louse. Fortunately with the modern insecticides DDT, BHC pyrethrins these infestations are readily amenable to treatment and masters and owners are most co-operative in this connection. But the importance of the eradication of verminous conditions must always be stressed. Fleas and lice have throughout the centuries literally wiped out great centres of population in many countries of the world. Historians have argued for generations about the cause of the fall of many of the great civilizations like Egypt, Persia, Babylon, Greece and Rome. The rat, the flea and the louse may have had a sinister role to play here and epidemic diseases like plague and typhus may have been a potent force in determining the course of history and the downfall of these great dynasties. Science, however, has provided the means of controlling these infections which spread from rodents to humans and between humans. Modern treatment has reduced their killing force, so terrifying in the past, but there is still great need for intensifying campaigns for keeping our ships, docks, warehouses and harbour areas free from rats and insect pests. The systematic destruction of rats, mice and insects is another of the responsibilities of the port health officer and his rodent control assistants who by baiting, trapping and fumigation with hydrogen cyanide and methyl bromide and the use of other poisons not only keep us free of rat borne disease but protect many tons of valuable foodstuffs which would otherwise be contaminated and rendered unfit. Under International Sanitary Regulations all foreign going ships must carry a valid approved certificate reviewed six monthly to show that they are free from rats and mice.

John Masefield, the former Poet Laureate, in his poem "Cargoes" writes of a

> Stately Spanish galleon coming from the Isthmus,
> Dipping through the Tropics by the palm-green shores
> With a cargo of diamonds, emeralds, amethysts
> Topazes and cinnamon, and gold moidores.
> Dirty British coaster with a salt-caked smoke stack,
> Butting through the Channel in the mad March days,
> With a cargo of Tyne coal,
> Road rails, pig lead,
> Firewood, ironware, and cheap tin trays.

One would not like to convey the impression that the port medical officer has no romance in his soul, but he will have to take a closer look at any ship coming from the Orient and tropical climates to our shores. What is the vaccination state of her crew and passengers? Is her Declaration of Health clear? Is her Deratting Certificate in order? Is there any risk of anthrax from her cargo of hides or goat-skin rugs? Has she a consignment of peanuts for human consumption? Is there

any imported meat from unauthorised establishments overseas? It might even be necessary to distribute to some of her crew members our standard red card giving the places and times where the venereal diseases consultants are available for consultation. This is in accordance with W.H.O. arrangements which are standardised for all seaports of the world.

This dirty British coaster doesn't sound too promising either from a public health point of view. Her smoking stack may be in contravention of the Clean Air Act, her crew accommodation may not be all that it should be from an hygienic point of view and her food storage and cooking arrangements may be somewhat primitive. Perhaps we had better give her an extra look over too. Just in case!

We have come to the end of our story about those who stand at the gateways of countries to protect the health of their citizens against dangers from across the seas. In countries all over the world today governments are introducing measures for improving the health of their peoples, but shortage of funds and well trained personnel are preventing most developing countries from coping with the complex problems presented by changing environmental conditions. The 1966 World Health Assembly conscious of the fact that there were 100,000 cases of smallpox with 25,000 deaths in 1965 launched a ten year plan aimed at the total eradication of smallpox throughout the world. Other projects of wide international scope look towards the control of malaria, tuberculosis, cholera, leprosy and other communicable diseases. The success of these measures will depend not only on the co-operation of individuals. Medicine is a social science and its progress depends on a knowledge and understanding of social processes. Medical workers of the future must be trained to think in this way and to realize that they have a duty to the community at large and to the people of the less developed countries. Unfortunately, until comparatively recently, doctors were trained mainly to treat the sick person as an individual and the increasing specialization in medicine has fostered the importance of this idea. This world of ours is getting smaller every year; we can no longer think only in terms of our own parish or town or even of our own country. In the well known words of the former Dean of St. Paul's, seventeenth century writer John Donne: "No man is an island entire of itself; every man is a piece of the continent, a piece of the main; if a clod be washed away by the sea, Europe is the less, any man's death diminishes me, because I am involved in mankind and therefore, never send to know for whom the bell tolls, it tolls for thee."

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THE PREVALENCE OF ALCOHOLISM IN NORTHERN IRELAND

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THE main object of this paper is to discuss the methods which might be used to estimate the size of the problem of alcoholism in a population and to review the present state of knowledge about the extent of alcoholism in Northern Ireland.

Previous Research

There is very little information at present available about the prevalence or general epidemiology of alcoholism in Northern Ireland. Traditionally, the Irish have been considered to be excessive consumers of alcoholic drinks. For example, in 1810 the "Belfast Monthly Magazine" felt compelled to complain that,

> "The cheapness of the poison of ardent spirits is permitted to increase our national vice, and that fondness for intoxication which is unhappily characteristic of our country."

The belief that "drunkenness" is characteristic of any one country or that it is an innate weakness of the inhabitants cannot be supported by historical evidence. For example, Trevelyan writes of England in the days of Queen Anne, "Drunkenness was the acknowledged national vice of Englishmen of all classes, though women were not accused of it" (Trevelyan, 1944).

It was not until recently that the medical syndrome of alcoholism was differentiated from the more diffuse concept of drunkenness. This makes historical commentaries of even less value in assessing the extent of pathological drinking.

Even today, there is very little reliable information about alcoholism either in Northern Ireland or in the Republic of Ireland. Most of the documented evidence about alcoholism in the Irish has been based on immigrants in the United States. The findings have been of great interest and the workers have made much of Irish attitudes and drinking patterns to support socio-cultural theories of the aetiology of alcoholism (Bales, 1946; Myerson, 1952; McCord et al., 1959; Mulford and Miller, 1960; Viney, 1964).

It is unfortunate, however, that the high prevalence of alcoholism in Irish immigrants in the United States, and a lack of distinction between heavy social drinking and alcoholism, has lead to the assumption that there is a high prevalence of alcoholism among the Irish living in Ireland. An example of this confusion is illustrated in a recent epidemiological review (Rathod, 1964).

Some assessments of the alcoholic problem in Northern Ireland have been made, and within the last few years Grant and Boyd surveyed a small sample of Ulster general practitioners to estimate the number of alcoholics in their practices (Grant and Boyd, 1961 and 1962). For reasons given later the figure obtained (191 alcoholics per 100,000 adults) is probably a gross underestimate.

There have been appeals for further research (Grant and Boyd, 1961; Grant,

1963; The Northern Ireland Association for Mental Health, 1963; Viney, 1964) and there is growing realisation that further information is necessary for guidance in the realistic development of preventive, curative and educational programmes. Similar appeals have been made in Scotland (Morrison, 1964) and in England (Joint Committee of the B.M.A. and the Magistrates' Association, 1961; Rathod, 1964).

The Need for Investigation

An estimate of the prevalence of alcoholism in the community is necessary for the following reasons:

(1) To guide in the planning of medical services, and to help in assessing priorities.
(2) To aid the definition of high risk groups.
(3) To clarify medical care problems. To what extent is the problem of alcoholism being dealt with and how?
(4) To provide clues as to causal and influencing factors.
(5) To make comparisons with other countries. Regional and international differences in rates may suggest social and cultural aspects of the problem.

The Nature of Alcoholism

Alcoholism has been variously defined. This is one of the main difficulties in comparing its prevalence in space and time. Although clinicians are in agreement that conceptually, an alcoholic is a person who is excessively dependent on alcohol to such an extent that he develops a noticeable degree of mental, physical or social pathology, they may have varying opinions about what constitutes "excessively", "extent" or "a noticeable degree". From the clinical point of view it is not always necessary or even advantageous to require inflexible diagnostic yardsticks in the management of individual patients; but clear and rigid diagnostic criteria are absolutely essential for surveys. The estimate of the prevalence of a disease will depend on how it is defined.

Another difficulty with alcoholism is the extent of its social ramifications. These bring the subject into the fields of other disciplines as well as medicine. Surveys on alcoholism may therefore tackle the problem from one or more of its following social aspects:

(1) Psychiatric (Habituation, addiction and psychosis).
(2) Medical (because of the complications, liver cirrhosis, gastritis, peripheral neuritis, cardiac complications, increased susceptibility to pneumonia, tuberculosis and deficiency states).
(3) Surgical (Complications: pancreatitis and increased risk of accidents).
(4) Social (Family problems, inter-personal relationships).
(5) Economic (Decrease in economic status, poverty).
(6) Industrial (Decreased efficiency, absenteeism).
(7) Cultural (Patterns of drinking, the image of alcohol in the society).
(8) Criminal (Drunken driving, arrests for drunkenness, criminal offences).

Along with the social ramifications and the difficulties in definition of alcoholism, there is the added difficulty of a confused terminology. Difficulties can be resolved however by adopting an acceptable term and by describing rigidly the type of person which the term is intended to cover.

Methods of Measuring the Incidence of Alcoholism

A. Field Surveys

1. Using all available sources

Some workers have approached in person every available source of information in order to estimate the number of alcoholics in an area. Gibbins (1954) used the following sources in his study of alcoholism in an Ontario County—Alcoholics Anonymous, employers, clergymen, institutions (hospitals, penal institutions, etc.), military headquarters, physicians and psychiatrists, police, school officials, social agencies and public health groups, service clubs and professional bodies.

Those interviewed were representatives of these bodies, and each was asked if he had encountered any abnormal drinkers (as defined) during the time period covered by the survey. The figure obtained was 1,600 alcoholics per 100,000 of the adult population. This type of survey, by its nature, can only be carried out over a limited area and on a limited population.

2. General Practitioner Surveys

Another method is to interview general practitioners and enquire about the number of alcoholics in their practices (Table I).

Table I—The Prevalence of Alcoholism in General Practice

Country	*Source*	*Rate per* 100,000 *of population aged* 20 *and over*
United Kingdom	Parr (1957)	110
Northern Ireland	Grant and Boyd (1962)	191
Scotland	College of General Practitioners (1963)	187

Such surveys gave very low figures for alcoholism. Some of the possible reasons for this low reporting are as follows—

(i) Memory defects in the minds of the doctors.

(ii) A reluctance of doctors to reveal information about their patients, especially those with the stigmatic label of "alcoholism".

(iii) Doctors do not ask patients routinely about their drinking habits.

(iv) Difficulties in definition. Many doctors may think only in terms of patients with delirium tremens, or of cases with physical complications. (This could lead to gross under-reporting since only one in four alcoholics gets physical complications.) It is common for doctors to think of alcoholics only in terms of the Skid Row types.

(v) Many alcoholics may not have gone to see their practitioner at any time, so that he is not in the position to estimate the number in his practice. It is reasonable to suppose that many alcoholics neglect to attend their doctor until physical complications occur.

3. Interviewing a sample of the population

A few groups of workers have studied the drinking patterns of the adult population in the United States (Riley and Marden, 1946; Maxwell, 1951; Mulford and

Miller, 1959). Persons drawn up in the sample were interviewed about their drinking habits and their attitudes to alcohol. Mulford and Miller found a rate of 2,954 alcoholics per 100,000 of the adult population in Iowa. This was the method of social survey and in the best traditions of epidemiological investigation enabled the investigators to define the groups at risk by the main social factors relevant to alcoholism.

B. The Use of Available Statistics

In the absence of field surveys other sources of information can be used to estimate the extent of alcoholism in a community:

1. Certified Deaths from Alcoholism (I.S.C. numbers 307, 322*)*

Deaths from alcoholic psychosis are also included under this heading. The annual number of persons certified as dying from these causes is so small that they give no indication of the incidence of alcoholism. The rate for England and Wales in 1957, for example, was 0.9 per 100,000 adults and the corresponding rate for the United States in 1950 was 2.3.

2. Certified Deaths from Liver Cirrhosis (I.S.C. number 581*)*

Of all the statistics relating to alcoholism this has been found the most useful and has been used the most widely.

In 1947 E. M. Jellinek devised a formula for calculating the number of alcoholics in a community using the number of deaths from cirrhosis of the liver.

The formula is usually stated as—

$$A=\left(\frac{PD}{K}\right)R$$

where A=the total number of alcoholics alive in a given year;
D=the number of reported deaths from liver cirrhosis in that year;
P=the percentage of such deaths attributable to alcoholism (51.5 per cent for men; 17.7 per cent for women);
K=the percentage of all alcoholics with complications who die of liver cirrhosis (0.694);
R=the ratio of all alcoholics to alcoholics with complications (4 : 1).

This formula has been much criticised, mainly with regard to the values of the factors concerned. The D value depends on the quality of death certification. The P value may vary from one country to another and from time to time. The constant K is based on a large international sample in which the variation was minimal. The value of R is conceivably different from country to country.

Yet the extraordinary fact remains that there is very close agreement between estimates using the Jellinek Formula and estimates based on more direct methods. There are now 14 instances where the two types of estimate can be compared. In eight cases the difference is 10 per cent or less; in two cases less than 20 per cent; and there is poor agreement in four instances. Some of these comparisons are shown in Table II. Furthermore, it has been pointed out that discrepancies may often be attributed to the independent method with as much justification as to the Jellinek method.

In the light of this knowledge the Jellinek formula was used to calculate the incidence of alcoholism for Northern Ireland over the period 1951 to 1964. The

TABLE II—PREVALENCE OF ALCOHOLISM (per 100,000 population aged 20 and over) IN VARIOUS AREAS ESTIMATED BY THE JELLINEK AND INDEPENDENT METHODS (Adapted from Popham, 1956)

Place	*Source*	*Independent Method*	*Jellinek Method*
Ontario	Gibbins (1954)	1,605	1,600
Denmark	W. H. O. (1951)	1,950	1,750
Switzerland	Jellinek (1954); W. H. O. (1951)	2,100	2,700
Kansas	Keller (1955); Community Studies (1954)	2,350	1,580
Massachusetts	Ipsen et al. (1952)	2,840	4,960
Chile	Jellinek (1954); Marconi et al. (1955)	2,960	4,150
New Jersey	Riley and Marden (1946)	4,080	3,945
Florida	Maclachlan (1955)	4,310	4,150
France	Jellinek (1954); Ledermann (1954)	5,200	7,300
Chicago	Chicago Committee on Alcoholism (1955)	5,330	5,250
Iowa	Mulford and Miller (1960)	2,954	3,000

TABLE III—APPLICATION OF THE JELLINEK FORMULA TO DEATHS FROM CIRRHOSIS OF THE LIVER (NORTHERN IRELAND 1951–64)

Year	*Number of Cirrhosis Deaths in Persons aged 20 and over**			*Number of Alcoholics*			*Rate per* 100,000 of *Population aged* 20 *and over*		
	Males	*Females*	*Persons*	*Males*	*Females*	*Persons*	*Males*	*Females*	*Persons*
1951	17	12	29	5,046	1,224	6,270	1,202	269	717
1952	20	14	34	5,936	1,082	7,018	1,420	234	798
1953	10	15	25	2,968	1,530	4,498	707	329	504
1954	15	20	35	4,452	2,040	6,492	1,064	438	734
1955	20	16	36	5,896	1,632	7,528	1,413	349	851
1956	24	10	34	7,124	2,040	9,164	1,708	437	1,036
1957	16	23	39	4,749	2,346	7,095	1,142	502	804
1958	15	18	33	4,452	1,036	5,488	1,071	222	622
1959	21	35	56	6,234	3,571	9,805	1,499	765	1,109
1960	15	18	33	4,452	1,036	5,488	1,065	220	618
1961	24	19	43	7,124	1,930	9,054	1,685	410	1,014
1962	20	19	39	5,936	1,930	9,866	1,400	409	879
1963	26	15	41	7,718	1,530	9,248	1,816	322	1,028
1964	19	20	39	5,680	2,040	7,720	1,328	426	852

*Source: Registrar General's Annual Reports

TABLE IV—ESTIMATED ALCOHOLISM RATES FOR VARIOUS COUNTRIES FOR THE YEAR 1955

Place	*Source*	*Cirrhosis Deaths per* 1,000 *deaths from all causes*	*Estimated Alcoholics per* 100,000 *persons aged* 20 *and over*†
United States	Keller (1958)	—	4,360
Helsinki	Brunn et. al. (1960)	7.3	2,320
Canada	Popham and Schmidt (1958)	5.9	1,750
Finland	Brunn et al. (1960)	3.9	1,150
Scotland	*	2.7	960
Northern Ireland	*	2.3	850
England and Wales	*	2.2	830
Eire	*	1.9	810

*Calculated from Mortality data and population statistics.
†Estimated using Jellinek Formula.

results are shown in Table III and they imply that alcoholism is a much smaller problem in Northern Ireland than in many other countries (Tables II and IV).

Jellinek's method tells us nothing about the "alcoholics" involved and gives no aid in defining the groups at risk. The method has often been used in the absence of an ad hoc survey. It should be stressed, however, that the formula necessitates the use of three proportions where precision is unknown. Errors in these will result in gross errors in the numbers of alcoholics.

3. Alcoholism in General Practice (Morbidity Statistics)

In the morbidity survey of general practices in England and Wales the prevalence of alcoholism was 35 per 100,000 adults (Logan and Cushion, 1958; Logan, 1960; Research Committee of the Council of the College of General Practitioners, 1962). The reasons for a low rate being returned from general practitioners have been discussed previously, but in addition it should be pointed out that unless doctors are asked specifically about alcoholism they will return their patients as suffering from one or more of the many complications of the condition rather than the condition itself.

4. Liver Cirrhosis in General Practice (Morbidity Statistics)

In the survey of morbidity from general practice mentioned above, cirrhosis of the liver also appeared rarely as a diagnosis, only occurring in 17 per 100,000 of the adult population. In the same year (1955) in England and Wales there were 4.0 deaths per 100,000 adults from cirrhosis of the liver. Assuming that one third (34.6 per cent) of these were due to alcoholism and that this rate (1.4 deaths from alcoholic cirrhosis per 100,000 adults) represented 7.7 per cent of live patients with alcoholic cirrhosis, one would have expected to find 18 persons per 100,000 adults suffering from *alcoholic* cirrhosis alone. The ratio of non-alcoholic liver cirrhosis to alcoholic cirrhosis is not known for live patients, but it must be assumed that the ratio is at least as great as the 2 to 1 ratio for mortality data. This would mean

that general practitioners were diagnosing cirrhosis of the liver in only half of the possible cases.

5. Admission to Hospital for Alcoholism

This method of estimating the incidence of alcoholism is most unreliable. In the first place, a common convention, probably originating with the World Health Organisation (W.H.O., 1951), is to gather statistics on admission for alcoholism to mental hospitals only. As a result of this approach one worker was led to suggest (Morrison, 1964) that, because admission rates to mental hospitals in Scotland for alcoholism (including alcoholic psychosis) were about four times higher than in England and Wales, this reflected differences in the incidence in alcoholism in the two countries. No allowance was made for patients attending general hospitals for alcoholism. For example, in the year 1957 there were 1,535 admissions to mental hospitals for alcoholism and alcoholic psychosis (General Register Office, 1961). In the same year there were 1,780 admissions to non-mental hospitals for these conditions, illustrating that in England and Wales an alcoholic patient is just as likely to go to a non-mental as a mental hospital for treatment. It is not known whether

TABLE V—TRENDS IN ADMISSIONS TO MENTAL HOSPITALS FOR ALCOHOLISM (1950–65)

Total Admissions to Mental Hospitals for Alcoholism and Alcoholic Psychosis

	1		2		3	
Year	*Northern Ireland*		*England and Wales*		*Scotland*	
	Number	*% of all admissions*	*Number*	*% of all admissions*	*Number*	*% of all admissions*
1950	92	4.0	465	0.8	—	—
1951	143	5.8	521	0.9	—	—
1952	119	5.0	668	1.1	—	—
1953	126	4.9	775	1.1	—	—
1954	130	4.6	799	1.1	—	—
1955	170	5.6	1,053	1.3	—	—
1956	227	6.2	1,285	1.5	732	7.1
1957	273	6.4	1,535	1.7	840	7.4
1958	331	7.3	1,595	1.7	861	7.4
1959	345	6.9	2,044	1.9	921	7.3
1960	445	8.6	2,479	2.2	1,091	8.5
1961	502	9.2	—	—	1,347	9.8
1962	732	12.1	3,690	2.4	1,617	11.0
1963	793	13.4	—	—	2,307	12.3
1964	838	12.0	5,423	3.4	2,698	13.6
1965	862	12.6	—	—	—	—

1. Source: "Report on Health and Local Government Administration" for years 1950-61, also Department of Medical Records, Northern Ireland Hospitals Authority.
2. Source: "The Registrar General's Statistical Review of England and Wales: Supplement on Mental Health" for the relevant years.
3. Source: Scottish Home and Health Department.

the same trend is true for Scotland or Northern Ireland. A variation in this distribution of places of treatment of alcoholic patients from country to country could give deceptive differences in admission rates to mental hospitals.

Admission rates also depend on the type of development of the services for alcoholics and in addition would depend on the attitude of various communities towards alcoholics. In some places it is a disgrace to be admitted to a mental hospital for alcoholism. In other places it is a kind of social custom to be "dried out" in the local mental hospital after a "binge". Despite these difficulties the analysis of admissions to mental hospitals for alcoholism raises some interesting questions.

Why has there been such a marked increase in admissions to mental hospitals for this condition? (Table V). The table does suggest that alcoholism is becoming increasingly more prominent in mental hospital care, especially in Northern Ireland. The trend would be in keeping, of course, with an increase in the incidence of alcoholism but it more likely reflects improvement in treatment facilities for the condition. It is worthy of note that although admission for psychiatric conditions have increased from 2,400 in 1950 to 5,900 in 1963, new out-patient attendances to psychiatric clinics have shown a rather more steep rise, from 0.6 attendances per admission to 0.8 attendances per admission. A greater emphasis on out-patient attendances for other conditions may help to explain the great relative rise in admissions for alcoholism.

As a result of examining mental hospital statistics it might also be asked why the admission rates for alcoholism show such a great difference from one country to another. (Table VI). Given that a large proportion of alcoholics may have their treatment elsewhere than in mental hospitals, it is difficult to see why the rates should be so enormously different. The Northern Ireland rate is seven times greater than that for England and Wales, and the latter rate is one quarter of that for Scotland and of that for the Republic of Ireland. It may be that more alcoholics in England and Wales go without treatment or that they are treated elsewhere than in mental hospitals. It would be dangerous to assume that these rates are any indication of the relative incidence of alcoholism in the four countries.

6. Admissions to hospital for Liver Cirrhosis

There is no counterpart of the Hospital In-patient Enquiry (Ministry of Health and General Register Office, 1957 onwards) in Northern Ireland. Therefore it is

TABLE VI—ADMISSION RATES FOR ALCOHOLIC DISORDERS TO MENTAL HOSPITALS IN THE BRITISH ISLES (YEAR 1962)

Country	*Admissions for Alcoholism and Alcoholic Psychosis to Mental Hospitals*
Northern Ireland	81.8 per 100,000 population aged 20 and over
Republic of Ireland	46.5 ,, ,, ,, ,, ,, ,, ,,
Scotland	46.0 ,, ,, ,, ,, ,, ,, ,,
England and Wales	11.3 ,, ,, ,, ,, ,, ,, ,,

difficult to estimate the numbers of persons who are admitted to hospital for liver cirrhosis.

For England and Wales in 1957 there were 9.4 admissions per 100,000 of the adult population for liver cirrhosis. This figure is only about half those cases seen in general practice. As shown previously, even the numbers of cases found in general practice statistics were probably gross underestimates.

It may be concluded that information about cirrhosis of the liver in hospital statistics is unlikely to be helpful in calculating the incidence of alcoholism.

7. The Consumption of Alcohol

It would be reasonable to assume that the amount and form (beer, wine and spirits) of alcohol consumed in a community have some relation to the prevalence of alcoholism. In support of this assumption Jellinek showed that when Prohibition was most effective in the United States (1915-20), deaths from cirrhosis of the liver had fallen to the lowest number ever recorded (W.H.O., 1951). From the analysis of this trend he was able to estimate the percentage contribution of alcoholism to deaths from cirrhosis of the liver. A similar computation for Northern Ireland is not possible since there has never been a period of Prohibition there.

As a possible indication of the increasing prevalence of alcoholism in Northern Ireland, Grant pointed out that the consumption of spirits in Northern Ireland rose from 260 thousand gallons in 1950 to 315 thousand gallons in 1959 (Grant, 1963). When the increase in adult population is allowed for, the rise does not appear so dramatic (0.30 gallons per adult in 1950 to 0.36 gallons per adult in 1959), and there may be other factors at work, such as decrease in the number of abstainers.

8. Money spent on Alcohol

Consumer expenditure on alcoholic drinks in the United Kingdom, even when revalued at 1950 prices, rose from £835 million in 1952 to £1,088 in 1962 (Central Statistical Office, 1963). This again, may be related to the increase in the population, a decrease in the number of abstainers or an increase in social drinking. These figures give no idea about the number of alcoholics or trends in the prevalence of alcoholism.

9. Arrests for Drunkenness

The rate of offences against the Intoxicating Liquor Laws in Northern Ireland has risen slightly from 148 convictions per 100,000 of the population aged 15 and over in 1956 to the rate of 167 in 1962. The only available figure for comparison is the rate for Canada in 1955, which was 882 (Popham and Schmidt, 1958).

It is noteworthy that the rate of arrests for drunkenness in the City of Helsinki in 1956 was 11,017 per 100,000 of the population aged 20 and over (Brunn et al., 1960). The rate for persons aged 15 and over in Helsinki would be slightly smaller but not enough to explain the enormous differences in rates with Canada and Northern Ireland. It is interesting to note that the relative difference in these three rates corresponds with the ranking in the incidence of alcoholism as deduced from the Jellinek Method (Table IV).

Of course statistics of arrests for drunkenness usually make no allowance for repeated apprehensions of the same person in a given year and are affected by local variations in the legal distinctions of intoxication and the climate of public

opinion. They also depend on the degree of activity of the police, and changes in police activity and methods.

10. Convictions for Drunken Driving

In 1961 in Northern Ireland there were 207 convictions for drunken driving per 100,000 vehicles on the roads. The last available figure for Canada was 61 convictions per 100,000 vehicles in 1955 (Popham and Schmidt, 1958). It is clear that these figures have a bearing on the problem of alcoholism but cannot help in arriving at an estimate of its prevalence.

Conclusions

Apart from those surveys in which a sample of the community was interviewed, all the methods described of estimating the size of the alcoholism problem suffer from severe disadvantages. It is likely that when a system of record linkage comes into general use the value of routine records and statistics will be much enhanced. Nevertheless it is clear that the most accurate and fruitful method of estimating the prevalence of alcoholism is to carry out an ad hoc community survey. Only this kind of survey can demonstrate the types of persons (age, sex, occupation, marital status, place of residence, etc.) who are at risk from alcoholism.

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CANCER OF THE LIP

By GERARD A. LYNCH, M.B., F.F.R., F.F.R.R.C.S.I., D.M.R.T.
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In Great Britain the lip is not a very common site for cancer but in Northern Ireland the condition continues to provide between 6.5 and 8.5 per cent of all new cases treated at the Radiotherapy Centre. Over a twelve year period 990 cases of lip cancer were registered—964 of the lower, and 25 of the upper, i.e., 2.7 per cent of the total—a figure very similar to that reported in other series. Cancer of the upper lip, it is generally agreed, differs from that of the lower lip in its aetiology, behaviour and malignancy and this review, therefore, is confined to those tumours arising in the mucous membrane or vermilion area of the lower lip.

TABLE I—CANCER OF THE LOWER LIP

	New	*Post-Op.*	*Post Radiation*	*Post 'Plaster'*	*Total*
Male	816	58	30	20	924
Female	35	4	1	—	40
Total	851	62	31	20	964

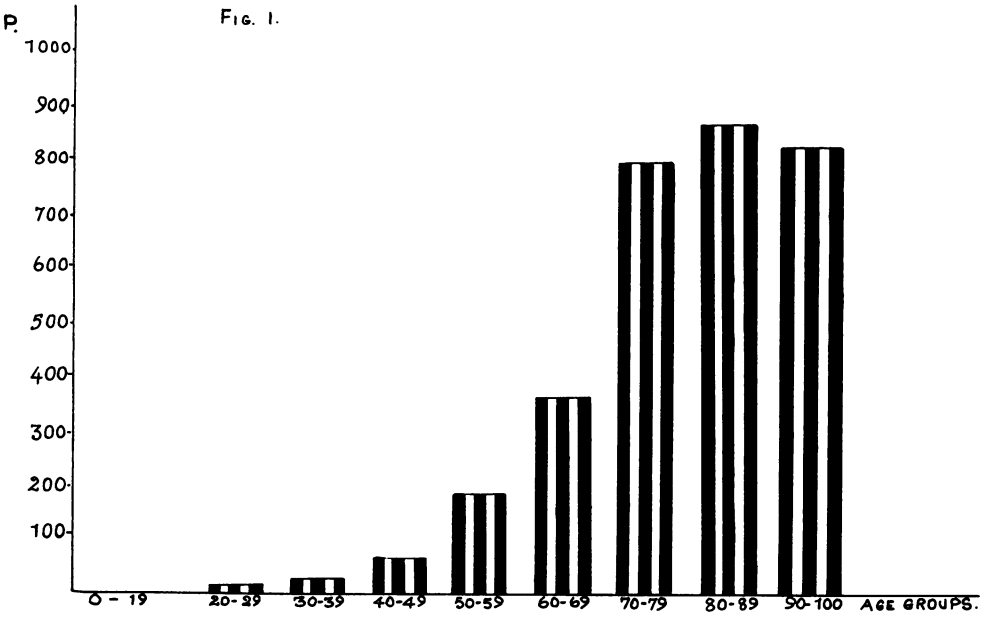
Table I confirms that it is a condition predominantly found in men—the generally accepted figure for women is between 2 and 3 per cent of the total whilst here it is slightly over 4 per cent. One hundred and thirteen patients had treatment elsewhere – radiation, surgery or 'plasters'. These so called 'plasters', made of arsenical paste, are worn by the patient for several weeks, give rise to excruciating pain and on occasions to very profuse haemorrhage. One patient had eleven 'plasters' in all applied at various times and it is interesting to note that the pathologist reporting on the section stated that it showed 'radiation changes'! Traffic was not altogether one way, however, for the records show that six patients after receiving radiation treatment, made doubly sure by subsequently having 'plasters' applied!

TABLE II—AGE INCIDENCE

Age	20–29	30–39	40–49	50–59	60–69	70–79	80–89	90–100	*Total*
Men	4	16	73	179	249	295	102	6	924
Women	–	1	4	3	6	15	10	1	40
Total	4	17	77	182	255	310	112	7	964
Per cent	0.4	1.8	8.0	18.9	26.5	32.2	11.6	0.7	100

It is generally accepted that cancer of the lip is a disease of old age (Table II). It rarely occurs under the age of 40 and is most unusual under the age of 30. The youngest patient referred was a male, aged 25, a colonial officer on home leave. He had a small lesion treated by surgery. Ackerman and del Regato (1962) quote a series of 1,618 patients where the highest percentage occurs in the fifties. Dick

(1962) reporting on 328 patients in Canada states that it is most common in the sixties and a similar pattern was found by Judd (1949). In the present series about 90 per cent of the cases occurred after the age of 50 and the highest percentage, 32 ,was found in the seventies. This apparent late development of the condition in Northern Ireland, as compared with other countries, could possibly be of significance when the aetiology is considered. A more accurate picture of the actual incidence in relation to age is given in Figure I where account is taken of the percentage of population in each age group.



The histogram illustrates how rare it is before the age of 40 and demonstrates that the liability to develop the condition doubles with every decade from 40 to 70 years of age. The picture for women is almost identical with the condition occuring, perhaps, a little later than in men.

CLINICAL EVOLUTION

Table III suggests that by far the most common initial or presenting symptom is ulceration—37.8 per cent.

TABLE III—INITIAL SIGNS OR SYMPTOMS IN 964 CASES

	Number	*Per cent*		*Number*	*Per cent*
Lump	63	6.5	Burn	10	1.0
Ulcer	364	37.8	Sore	65	6.7
Crust	117	12.1	Crack	29	3.0
Pimple	42	4.4	White Patch	15	1.6
Blister	25	2.6	Other	234	24.3

When the patient actually attends for treatment the history may be as follows:

1. An ulcer developing de novo.
2. An ulcer appearing on a previously existing swelling or nodule.
3. Superficial crusting with perhaps minimal ulceration on an area previously subject to periodic crusting and healing.
4. The persistent and gradual increase in size of a keratotic nodule.

TABLE IV—DURATION OF SYMPTOMS

	3/12	6/12	9/12	1 *yr.*	1½ *yrs.*	2 *yrs.*	2+*yrs.*	*Ind.*	*Total*
Men	272	210	79	118	36	51	107	51	924
Women	12	11	3	5	3	2	0	4	40
Total	284	221	82	123	39	53	107	55	964

As a general rule cancer of the lip develops slowly (Table IV) but it is surprising to find a delay of six months or more in cases in view of the lesion's rather prominent and obvious location. Those patients where the lesion develops de novo probably account for cases reporting in the first few months of onset, whilst it is probably true that malignancy occurring on long-standing pre-cancerous conditions accounts for the very great delay in other cases. In the present series some 16 per cent of all patients delayed two years or more before seeking medical attention but this figure, in fact, is not dissimilar to that given in other reports.

CLINICAL STAGES

The cases are staged according to the system whereby Stages I and II describe the length of the primary lesion, Stage III the position when mobile lymph nodes are present, and Stage IV when there is fixation of nodes, an extensive primary or where there are distant metastases, which is extremely rare. Seventy-five per cent of the patients seen presented with a primary lesion 2cm. or less and only in 4 per cent was the lip tumour over 4cm. in length.

The actual percentage of patients presenting in the later stages of the disease i.e. Stages III and IV compares favourably with figures from other series.

TABLE V—CLINICAL STAGES

Stage	1	2	3	4	*Ind.*	*Total*
Men	756	79	16	64	9	924
Women	26	4	9	0	1	40
Total	782	83	25	64	10	964

INCIDENCE OF SECONDARY NODES

There is a great variation in the reported incidence of involved lymph nodes in cancer of the lip. Some reports, Dick (1962) and Martin (1935) suggest that it only occurs in about 3.5 per cent of cases whilst others, Bhansali (1961) and Simmons and Daland (1962) report that cervical metastases are present in 20-25 per cent.

Five hundred and ninety-two cases are available for five year assessment and Table VI indicates that 37 patients out of this number i.e. 6.3 per cent presented

TABLE VI—INCIDENCE OF SECONDARY NODES
(592 patients)

	Present	3/12	6/12	9/12	1 *yr.*	2 *yr.*	3 *yr.*	4 *yr.*	5 *yr.*
Number	37	6	8	6	10	7	4	–	3

with lymph glands already involved. In the succeeding 5 year period, 44 patients or 8 per cent developed nodes and it is interesting to note that in 37 of these patients i.e. 84 per cent the nodes appeared within two years of treatment. The incidence of secondary nodes must obviously depend upon the duration of symptoms, the extent of the primary lesion as well as the relative degree of differentiation of the tumour, but I doubt if prophylactic dissection, as suggested by some, would offer sufficient added benefit to compensate for the effort and the operative risk involved. This would be particularly relevant here in Northern Ireland where so many of the patients are aged seventy and over.

TREATMENT

Cancer of the lower lip may be treated by surgery or radiotherapy, the choice of treatment depending upon such factors as extent of the primary, the degree of differentiation of the tumour, the presence of enlarged regional lymph nodes, the patient's age, general condition, etc. Here I will refer only to radiotherapeutic methods and Table VII illustrates some of the more common techniques in use at the Northern Ireland Radiotherapy Centre.

Many of our patients with small tumours are treated by means of a single exposure of superficial or medium voltage x-rays – the mouth and jaw being protected by a 2mm. thick lead sheet placed inside the lower lip. This is not a treatment method one would necessarily recommend but it is a reasonable compromise taking into account the age of many of our patients, the distances involved and the extreme reluctance to enter or even attend hospital. If the lesion is more bulky and extensive then we treat by deep x-ray therapy, fractionating the course of treatment and again using lead to protect the mouth, jaw and normal tissues. Radium is being used less and less in the treatment of lip cancer for it is probably difficult to justify the added exposure of staff to radiation when equally good results can be obtained by other simpler methods. We feel, however, that the double radium or cobalt mould gives a slightly better cosmetic result and it is, therefore, still used in selected cases especially in the younger patient. Recurrences following radiation are treated by surgical excision. If mobile glands are present

TABLE VII—TREATMENT BY RADIOTHERAPY

(1) Superficial or medium	Single treatment		2000r–2250r
Voltage (140 KV)	Fractionated	5 days	3250r–3500r
(2) Deep V-ray Therapy		8 days	4250r–4500r
(300 KV)	Fractionated		
		15 days	5000r–5500r
(3) Radium Mould		8 days	6000r–6750r
Implant – Radium needles or Gold Seeds		7 days	6000r–6500r

when the patient is seen or appear after treatment then radical block dissection is indicated. If the glands are fixed and surgery is not possible palliative radiation therapy may be tried, either in the form of external deep x-ray therapy or as a small radium or radon seed implant directly into the involved nodes.

Prognosis and Results of Treatment

The main factors probably influencing the prognosis are :

1. The length of the primary lesion.
2. Previous therapy whether by surgery, diathermy or radiation.
3. The degree of differentiation of the tumour.
4. The presence of lymph nodes.

It is, however, generally accepted that when the disease is detected in the early stages treatment whether by surgery or radiothrapy should result in a cure rate of between 90 and 95 per cent. It is sometimes not easy to compare results because of the failure in reports to differentiate between crude and corrected survival rates but as mentioned earlier over 70 per cent of our patients were over sixty years of age and this is certainly reflected in the high proportion of patients dying from other causes in the five year period following treatment. The overall corrected survival rate for this particular series is 87 per cent and Table VIII illustrates clearly how the prognosis is influenced by the stage in which treatment is initiated.

Table VIII—Five Year Results

Stage	*Number treated*	*Number alive*	*Died from intercurrent disease*	*Died from disease*
1.	478	361 (75.5%)	92 (19.2%)	25 (5.2%)
2.	54	36 (66%)	12 (22.2%)	6 (11.1%)
3.	13	6 (46%)	1 (7.7%)	6 (46.2%)
4.	46	11 (24%)	4 (8.7%)	31 (67%)
Indef.	1	—	1	—
Total	592	414 (70%)	110 (18.6%)	68 (11.4%)

It is sobering to reflect on the fact that 68 patients out of 592 or about 12 per cent. actually died from the disease, and the mode of death from lip cancer is such that every effort should be made to initiate treatment at as early a stage as possible. Although many of our patients are old, and travel to clinics is not always easy, we feel that close follow-up is necessary, particularly in the two year period following initial treatment in order to detect secondary nodes at a stage when they are still operable and curable.

Aetiology of Lip Cancer

Numerous factors have been suspected of playing a part in the development of lip cancer.

These are listed in Table IX but it has been generally accepted that the most important factor in the production of lip cancer is long standing exposure to sunlight. Tobacco, particularly in the form of pipe smoking, may have an association but clearly to a very much lesser degree. Both intensity and chronicity of

TABLE IX

Tobacco
Alcohol
Syphilis
Nutritional deficiencies
Sunlight
Miscellaneous factors such as heat, trauma, dental irritation, etc.

exposure to sunlight are probably involved, the latter appearing to be of more importance here in Northern Ireland where the highest percentage of cases occurs in the seventy age group. It is certainly a condition most often found in out of door workers, occurring predominantly in rural areas and division and distribution of our cases on a geographical basis would appear to confirm this.

Table X illustrates the fact that Belfast with about 30 per cent of the population provides less than 11 per cent of the cases referred. Almost 33 per cent of the patients, on the other hand, live in Tyrone and Fermanagh although the combined

TABLE X—GEOGRAPHICAL DISTRIBUTION

	Belfast	*Antrim*	*Down*	*Armagh*	*F'managh*	*Tyrone*	*L'derry*	*Other*
No. of cases	105	167	180	110	100	210	89	3
Percentage	10.9	17.3	18.7	11.4	10.4	21.8	9.2	0.3
Population (thousands)	416	274	267	117	51	134	165	—
Percentage of total population	29.2	19.2	18.7	8.2	3.1	9.4	11.6	—

population of these counties represents only 12.5 per cent of the total for the province. These figures would indicate that those people living in the western counties are about eight times more liable to develop cancer of the lip than people living in Belfast.

Finally if chronic exposure to sunlight over a long period is the most important factor then one might reasonably expect to see a somewhat similar pattern in the incidence of skin cancer where studies have confirmed the existence of a casual relation between excessive occupational and environmental exposures to sunlight and the incidence of cancer of exposed skin. One thousand cases of skin cancer

TABLE XI—SKIN CANCER
1,000 Cases (570 men, 430 women)

Belfast	*Antrim*	*Down*	*Armagh*	*Fermanagh*	*Tyrone*	*L'derry*
330	114	193	93	44	126	100
33.0%	11.4%	19.3%	9.3%	4.4%	12.6%	10.0%
		Percentage of Total Population				
29.2	19.2	18.7	8.2	3.6	9.4	11.6

registered at the Centre were chosen at random and Table XI illustrates that this actually is not the case.

It can be seen that, although skin cancer is more common in men the difference is nothing like that for cancer of the lip where women make up less than 5 per cent of the total cases registered. In addition the division of skin cancer cases on a geographical basis follows broadly the general distribution of population.

In view of this one might reasonably suggest that, although sunlight may be the main factor in the aetiology of lip cancer in other countries this need not necessarily apply in Northern Ireland. It is a fact that the condition continues to be a fairly common neoplasm in this country and full investigation of all aspects of the problem might yield useful information on what many people believe is a preventable form of cancer.

Summary

Nine hundred and sixty four cases of cancer of the lower lip registered at the Radiotherapy Centre are reviewed with particular reference to the age incidence, clinical evolution and incidence of secondary nodes. The importance of close follow-up in the two year period following treatment is emphasized. Treatment by radiation is described briefly and the main factors influencing the prognosis and results of treatment are discussed. The numerous factors suspected of playing a part in the development of lip cancer are mentioned with particular reference to Northern Ireland where the condition continues to remain a common form of cancer.

Acknowledgments

I wish to thank my colleagues Dr. Arnold R. Lyons and Dr. George A. Edelstyn for allowing me to use notes of many of the patients treated by them. I am obliged to Miss B. Mullan for Figure 1 and also to Miss D. Hinds for typing the manuscript.

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BLOOD GROUPS AND GASTROINTESTINAL CANCER

A comparison of the ABO distribution by site of lesion

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Previous investigations in the literature have suggested a correlation between blood group A and carcinoma of the stomach (Fraser Roberts 1959). This finding was also present, but to a lesser degree, in cases of carcinoma of the oesophagus (Aird, Lee and Fraser Roberts 1960). Studies of the ABO blood group distributions of cancer within the remainder of the intestinal tract have not revealed any significant deviations from the controls (Fraser Roberts 1957). In this present investigation of patients with carcinomas of the gastrointestinal tract the ABO blood group distributions in the different sites were recorded and compared to see if the distributions altered as one descended the intestinal tract.

Patients and Methods

The ABO blood groups of 1,162 patients with carcinoma of the gastrointestinal tract were known. The diagnosis was confirmed histologically in all cases except in 22 patients with carcinoma of the rectum, in whom the diagnosis was made at operation by the surgeon. All the patients were normally resident in the Belfast Postal Region and the distributions of their blood groups were compared with those of a large series of "current" and "resigned" blood donors also resident in the

Table I

Percentage ABO blood group distribution of the controls

Blood group				*Total*
A	*O*	*B*	*AB*	
9,433	15,715	2,702	716	28,566
(33.02)	(55.01)	(9.46)	(2.51)	(100.)

Table II

Percentage ABO blood group distribution of 1,162 *patients with gastrointestinal cancer by site of lesion*

Site of cancer	*Blood group*				*Total No. patients*	χ^2	P
	A	*O*	*B*	*AB*			
Oesophagus	44.28	39.34	13.11	3.27	61	6.05	$0.05 > P > 0.02$
Stomach	39.39	47.41	11.64	1.66	481	14.59	$0.01 > P > 0.001$
Colon	40.98	46.17	9.57	3.29	366	13.09	$0.01 > P > 0.001$
Rectum	32.29	57.88	7.87	1.96	254	1.39	$0.80 > P > 0.70$

χ^2 comparison of the ABO distribution between each site of the lesion and the controls

same area. Table I shows the ABO blood group distribution of the controls. Table II shows the ABO blood group distribution of the patients by site of the lesion, and the x^2 comparison with the controls is shown at each site.

Discussion

There is a significant increase in blood group A and decrease in blood group O, when the blood group distribution of patients suffering from carcinoma of the oesophagus, stomach and colon are compared with the controls. In carcinoma of the rectum the results are closely similar to the controls.

In this series from one area there is no overall blood group trend as one descends the intestinal tract, although the blood group A increase is noted in all sites except the rectum.

Summary

A comparison of the ABO blood group distribution of 1,162 patients with intestinal cancer was made by site of the lesion. All patients were resident in the same area. There is a significant increase in the frequency of blood group A in carcinoma of oesophagus, stomach and colon, with a corresponding deficiency of blood group O, at each site.

Acknowledgements

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TRIGGER THUMB IN INFANCY AND CHILDHOOD
A SURVEY OF 80 PATIENTS

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TRIGGER THUMB in adult life is often associated with a history of trauma and occurs almost exclusively in middle aged female patients (Fahey and Bollinger, 1954). In infancy and childhood trigger thumb is a relatively rare condition, the aetiology of which is obscure. The condition is not well known outside hospital practice.

It seems worth while to review the cases of trigger thumb operated on in infancy and childhood in the hope that some light might be thrown on the condition as it affects this younger age group. The review is based on a series of 80 patients treated in the Royal Hospital for Sick Children, Edinburgh, during the eighteen year period, January 1946 to December 1963. We were impressed that in 23 patients out of 80, or 29 per cent, the condition was bilateral. Overall the condition was seen in 103 thumbs.

In the well established case there is a thickening and stenosis of the sheath of the flexor pollicis longus tendon at the level of the metacarpo-phalangeal joint of the thumb. In addition there is a nodule in the tendon itself and the disparity in size between the tendon and the narrowed sheath limits the movement of the tendon and consequently of the distal phalanx of the thumb to the base of which the tendon is inserted. If the primary lesion is a narrowing of the tendon sheath this could cause pressure on the tendon, exerted more consistently in the position of rest, i.e. about 15 degrees short of full extension, and the movement of the tendon through the narrowed sheath could damage the tendon and cause the development of a nodule.

Biopsy studies on the thickened tendon sheath have confirmed the findings of others (Fahey and Bollinger, 1954; Torokova, 1963), that the thickening in the tendon sheath consists of non-specific fibrous tissue. The nodule in one instance where biopsy was taken also consisted of similar non-specific fibrous tissue. In two patients where the condition had existed for a considerable time, the nodule contained glairy, ganglion-like fluid, possibly the result of degeneration.

A considerable number of patients presenting with the established condition on one side later reported with the same condition in the opposite thumb.

We have examined the normal thumb carefully in all patients presenting with unilateral symptoms and also in those patients seen at follow-up where operation has been performed on one side. In 9 patients we found a definite nodule in the

tendon of the flexor pollicis longus at the level of the metacarpo-phalangeal joint in the thumb opposite to the clinical lesion. This nodule moved freely on flexion and extension of the distal phalanx and did not give rise to symtoms.

Clinical Observations

We have divided the condition into three clinical stages : (1) presymptomatic or asymptomatic; (2) trigger thumb; and (3) locked thumb.

(1) *Presymptomatic or asymptomatic*: No symptoms are complained of but a definite nodule is palpable in the flexor pollicis longus tendon at the level of the metacarpo-phalangeal joint of the thumb. The nodule is definitely in the tendon because it moves longitudinally on flexion and extension of the distal phalanx. It is difficult to understand how a tendon sheath narrowed insufficiently to interfere with the free movement of the tendon within it could exert sufficient pressure on the tendon to produce the nodule. Indeed the nodule is palpable and it appears to move freely through the narrowed part of the sheath. In many cases locking never occurs and the nodule gradually disappears.

(2) *Trigger Thumb*: There is again a palpable nodule in the tendon of the flexor pollicis longus but the disproportion between the nodule and the sheath is now sufficient to cause an audible or palpable click as the nodule moves through the narrowed sheath and the child may have obvious difficulty in extending the distal phalanx or extension may take place with a sudden snapping movement.

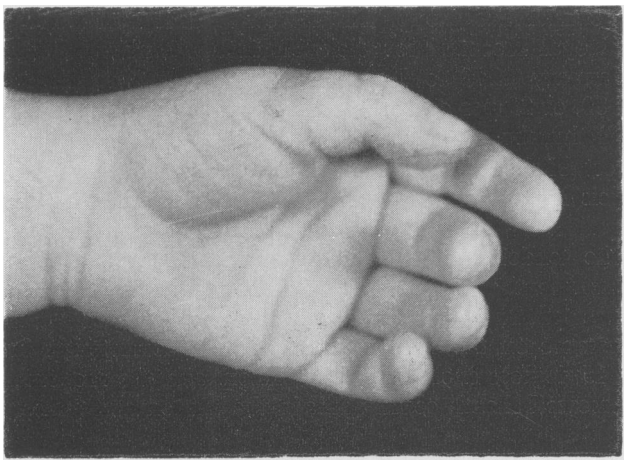

Fig. 1. *Locked thumb. Typical position in the infant. Extension limited to* 150 *degrees approximately.*

(3) *Locked Thumb*: (Fig. 1) The nodule usually becomes locked on the proximal side of the constricted sheath as the flexor muscles exert a stronger pull than the extensor muscles. The interphalangeal joint of the thumb then becomes fixed in about 150 degrees of extension, further active extension is impossible but flexion to 90 degrees can be performed. With passive force extension is sometimes possible. Infants usually present at this stage.

Sex Incidence

Of our 80 patients 34 were male and 46 female.

Side Affected

The right side alone was affected in 24 patients, the left side alone in 33 patients. Twenty-three patients had bilateral involvement and will be discussed in detail later.

Age of Onset

The ages at which the condition was first noted are shown in Table I.

TABLE I—TRIGGER THUMB
Age of Onset (80 patients)

Birth — 3 months	6	2 — 3 years	20
3 — 6 months	3	3 — 4 years	10
6 — 12 months	3	4 — 5 years	5
1 — 2 years	32	5 — 6 years	1

Three cases were noted shortly after birth. The maximum incidence occurs during the second year of life. Although children up to the age of twelve years are seen at the hospital there were no cases where the age of onset was above six years.

History of Injury

A history of injury to the thumb was noted in only nine patients. The condition was noted immediately after the injury in two patients. The remainder were noted from four days to five weeks after injury. In most of these cases the time between injury and the awareness of the condition was extremely short, suggesting that injury in most cases simply drew attention to the deformity. One patient showing bilateral involvement presented with a history of trauma to one side six weeks previously.

X-rays were performed in five patients referred to casualty with a history of injury. No bony abnormality was noted in any of these cases.

Provisional Diagnosis

The condition is not well known outside hospital practice and in our series only eight patients were referred with the correct diagnosis. The diagnoses with which the patients were referred are shown in the following table.

TABLE II—TRIGGER THUMB SURVEY (80 patients)
Diagnosis with which Patients were Referred to Hospital

Diagnosis	*No. of patients*
Trigger thumb	8
Dislocation	8
Deformity	19
Contracture	3
Swelling	1
Exostosis	1
Direct to Casualty	2
No diagnosis	38

Treatment

The most effective treatment is by adequate division of the tendon sheath of the flexor pollicis longus by open operation although it is possible for mild cases to settle with conservative treatment in the form of splintage. In our series three patients were treated by splintage, with temporary improvement in two. These however recurred and required operative division of the tendon sheath. The injection of hydrocortisone into the lesion was not performed in this series (Wolin, 1957).

Operation is performed in all cases under general anaesthesia either as an inpatient or outpatient procedure and is usually performed in a bloodless field after the application of a pneumatic tourniquet. A transverse incision is made 2 – 3 mm. distal to the proximal skin crease of the thumb, avoiding the digital nerves lying alongside the tendon sheath (Fig. 2). The stenosed tendon sheath is widely opened vertically in the midline or just to the side of the midline until the nodule and tendon move freely (Fig. 3). The skin and subcutaneous tissues are closed. The thumb is firmly bandaged and the child allowed home. Sutures are removed in one week. Adequate opening of the tendon sheath is the most important factor in preventing recurrence.

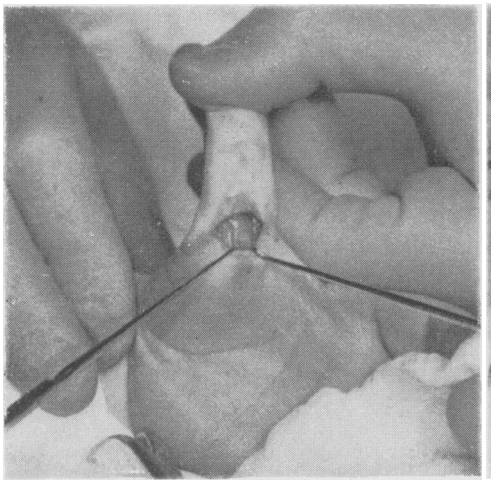

FIG. 2. *The operation. Transverse incision 2 – 3 mm. distal to proximal skin crease thumb. Showing tendon sheath and digital nerves.*

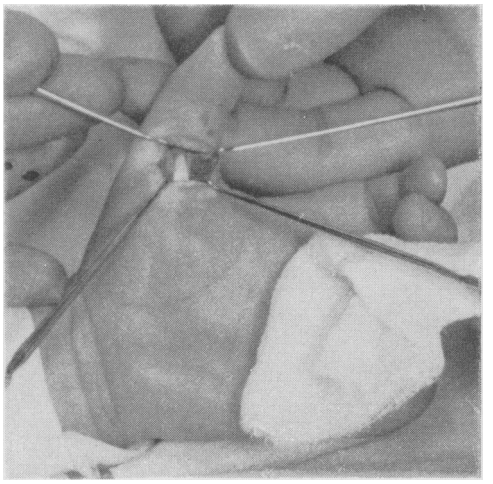

FIG. 3. *The operation. Tendon sheath opened vertically. Showing nodule proximally and constricted tendon distally.*

Findings at Operation. Primary operation was performed on 94 thumbs. These consisted of 66 patients with the condition on one side only and 14 bilateral cases. In most stenosis of the tendon sheath of the flexor pollicis longus tendon was present at the level of the metacarpo-phalangeal joint. The sheath was usually slightly thickened. There was a constriction of the tendon at the same level with a definite nodule proximal to this. In three cases a band of tissue passing anterior to the tendon sheath at the level of the metacarpo-phalangeal joint was noted. When this was divided the nodule moved freely before division of the actual sheath.

Biopsy of the tendon sheath was performed in six cases and biopsy of the nodule

in one case. These biopsies showed only non-specic fibrous tissue. In two cases, one late and one recurrent in which a very large nodule was found in the tendon, both nodules were found to contain glairy, ganglion-like fluid. This was thought to be due to degeneration.

Prognosis

Of the 80 children who had operation performed a total of 57 were followed up (71 per cent). Forty-five of these children were reviewed in the Hospital Outpatient Department when they returned for removal of sutures and again one month later. The remainder were discharged directly to their own doctors for removal of sutures and follow-up.

To gain some knowledge of the late results of the operation we traced 20 children who still lived in the Edinburgh area and who had had the operation performed from one to 15 years previously and visited them in their homes. Eight of these children had previously been reviewed at the hospital after operation.

Results of Edinburgh Survey

Of the 57 children followed up 46 originally had the condition in one thumb and 11 had bilateral involvement. Of the 46 originally unilateral cases 9 developed signs in the opposite thumb (two trigger thumb, 7 symptomless nodules). The total number of children with bilateral involvement in the series followed-up was therefore 20 out of 50 (35 per cent.) (Table III).

Table III—Trigger Thumb Survey

Combined Follow-up — 57 patients (71 per cent)
1 month—15 years after operation

Number of Patients			*Total*	*Recur-*	*Opposite Thumb (unilateral Cases)*			*Total*
Total	*Unilat.*	*Bilat.*	*Thumbs*	*rences*	*Trigger*	*Nodule*	*Total*	*Bilateral*
57	46	11	68	7	2	7	9	20 (35%)

Of the 94 thumbs operated upon in 80 patients (this includes both thumbs in 14 bilateral cases) there were 7 recurrences. In these the inability to move the distal phalanx was usually noted within a few weeks of operation and it was felt that in these cases the tendon sheath had not been sufficiently widely divided. Further operation was performed on five of these thumbs with a completely satisfactory result. Wilks (1954) in a series from the Hospital for Sick Children, Great Ormond Street, London, quoted 4 recurrences in 47 operations.

After adequate division of the tendon sheath the nodule in the tendon gradually disappeared. All thumbs examined from 6 to 15 years after operation were completely normal.

No occurrence of the same condition in other members of the family was noted and none of the parents had noted any excessive crawling or thumb sucking.

Incidence of Bilateral Involvement

In our series of 80 patients 23 were found to have bilateral lesions (29 per cent). They may be divided into three groups:

(1) Eight children who presented with bilateral locked of trigger thumb.
(2) Six children who presented with locked or trigger thumb on one side and at intervals varying from three months to three years developed a locked or trigger thumb on the opposite side.
(3) Nine children who presented with locked or trigger thumb on one side and with a definite nodule in the flexor pollicis longus tendon on the opposite side not giving rise to symptoms.

In seven of the last group the nodules were noted at follow-up at intervals varying from one to five years after the first side had been diagnosed.

In two of these cases (numbers 77 and 78) the nodules were noted at the time the patients presented with the clinical lesion on the opposite side. In view of the size of these nodules and the probability of the development of locking at a later date operation was performed on both sides.

The first (Case 77) was a female child aged ten months. She presented with a locked thumb on the right side and was also noted to have a mobile nodule in the flexor pollicis longus tendon on the left side. On the right side at operation the tendon sheath was found to be thickened, there was also a band of fascia passing anteriorly to the sheath. When this band had been divided the tendon and nodule moved freely before the division of the actual sheath. On the left side, where the symptomless mobile nodule was present a band of fascia was also noted passing in front of the tendon sheath which was also thickened. Both were divided and the nodule exposed.

Case 78 was a female child aged four and a half years. A week prior to being seen at the hospital her mother had noticed that she was unable to extend the distal joint of the left thumb. No symptoms were present on the right side. On examination the distal phalanx of the left thumb was locked in flexion and a nodule was palpable at the level of the metacarpo-phalangeal joint. On the right side movement of the distal phalanx was free but a definite mobile nodule was palpable in the tendon of the flexor pollicis longus at the metacarpo-phalangeal joint. Operation was again performed on both sides. On the left the tendon sheath was thickened and a nodule in the tendon firmly fixed proximal to the constriction. On the right side the nodule moved freely but the sheath was also thickened at the level of the metacarpo-phalangeal joint. Simple division of the tendon sheath was performed on both sides.

Review of the Literature

From the literature we have been able to collect 257 cases of trigger thumb in infancy and childhood and in association with these 71 cases in adults. These are described or referred to in the references given at the end of the paper.

Of the 257 childhood cases 84 were fully analysed and of these 25 were bilateral (29 per cent). The sexes were almost equally affected and no obvious predisposing causes were noted. The onset was usually in infancy or early childhood, the youngest being 2½ months old. The oldest was a woman of 20 years, described by Compere (1933), who presented with bilateral trigger thumbs which had been present since the age of 3-4 years. At operation a tight transverse band was found constricting the tendon on both sides.

The condition was first described by Poulsen in 1908 and the first bilateral case in a child of 3½ years was reported by Hauck in 1923.

Although no family history was noted in our own series, White and Jensen (1953) from Honolulu found a family history in 2 children, and 5 children, of Filipino ancestry, came from the same Hawaiian Island of Kauai. Fahey and Bollinger (1954) described the occurrence of the bilateral condition in a boy of 3½ years and his twin sister, and Torokova (1963) noted that the father of one of the children in her series had had trigger thumb himself in childhood. This had resolved without treatment.

Division of the tendon sheath by open operation was found to be the most satisfactory method of treatment, but Chiari (1953) describes a method of subcutaneous tenotomy, the knife being introduced at the leval of the metacarpophalangeal joint and the sheath divided. He had 2 failures in 100 cases.

Of the 71 cases of trigger thumb in adults 7 were bilateral (10 per cent). Almost all occurred in females, the condition being commonest between the ages of 50-60 years. Trauma or constant repetitive movement appeared to be a factor in some cases but not in all. Fahey and Bollinger in a series of 12 children and 31 adults (all female), with trigger thumb, found that in adults there was usually gross thickenings of the tendon sheath with minimal changes in the tendon. In children the changes in the tendon were more marked than those in the sheath.

The occurrence of trigger thumb in adults almost exclusively in middle aged female patients and the 10 per cent incidence of bilateral cases suggests that other aetiological factors, apart from trauma, may play a part in causation.

Aetiology

From our own observations and from a review of the literature we are convinced that trigger thumb in infancy and childhood has a congenital aetiology. This is supported by the following considerations:

(1) *Early onset*: All cases were noted before the age of six years although children up to the age of 12 years are seen at the hospital. The maximum incidence of the condition was in the first 2 years, 44 of our 80 patients developing the condition before their second birthday.

(2) *The incidence of bilateral cases*: The incidence of bilateral cases is interesting. We found that 23 out of 80 patients had bilateral involvement. This included the presence of symptomless nodules in the opposite thumb in nine children.

(3) *The absence of a predisposing cause*: In most cases no history of trauma is obtained and where a history of trauma is given the time relationships are such that it would seem to be purely an incidental factor.

Crawling on the hands has been suggested as a possible aetiological factor but the parents of children when questioned at follow-up stated that there had been no excessive crawling in their children. Many cases occurred before crawling started. No history of excessive thumb sucking was obtained.

Theories of Aetiology

At the metacarpo-phalangeal joint of the thumb the flexor pollicis longus tendon passes in effect through a pulley. Any factor, either functional or anatomical which affects this mechanism may cause irritation to the tendon and its sheath due to pressure, causing fibrosis and narrowing of the sheath and the development of a nodule in the tendon. The following theories have ben proposd:

(1) *Hypermobility of the first metacarpo-phalangeal joint*: This had been noted in a number of patients.

(2) *An abnormal remnant of the superficial transverse ligament of the palm* or other abnormal fibrous band anterior to the tendon and its sheath. Three cases were noted in our series with abnormal bands and Compere described a bilateral case.

(3) *Insertion of a part of the oblique head of the adductor pollicis into the lateral sesamoid of the thumb*: A small portion of the oblique head of the adductor pollicis may be inserted into the lateral sesamoid of the thumb, passing behind or in front of the flexor pollicis longus tendon. This slip of muscle is described in Gray's "Anatomy" (1946). Wood Jones (1941) also describes it but regards the muscle as part of the flexor pollicis brevis muscle. Describing the muscle he states —"From this mass of varient descriptions it is exceedingly difficult to define a muscle which will embrace all the many definitions which have been given. The difficulty is made greater by the fact that many of the slips are themselves liable to individual variation." This slip of muscle was also mentioned by McFarlane in his "Observations on the functional anatomy of the intrinsic muscles of the thumb", in 1962, but was not found in 26 dissections of the thenar muscles which he performed.

(4) *Flexed position of the thumb at the metacarpo-phalangeal joint in utero*: This position is commonly seen in the newborn and I have noted it in premature infants. This persistent flexion will lead to pressure on the tendon and its sheath.

SUMMARY

Eighty patients with trigger thumb in infancy and childhood are described. These were seen over an eighteen-year period at the Royal Hospital for Sick Children, Edinburgh. Thirty-four were male and 46 female. The age of onset was from birth to six years. Twenty-three patients had bilateral involvement. This figure included nine patients in whom a definite mobile nodule, not producing symptoms, was present in the tendon of the flexor pollicis longus tendon at the level of the metacarpo-phalangeal joint in the opposite thumb to the clinical lesion. We have called this the "pre-symptomatic" or "asymptomatic" stage. Trauma is not an aetiological factor.

The treatment of choice is by operative division of the narrowed sheath of the flexor pollicis longus tendon. Primary operation was performed on 94 thumbs with 7 recurrences.

It is concluded that trigger thumb in infancy and childhood is a congenital condition and is due to a functional or anatomical abnormality and is bilateral in about 30 per cent of cases. It affects the sexes almost equally. It is distinct from the condition in adults which occurs almost exclusively in middle aged females where the aetiology is again obscure but trauma and excessive use appear to play a part in some but not all cases. The condition is bilateral in 10 per cent of recorded cases in adults.

We would like to record the debt we owe to the late Mr. J. J. Mason Brown, O.B.E., M.B., P.R.C.S.Ed., at whose suggestion this survey was undertaken and who gave constant help and encouragement during its preparation. We would also like to thank Mr. F. H. Robarts, M.B., F.R.C.S.Ed., and Miss R. M. Mackay, M.B., F.R.C.S.Ed., Consultant

Surgeons to the Royal Hospital for Sick Children, Edinburgh, for their encouragement, for permission to use their cases and for their helpful comments on the script. We wish to thank the Records and Photographic Staff of the hospital for their assistance and Mrs. E. M. Ross, Belfast, for translating the paper by K. Chiari from the German.

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REVIEWS

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The seven reviews on gastrin are particularly helpful at this time. It is now clear that this hormone is one of the important co-ordinating materials of the alimentary tract and the reviews of the subject in this publication should be helpful to all who are concerned to have an up to date knowledge of its current status.

Six presentations deal with vagotomy and its problems. Reading this section, one is impressed by the unsatisfactory nature of data about this operation. The clinical surveys and the significance of the insulin stimulation test leave much to be desired and one is left with the feeling that enthusiasms for this operation are beginning to wane.

The section on small intestinal absorption is particularly valuable in presenting general concepts on the nature of absorption. It tends to deal with the subject at the biochemical and microanatomical level so that clinical problems are discussed only indirectly. However, anyone who wishes to have an understanding of the nature of the complex problems presented by malabsorption states, would do well to read these accounts of current thinking on the subject.

Other current problems dealt with are the increasing incidence of hepatic toxicity due to drugs, and a section reviewing current diagnostic and therapeutic advances in gastroenterology.

The price at 50s seems rather high for a paper-back, but no other current publication presents together such a wealth of basic clinical and physiological data about the alimentary tract. It clearly has to be read by anyone with an interest in gastroenterology. A.M.C.

THE GENETICS OF GASTRO-INTESTINAL DISORDERS. By R. B. McConnell, *T.D.*, M.D., M.R.C.P. (Pp. IX+282; figs. 47. 70s). London: Oxford University Press, 1966.

ABDOMINAL medicine, as McDonnel, Malcolm, Cuming and Whitla knew it, has been transformed by the success of surgical treatment and surgical prophylaxis of abdominal sepsis, and by the retreat of the bacterial diseases of the abdominal and pelvic viscera and peritoneum. Abdominal physicians in this country are now predominantly concerned with nutrition (dietary, absorbtive and utilisative), with cancer, with gastric hypersecretion and its consequences, with the malabsorbtive diseases of the small intestine and with ulcerative colitis. Virology, bacteriology and environmental study may yet do much for us, but the solution to some of our problems must be metabolic, and the origins of some are genetic.

Doctor R. B. McConnell's book reviews for the physician the present state of the genetics of abdominal disease. It is comprehensive, and clearly written. The summaries are decisive. The growing points are indicated and the deficiences of the subject are made clear. There are 1098 references, each giving the title of the paper. There is a helpful genetic glossary and there are subject and author indexes. The proof reading has been good. This is a really useful book, suitable for hospital libraries and medical unit book shelves. It cannot in the present state of knowledge make a big difference to practice but it will help thinking. It is essential reading for membership candidates. J.S.L.

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There is much of interest in this essay for the surgeon interested in diversion procedures, and the bibliography is comprehensive. J.M.M.

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This is a well ordered presentation of much interesting data, but both the basic material, man, and the environmental conditions are so infinitely variable and unpredictable that it never had any hope of reaching any conclusion.

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Some interesting facts emerge concerning the role of general practitioners in the treatment and management of their psychiatric patients. They deal with the bulk of such patients themselves, referring only 5.1 per cent to psychiatrists and 4.3 per cent to other specialties. The majority of patients received one or more drugs whilst only one quarter had, in addition, some form of counselling or reassurance. The younger the patient the more likely was counselling given, whereas if the condition was psychosomatic the patient was more likely to be referred to a general physician than to a psychiatrist. Social agencies were infrequently used in treatment programmes, although the doctors regarded social factors as important in the majority of patients, especially women. Classical diagnostic categories were shown to be insufficient for use in general practice, particularly where there were psychological components in physical illness and where chronic psychiatric and chronic physical ill health were positively associated.

The facts recorded in this book could form the basis for much useful research. They could also provide valuable guidance to administrators in planning the next stage of development of community health services. It would require little more than an alteration in the standpoint of general practitioners for a referral rate of 700 per 10,000 of the population at risk to be reached. Hence, the implications of this study are obvious in the need to fully equip practitioners of the future with the techniques of psychiatric diagnosis, treatment and management, including increasing use of the social services.

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John Fry is a worthy product of the post-war generation of well organized general practitioners and his contribution to literature and the College of General Practitioners has been a stimulus to many of his colleagues.

He sets the scene for his "Profiles" by quantifying in broad terms – the morbidity – the expected sickness experience in a typical practice in a year. This medical audit in itself gives food for thought. He notes that there is a substantial amount, even in our welfare state, of self-treated or non-treated illness in the community and perhaps for only one quarter of all sickness does the patient seek medical care. The G.P. refers one-tenth of these patients to hospital consultants and the burden on the hospital services represents just over 2 per cent of all disease.

He describes his practice in a suburb of South London, his age/sex register, his methods and record keeping. He then considers a wide variety of clinical situations – perspectives in general practice – ranging from diseases at the extremes of life, childhood and old age and such matters of diverse interest from coronary heart disease to emotional disorders. It is perhaps invidious to single out single chapters but his consideration of the catarrhal child is of much interest and value and his note on epidemic influenza is topical and realistic. He describes the explosion of the epidemic and its nightmare effect by its sheer volume on even the best organized practices. He has a special thought for hypertensive patients of whom he had some 390 under observation and statistical record in a ten year period. Like William Evans he finds the great majority, two-thirds, to be benign and often symptomless and requiring no specific therapy. Indeed he rarely uses hypotensive medicaments. Peptic ulcer is well discussed and it is surprising that he has not noted, as others have ,the decrease in incidence of duodenal with an almost corresponding increase in gastric ulcer. Regrettably in this connection he does not mention the fashionable hiatus hernia.

Finally, in his last chapter he records that cancer is not a "common" disease and it is largely a disease of ageing and, in many cases, there is reasonable hope of survival.

This book will be read and enjoyed by family doctors interested in good general practice. It should be read by consultants, especially those entrusted with teaching, so that they too may have a new perspective of the great mass of morbidity in the community, in the front line of medical care. C.W.K.

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There are excellent diagrams, illustrating not only mechanical but mathematical problems. There are valuable historical notes and illustrations. Some of the radiograph reproductions are poor.

The management of cases of this condition is covered well with emphasis on complete clinical examination and investigation. The use of the Milwaukee brace did not receive as much attention as the reviewer feels it merits. The section on surgical treatment is most comprehensive and one senses that it is in this field that Professor Roaf feels that the problem of scoliosis may be solved; that is in the light of present knowledge.

This is a publication of the high standard expected of its publishers. It is comprehensive, compelling and controversial, and it must be studied in detail by everyone interested in the complex problem of scoliosis. R.I.W.

THE ACUTE ABDOMEN. Edited by W. W. Glass and G. E. Gould. (Pp. XI+ 155; figs. 9. 60s). Baltimore: Williams & Wilkins; Edinburgh and London: E. & S. Livingstone, 1966.

THIS 150 page monograph, although entitled "The Acute Abdomen", is not intended to be a comprehensive survey of the whole subject. Certain conditions have been selected for discussion, various diagnostic techniques described, and the "proper sequence of therapy" outlined rather than any rigid scheme of treatment detailed

One failing, perhaps not so marked as in many multi-author books because all the authors come from one hospital, is the disparity in the approach of the different contributors. For example, the 4 page chapter on "Recognition of the acute surgical abdomen" sets out the principles of history taking and examination as for the undergraduate student. On the other hand 13 pages are devoted to a discussion of the "Value of peritoneal aspiration" – something that many specialists still question.

The opening paragraph contains sound advice for the more conservative physician: "with rare exceptions, if the diagnosis is uncertain, the conservative approach is to operate." However, more emphasis appears to be given to making the knife-happy surgeon aware of conditions outside his own speciality, which might be responsible for the acute abdomen. If this is one of the purposes of the authors they deserve to succeed. The chapters on "Medical conditions associated with acute abdominal pain" and "Intra-abdominal manifestations of connective tissue disease" are good, and as much space is given to them as to pure surgical conditions. A working knowledge of the commoner adult surgical emergencies, such as perforated peptic ulcer, acute intestinal obstruction and acute appendicitis, is assumed and they are not discussed. Caecal volvulus, diverticulitis and a plan of management for patients with multiple injuries constitute the general surgical chapters. Paediatric problems are dealt with in a more comprehensive fashion and "Medical illnesses that mimic the acute surgical abdomen" are described again in relation to the young patient. There are also chapters on urological and gynaecological conditions.

Those who have to deal with the acute abdomen, and, without the ready advice of specialist colleagues, have to differentiate medical and gynaecological problems from the purely surgical, should find valuable help in this book. W.A.H.

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The management of cases of this condition is covered well with emphasis on complete clinical examination and investigation. The use of the Milwaukee brace did not receive as much attention as the reviewer feels it merits. The section on surgical treatment is most comprehensive and one senses that it is in this field that Professor Roaf feels that the problem of scoliosis may be solved; that is in the light of present knowledge.

This is a publication of the high standard expected of its publishers. It is comprehensive, compelling and controversial, and it must be studied in detail by everyone interested in the complex problem of scoliosis. R.I.W.

THE ACUTE ABDOMEN. Edited by W. W. Glass and G. E. Gould. (Pp. XI+ 155; figs. 9. 60s). Baltimore: Williams & Wilkins; Edinburgh and London: E. & S. Livingstone, 1966.

THIS 150 page monograph, although entitled "The Acute Abdomen", is not intended to be a comprehensive survey of the whole subject. Certain conditions have been selected for discussion, various diagnostic techniques described, and the "proper sequence of therapy" outlined rather than any rigid scheme of treatment detailed

One failing, perhaps not so marked as in many multi-author books because all the authors come from one hospital, is the disparity in the approach of the different contributors. For example, the 4 page chapter on "Recognition of the acute surgical abdomen" sets out the principles of history taking and examination as for the undergraduate student. On the other hand 13 pages are devoted to a discussion of the "Value of peritoneal aspiration" – something that many specialists still question.

The opening paragraph contains sound advice for the more conservative physician: "with rare exceptions, if the diagnosis is uncertain, the conservative approach is to operate." However, more emphasis appears to be given to making the knife-happy surgeon aware of conditions outside his own speciality, which might be responsible for the acute abdomen. If this is one of the purposes of the authors they deserve to succeed. The chapters on "Medical conditions associated with acute abdominal pain" and "Intra-abdominal manifestations of connective tissue disease" are good, and as much space is given to them as to pure surgical conditions. A working knowledge of the commoner adult surgical emergencies, such as perforated peptic ulcer, acute intestinal obstruction and acute appendicitis, is assumed and they are not discussed. Caecal volvulus, diverticulitis and a plan of management for patients with multiple injuries constitute the general surgical chapters. Paediatric problems are dealt with in a more comprehensive fashion and "Medical illnesses that mimic the acute surgical abdomen" are described again in relation to the young patient. There are also chapters on urological and gynaecological conditions.

Those who have to deal with the acute abdomen, and, without the ready advice of specialist colleagues, have to differentiate medical and gynaecological problems from the purely surgical, should find valuable help in this book. W.A.H.

THE SOCIAL RESPONSIBILITY OF GYNECOLOGY AND OBSTETRICS. Edited by Allan C. Barnes. (Pp. XIV+210. 42s). Baltimore: Johns Hopkins University Press; London: Oxford University Press, 1966.

THIS book gives the proceedings of a conference held at the John Hopkins Hospital in May, 1965, under the chairmanship of Professor Allan C. Barnes.

In his main introduction Professor Barnes asks the conference "to consider some of the points at which the science of gynecology and obstetrics impinges most closely on the needs and problems of our society". Among the problems considered were: The population explosion and its control; The quality of the next generation; Marriage counselling; The unmarried mother; The early detection of cancer, etc. Thirteen specialists contributed very interesting papers in their various fields, and the editorial comments of Dr. Barnes enhance their value.

As the publishers claim, it is "a book for every thoughtful citizen". J.A.P.

GYNAECOLOGY. By J. M. Holmes, M.D., B.S.(Lond.), M.R.C.O.G. (Pp. VIII +228; figs. 29. 18s). London: Baillière, Tindall & Cassell, 1966.

THERE will be general agreement with the author "that the medical student, overburdened by the need to acquire factual knowledge, may fail to grasp the fundamental principles". In the chapters on examination of the gynaecological patient and on the relevant anatomy and physiology, Mr. Holmes has combined clarity and brevity with inclusion of all essential points although a more detailed description of the method for taking cervical smears would be useful.

In some of the subsequent chapters, the pursuit of brevity has been carried too far and a proper balance has not always been maintained. For example, while the adrenogenital syndrome and testicular feminization each rate a half page, treatment of a pelvic abscess is reduced to the meagre and unhelpful advice that it "should be opened at the most suitable place". While the main features of each disorder are always listed and the layout is logical, there is insufficient clinical interest to stimulate a real interest in gynaecology in the above average student. The admitted necessity to be dogmatic in such a mini text must reduce further its acceptibility outside the author's own unit.

In short, while it may have some use in rapid pre-examination revision, the book cannot be recommended as a main undergraduate gynaecological text. C.R.W.

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THIS report gives a brief account in 31 pages of the work in progress in the Council's establishments and of the essential work of the Council such as committees and administration. A second section of 55 pages, also published separately at 6s, is entitled "Current Medical Research" and is, as usual, a most informative review of some aspects at present advancing rapidly. A third section lists the research projects and those involved and supported by the Council through their special units and by grants in aid.

The second section is written for the general medical reader. Perhaps the most challenging concepts for the future are the increasing complexity of chemical structure revealed in the discussions on the abnormal haemoglobins and on enzyme diversity in human populations, and those in the section on the thymus and immunity which must have such important implications for the general theory of immunity and for the future of organ transplantation.

Anyone studying this report carefully must become aware of the large contribution British medical science still makes to world medicine, and of how this is sustained by the Council.

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SYSTEMIC PATHOLOGY. Edited by G. Payling Wright and W. St. Clair Symmers. (Two volumes. Pp. XV+1675+CIII. Illus. 320s). London: Longmans, Green, 1966.

WE welcome this most important work edited by the late Professor Wright and by Professor Symmers, especially since Professor Symmers is a distinguished graduate of this medical school. Indeed, in the introduction Professor Symmers pays a gracious tribute to three men well known to older members of the society who taught him the value of an interest in pathology – the late Surgeon T. S. Kirk, of Belfast, Professor P. T. Crymble and his father, Professor Symmers of Belfast.

The book has been in preparation for eight years and is largely the product of those working at some time in the medical schools and special institutes of London University. It presents a most comprehensive account of systemic pathology and is supported by 1,867 photographs, 62 diagrams, 42 tables and over 6,500 references. It has two excellent indices covering subjects and authors cited. It is beautifully printed and the illustrations are almost without exception of the highest quality and are a good blend of gross and microscopic photographs and have been most carefully chosen to illustrate the subject. Paper and binding make this a most pleasant book to use despite its size.

In a felicitous foreword the late Sir Roy Cameron – the doyen of British pathology – welcomes this book as not just a work of fine scholarship, but the present day successor to Aschoff's *Pathologie Anatomie*, the great book above all others to which generations of pathologists and clinicians directly or indirectly owe so boundless a debt. As Sir Roy says this book successfully combines a detailed account of structural pathology with the consideration due to the experimental and functional aspects.

A book such as this must depend on the happy choice of contributors and on close editorial supervision. There must inevitably be some criticism of the emphasis placed on some aspects. Some sections, such as that on congenital anomalies of the heart and great vessels, attempt to present too much information in the available space. In general the authors, and especially the editors, attain a clear fluid prose and much detail is presented in a logical manner. Indeed, in contrast to its American rival, which deals also with general pathology, the greater length allows a clearer more readable style and a more logical development which should appeal to the critical reader. The editors are to be congratulated on how well they have co-ordinated their team and on the absence of overlapping and contradiction between sections.

Many good medical students should read large parts of this book, and it would greatly widen their outlook as well as supplying factual information. It should be readily available to all undergraduate and postgraduate students for reference and, owing to its attractive style and the valuable correlation of all data on disease, they will find themselves reading on beyond what they originally intended. J.E.M.

GENETRICS IN MEDICINE. By Alwyn Smith, Ph.D., M.B., Ch.B., D.P.H. (Pp. 71; figs. 8. 6s). Edinburgh and London: E. & S. Livingstone, 1966.

THE author of this little paper-backed book states that it is an attempt to present an account of the principles of human genetics from the viewpoint of the medical man interested more in general problems of human health and human sickness than in the special problems of occasional patients with rare anomalies. He expects that his readers will be mainly students of public health and social medicine. He does succeed in showing something of the broader significance of genetic studies.

The later chapters are good and it is unfortunate that so much of this short book must be taken up with elementary considerations. With the emphasis on science to the exclusion of general cultural subjects in the entrance requirements for medicine, and with the time spent on pre-clinical subjects, one might really think that present day students might be more adequately informed.

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HISTOLOGICAL APPEARANCES OF TUMOURS. By R. Winston Evans, *T.D.*, B.Sc.(Lond.), Ph.D.(Lond.), M.R.C.S.(Eng.), L.R.C.P.(Lond.), F.C.Path. Second Edition. (Pp. XII+1253; figs. 1331. 210s). Edinburgh and London: E. & S. Livingstone, 1966.

THIS is in every way a better book than the first edition published ten years ago. Many books achieve success in their first edition, and in the second edition the author is content to add a paragraph here and there and bring the references up to date by a few additions. This is a very different revision. Entirely new material has been added in twelve new chapters and neoplasms of all organs of the body including the central nervous system, the female genital tract and the placenta are now considered. There has been some re-arrangement of chapters, and as well as 350 further illustrations many others replace those in the first edition. More important still the book has been virtually rewritten. New knowledge has not only been added, it has been incorporated and presented in a well integrated whole. The descriptions are still complete and supported by well chosen and informative illustrations of microscopic appearances, but there has been a greater discussion of the clinical aspects and of physiological, endocrine and genetic aspects of cancer.

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THE problem in writing a textbook of neuroanatomy is to judge how much correlation with clinical neurology is necessary and desirable. tI seems unreal and out of keeping with modern teaching to offer anatomical data without a note on normal function or the effect of disease. Indeed to do so makes anatomy dull and not the exciting subject it should be. Unhappily this book falls short of my ideal even though the author includes some facts about function and applied anatomy. It sets out in 102 pages details of the anatomy of the nervous system, central and peripheral, ending with a few pages on embryology and practical neuro-anatomy. The text is clear but the figures are of the rather standard unattractive compressed type so frustating even to the keen student. One yearns for more of the diagramatic functional presentations typified by Wilder Penfield's "motor humunculus" and for less illustrated nomenclature. The main criticism however centres round how much correlative anatomy one should expect in a book of essentials. Thus to describe the specialized cutaneous sensory nerve endings without reference to the physiological and psychological principles of central perception is too neglectful of other dimensions. The clinical neurologist is, of course, biased in what essentials he hopes to obtain from a neuroanatomy book. He would, perhaps, like to find easily the area involved in the posterior inferior cerebellar artery syndrome or the concept of watershed and end artery explained with regard to blood supply to the brain or how a knowledge of the development of the nervous system aids one in understanding the syndromes of springomyelia. Such are not dealt with adequately and the book cannot therefore fill the need of the postgraduate studying for a diploma in psychological medicine or for the membership examinations or for students of abnormal psychology. It could only be of limited help to the undergraduate or to the clinician who wanted to brush up his neuroanatomy. L.J.H.

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The author succeeds in building up a lively pen portrait of Freud through his writings. The "Interpretation of Dreams" provides the key to many of the deductions made about the kind of man Freud was, as there is little or no information available about his childhood or early development. Freud saw to that, for he destroyed all his notes, letters and manuscripts when he was 29 years old.

Marthe Robert traces Freud's career – he was born at Freiberg in Moravia in 1856. He witnessed anti-Semitism as a child and experienced it as an adult. Books and learning were highly valued in his household, particularly the Bible. His knowledge of the Old Testament, his fascination with the character of Moses and his love of Archaeology all helped to shape his future work. He qualified in 1880, spent two years in Brücke's Physiology Department followed by three years in the General Hospital of Vienna. He then worked for nearly 5 months in Meynert's Psychiatric Clinic – the only purely psychiatric experience he had apart from a locum post at a private psychiatric establishment for wealthy patients. After this he went to the Salpêtrière to see the work of Charcot. His work with Breuer, his prolonged correspondence with Fliess during the early days of his evolving metapsychology and his self analysis are all adequately described.

This book portrays Freud as a man of opposites. Whilst firmly Atheistic in outlook, he was strongly influenced by Biblical characters and highly valued his early friendships with Jung, the son of a clergyman and with Pfister who was a Swiss pastor. His theories display this trend too. The tremendous drive to make a lasting mark on the thinking about the psychology of man never left him, even during the years of a long and painful physical illness which he bore with fortitude.

Whether the reader is familiar with psychoanalytic concepts or not, this book is worthwhile reading both as a history of an epoch and of an important aspect of medicine. It is recommended for psychiatrists for whom a sense of historical perspective is essential. General practitioners may not see patients like "little Hans" or "the Wolf Man", but if they read the book they will be provided with a useful synopsis of the birth and growth of psychoanalysis, together with interesting glimpses of international figures in psychiatry at the turn of the century. J.G.G.

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THE author stated in his preface to the first edition that his purpose was to build a bridge between the psychiatric clinic and the psychological laboratory. The second edition, whilst retaining this aim, is addressed to all who are professionally concerned with problems of mental disorder in children or adults.

Psychopathology is defined as that part of psychology which seeks to explain disorders of behaviour or mental activity, the latter being regarded as a reaction by the organism to an event in its environment. The book is a compendium of such reactions, providing also useful references to the literature. Psychological, epidemiological, ecological and genetic factors found to be associated with psychiatric disorder are described. Psychologists, PSW's and psychiatric nurses will find this book useful. It will guide the young psychiatrist in his introductory reading on the subject. The general practitioner may wish to include it in his reading list for a refresher course in psychiatry. J.G.G.

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Psychopathology is defined as that part of psychology which seeks to explain disorders of behaviour or mental activity, the latter being regarded as a reaction by the organism to an event in its environment. The book is a compendium of such reactions, providing also useful references to the literature. Psychological, epidemiological, ecological and genetic factors found to be associated with psychiatric disorder are described. Psychologists, PSW's and psychiatric nurses will find this book useful. It will guide the young psychiatrist in his introductory reading on the subject. The general practitioner may wish to include it in his reading list for a refresher course in psychiatry. J.G.G.